5ESS® Switch
5E16.2 Large Terminal Growth Procedures

5E16.2 Software Release

235-106-306
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5E16.2 Large Terminal Growth Procedures

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1. INTRODUCTION

1.1 PURPOSE

This 5ESS® Switch Large Terminal Growth Procedures document, 235-106-306, provides a general overview, planning information, and detailed Large Terminal Growth (LTG) procedures to install large line and trunk data in an operational 5ESS switch on the 5E16.2 software release.

Note: These LTG procedures are not supported on the 5ESS Very Compact Digital Exchange (VCDX).

Unless otherwise specified, in the term "LTG" refers to the merging of the precut office data into the existing database of an operational 5ESS switch.

This document is intended to be used by several different types of users. Customer managers and planners will use Sections 1 through 4 to schedule jobs and plan for LTGs. Office technicians will use Sections 4, 5, 8 and 9 when performing the LTG. Sections 6 and 7 will be used only in the event of a Retrofit failure and only in consultation with technical support staff. Support personnel will use the entire document.

Both the office technicians and the designated customer LTG coordinator should have a good knowledge of the 5ESS switch and its normal operation and maintenance.

1.2 UPDATE INFORMATION

When this document is updated, the reason(s) for the update will be listed here.

- Section 3.9.2 has been updated for technical issue, CAUTION statement added.

1.3 DOCUMENT CONTENTS

This document provides descriptive and procedural information in the following areas:

- **Section 1 – Introduction:** Contains a brief introduction to the document and a general overview of software release LTG. It also provides a brief overview of the remaining sections of the document.
- **Section 2 – Planning:** Contains the planning requirements necessary to effect an efficient and timely LTG.
- **Section 3 – Advance Preparation:** Contains information and procedures to prepare the switch for the LTG. This includes ensuring adequate memory is available and performing a database dump.
- **Section 4 – System Evaluation:** Contains a series of procedures to ensure the switch is in an operating condition suitable for the LTG.
- **Section 5 – LTG Implementation:** Contains the specific, detailed procedures required on site to perform the LTG. It does not include information or procedures for LTG work that occurs off site such as merging of the new data.
- **Section 6 – Recovery Procedures:** Contains procedures to recover from various LTG-related troubles. It does not include information or procedures for LTG work that occurs off site. It will handle a majority of the error conditions that can occur during a LTG. In most cases, the LTG can be continued after clearing a particular trouble.
- **Section 7 – Backout Procedures:** Contains procedures to back out of various LTG-related troubles. This section provides procedures and different entry points
(depending on how far the office has progressed into the LTG) for returning to the old ODD and duplexing the system. This section is used only in a very small number of offices attempting an LTG.

- **Section 8 – Non-Off-Line Boot Recovery Procedures:** Contains procedures to recover in the event that the Proceed stage cannot be run due to the inability to perform an off-line boot on the switch.

- **Section 9 – Worksheets and Tables:** Contains information concerning LTG worksheets that will be used throughout the LTG interval to record information important to the LTG. Review them before starting the LTG.

- **Section 10 – Reference Documents and Required Materials:** Contains a list of reference documents and required materials.

A **Glossary** and **Index** are also included at the back of the document.

### 1.4 GENERAL COMMENTS

The primary goal during the actual LTG interval is to install large line and trunk data in an operational 5ESS switch while maintaining service and reliability. Utmost care must be used when using this document to ensure that the impact on the subscribers is minimized. This can be done only by following the steps in this document in the order given. Remember, **software release LTG is a service-effecting activity.**

The procedures must only be used in stable offices that are performing within all parameters normally used to measure office performance. The LTG is not a means of fixing problems in an office and should never be used as such.

Many of the procedures in this document are not used in day-to-day office operations and should be fully reviewed before using.

LTG-related trouble and fault resolution are provided in the Recovery Procedures and Backout Procedures and Non-Off-line Boot Procedures (Sections 6, 7, and 8 respectively). If problems arise and you are uncertain about options regarding continuation of the LTG or backing out of it, you should escalate to your next level of support.

*Any deviation from the procedures could jeopardize the LTG and result in service interruptions beyond the control of this document.*

### 1.5 LARGE TERMINAL GROWTH OVERVIEW

The LTG provides the ability to add large quantities of lines, trunks, and other switch data to an operational 5ESS switch. The LTG allows the bulk loading of new, nonoperational, precut office data. Manually input data or existing switch owner database information is used to generate the new office data to be loaded during the LTG.

The new office data is then merged with the existing 5ESS switch Office Dependent Data (ODD), using off-site Office Data Administration (ODA) processing.

The LTG provides the ability to copy the existing 5ESS switch ODD, reverse map the data to forms data, merge the new forms data, produce the new ODD, reload the newly merged ODD, and reapply the database changes that occurred while the ODD was off-site being processed. During this off-site processing, the office data is checked for inconsistencies and errors. Any inconsistencies and errors are corrected before the final LTG load date.
Use of LTG eliminates the need to manually populate line, trunk, and other switch data (using the recent change/verify mechanism) during terminal growth on the 5ESS switch. If Off-Site Recent Change Reapplication (OFFRCR) is not used, the 5ESS switch will have to reapply changes to the data made via Recent Change (RC) during the 17-day, off-site ODD processing interval. If OFFRCR is used there will only be 5 days of recent changes to reapply on the switch. The RC reapplication rate is approximately 400 RCs per hour.

Through 5ESS switch Office Data Administration (5 ODA), LTG interfaces with the developed 5ESS switch Conversion (5ECONV) process. The 5ECONV provides processes and procedures that facilitate the translation and input (or merging) into an existing 5ESS switch database of subscriber and other switching data from existing databases. These databases include:

- Switching office databases such as the 1 ESS™ switch, 1A ESS switch, and 2B ESS switch.
- Switch owner Operations System (OS) facilities database such as Computer System for Main Frame Operations (COSMOS), Automated Inventory Record System (AIRS), etc.

Line, trunk, and other switch data can be supplied to the LTG process using a batch interface tape. Refer to 235-080-100, Translations Guide, 5ODA Batch Load Interface, Division 1, Section 9, for the tape format specification.

The LTG allows addition of line and trunk data, both analog and digital, along with other switch data such as:

- Switching Module (SM), Remote SM (RSM), Optically Integrated Remote Switching Module (ORM), etc.
- Thousands group(s)
- Trunk group(s) and/or trunk member(s)
- New digit interpreter data tables
- Additional routing and charging data
- Operator service position system data
- Other switch data that can be rendered inactive at load switch forward time.

The LTG does not allow:

- Modification to existing 5ESS switch office data (rehosting, rehoming, routing modifications, etc.)
  - Rehosting: Transferring an RSM from one host SM to another host SM within an office
  - Rehoming: Transferring an RSM or multimodule RSM from one office to another, as SMs or RSMs
- Addition of lines into an existing thousands group
- Addition to and/or modification of Multiline Hunt Group (MLHG) lines associated with existing MLHG groups
- Any hardware growth or modification.
1.6 SIMPLIFIED MAINTENANCE AND REDUCED TRANSLATION (SMART) CONVERSION SERVICE

The SMART Conversion Service is a modified Large Terminal Growth (LTG) procedure. The Main areas of difference include:

- A modified timeline of activities.
- No use of the OFFRCR procedure, but POSTRCR will be used for CORC data.
- During the night of conversion, the double logging period in recent change must be inhibited. There may be an exception to this rule, if so, there will be additional restrictions on Recent Change Views that can be modified during the double logging period. Contact your Lucent Technologies SUMS center for more information.
- A different address for mailing the preliminary dump tapes.
- Final dump tapes will be processed on-site on the day of the conversion LTG.
- No changes in SM configuration, memory or disk equipage. No changes other than those performed by the SMART conversion will be allowed (The Smart Conversion does NOT use ODA.)

It is important that all required diagnostics are executed and that the AM Off-Line Boot and SM Off-Line Pump tests are performed to insure that the switch will be able to load the new ODD and successfully execute the switchforward stage. If any failures occur during these tests that will impact the timeline of the SMART Conversion LTG, the conversion coordinator should be notified immediately.

A seven-week timeline of events is a suggested maximum interval between preliminary dump and the night of the LTG.

1.7 HIGH-LEVEL PROCEDURAL OVERVIEW

1.7.1 GENERAL

The major sections of the LTG interval are as follows:

- Planning
- Advance Preparation
- System Evaluation
- LTG Implementation (which includes a section on Duplex Regression Tests).

1.7.2 PLANNING

Detailed information on scheduled maintenance activities will be referenced throughout the document in preparation for a successful 5E16.2 LTG.

1.7.3 ADVANCE PREPARATION

Advance Preparation starts at a maximum of 9 weeks before the LTG. It runs for 6 weeks and is completed 17 days before the LTG. In addition to ensuring certain supplies are on hand, you will have to:

- Ensure a tape unit is available and functional.
- Prepare an acceptance test plan to verify lines/trunks for use after the LTG.
- Verify office disk configuration.
• Ensure that the CCS links on GSMs are provisioned in an optimal duplex configuration so that CCS signaling can be maintained during the LTG.

• Make a tape containing the "other-switch" translations data 8 weeks before the LTG load date.

• Ensure all growth activity is completed.

• Clean, test, and verify tape drive.

• Perform preliminary dumps of the 5ESS switch ODD and Equipment Configuration Data (ECD) databases 5 weeks before the LTG load date.

• Perform cutover relation checks.

• Ensure all growth activity is completed.

• Make office backups for system Moving Head Disks (MHDs).

• Assign test lines.

• Plan for Foreign Exchange (FX) lines at central office and remote sites.

• Test SMs for off-line pump capability.

• Test the AM off-line boot capability.

• Check for blank tapes and spare disks.

• Ensure the office is up to date on hardware Change Notices (CNs) and Software Updates (SUs).

• Ensure the system is running in root partition on the Emergency Action Interface (EAI) page.

• Ensure the system is running duplex with no major off-normal indications.

• Check for utility breakpoints.

• Place any nonrequired trunks in Out-Of-Service Circuit Administration (OOS-CADN) (optional).

• Start double-logging of RCs and Customer-Originated Recent Changes (CORCs).

• Perform the final 5ESS switch ODD and ECD database dumps 5 days before the LTG load date.

During the advance preparation interval, the switch owner’s LTG managers, planners, line/trunk engineers, and the Lucent Technologies Systems Equipment Engineer (SEE) should refer to the Translations Guide (TG-5), Division 1, Section 12, ODA Off-Line LTG Plan for detailed information regarding the schedule and processing responsibilities of each of the parties involved.

1.7.4 SYSTEM EVALUATION

Pre-LTG system evaluation consists of a set of tests and exercises designed to demonstrate that the switch is in an operating condition suitable for LTG. The tests will normally take about 2 days to run and must be performed within the period 10 days before the LTG. The following must be done:

• Verify that all major units successfully pass diagnostics and can run duplex with either unit active.

• Perform AM off-line boot check.
• Perform SM off-line pump check.
• Perform optional Off-Site Recent Change Reapplication (OFFRCR) Reverse Software Change Administration and Notification System (RSCANS) transmission (at -4 days).

1.7.5 LTG IMPLEMENTATION

1.7.5.1 General

LTG implementation begins the morning of the planned transition to the newly merged ODD and consists of twelve separate and distinct stages followed by duplex regression tests.

1.7.5.2 System Setup Stage

The System Setup stage should begin the morning of the LTG. The system setup consists of the following:

• Prepare environment.
• Check office records queue.
• Check/remove utility breakpoints.
• Perform final Software Update (SU) check.
• Make office backups.
• Run Module Controller/Time Slot Interchanger (MCTSI) diagnostics.
• Run Communications Module Processor (CMP) diagnostics.
• Clean and test the tape drive.
• Install LTG software tools.
• Select the proper tapes to be used in the Enter stage.
• Run a tape header check.
• Perform final Out-Of-Service (OOS) dumps.
• Check the Automatic Customer Station Rearrangement (ACSR) queue.
• Start a Backup ODD.
• Verify a quiet duplex system.

Caution: All input messages must be entered at the Master Control Center (MCC) or Switching Control Center (SCC). Failure to do so could result in missing the output responses to messages and jeopardize the transition because of differences in the MCC or SCC and other terminals in the office.

1.7.5.3 Begin Stage

The Begin stage is the starting point for the LTG and should last approximately 1 to 2½ hours. In the Begin stage, the technician should do the following:

• Check the automatic Office Dependent Data (ODD) backup schedule.
• Run an AMA session.
• Start the LTG process.
• Stop any active or scheduled Routine Exerciser (REX) diagnostics.
• Perform a backup ODD.
• Tape Read Header Check.

1.7.5.4 Enter Stage
In the Enter stage, the ODD and ECD databases are loaded from tape to the off-line disks. A full tape should take about 30 minutes to read. At the end of this stage, the odd numbered disks will contain the new ODD and ECD databases.

In the Enter stage, each SM will be forced simplex (MCTSI side 0 ACTF/MCTSI side 1 UNV). All MCTSIs side 1 will be off-line pumped with the new software release data.

The procedure will take from 2 to 4 hours (or more) depending on office size. Other activities in this stage are:
• Execute Enter Preparation.
• Disk Preparation X
• Wait Backup ODD.
• Mount Off-Line Partitions.
• Execute CNI_UPDATE.
• Execute Automatic/Manual Offline Pump.

1.7.5.5 Proceed Stage
The Proceed Stage is expected to last from approximately 1 to 2 hours. Activities in this stage include:
• Prepare the Environment.
• Perform EAI Setup.
• Prepare ECD.
• Execute VTOC changes.
• Start WRTAMA.
• Execute AMA session.
• Execute ALLOW CHECKS.
• Execute TSM OLD.
• Prepare TSMU.

1.7.5.6 Switchforward Stage
In the Switchforward Stage, the Administrative Module (AM), Communication Module Processor (CMP) and MCTSIs of each SM are switched to the new merged ODD. During the switch forward, 2-port stable calls with a talking path are maintained and all transient calls are routed to reorder. New originations are also routed to reorder. Because stable calls are maintained, the switch forward may be scheduled earlier in the evening at a time acceptable to the operating company. Recent change is allowed and the AM and CMP are duplexed on the new ODD.
The switch (with the exception of the SMs and disk drives) is duplexed after the transition on the new ODDs.

Activities included in this stage are:
- Confirm Switchforward.
- Execute APPLHOOK.
- Execute Old Side SM Manager.

### 1.7.5.7 Recovery Preparation Stage

Activities included in this stage are:
- Prepare environment.
- Execute APPLHOOK.
- Execute New Side SM Manager.

### 1.7.5.8 Post-boot Stage

Activities included in this stage are:
- Execute TSM NEW.
- Stop Off-Line Boot.

### 1.7.5.9 Soak Stage

The Soak stage consists of acceptance testing, reconfiguring AMA disk partitions (if necessary), and the starting of the reapplication of RCs and CORCs.

Acceptance testing is expected to last up to 1 hour. During this interval, the operating company performs a series of locally-developed tests to assess the reliability of the new merged ODD before committing the switch to full-duplex operation. Other activities in this stage include executing manual actions such as CORC and Recent Change Reapplication.

### 1.7.5.10 Commit Stage

During the Commit stage, the remaining units will be duplexed.

In the Commit stage, the disks containing the old software release ODDs are off-line until all SMs are duplex on the new ODD. (This ensures a clean backout possibility until the even-numbered disks are committed to the new ODD.)

Duplexing the disks is the last major task. This stage is expected to last from 1½ to 6 hours depending on the number of disks in the office. Other activities in this stage are:
- Duplex the SMs.
- Execute reapplication check.
- Execute Duplex MHDs.
- Execute APPLHOOK.
- Execute CMTHOOK.
1.7.5.11 End Stage

The End stage completes the LTG interval. During this stage, the LTG cycle is completed, and RC and REX are allowed. This is followed by a series of general cleanup steps to reset Automatic Line Insulation Testing (ALIT) parameters, AMA passwords, automatic ODD backup schedule, and call trace lines.

The final task is to make full office backups. As the backups are essential for system recovery, they should be made at this time.

Discounting full office backups, the End stage is expected to last approximately 30 minutes to 1 hour. Additional time for full office backups is dependent on office size/equipage and should be calculated into the overall LTG planning schedule. Other activities in this stage are:

- Execute APPLHOOK.
- Execute ENDHOOK.
- Execute RMVTOOLS.
- Pauses and prompts for the technician not to resume until all RC and CORC Reapplication activity is complete.
- Removing ECD modifications that made it possible to restart the LTG if interrupted by an unexpected AM INIT.

1.7.5.12 Duplex Regression Tests

The operating company should monitor office performance for several days following the LTG. This should include 1 full, normal business day. Any abnormal conditions that arise should be promptly reported per local procedures.

1.8 MISCELLANEOUS

1.8.1 COMMENTS, NOTES, CAUTIONS, AND WARNINGS

Four levels of notation are used in this document for adding supportive information to the text. The four levels and their implications are as follows:

1. Comment: Additional information for clarification or further explanation.
2. Note: Important information that could affect the procedures.
3. Caution: Very important information. If cautions are not heeded, there could be an adverse impact on the operating company subscribers or on the ability to successfully complete the procedures.
4. Warning: Critical information. If warnings are not heeded, there will probably be an adverse impact on the operating company subscribers and/or the ability to successfully complete the procedures will be in jeopardy.

1.8.2 FORMAT AND USE OF DOCUMENT

1.8.2.1 Overview

In this document, special message formats and conventions have been used. The user should be aware of these message formats and conventions and their meaning. They include the following:

- [ ] (brackets)
1.8.2.2 Brackets [ ]
Information (equipment unit, output response, tape, etc.) that appear inside brackets indicate that this information may be applicable to your office. In most cases, the user can easily determine from the information if it applies to the office. Output responses, equipment units, tapes, etc., inside the brackets may or may not be output, equipped, or loaded depending on the office. Brackets around an output response indicate that only some offices will receive the output response depending on equipage or configuration in the office. For example:

[RST MHD 4 COMPLETED].
The restore MHD 4 completed message will only be output if an office has an MHD 4 equipped.

1.8.2.3 Box

Information and input messages that are boxed provide additional information to the user that may be helpful in the procedures that follow. If an input message appears in a box, the user should be aware that it is not necessary to enter the message(s) at that point in the procedure to continue. The user should read and be aware of the special instructions, messages, or information shown in a box. Boxes are also used to show examples.

1.8.2.4 Braces { } and Pipes |
The brace and pipe symbols are used to indicate conditions where two or more responses, options, arguments, etc., are possible. In output responses that are shown with the brace and pipe symbols, they may be used to show the different possible output responses that can be received. For example,

OP SYSSTAT SUMMARY {FIRST | NEXT | LAST}

1.8.2.5 Read Icon => Read:
The read icon provides useful information for the user that will be of assistance when performing the procedures that follow.

1.8.3 ENTERING COMMANDS
1.8.3.1 Overview
When performing these procedures, it is necessary to input (or enter) machine commands to successfully complete the required task. Currently, there are two primary methods of entering commands. One method is by using an input message, the other is a poke command.

While both methods of entering data are performed from the Master Control Center (MCC), input messages are entered in the message mode; poke commands are entered in command mode. To toggle between the two modes, the CMD/MSG key (on the MCC keyboard) is used.
1.8.3.2 Input Messages

Input messages are given for Man-Machine Language (MML) and are as follows:

MSG INPUT MESSAGE

Caution: Input messages must be entered exactly as printed with regard for upper case and lower case, punctuation, and spacing. The final character of each message ';' is not actually typed, but appears when the RETURN key is depressed to enter the message.

Unless otherwise specified:

- All input messages and commands will be entered at the MCC.
- It is assumed that the technician will wait for a successful response from an input message or command before continuing to the next step.

1.8.3.3 Poke Commands

While input messages can be entered from any MCC page, poke commands must be input from the referenced MCC page. Poke commands will be given in the following format:

CMD poke command

1.8.4 TERMINOLOGY

Unless otherwise stated, the term Switching Module (SM) refers to Local Switching Module (LSM), Host Switching Module (HSM), Optically Integrated Remote Switching Module (ORM), Remote Switching Module (RSM), Multimodule Remote Switching Module (MMRSM), 2-mile Optically Remoted Module (TRM), and Switch Module-2000 (SM-2000).

Some examples include <cr> to indicate "carriage return." In these cases, "nothing" is input; the RETURN key (or the ENTER key) is pressed.

1.8.5 WORKSHEETS

Section 9 of this document contains several worksheets that are to be used throughout each stage of the LTG process. It is very important to enter data on the worksheets as specified throughout the document. Some of the data on the worksheets are entered at intervals before the LTG and are referenced and used on the night of the actual LTG. If the key fields in the worksheets are not filled in by the time of the actual LTG, they will cause delay or cancellation of the LTG.

1.9 SOFTWARE RELEASE RETROFIT TECHNICAL ASSISTANCE — SUMS CENTERS

Technical assistance for Software Release Retrofits is provided by the Lucent Technologies Software Update Management Service (SUMS) Centers. If there are any questions regarding the Software Release Retrofit/LTG/SRU, call your Lucent Technologies SUMS Center support indicated in Table 1-1.
Table 1-1 — SUMS Centers

<table>
<thead>
<tr>
<th>SUMS</th>
<th>LOCATION</th>
<th>TELEPHONE NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>South</td>
<td>Birmingham, AL</td>
<td>1-800-824-1626 (NAT.) 1-205-560-2174</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FAX 1-205-560-2188</td>
</tr>
<tr>
<td>Western</td>
<td>Denver, CO</td>
<td>1-877–295–0084 1-720-482-4267</td>
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<td>FAX</td>
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</tbody>
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1.10 USER COMMENTS
We are constantly striving to improve the quality and usability of this information product. Please use one of the following options to provide us with your comments:

- You may use the on-line comment form at [http://www.lucent-info.com/comments](http://www.lucent-info.com/comments)
- You may email your comments to comments@alcatel-lucent.com

Please include with your comments the title, ordering number, issue number, and issue date of the information product, your complete mailing address, and your telephone number.

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Customers who are not represented by a documentation coordinator and employees of Alcatel-Lucent should order 5ESS switch information products directly from Alcatel-Lucent.

To order, call the following telephone number:

- 1-888-582-3688 or fax to 1-800-566-9568; from inside the continental United States
- 1-317-377-8618 or fax to 1-317-377-8616; from outside the continental United States.

1.12 TECHNICAL ASSISTANCE
For technical assistance, call Technical Support Services (TSS) at:

- 1-866-582-3688; from inside the continental United States
- 1-630-224-4672; from outside the continental United States.

Technical Support Services is staffed 24 hours a day, 7 days a week.
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2. PLANNING

2.1 INTERVALS AND TIMING CONSTRAINTS

In addition to the standard ordering interval, there are certain LTG-related site activities that must be planned. Table 2-1 should be used as a guide for site activity planning. Also, refer to Figure 2-1 for a high-level LTG time line. The 5ESS® switch Product Offer and Realization (POR) organization has final approval on all shortened LTG intervals. The entire 5E16.2 LTG timeline supports a maximum interval of 13 weeks.

This 5ESS Switch Large Terminal Growth (LTG) Procedures 5E16.2 document will walk you through the standard 13 week interval.

### Table 2-1 — Site Activities Guide

<table>
<thead>
<tr>
<th>STAGE</th>
<th>TIME</th>
<th>ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advance Prep</td>
<td>-9 wks</td>
<td>Tape unit verify</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ensure proper AM and SM memory</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Verify office disk configuration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Run GSM CCS Link Configuration Check</td>
</tr>
<tr>
<td></td>
<td>-8 wks</td>
<td>&quot;Other system&quot; translations data dump</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Growth check</td>
</tr>
<tr>
<td></td>
<td>-5 wks</td>
<td>Preliminary 5ESS switch ODD/ECD dumps</td>
</tr>
<tr>
<td></td>
<td>-4 wks</td>
<td>Cutover relation checks/ODD finals in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tape unit verify</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Disk verify</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Office backups</td>
</tr>
<tr>
<td></td>
<td>-3 wks</td>
<td>SM off-line pump check</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AM off-line boot check</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Software update check</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Utility breakpoint check</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Final 5ESS-2000 switch ODD and ECD dumps</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OOS-CADN trunk configuration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LTG equipment begins arriving on-site (tapes, documents, etc.)</td>
</tr>
<tr>
<td>System Evaluation</td>
<td>-1 wk</td>
<td>Begin final office baseline tests (REX) and system evaluation tests</td>
</tr>
<tr>
<td></td>
<td>-4 days</td>
<td>RSCANS transmission if using OFFRCR</td>
</tr>
<tr>
<td></td>
<td>-3 days</td>
<td>Final Software Updates (SUs)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quiet Duplex system</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tape unit verify</td>
</tr>
<tr>
<td></td>
<td>-1 day</td>
<td>Review checklist and procedures</td>
</tr>
<tr>
<td>Implementation</td>
<td>0</td>
<td>Disk backups</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MCTSI diagnostics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CMP Diagnostics</td>
</tr>
</tbody>
</table>
The importance of meeting the time intervals shown in Table 2-1 cannot be overstated. The processes used for the database merge by Lucent Technologies are long and
involved. Since that group is involved in many LTGs, any slip in the initial time intervals may delay the LTG.

2.2 5E16.2 RETROFIT ENHANCEMENTS

2.2.1 RETROFIT CONTROL LANGUAGE PAGE

2.2.1.1 1984 Page Description

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2XX</td>
<td>Stop procedure.</td>
</tr>
<tr>
<td>5XX</td>
<td>Resume the procedure.</td>
</tr>
<tr>
<td>6XX</td>
<td>Backout of the procedure.</td>
</tr>
</tbody>
</table>

There are two ways to initialize tools from the 1980 MCC page:

1. If a 3XX command has not been entered and no procedures are running, enter 801. The 1984 page is then displayed showing all the associated tools so that the appropriate tool may be selected.

   Or,

2. Enter 3XX directly from the 1980 page. This starts the procedure while displaying the 1985 page without accessing the 1984 page. The 1984 page may be entered to view the procedure at this point but an 801 command will not be accepted.

### 2.2.2 AUTOMATE 1984 PAGE COMMANDS

The creation of the 1984 MCC page accommodates the need for tools that cannot be automated or that need to be run at any time, including the preparation period. Besides allowing the execution of retrofit tools the 1984 page provides all the current RCL capabilities by implementing tools as special steps within RCL.

### 2.2.3 AUTOMATE SM OFFLINE PUMP

Automated offline pump automates the following actions:

- Switch PPCs
- Inhibit CLNK normalization
- Force requested SMs active on one side of the MCTSI
- Inhibit hardware and software checks on the requested SMs
- Start the requested SMs offline pump
- Monitor the success/failure of the offline SM pump.

The 1984 page is used to enter the poke to execute the “SM Offline Pump” tool. A required argument of “act” or “off” (for example: 3XX,act) determines if the active or offline disk image is pumped into offline SM memory. While the SM offline pumps are in progress, the SM Offline Pump tool’s status indicator displays the percentage of SMs that have completed their offline pumps.

When the offline pumping of the SM has completed, the status indicator displays “COMPLETE” or “FAILURE”. If there are failures and the appropriate corrective actions have been taken, re-execute the “SM Offline Pump” tool to attempt to offline pump the SMs that are not at the “MATE PUMPED” status.

Automated offline pump monitoring provides the following features:

- Lack-of-activity check that sets the step indicator to “FAILED”
- Print a periodic report on the ROP showing the number of SMs (out of the total number) that have completed offline pump.

SM Offline pumps can fail due to hardware or data problems, or because the SM is in the grow state. In this case, after all the other SMs have completed their offline pumps, set the “Automated SM Offline Pump” option on the 1989 MCC page to “N” and continue the procedure. This causes the “AUTO PUMP” step to complete and the remainder of the ENTER stage to continue. The failed SMs can be isolated and recovered after the new software release is operational.

### 2.2.4 ON-SWITCH OFF-LINE BOOT CHECK

The On-switch off-line boot check is an LTG pre-conditioning tool. The purpose of the tool is to ensure that an off-line boot has been completed successfully before performing a database dump. If a successful off-line boot has not been completed, the database dump will be inhibited. In this case, the condition responsible for the off-line boot failure will need to be corrected before continuing.

The output from the OP:RETROCHK command was modified to include this new check. Before the database dump may be performed, offices will need to ensure that
the OFFLINE BOOT check reports a status of "COMPLETED" and a summary of "NO ERROR". For more information on the OP:RETROCHK change, see Section 3.8.4.9.

2.2.5 LTG PRE-CONDITIONING CHECKS

The OP:RETROCHK command checks all summary report files generated by the pre-conditioning processes i.e., Memory Forecasting Tool, and the ODD Retrochk Tool and the offline boot check tool. This command assists the switch owner in determining whether the above mentioned processes have been run, if run was error-free, and if not error-free a summary of the errors. The output of this command will be sent to the ROP. In order to be able to perform the database dump, the new OFFLINE BOOT check audit must be completed without error.

2.2.6 GLOBAL SWITCHING MODULE (GSM) CCS LINK CONFIGURATION CHECK

The GSM CCS link configuration check will examine the CCS link configuration on each GSM to determine the impact a SwitchForward will have on the CCS signaling.

If a GSM is provisioned with an optimal duplex CCS link configuration, the GSM will be able to maintain 50% CCS signaling capacity to all destinations (i.e. DPCs, clusters, and networks) during the SwitchForward. If a GSM is not provisioned with an optimal configuration, the GSM may experience reduced CCS signaling capacity, or an extended CCS signaling outage to some destinations during the SwitchForward.

Instructions for provisioning the GSM CCS links in an optimal duplex configuration can be found in 235-200-116, *Signaling Gateway Common Channel Signaling* document.

GSM CONSIDERATIONS

*Note:* The SwitchForward of the processors will behave differently for switches that are equipped with Global Switching Modules (GSMs) for CCS signaling.

For each GSM (host or island) which has a supported (duplex) CCS link configuration, the system will attempt to preserve CCS signaling on the GSM during SwitchForward by performing the following tasks:

- simplexing the CCS links (i.e. removing one half of the links by removing PSUPHs)
- Switching Forward
- initializing the removed links on the new release
- restoring the links
- performing the same tasks for the other half of the links (which were left activated during the switch forward)

When these tasks are performed, one or more of the following output messages may be printed on the ROP before the switch forward begins:

```
TST CCS GSMCFG
RMV PSUPH
REPT GLOBAL FUNCTIONALITY IMPAIRED - QPH_OFFN CCS_LNK
REPT CCSLK - UNAVAIL MAN MTCE OOSF-PH
REPT QPHPPIPE RECOVERY
```
The “GSM CCS Link Configuration Check” will be performed for the Host GSM prior to switching the processors forward to determine if the CCS signaling links have been provisioned in an optimal duplex configuration. (*) See Table 2-2 for possible GSM SwitchForward configurations.

a. **Optimally Duplexed (i.e. fully supported)**

50% CCS signaling capacity maintained to all destinations during the switch forward of the processors.

For each GSM that has a fully supported CCS link configuration, the following message will be printed on the ROP:

```
TST CCS GSMCFG SM=SM# LS/CLS=
GRSI MAY PROCEED WITH MINIMAL CCS CAPABILITY LOSS
```

b. **Non-optimally Duplexed (i.e. partially supported)**

The signaling capacity to some of the destinations will be less than 50% for several minutes. In the worst case, some destinations will be completely isolated.

The system can be forced to perform the SwitchForward of the processors using the "CCS Preserving" sequence by entering a Poke (500) RESUME command, or backed out to the beginning of the SwitchForward Stage by entering a Poke (600) BACKOUT command.

c. **Non-duplexed (i.e. non-supported)**

There will be no signaling capability to all of the destinations for several minutes (i.e. all destinations will be isolated).

The system can be forced to perform the Switchforward of the processors using the "Default" sequence by entering a Poke (500) RESUME command, or backed out to the beginning of the Switchforward Stage by entering a Poke (600) BACKOUT command.
Table 2-2 — Possible GSM SwitchForward Configurations

<table>
<thead>
<tr>
<th>GSM — CCS SIGNALING CONFIGURATION DETECTED ON THE SWITCH</th>
<th>SWITCHFORWARD PROCESSOR SWITCHING SEQUENCE</th>
<th>MCC SCREEN AND ROP MESSAGE DISPLAYED</th>
</tr>
</thead>
<tbody>
<tr>
<td>No GSM equipped</td>
<td>The system will perform the SwitchForward of the processors using the “Default” processor switching sequence, with no additional pauses.</td>
<td>NON GSM SWITCH CONFIGURATION RUNNING DEFAULT SWITCH SEQUENCE</td>
</tr>
<tr>
<td>One or more Island GSMs equipped (but no Host GSMs)</td>
<td>The system will perform the SwitchForward of the processors using the “CCS Preserving” processor sequence, with no additional pauses.</td>
<td>ISLAND ONLY GSM CONFIGURATION RUNNING DEFAULT SWITCH SEQUENCE</td>
</tr>
<tr>
<td>* Host GSM with an optimally duplexed (i.e. fully supported) CCS signaling configuration</td>
<td>The system will pause.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>See MCC Screen and ROP Message Display for instructions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> This is an additional 500/600 Poke Command, not identified in the main procedure which reflects fully supported CCS signaling.</td>
<td></td>
</tr>
<tr>
<td>* Host GSM with a non-optimally duplexed (i.e. partially supported) CCS signaling configuration</td>
<td>The system will pause.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>See MCC Screen and ROP Message Display for instructions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> This is an additional 500/600 Poke Command, not identified in the main procedure which reflects fully supported CCS signaling.</td>
<td></td>
</tr>
<tr>
<td>* Host GSM with a non-duplexed (i.e. non-supported) CCS signaling configuration</td>
<td>The system will pause.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>See MCC Screen and ROP Message Display for instructions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> This is an additional 500/600 Poke Command, not identified in the main procedure which reflects fully supported CCS signaling.</td>
<td></td>
</tr>
</tbody>
</table>

2.3 IMPACT OF A LTG

2.3.1 OVERVIEW

The 5E16.2 LTG may impact the 5ESS switch in the following areas:

- Hardware
- Data (ODD/ECD)
- Service
- Technician
- Operator Services Position System (OSPS).
The ODD is updated.

2.3.2 HARDWARE IMPACT

2.3.2.1 Overview

The hardware required for the 5ESS switch for a LTG on 5E16.2 Software Release consists of sufficient AM and SM memory and sufficient disk space. Hardware Change Notices (CNs) may also need to be applied.

Any additional memory or disk drives must be added before the dump. If memory or disk growth is required, the growth procedures must also be completed before the dump.

It is recommended that the memory requirements for the 5E16.2 Software Release be determined well in advance of the dump interval to allow sufficient time for ordering and installation.

Refer to the following for information on memory requirements and procedures for growing memory and disks:

- 235-070-100, Administration and Engineering Guidelines, for the 5E16.2 memory and disk requirements.
- See Section 2.3.2.3.2, Disk Space for information on the necessary items that are used in determining the 5E16.2 disk space.
- 235-105-231, Hardware Change Procedures - Growth, for procedures for growing AM/SM memory.
- See Section 2.3.2.2.3, Memory Tool for procedures on memory projections.

2.3.2.2 Memory Requirements

2.3.2.2.1 Is the type of LTG being performed a SMART Conversion LTG?

- If YES, skip these steps and go to Step 2.3.2.3 since additional memory is not required.
- If NO, continue with the next step.

2.3.2.2.2 Overview

The memory forecasting tool is suggested as a "predictor" for memory requirements specific to the target release. This tool is only a predictor and profiles approximately 90% of the switch in an office. For the 5E16.2 LTG, additional memory for the AM and each SM may be needed. If additional memory is needed, it must be added before the database dump. The memory forecasting tool is provided as a predictor that enables offices to determine the amount of memory needed to LTG from the current software release ODD to a specified subsequent software release ODD.

2.3.2.2.3 Memory Forecasting Tool (SUGGESTED)

Because of memory requirement projections for the 5E16.2 Software Release, a feature (the memory forecasting tool) is available to forecast the amount of memory required for an office to support LTG to the merged ODD.

This tool will aid the customer in determining memory usage, trigger procurement of additional memory, and allow more flexibility in the scheduling of LTGs. This tool also provides the office's current AM, CMP, and SM memory equipage as well as the projected memory usage for the switch.
In preparation for the LTG, this tool should be run well in advance of the Telephone Equipment Order (TEO). If the report indicates that memory is needed in any of the processors, the appropriate memory should be grown. In some cases this tool may reduce the default ODD freespace percentage of 30% used in its calculations in order to limit a specific processor’s forecasted memory requirements to a value equal to the current memory equipage. Therefore, the “%FREE” column of the report output should be examined to determine if the values are acceptable to the office.

This tool should still be run on a regular basis to verify that memory needs do not increase in the weeks before the LTG.

To run the memory forecasting tool, enter the following message:

```
MSG OP:MEMSIZE,TORELEASE=5E162;
```


### 2.3.2.2.4 SM Memory

#### 2.3.2.2.4.1 Overview

The SM memory size for the 5E16.2 software release depends on the SM software configuration and the SM ODD requirements. The 5E16.2 software release SM memory requirements for your office should be determined. The ODD requirements for your office may not be typical. Calculations and guidelines for determining the exact memory requirements are given in 235-070-100, Administration and Engineering Guidelines. The SM memory projections may also be obtained from the output of the memory forecasting tool. See Section 2.3.2.2.3.

The SM memory requirements need to be determined well in advance of the database tape dump.

#### 2.3.2.3 Disk Equipage

**2.3.2.3.1 Is the type of LTG being performed a SMART Conversion LTG?**

- If **YES**, skip these steps and go to Step 2.3.2.4 since disk equipage modifications are not required.
• If NO, continue with the next step.

2.3.2.3.2 Disk Space

LTG planning requires proper disk equipage so that the office will have enough disk space on the new software release side to accommodate the ODD and Automatic Message Accounting (AMA) data. All SM static ODD memory must have sufficient disk space to be backed up on disk. If additional SMs will be added in the near future, this should be considered in determining the total disk requirements for SM static ODD and AMA data. After the LTG to the merged ODD, additional features and capabilities are available which have an impact on the storage requirements.

The following listing includes several different types of procedures that deal with MHDs (or disks). Some of these procedures may need to be performed before the LTG in a 5E16.2 Software Release office to meet the disk requirements for the 5E16.2 Software Release ODD.

• **Disk Growth:** The disk growth procedures allow an office to grow an additional disk on to the existing disk system. After hardware growth, one of three disk options will be selected to increase the AMA and/or SM ODD space.

• **Disk Reconfiguration:** The disk reconfiguration procedure maximizes the storage space of the SM ODD by consolidating and reconfiguring the SM ODD space. The SM ODD disk partitions are changed to efficiently utilize the ODD space. A disk reconfiguration is required after a disk conversion.

For further information on disk engineering, see Section 2.3.2.3.5, Disk Engineering Guidelines, and 235-070-100, *Administration and Engineering Guidelines*.

2.3.2.3.3 5E16.2 Disk Configurations

In the 5E16.2 Software Release only the 2020 disk configuration is used and offices must be equipped with a 3B21D processor.

The number of MHDs is the number of disk pairs that are included as part of the actual disk configuration. These disk pairs are referred to as "base disks." Base disks do not include any optional disk pairs that may be equipped.

2.3.2.3.4 5E16.2 Disk Options

Each disk configuration in the 5E16.2 Software Release may use any of the following disk options. These disk options refer to the type of data stored on the optional disk pairs. The **03xx** and **03xxx** options are for 322 Mb SCSI MHDs. The **06xx** and **06xxx** options are for the 600 Mb SCSI MHDs. The **10XX** options are for 1GB/2GB SCSI MHDs.

- **0300 or 0600 or 1000:** All of the data on the outboard disks (an outboard disk is any disk other than the required MHDs) is AMA.
- **0325 or 0625 or 1025:** With this option, 75 percent of the disk space on the outboard disks is allocated for AMA, and the other 25 percent is allocated for the SM ODD.
- **0350 or 0650 or 1050:** With this option, 50 percent of the disk space on the outboard disks is allocated for AMA and the other 50 percent is allocated for the SM ODD.
- **0375 or 0675:** With this option, 25 percent of the disk space on the outboard disks is allocated for AMA and the other 75 percent is allocated for the SM ODD.
• **03100 or 06100**: All of the disk space on the outboard disks is allocated for SM ODD.

### 2.3.2.3.5 Disk Engineering Guidelines

#### 2.3.2.3.5.1 Overview

Engineering of the disk space is based on the office requirements for storage space on disk to back up the SM ODD and to store AMA data. These items are used to determine which disk configuration should be used.

Two optional simplexed software backup disks (1 disk pair) may also be equipped in the office. MHDs 14 and 15 are reserved for optional software backup disks.

Various combinations of disk layouts are available for the different levels of disk space required for the SM ODD and AMA storage for your particular office. It is recommended that there be sufficient disk memory for storing 5 days of AMA billing data to ensure the accuracy of the billing records.

Remember that for disk conversions, the new hardware must be ordered, installed, and the disk conversion and reconfiguration procedure performed prior to the database dump. Also, if the office requires additional disk pairs, the new disk pairs must be ordered and installed prior to the database dumps.

Hardware growth must be done before the LTG. The number and type of disks needed should be determined in advance of the LTG. If any type of disk growth is required, use 235-105-231, *Hardware Change Procedures - Growth*. Refer to 235-070-100, *Administration and Engineering Guidelines* for complete disk engineering guidelines.

Customers can also call their SUMS Center (Table 1-1) for assistance.

#### 2.3.2.3.5.2 Calculation of SM ODD Current Usage

The output from the "OP:ODD" input message may be used to obtain the total SM ODD current usage for the office. The "OP:ODD" input message is entered at the MCC and the output response will be printed at the Read-Only Printer (ROP).

**MSG OP:ODD, SM=1&x;**

Where: $x = \text{highest numbered SM}$

The output response from the "OP:ODD" input message will also contain the memory usage for the "APPCP" (ODD availability report in the central processor) and the "APPCP DISK" (ODD availability report for the disk). **Do not add the "APPCP" and the "APPCP DISK" usage to the total SM usage.** The SM ODD space for all SMs should be added together to obtain the total SM ODD current usage for the office.

For more information, refer to 235-070-100, *Administration and Engineering Guidelines*.

#### 2.3.2.3.5.3 Calculation of AMA Current Usage

Items to consider when determining the total 5E16.2 AMA storage space include:

- Call types - the AMA record length varies depending on the call type.

- Number of calls for each call type.
The percentage of AMA disk space being used off-line at any time in the office can be determined by entering "OP:AMA:DISK". Keep in mind that this is a dynamic number that changes as calls are being billed.

For more information, refer to 235-070-100, Administration and Engineering Guidelines.

2.3.2.4 Hardware Change Notice Requirements

2.3.3 DATA IMPACT (DATABASE DUMP)

The ODD database must be updated for compatibility with the new software release ODD. Seventeen days before the LTG, the ODD and ECD databases are dumped to tape and mailed to Lucent Technologies for off-line processing of the databases (to arrive 15 days before the LTG). This off-line processing converts the ODD and ECD databases to a compatible format.

*After the dump is made, RC activity should be minimized.*

2.3.4 DATA IMPACT

For LTG, the ODD database must be updated. The following actions must be performed:

1. Eight weeks before the LTG load date, the telephone company must supply Lucent Technologies with an approved tape containing data (for example, line or trunk) from the existing other switch being merged with an existing 5ESS switch.

   Refer to 235-080-100, Translations Guide, Division 1, Section 9, for 5ODA Batch Load Interface Specifications for further instructions regarding how to build and ship the tape(s).

2. Five weeks before the LTG load date, the 5ESS switch ODD and ECD databases are dumped to tape and mailed to Lucent Technologies for an initial review.

   The switch databases are checked for errors and inconsistencies. Telephone company managers, planners, line/trunk engineers, and the Lucent Technologies Systems Equipment Engineer (SEE) should refer to the TG-5 (235-080-100), Division 1, Section 12, ODA Off-Line LTG Plan, for detailed information regarding the schedule and processing responsibilities for each party involved.

   ⇒ *Important* The telephone company and the Lucent Technologies systems equipment engineer must clean up any errors detected by the processing of the preliminary dump data. *Delaying the error cleanup effort until the final dump could jeopardize the LTG load date.* The final dump processing interval does not permit enough time to perform extensive error correction without delaying the LTG load date.

   The preliminary dump process is designed to permit the location and analysis of database inconsistencies. Consultation with the telephone company is provided so that solutions to any errors found can be corrected in the database of the switch before the final dump. Error correction would include using Recent Change (RC) and, if necessary, Office Data Base Editor (ODBE) changes to the on-site switch database.

3. Seventeen days before the LTG load date, the 5ESS switch ODD and ECD databases are dumped to tape again and mailed to Lucent Technologies for off-line processing and merging with the "other-switch" translation data. Before
the growth data ("other-switch" translation data) is merged with the final dump data, error checking is performed. Any errors found are corrected. When all errors have been corrected, the growth data and final dump data are merged. Magnetic tapes are written with the updated ODD. Hard copies of the office records, functional listings, and the new ODD tapes are then shipped to the office for the LTG load date.

4. In offices using OFFRCR, four days before the LTG load date, the collected recent changes are dumped and shipped via RSCANS to Lucent Technologies.

5. All modifications performed via the Office Data Base Editor (ODBE) after the final dump has been made should be kept and reapplied after the LTG. Changes made after the final dump with the ODBE will not be carried over to the new database load.

After the final ODD and ECD dumps are made, RC activity should be minimized.

2.3.5 SERVICE IMPACT

2.3.5.1 Overview

The following assumptions can be made regarding the impact on service during the LTG:

a. The disk subsystem will be simplex for 4 to 6 hours during the LTG procedure. This time is determined by several factors which include tape reading time during the "Enter Stage," office size, and the duration of the acceptance testing in the "Soak Stage."

b. All SMs will be simplex for 2 to 4 hours during the LTG procedure.

c. A subset of line and trunk RC forms and all Customer-Originated Recent Changes (CORCs) will be carried over to the new ODD via OFFRCR. See Section 2.5. Recent change is inhibited during the night of LTG interval, with the exception of verifies. The CORCs will be inhibited briefly prior to the Switch Forward.

   Recent changes will be applied at a rate of approximately 400 to 800 per hour using the RC batch insert mechanism. Reapplication time is dependent on the complexity of the RC view to be applied, the number of RCs to be applied, and the amount of traffic.

   The CORCs will be applied at a rate of approximately 4,000 to 5,000 per hour depending on office size and equipage.

d. During the AM and/or SM Switch Forward:

   • Calls maintained over the switch forward are those 2-port calls in the talking state of the following types:

      — Analog line calls (voice or data, that is, modem).
      — Analog or digital trunk calls (for DCS, trunk calls will NOT be preserved over the Switch Forward).
      — Integrated Services Digital Network (ISDN) BRI circuit-switched voice and data calls.
      — ISDN Primary Rate Interface (PRI) circuit-switched voice and data calls.
All other calls will be routed to reorder. Packet switched calls are not saved during the initialization on the new software ODD. All calls that are saved can only disconnect. They cannot activate features and cannot be billed.

- Transient call processing will be suspended for a short period of time. ISDN call processing may not be available for a longer period of time depending on equipage. New originations will be routed to reorder.
- All pending billing data residing in buffers which have not been written to disk will be lost. Billing data for stable calls will be lost.
- All pending traffic and plant measurement data will be lost.
- Out-Of-Service (OOS) status for all faulty equipment will be lost. Lists dumped during the Begin Stage can be used to manually remove the previous OOS equipment after the system recovers.
- For each GSM with a duplex CCS link configuration, approximately one half of the CCS links will be deactivated during the GSM switch forward for up to 5 minutes.

e. If the Off-Site Recent Change Reapplication (OFFRCR) process is not used, customer lines modified by RCs after the database dump will not contain those modifications until after the RCs are reapplied to the new database the night of the LTG. If the OFFRCR process is used, accumulated RCs since the database dump are electronically data linked to Lucent Technologies Network Software Center (NSC) -4 days before the LTG using Reverse Software Change Administration and Notification System (RSCANS). The Lucent Technologies ODD/ECD tape processing group applies the accumulated RCs to the ODD via OFFRCR. The LTG tapes (ODD/ECD) are then shipped to the office for the LTG. Recent changes made after the -4 day RSCANS transmission for OFFRCR are reapplied to the merged ODD after the switch has recovered on the new ODD.

2.3.5.2 ACSR Customer Notification

All Automatic Customer Station Rearrangement (ACSR) customers will be impacted by the transition and therefore should be notified in advance. The ACSR feature is inhibited from the Begin Stage until the End Stage. When notified, advise the customers of the date of your upcoming LTG so they can adjust their schedules accordingly. They should not move their terminal equipment (i.e. use ACSR) the day or the weekend of the LTG.

2.4 OFFICE PREPARATION AND SUPPORT

2.4.1 CRITICAL ITEM LIST

Table 2-3 contains a listing of items that are critical to performing a 5E16.2 LTG. The operating company has responsibility for ensuring that all items listed are ordered and are on hand for the LTG.
Table 2-3 — 5E16.2 LTG Critical Item List

<table>
<thead>
<tr>
<th>ITEM</th>
<th>SUPPORT INFORMATION</th>
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<tr>
<td>Ensure ODD critical relations are error-free</td>
<td>Execute ODD Retrochk tool (Section 3.8.2)</td>
</tr>
<tr>
<td>Ensure office has sufficient AM/SM Memory</td>
<td>Refer to the output from the memory forecasting tool (Section 2.3.2.2.3) and 235-070-100, Administration and Engineering Guidelines</td>
</tr>
<tr>
<td>Tape Unit</td>
<td>The 3B21 Requires KS-23909, L10 or L21. Also for DAT, Model 35470A, NCR Specification NCR006-3503341/60, Rev. A.</td>
</tr>
<tr>
<td>Blank Tapes</td>
<td>Refer to J5D008T-1 (latest issue)</td>
</tr>
<tr>
<td>Software Update Level</td>
<td>From LTG Notes obtained via the Internet or the SUMS center.</td>
</tr>
<tr>
<td>5E16.2 Documents</td>
<td>235-001-001, Documentation Description and Ordering Guide</td>
</tr>
<tr>
<td>Database Tapes (two full sets)</td>
<td>From Network Software Center in Lisle, Illinois</td>
</tr>
<tr>
<td>LTG Notes</td>
<td>Latest Issue from Network Software Center (CTS LTG Support Group) in Lisle, Illinois</td>
</tr>
<tr>
<td>Foreign Exchange Lines</td>
<td>There should be at least two FX lines in the central office. There should also be one at each remote site and at least one FX for each NXX in the office. These FX lines are for use on the day of the LTG.</td>
</tr>
</tbody>
</table>

2.4.2 LTG NOTES

A copy of the LTG notes will be arriving (from Lucent Technologies) with the LTG tapes. The LTG Notes provide additional information and procedures for the upcoming LTG that are not included in this document. Supplemental information and procedures that may not have been available at publication of this document may be included in the LTG Notes. A copy of the LTG Notes may also be obtained by contacting your technical support organization (SUMS Center). It is critical to obtain the latest copy of the LTG Notes, as the notes are updated weekly.

LTG Notes are also available on the web at http://www.lucent.com/support. All current 5ESS RETROFIT/SRU/ LTG users MUST REGISTER to access this website.

To register: Click on the “Register Now” link and complete the required fields on the form.

Follow these steps to get to the Retrofit Index Page:

Note: You must be logged into this site in order to follow the steps below.

- Place your mouse over the “Documentation and Downloads” link at the top of the screen.
- Click on the “Product Index” link.
- Click on the ”5ESS Switch” link.
Click on the "Release Information" link. Here you will find access to the most current Retrofit and LTG Notes, the SU Compatibility Notice, and Current CFT Descriptions.

2.4.3 LTG TOOLS

The LTG tools are included and are therefore already present on the 5ESS switch. However, additional LTG tools may be needed for your LTG. If additional tools are needed, the LTG Notes which arrive with the LTG package will contain more detailed information and tape loading procedures.

2.4.4 SOFTWARE UPDATE AND CN LEVELS

The office must attain a level of Software Updates (SUs) and hardware Change Notices (CNs) to ensure a successful LTG. In general, SU and CN application should be finished before the database dump. Offices must be at the SU and CN level indicated in the Software Update Compatibility Notice before the dump. Contact your SUMS Center to obtain current information about the minimum requirements or you can access the the web for your generic on the Internet at url: http://www.lucent.com/support. If any additional SUs, CFTs, or TMPs are needed after the dump, contact the SUMS center to determine if these can be loaded into your office. If inappropriate updates (SU, CFTs or TMPs) are loaded, there is a possibility that critical fixes will be overwritten.

2.4.5 GROWTH ITEMS

All required growth must be completed before the final database dump so that any database errors introduced by the growth can be detected and corrected. If any units are in a growth state at the database dump, these units will be OOS after the ODD evolution.

If any units are in any growth state (that is, unequipped, grow, special grow, etc.), there are two available options:

1. Make the unit fully operational.
2. Degrow the unit.

Use 235-105-231, Hardware Change Procedures - Growth, and 235-105-331, Hardware Change Procedures - Degrowth, for any required unit growth and/or degrowth.

Use the AM Off-Line Boot Verification procedure in 235-105-210, Routine Operations and Maintenance Procedures to insure the switch can be off-line booted. This procedure will, as part of its pre-checks, verify many hardware units.

2.4.6 TAPE DRIVE

One tape drive is required to perform a LTG. The tape drive will be used for writing the database dumps to tape and for reading in the updated ODD, and ECD during the LTG.

2.4.7 TEST LINES

At least one test line per SM should be defined in the office database before the final database dump takes place. These lines should be single-party lines. Do not use multiline hunt lines.

As a further check, every exchange in the office should be tested.
2.4.8 FX LINES

Two Foreign Exchange (FX) lines are recommended for the central office on the night of the LTG. The FX lines are used for voice and data communication with off-site support centers during the LTG. One FX line should also be supplied for each remote site (that is, Remote Switching Module (RSM), Multimodule Remote Switching Module (MMRSM), Optically Remote Module (ORM), etc.). Plans should be made now to have these lines available 1 day before the LTG.

Data sets may be required to support any FX lines. The following data set, adapter, and cable (or equivalents) may be used:

- ITE-6134 212AR data set.
- ITE-9839A Adapter for 212A data set.
- ITE-8962 Read-only printer data cable.

2.4.9 DOCUMENTATION

The documentation supporting the 5E16.2 Software Release is available from the Customer Information Center and is listed in 235-001-001, Documentation Description and Ordering Guide. To order documentation, refer to Section 1.11. Most of the 5ESS switch documents are available on paper as well as on electronic media (CD-ROM, magnetic tape, and on-line dial-up). Consult 235-001-001 for availability.

The following documents are referenced at various locations within the document and should definitely be on site:

- 235-070-100, Administration and Engineering Guidelines
- 235-080-100, Translation Guide
- 235-105-200, Precutover and Cutover Procedures
- 235-105-210, Routine Operations and Maintenance Procedures
- 235-105-220, Corrective Maintenance Procedures
- 235-105-231, Hardware Change Procedures - Growth
- 235-105-250, System Recovery Procedures
- 235-105-331, Hardware Change Procedures - Degrowth
- 235-118-251, Recent Change Procedures
- 235-118-258, Recent Change References - 5E16.2
- 235-190-115, Local and Toll System Features
- 235-190-400, Feature Descriptions
- 235-600-750, Output Message Manual

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2.4.10 TRUNK STATUS INFORMATION

2.4.10.1 Trunk Status Mapping

2.4.10.1.1 General

Trunk Status Mapping (TSM) is a mechanism which maps Out-Of-Service (OOS) trunk data across an SM LTG initialization.

TSM consists of the following two parts:

- Mapping mechanism.
- Report mechanism.

2.4.10.1.2 Mapping Mechanism

The mapping mechanism automatically maps OOS trunk data from the old side to the new side and occurs after MCTSIs are switched to the new data.

Table 9-11, Trunk Status Mapping, provides a list of supported and unsupported trunk statuses.

2.4.10.1.3 Report Mechanism

The report mechanism is technician-activated and consists of tasks before and after the initialization to the new data.

Before the initialization, UPD:GEN:TSM,OLD is automatically executed before executing PROCEED during the LTG implementation. The TSM report mechanism builds a file containing a current list of OOS trunks (which PROCEED copies to the new data).

Before the initialization, UPD:GEN:TSM,OLD is automatically executed before executing PROCEED during the Retrofit implementation. The TSM report mechanism builds a file containing a current list of OOS trunks (which PROCEED copies to the new side).

After the initialization, the technician executes 501,tsmnew or 514,new (UPD:GEN:TSM,NEW) on MCC page 1984. The TSM report mechanism then does the following:

- Builds a file containing a current list of OOS trunks.
- Compares the old and new trunk OOS lists.
- Prints the following "mismatch counts" to ROP:
  - The OOS summary mismatch count shows the total number of trunks which are In-Service (IS) on the new side but were OOS on the old side. If required, the OOS report (/updtmp/tsm/oos.report) can be dumped to the ROP or another printer.
  
  The technician can then use the 501,tsmrmv or 514,rmv command on MCC page 1984 to remove from service all trunks listed in the OOS report.

  - The CADN summary mismatch count shows the number of trunks that are OOS-CADN on the new side but were IS on the old side. If required, the CADN report (/updtmp/tsm/cadn.report) can be dumped to the ROP or another printer.

These two reports are similar in format to the output from an OP:LIST,TRUNKS input message.
2.4.10.2 OOS-CADN Trunks

The OOS-CADN trunk status is currently the only static trunk OOS status. That is, the status is physically part of the ODD. When a trunk is put into the CADN state (for example, grown in, RMV:TRK...,CADN message, etc.) that status becomes part of the ODD. Likewise, when a trunk is removed from the CADN state (RST:TRK... message), that change also becomes part of the ODD. Refer to Table 9-12, OOS-CADN Trunk Status, and the descriptions of the following four possible scenarios of OOS trunk status during the LTG interval.

1. Trunk is in-service before the ODD dump and is placed in either a CADN or non-CADN OOS state after the dump.
   The OOS trunk status will be mapped as part of Trunk Status Mapping (TSM).

2. Trunk is OOS (non-CADN) before the dump and is placed in either a CADN or non-CADN OOS state after the dump.
   The OOS trunk status will be mapped as part of Trunk Status Mapping (TSM).

3. Trunk is OOS-CADN before the dump and remains in that state throughout the dump interval.
   The OOS-CADN status will be mapped as part of TSM.

4. Trunk is OOS-CADN before the dump and is brought into service after the dump.
   This trunk will come up OOS-CADN on the night of the LTG.
   For this particular scenario, these procedures will be performed during advance preparation.

2.5 RC/CORC EVOLUTION AND REAPPLICATION

Note: Due to the asynchronous nature of CORC and RC reapplication, a chronological mismatch possibility exists for any tuple in the database that is touched by both a RC and CORC during the double-logging period. Because of this reapplication strategy, to minimize overall reapplication time, it is possible to have a feature activated/deactivated by a CORC be overridden by a chronologically older feature which is activated/deactivated by a RC. Thus the feature activation/deactivation could be in the wrong state at the end of the RC/CORC reapplication.

2.5.1 OVERVIEW

The RCs and CORCs made during the final 17 days are "double logged" for LTG processing. The remaining subset of RC forms will be reapplied during the POSTRCR process. All RCs and CORCs will be reapplied after the initialization on the office to the new merged databases. Table 9-13 lists the OFFRCR supported RC views. Table 9-14 lists the OFFRCR unsupported RC views.

2.5.2 RECENT CHANGE EVOLUTION REPORTS

Once double-logging is started 17 days before the LTG, RC evolution report files (RCTYPE.rpt) are generated automatically after each ODD backup. The report file provides an analysis and detailed activity report for each RC. The file may be dumped to indicate the number of RCs that have been done since the last dump.
2.5.3 COPIES OF RCs AND CORCs

The RC and CORC evolution processes will save a full copy of the original version of the RCs and CORCs. The files (full.old [xxx refers to the SM number] for CORCs, full.RCOLD for RCs, and full.OSPS for OSPS RCs) will be saved in /rclog and will be automatically moved to /updtmp if /rclog is 75 percent full. These files can be dumped to tape if space in /updtmp becomes a problem. Seek technical assistance before moving/removing any files.

2.5.4 RC Activity Report File

At the time of each ODD backup during the final 3 weeks, when RCs and CORCs are evolved automatically, an RC evolution report file is generated (RCtype.rpt). The report file provides summary and detailed reports of the RC evolution activity. Information in the file consists of the number of RC/Vs logged, supported RC/Vs, non-supported RC/Vs, and detailed evolution activity information on specific RC Views.

2.5.5 RECENT CHANGE REAPPLICATION OPTIONS

2.5.5.1 Overview

Recent change reapplication refers to the reapplication of RCs made since the database dump or the RSCANS transmission to the new ODD. Table 9-13 lists the RC forms that are supported by OFFRCR for the 5E16.2 Software Release. There are two options in which the telephone company may choose to use:

a. **RC reapplication without OFFRCR (Post-Recent Change Reappplication (POSTRCR) only)**

b. **RC reapplication with Off-Site Recent Change Reappplication (OFFRCR).**

The procedures in this document accommodate both RC reapplication methods. The telephone company should consider the benefits of each method and determine before the LTG if OFFRCR will be used.

**Note:** POSTRCR will be used the night of LTG to reapply RCs occurring after the RSCANS transmission at -4 days before the LTG or to reapply the full 17 days of RCs if OFFRCR is not used.

2.5.5.2 RC Reapplication Without OFFRCR (POSTRCR Only)

Post-recent change reapplication refers to the reapplication of accumulated RCs after the switch has successfully initialized and recovered on the new data. Refer to Figure 2-3 for an RC time line for POSTRCR.

The RCs and CORCs entered since the dump will not be active until reapplied to the new data in the "Soak Stage" after the initialization.

The RC reapplication rate is approximately 400 to 800 RCs per hour, which is an average value. The CORC reapplication is approximately 4,000 to 5,000 per hour.

**Note:** The preceding reapplication rates are average values and are influenced by the type and complexity of the CORCs and RCs.
2.5.5.3 RC Reapplication With OFFRCR

1. Is the type of LTG being performed a SMART Conversion LTG?
   - If **YES**, skip the following step and go to Paragraph 3.
   - If **NO**, continue with the next step.

The advantage of using the OFFRCR feature is that the number of RCs to be reapplied to the ODD on the night of the LTG is greatly reduced. Refer to Figure 2-4 for an RC time line with OFFRCR.

The number of RCs that will be reapplied on the night of the LTG consists of the RCs made since the RSCANS for the OFFRCR process until the day of the LTG (4 days of...
RCs). The office using OFFRCR only reapplies 4 days of accumulated RCs with POSTRCR as opposed to 17 days of RCs without OFFRCR. The disks stay off-line the night of the LTG for a shorter time since the reapplication time is reduced. Offices with a large number of RCs since the database dump benefits the most from using this feature.

If the telephone company decides to use the OFFRCR feature, the following tasks must be performed:

1. Four days before the LTG, the RCs made since the database dump is data linked to Lucent Technologies using RSCANS.
2. The RCs made since the database dump are applied off site to the office's ODD database by the Lucent Technologies tape processing group.

3. The ODD tapes with the RSCANS RCs reapplied are shipped to the office for the LTG. If both OFFRCR and POSTRCR fail to reapply an RC, the RC must be manually reinput after LTGing to the new data.
# 5E16.2 Large Terminal Growth Procedures

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3. ADVANCE PREPARATION

3.1 OVERVIEW

3.1.1 ADVANCE PREPARATION

Advance Preparation starts at a maximum of 9 weeks before the LTG. It runs for 6 weeks and is completed 17 days before the LTG. In addition to ensuring certain supplies are on hand, you will have to:

- Ensure a tape unit is available and functional.
- Prepare acceptance test plan to verify lines/trunks for use after the LTG.
- Review critical item list (Table 2-3) and verify materials.
- Ensure that office has sufficient number of disk pairs, using the 2020 configuration, to support the office after the LTG.
- Verify SM configuration parameter. Complete any processor conversion changes [Switching Module Processor Unit (SMPU) to Module Controller and Time Slot Interchanger Unit (MCTU), etc.].
- Ensure that the CCS links on GSMs are provisioned in an optimal duplex configuration so that CCS signaling can be maintained during the LTG.
- Execute ODD Retrochk tool to audit ODD critical checks needed for LTG.
- Verify CNI routing data and destination point codes.
- Ensure that all growth activity is complete before the database dump.
- Re-run memory forecasting tool and ensure site has sufficient Administration Module (AM) and SM memory.
- Verify office disk configuration.
- Make a tape containing the "other-switch" translations data 8 weeks before the LTG load date.
- Ensure all growth activity is completed.
- Clean, test, and verify tape drive.
- Perform preliminary dumps of the 5ESS® switch ODD and Equipment Configuration Data (ECD) databases 5 weeks before the LTG load date.
- Perform cutover relation checks.
- Ensure all growth activity is completed.
- Make office backups for system Moving Head Disks (MHDs).
- Assign test lines.
- Plan for Foreign Exchange (FX) lines at central office and remote sites.
- Test SMs for off-line pump capability.
- Test the AM off-line boot capability.
- Check for blank tapes and spare disks.
- Ensure the office is up to date on hardware Change Notices (CNs) and Software Updates (SUs).
• Ensure the system is running in root partition on the Emergency Action Interface (EAI) page.
• Ensure the system is running duplex with no major off-normal indications.
• Check for utility breakpoints.
• Place any nonrequired trunks in Out-Of-Service Circuit Administration (OOS-CADN) (optional).
• Start double-logging of RCs and Customer-Originated Recent Changes (CORCs).
• Perform the final 5ESS switch ODD and ECD database dumps.
• Perform full office backups.
• Diagnose, exercise, and ensure that tape unit is functional.
• Re-run memory forecasting tool and ensure that office has sufficient Administration Module (AM) and Switching Module (SM) memory.
• Re-run ODD Retrochk tool to audit ODD critical checks.
• Ship the database tapes to the Lucent Technologies tape processing department in Lisle, IL (to arrive -15 days, Friday).
• Verify a list of lines/trunks to be tested after the LTG.
• Review the procedures to perform the LTG.

After completing the Advance Preparation section, the technician should review the remaining sections (System Evaluation, LTG Implementation, Recovery Procedures, Backout Procedures, Worksheets, and Reference Documents and Required Materials) to become familiar with Non-Off-Line Boot Recovery Procedures.

**Note:** The SMART Conversion LTG will take less time, 7 weeks. When an action for the SMART Conversion LTG appears, follow the directions given.

### 3.2 Is the type of LTG being performed a SMART Conversion LTG?

- If YES, continue with the next step.
- If NO, go to Step 3.4.

### 3.3 SEVEN WEEKS BEFORE THE SMART CONVERSION LTG

#### 3.3.1 General

The activities in this section take place at a maximum of 7 weeks before the LTG.

#### 3.3.2 Continue to Prepare Acceptance Test Plan Step

Go to Step 3.4.2.

### 3.4 NINE WEEKS BEFORE THE LTG

#### 3.4.1 GENERAL

The activities in this section take place at a maximum of 9 weeks before the LTG.

#### 3.4.2 PREPARE ACCEPTANCE TEST PLAN

Prepare an acceptance test plan to be used the night of the LTG to verify call processing after the transition to the new data. The test plan should include a prioritized list, with the most important test calls at the top. Included in this list
should be fire, police, the 911 dispatcher, hospitals, and other emergency numbers as
determined by local practices.

There should also be at least one test line per SM. These lines should be single-party
lines. Do not use multiline hunt lines. One line from each NXX exchange in the office
should also be tested.

Trunk types such as Multifrequency (MF), Common Channel Signaling (CCS), and
Inward Wide Area Telecommunications Service (INWATS) trunks may also be tested. If
the office is equipped with the optional Common Network Interface (CNI) ring, then
copies of RC views 15.1, 15.2, and 15.3 may be used for reference when the testing is
being performed.

3.4.3 MATERIALS ON HAND
a. Office backup supplies:
   • Sufficient certified writable tapes.

b. Database dump supplies:
   • New certified write-enabled tapes and labels. Two copies of each database will
     be made for the database dump.

c. One software release text tape (current software release) to be used during tape
   unit verification.

d. Tape drive cleaning supplies and equipment.

3.4.4 TERMINAL ACCESS
The AM off-line boot feature impacts the states of the various terminals (MCC,
STLWS, RC/V, UNIX\textsuperscript{1}, etc.) connected to the 5ESS switch during the LTG. These
terminals will appear in states different than in previous software releases. The state
of a specific terminal depends on which IOP the terminal is connected. The AM off-line
boot process isolates equipment on side 1 of the switch. IOP 1 is taken out of service.
Therefore, terminals connected to the off-line side of the switch will provide invalid
information on the status of the switch. If the MCC is connected to IOP 1, the AM
off-line boot process called by the proceed poke in Section 5.6.4 will automatically
execute a port switch. When the port switch is executed, the MCC will go blank and is
then initialized on IOP 0. \textit{It is very important to ensure that all messages/commands required to perform the LTG and all preliminary
activities are input at the Master Control Center (MCC) or Switching Control
Center (SCC). The MCC or SCC are the only terminals that will always depict
the true status of the switch.}

3.4.5 VERIFY DISK EQUIPAGE

3.4.5.1 Is the type of LTG being performed a SMART conversion LTG?
   • If \textbf{YES}, skip these steps and go to Step 3.4.6 since verification of disk equipage is
     not required.
   • If \textbf{NO}, continue with the next step.

\textsuperscript{1} UNIX is a registered trademark, in the United States and other countries, licensed exclusively through
X/Open Company, Limited
3.4.5.2 Overview
The disk requirements for 5E16.2 are contained in 235-070-100, Administration and Engineering Guidelines. In order to verify that the correct number of disk pairs are equipped in the office to support the office after the LTG, perform the following steps:

1. Access MCC page 123 (and MCC page 125 if more than 2 DFCs are equipped).
2. Verify that each of the disk pairs required to support the office after LTG is ACT (active).

Caution: If the correct disks are not present and ACT, disk pairs must be grown before the 5ESS switch database dump or the system cannot be LTGed.

3.4.5.3 Office Disk Configuration Check
The only disk configuration for the 5E16.2 software release is:

- **2020**: 2 GB SCSI — One MHD pair (0 and 1). 1 GB SCSI — One MHD pair (2 and 3). The 2020 configuration is used for 3B21D offices.

The number of MHDs is the number of disk pairs that are included as part of the actual disk configuration. These disk pairs are referred to as "base disks." Base disks do not include any optional disk pairs that may be equipped.

In all 5E16.2 disk configurations, the following rule should be used (this may involve several disk replacement/reconfiguration procedures):

- All primary disks consist of 1 Gb SCSIIs with a disk configuration of 2020.

All required growth must be completed before the database dump. Disk engineering should be completed or near completion at this point in the procedures.

3.4.6 VERIFY 5E16.2 SM CONFIGURATION PARAMETER

1. Is the type of LTG being performed a SMART Conversion LTG?
   - If **YES**, skip this step and go to Step 3.4.7 since verification of the 5E16.2 SM Configuration Parameter is not required.
   - If **NO**, perform the following:

Refer to the data in Table 3-1 for an explanation of the various SM configurations available on the 5E16.2 software releases.

Caution: An SM configuration change may require SM memory growth. The SM configurations (basic, standard, and loaded) have different memory requirements. For more details on SM memory requirements for each configuration, refer to Section 2.3.2.2.4.

For the purpose of modifying the SM configuration transition to 5E16.2, the following procedure is provided. There is no conversion process from any SM type to an SM-2000.

=> Important: The Lucent Technologies Database Evolution group uses RCV 18.1 field 35 to determine which SM configuration an SM will have after the LTG. Please verify this field for each SM.

1. To determine the SM office configurations, enter message:

   MSG **OP:SYSSTAT,UCL**;
Response:  *(sample output shown)*

| OP SYSSTAT | SUMMARY {FIRST|NEXT|LAST} RECORD |
|------------|----------------------------------|
| SYS:       | INHIBITS-MSG-MISC                |
| AM:        | NORMAL                           |
| CM:        | NORMAL                           |
| CMP x-0 P: | NORMAL                           |
| CMP y-0 M: | NORMAL                           |
| S LSM a,x: | NORMAL                           |
| B LSM b,x: | NORMAL                           |
| L HSM c,x: | NORMAL                           |
| L ORM d,x: | NORMAL                           |
| L TRM e,x: | NORMAL                           |
| G RSM f,x: | NORMAL                           |
| S HSM g,x: | NORMAL                           |
| X LSM j,x: | NORMAL                           |
| L RSM w,x: | NORMAL                           |
| K LSM z,x: | NORMAL                           |

Comment: An example of the output is shown. Refer to the left-hand column of the output for each SM. The S indicates a standard SM. The B indicates a basic SM. The L indicates a loaded SM. An SM-2000 is indicated by the K. The G indicates a Global SM and the X indicates a signaling SM.

2. Determine which SMs (if any) should change configurations (that is, basic, standard, loaded).

   *Caution: Consult your office engineer before changing an SM configuration parameter.*

3. At an RCV terminal or the MCC, access MCC page 196.

4. Enter the following data:

<table>
<thead>
<tr>
<th>Form</th>
<th>18.1V</th>
</tr>
</thead>
</table>

   *1. SM  SM number (RC view 18.1 is displayed)*
*1. SM _____ 9. EVEN NCT CTS _____ ROUTE INDEXES

Enter ... 4 (Accesses Screen 4 of 5)

Table 3-1 — Field 45 SM LTG Value

<table>
<thead>
<tr>
<th>CURRENT CONFIG.</th>
<th>FIELD 45 SM LTG VALUE</th>
<th>NEW CONFIG.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic</td>
<td>0</td>
<td>Basic</td>
</tr>
<tr>
<td>Basic</td>
<td>1</td>
<td>Standard</td>
</tr>
<tr>
<td>Basic</td>
<td>2</td>
<td>Loaded</td>
</tr>
<tr>
<td>Standard</td>
<td>1</td>
<td>Basic</td>
</tr>
<tr>
<td>Standard</td>
<td>2</td>
<td>Loaded</td>
</tr>
<tr>
<td>Loaded</td>
<td>0</td>
<td>Loaded</td>
</tr>
<tr>
<td>SM2K</td>
<td>0</td>
<td>SM2K</td>
</tr>
<tr>
<td>Signaling</td>
<td>0</td>
<td>Signaling</td>
</tr>
</tbody>
</table>
3.4.7 VERIFY SM MEMORY EQUIPAGE

1. Is the type of LTG being performed a SMART Conversion LTG?
   - If YES, skip this step and go to Step 3.4.8 since verification of the SM Memory Equipage is not required.
   - If NO, perform the following:

The SM memory requirements for 5E16.2 are contained in 235-070-100, Administration and Engineering Guidelines, or may be obtained by running the memory forecasting tool. If the memory forecasting tool has been run at an earlier date, for example at -13 weeks, the output obtained at that time may also be used. See Section 2.3.2.2.3 for the input message used to run this tool. In order to verify that the correct SM memory equipage is entered in the database, perform the following steps:

1. Access MCC page 196.
2. Enter the following data:

<table>
<thead>
<tr>
<th>Form</th>
<th>18.4V</th>
</tr>
</thead>
</table>

*1. SM  SM number

*2. MC  0 or 1 (MCTSI controller side)

3. PHYMEMSZE  (the rest of the attributes are displayed)

<table>
<thead>
<tr>
<th>PACK</th>
<th>EQSTAT</th>
<th>CLI</th>
<th>PACK</th>
<th>EQSTAT</th>
<th>CLI</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td>11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comment: The Physical Memory Size (PHYMEMSZE) for the SM and Module Controller and Time Slot Interchanger (MCTSI) controller is displayed. The Equipment Status (EQSTAT) and Change Level Indicator (CLI) are displayed for each pack position (memory pack positions 1 through 11 are shown). Refer to 235-080-100, Translation Guide, Division 8, Section 1, for EQSTAT and CLI values.

The SM memory boards are as follows:
TN2012  4 Mb
TN13744 Mb (Used in SMs equipped with SMP20s only)
TN1376  8 Mb (Used in SMs equipped with SMP20s only)
TN1661  16 Mb (Used in SMs equipped with SMP20s only)

The TN2012 memory board cannot be mixed within the same SM. The TN1374, TN1376, and TN1661 memory boards can be mixed within the same SM.

The SM-2000 memory boards are as follows:

TN1685  32 Mb
TN1806  64 Mb
UN560   64 Mb

The MCTU3 memory boards are as follows:

KBN21   32 Mb
KBN21   64 MB

3. Repeat Step 2 for each equipped SM and RSM.
4. Exit from RC.
5. Resolve any discrepancies between database and actual physical memory equipage.

Caution: If the correct SM/RSM memory is not present, it must be grown before the database dump or the system will not run after the switch forward. Refer to 235-105-231, Hardware Change Procedures - Growth, to grow in proper SM memory if necessary.

3.4.8 AM OFF-LINE BOOT

The AM off-line boot must be run to verify the ability to boot the switch. Even though the AM will be simplexed while this is being done, call processing is not affected.

=> Read: The AM OFLBOOT feature, as documented in 235-105-210, Routine Operations and Maintenance Procedures is recommended to be run on a periodic basis in all offices to determine the bootability of the switch. When run in this maintenance mode, the recommended syntax of the input command is "exc:oflboot".

The AM OFLBOOT feature is required to be run during the LTG -9 week interval and also at the -7 day interval. When run at this -9 week interval, more restrictive parameters are passed to the OFLBOOT feature since these parameters are used during the night of LTG. Offices which do not use the AM OFLBOOT feature in the maintenance mode (as described in the previous paragraph) risk uncovering hardware problems in the switch which might be difficult to correct during the LTG interval.

If a failure occurs during the off-line boot, analyze the ROP message, take corrective action, and re-run the off-line boot. If you are unable to get off-line boot to complete successfully, escalate to your next level of support. You will not be able to complete the LTG procedure if off-line boot cannot be run successfully in your office.
The OFLBOOT feature is a powerful tool that must be used cautiously. It is important that the entire procedure be closely monitored by the technician. During the OFLBOOT procedure, the AM and its disks, CM, and CNI ring will be simplex. IOP 1 and all units attached to it will be removed. During this procedure there is an increased risk of system outage from a hardware failure associated with the on-line side. It is recommended that OFLBOOT be used during low-traffic hours.

Before initiating the procedure, ensure the system is healthy, with no known hardware faults associated with the AM, CM, IOP, DFC, and CNI.

All IOP subunits and Operational Support System (OSS) links, provided by IOP 1 will not be available to the system during the OFLBOOT procedure (for example, tape drives, TTYs, SDLs, AMA teleprocessing, data links, etc).

Root ECD (that is, disk) recent changes will be allowed on the off-line side. Office-Dependent Data recent changes are not inhibited. It is recommended that technicians NOT apply software updates, grow hardware, or perform ODD recent changes during this procedure.
1. Enter message:

MSG OP:SYSSTAT,UCL;

Response: *(sample output shown)*

```
OP SYSSTAT SUMMARY {FIRST|NEXT|LAST} RECORD
SYS:     MISC
AM:     NORMAL
CM:    NO_REQ_PEND
CMP x-0 P:    NORMAL
CMP y-0 M:    NORMAL
S LSM a,x:   [...]
B LSM b,x:   [...]
L HSM c,x:   [...]
L ORM d,x:   [...]
L TRM e,x:   [...]
...  
L RSM z,x:   [...]
```

2. Verify that the AM and CM are NORMAL.
   a. If the AM and/or CM are not NORMAL, access MCC pages 111 and 115 and restore any out-of-service hardware.
   b. After all units are duplex, re-enter OP:SYSSTAT,UCL.
   c. Access MCC page 115. Verify all units, including CLNKS are normal. Take corrective action for any units which are not normal.
   d. Access MCC page 111, Verify all units, including the CNI, DFC, and IOP are normal. Take corrective action for any units which are not normal.

3. Verify SCC link functionality. If your office uses its SCC links to perform LTGs, both links must be verified to insure communication to the office is not lost during AM off-line boot.
   a. Go to page 113 and enter message:

```
MSG RMV:SCC=x;
```

Where:   x = is the number of the primary/sec SCC link.
   b. Verify that the remaining SCC link is active and is operating.
   c. Restore the SCC link using message:

```
MSG RST:SCC=x;
```

Where:   x = is the number of the Out-Of-Service (OOS) SCC link.
   d. Repeat this procedure for the other SCC link.
4. To check current ODD backup schedule, enter message:

```
MSG OP:BKUPSTAT;
```

Response: `OP BKUPSTAT
AM NRODD= 1 TO 192 RODD= EVERY= x AT= y
or
NG - NO SCHEDULE REQUEST`

Comment: Record current backup schedule in Automatic ODD Backup Schedule Worksheet (Table 9-2), if present.

If NG - NO SCHEDULE REQUEST is output, then automatic backups are not scheduled.

5. To ensure automatic ODD backup will not start, enter message:

```
MSG CLR:ODDBKUP;
```

Response: `CLR ODDBKUP COMPLETED`

Comment: Ensure schedule was removed by entering the previous OP:BKUPSTAT command.

6. To ensure automatic hash reorganization will not start, enter message:

```
MSG INH:REORG;
```

Response: `INH:REORG;OK`

7. In the following steps, AM REX is inhibited.

a. Enter message:

```
MSG INH:DMQ,SRC=REX;
```

Response: `INH:DMQ,SRC=REX;OK`

b. To verify AM REX is inhibited, enter message:

```
MSG OP:DMQ;
```

Response: `OP DMQ COMPLETED`

8. To inhibit REX, enter message:

```
MSG INH:REX;
```

Response: `OK`
9. To inhibit DMQ, enter message:
   
   MSG INH:DMQ:SRC=ADP;
   
   Response: OK

10. To inhibit Recent Change, enter message:

   MSG INH:RC;

   Response: INH RC COMPLETED

11. Other Office Notification:

    If appropriate notify effected SCC, TCC, STPs, etc., that CCS7 alarms may occur
due to running of off-line boot.

12. On MCC page 111, verify that the AM is duplex with AM 0 ACT and AM 1 STBY.
    a. If the AM is not duplex, restore the OOS AM.
    b. If AM 0 is STBY and AM 1 is ACT, enter command on MCC page 111:

       CMD 400

       Response: SW CU 0 COMPLETED

       Comment: Verify AM 0 is ACT and AM 1 is STBY before proceeding.

13. Access the EAI Page

    Note: With software releases prior to 5E16.2, the secondary MHDs were
    selected on the EAI Page. With the AM off-line boot feature, it is necessary to
    select the primary MHDs.

14. Enter the following EAI commands:

       CMD 14 clear eai page
       CMD 20 select primary mhd

15. Ensure odd-numbered EAI commands 31 through 43 are backlit and the
    indicator for the primary MHDs show SET before proceeding.


17. To switch ports, enter command on MCC page 111:

       CMD 401

       Response:

       SW:PORTSW; PF
       REPT ROP x STOPPED
       REPT ROP y STARTED
       SW PORTSW COMPLETED FOR ROP

       Screen blanks while ports are being switched.

       REPT MTTY x STOPPED
       REPT MTTY y STARTED
       SW PORTSW COMPLETED FOR MTTY

       EAI page comes up followed by MCC page 111.

       Comment: If the port switch fails, ensure that the switches on the EAI boards
       are in the auto position.
18. Repeat Steps 13 and 17 for the other port.

19. To start the off-line boot of the AM, enter message:

   MSG EXC:OFLBOOT,IOP1=MAX,MONITOR;

   Comment: If the MTTY and ROP are connected to IOP1, a port switch will be performed automatically at this point.

   Response:

   EXC:OFLBOOT,TRACE,MONITOR,OOS; IP
   EXC OFLBOOT STARTED
   EXC OFLBOOT IN PROGRESS
   RMV DFC x COMPLETED
   RMV IOP 1 COMPLETED
   RMV MHD x COMPLETED

   (A RMV message appears for each AM/CM hardware unit)

   SET FRC MSCU=0 COMPLETED
   SET FRC ONTCCOM=0 COMPLETED
   SET FRC NCOSC=0 COMPLETED
   CU RECOVERY COMPLETE
   REPT DEGROWTH TTY x COMPLETED
   REPT DEGROWTH TTYC x COMPLETED
   REPT DEGROWTH SDL x COMPLETED

   (A DEGROWTH message appears for each AM/CM hardware unit)

   (The following messages print every 5 minutes)

   EXC OFLBOOT INFO
   BOOT IN PROGRESS
   OLBSTATE LASTATE FUNCTION LINE
   SENDBOOT EXC_AIMECD MON_BOOT xxxx

   Switch forward PRMs are output on the ROP.

   Depending on office conditions, the PRMs received by your office may differ slightly from this list.

   If any failing PRMs are encountered,
   consult the PRM manual. If only failing PRMs are output,
   escalate to your next level of support immediately.

   EXC OFLBOOT COMPLETED
   OFFLINE SIDE BOOT COMPLETE

   OLBSTATE LASTATE FUNCTION LINE
   EXC_AFTERBOOT EXC_AFTERBOOT OLB_MSG_HANDLER xxx

   Comment: On MCC page 111, AM 0 should be ACT and AM 1 should be UNEQ. Progress markers will show every 5 minutes even though complete message has occurred. The output responses should verify that the AM has been completely split. Verify status of all units with those in Figure 3-1.
20. To allow DMQ, enter message:

   MSG **ALW:DMQ,SRC=ADP**;

   Response: **ALW DMQ ENABLED ADP**

21. To stop the off-line boot process and reduplex the switch, enter message:

   MSG **STOP:OFLBOOT,RST**;

   Response:

   ```plaintext
   STOP:OFLBOOT,RST;
   PRM_1  E841 0001 2704  xxxx  xx  xx  xx
   PRM_0  EC00 0FDD 1234  xxxx  xx  xx  xx
   STOP:OFLBOOT,RST; IP
   CLR FRC MSCU COMPLETED
   REPT DFC x IN GROWTH STATE
   REPT SBUS x IN GROWTH STATE
   REPT MHD x IN GROWTH STATE
   ```

   (A GROWTH message appears for each AM/CM hardware unit)

   ```plaintext
   EXC OFLBOOT STOPPED
   RST MSGS=1 COMPLETED
   CLR FRC ONTCCOM COMPLETED
   STOP OFLBOOT STARTED
   TYPE MANUAL
   REPT GROWTH DFC x COMPLETED
   REPT GROWTH SBUS x COMPLETED
   REPT GROWTH MHD x COMPLETED
   REPT GROWTH TTY x IN PROGRESS
   REPT GROWTH TTY x COMPLETED
   ```

   (A GROWTH COMPLETED message appears for each AM/CM hardware unit.)
REPT TTY x IN GROWTH STATE
REPT DFC x OUT OF SERVICE
REPT SBUS x OUT OF SERVICE
REPT MHD x OUT OF SERVICE
REPT IOP 1 OUT OF SERVICE

(Out-of-service messages appear for each AM/CM hardware unit.)

STOP OFLBOOT COMPLETED
EXC ODDRCVY=ALL CMP=1-0 STOPPED
REPT CMP=1-0 MATE SWITCH FORWARD TRIGGER=MANUAL-REQUEST
RST CMP=1-0 COMPLETED
REPT COMMUNICATION RESTORED: AM TO CMP=1-0 MATE
INIT CMP=1-0 MATE LVL=FI,PUMP EVENT=1 COMPLETED
RST(UCL) CU 1 TASK x QUEUED
RST(UCL) DFC x TASK x QUEUED
RST IOP 1 TASK x MESSAGE STARTED
RMV MHD x COMPLETED
RST ONTCCOM=1 COMPLETED
RST IOP 1 COMPLETED
RST ROP 1 COMPLETED
RST MTC 1 COMPLETED
RST TTY x COMPLETED
RST CLNK=x-1-1-1 COMPLETED STATE = ACTIVE
RST DFC x TASK x MESSAGE STARTED
RST DFC x IN PROGRESS
RST DFC x COMPLETED
REPT DFC x AUTO PUMP STARTED
REPT DFC x AUTO PUMP COMPLETED
RST MHD x IN PROGRESS
ST MHD x COMPLETED
RST CU 1 IN PROGRESS
RST CU 1 COMPLETED

(RST messages appear for each AM/CM hardware unit.)

Comment: On the MCC page 111, the AM and all of its associated hardware should return to an ACT/STBY state.

22. To set the automatic ODD backup schedule (see Table 9-2) to perform a daily backup, enter message:

   MSG BKUP:ODD:EVERY=1,AT=y;

   Where: y = the time of day in hours and minutes (0000-2359) when the ODD is to be backed up.

   Response: OK

23. To allow automatic relation reorganization, enter message:

   MSG ALW:REORG;

   Response: ALW:REORG;OK

24. To allow Recent Change, enter message:

   MSG ALW:RC;

   Response: ALW RC COMPLETED

25. To allow REX for CU, enter message:

   MSG ALW:REX,CU;
26. To allow REX for CM, enter message:
   MSG ALW:REX,CM;
   Response: OK

27. To allow REX for SM, enter message:
   MSG ALW:REX,SM=1&&192;
   Response: OK

28. To allow DMQ, enter message:
   MSG ALW:DMQ:SRC=REX;
   Response: ALW DMQ ENABLED REX

29. Clear the EAI page:
   Access EAI page and enter command:
   CMD 14

30. Access normal display (NORM DISP):

3.4.9 GSM CCS LINK CONFIGURATION CHECK

The 5ESS is capable of maintaining CCS signaling on GSMs during the switch forward stage of the update, with only a small interval (5 to 10 seconds) of CCS signaling downtime.

However, the CCS signaling on the GSMs can be maintained during the switch forward only if the CCS links are provisioned in a duplex configuration.

Provisioning the GSM CCS links in a duplex configuration will allow the switch to maintain approximately one half of the CCS links in an active state while the other half is transitioning to the new release. The most optimal duplex configuration would yield exactly 50% CCS signaling capacity to all destinations (DPCs, clusters, and networks) during the switch forward stage.

This check will examine the CCS link configuration on each GSM to determine the impact a switch forward will have on CCS signaling.

1. Determine if there are GSMs provisioned in the switch by entering the following message:
   MSG OP:CCS:GSM
   Response:
   NG — NO GLOBAL SM IN OFFICE
   or
   OP CCS GSM
       SM LINK STATUS OPC GSM TYPE CMT CONNECTIVITY
       SM LINK STATUS OPC GSM TYPE CMT CONNECTIVITY
       ............ ........ ... ................

   If there are no GSMs provisioned in the switch, the remainder of the GSM CCS LINK CONFIGURATION CHECK should be skipped.
2. Execute the GSM CCS Link Configuration Check for all GSMs. One or more output messages will be generated for each GSM.

MSG **TST:CCS:GSMCFG,OPT=-C**;

Response 1:

TST CCS GSMCFG SM=a LS/CLS
GRSI MAY PROCEED WITH MINIMAL CCS CAPABILITY LOSS

Where:

a = the GSM number

Response 2:

TST CCS GSMCFG SM=a LS/CLS
b

Where:

a = the GSM number

b = one of the following:

- CCS CAPABILITY LOSS CANNOT BE MINIMIZED DURING GRSI
- GSM REQUIRES AT LEAST TWO QPHS TO REDUCE CCS CAPABILITY/LOSS DURING GRSI
- GSM REQUIRES AT LEAST TWO STPHS TO REDUCE CCS CAPABILITY/LOSS DURING GRSI
- GSM REQUIRES AT LEAST TWO OR MORE CCS LINKS TO REDUCE CCS CAPABILITY/LOSS DURING GRSI
- MUST SPLIT SDL TO NGSM ASSIGNMENT TO REDUCE CCS CAPABILITY LOSS FOR GRSI

Response 3:

TST CCS GSMCFG SM=a LS/CLS=
CCS CAPABILITY LOSS CANNOT BE MINIMIZED DURING GRSI AFFECTING b c INCLUDING THE FOLLOWING:
d

Where:

a = the GSM number

b = the total number of destinations that will be isolated.

b = the destination type (DPCs, CLUSTERS, or NETWORKS)

c = the first 15 destinations affected.

Response 4:

TST CCS GSMCFG SM=a LS/CLS=b
c% LINK CAPACITY DURING GRSI MAY CAUSE CONGESTION AFFECTING d e INCLUDING THE FOLLOWING:
f

Where:

a = the GSM number
\( b \) = the link set or combined link set number

\( c \) = the percentage of capacity during the update (1 to 49)

\( d \) = the total number of destinations that will be affected.

\( e \) = the destination type (DPCs, CLUSTERS, or NETWORKS)

\( f \) = the first 15 destinations affected.

If \textbf{response 1} is generated for a GSM, this indicates that the GSM has an optimal duplex CCS link configuration, and the GSM will be able to maintain 50% CCS signaling capacity to all destinations during the switch forward.

If all the GSMs receive \textbf{response 1}, the GSM CCS Link Configuration Check is complete (go to the next step).

If \textbf{response 2} is generated for a GSM, this indicates that the GSM has an unsupported CCS link configuration. The GSM will not be able to maintain CCS signaling during the switch forward, and will experience several minutes of CCS signaling downtime to all destinations.

If \textbf{response 3 and/or 4} is generated for a GSM, this indicates that the GSM has some form of duplex CCS link configuration. However, the configuration is not optimal, and thus, some destinations will experience extended intervals (minutes) of CCS signaling downtime, and/or less than 50% signaling link capacity.

Refer to 5ESS Document 235-200-116 Signaling Gateway Common Channel Signaling, to determine how to provision the GSM CCS links in an optimal duplex configuration.

\textbf{3.4.10 OSPS REQUIREMENTS}

The OSPS is impacted by the 5E16.2 LTG. OSPS Service may be impacted after the transition. For a short time (up to 5 minutes) after the completion of the switch-forward stage, customers can not connect to an OSPS operator.

\textbf{3.4.11 UPDATE OSPS FOR INTERFLOW}

\textit{Caution: The following procedure must be performed for all offices in the same OSPS interflow complex prior to the first LTG of any office in the complex.}

\textit{For example, if an OSPS interflow complex contains four 5ESS switches, all four offices must perform the following procedure BEFORE the first office LTGs to the new data.}

The following recent change update must be performed for all OSPS offices to ensure that the office uses valid cross generic (XGEN) translators (associated with interflow) after the LTG.

1. Access MCC page 196.
2. Enter the following data:
3. VALID TRANSLATION IDENTIFIERS

<table>
<thead>
<tr>
<th>TRANS ID</th>
<th>REMARK</th>
<th>TRANS ID</th>
<th>REMARK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 091</td>
<td>SE9.1</td>
<td>6.</td>
<td></td>
</tr>
<tr>
<td>2. 092</td>
<td>SE9.2</td>
<td>7.</td>
<td></td>
</tr>
<tr>
<td>3. 101</td>
<td>SE10.1</td>
<td>8.</td>
<td></td>
</tr>
<tr>
<td>5. 102</td>
<td>SE15</td>
<td>10.</td>
<td></td>
</tr>
</tbody>
</table>

Enter ...

Response: RCV SUCCESS RINFLTRID UPDATED 1 TERM-ID=ttyx

3. Exit from Recent Change.

*******************************************************************************
STOP
*******************************************************************************

The work required 9 weeks before the LTG is completed.
Mark your place.
Resume work on Section 3.7 at 8 weeks before the LTG.

3.5 Is the type of LTG being performed a SMART Conversion LTG?
   • If YES, continue with the next step.
   • If NO, go to Step 3.7.

3.6 SEVEN WEEKS BEFORE THE SMART CONVERSION LTG

3.6.1 Overview
The work in this section takes place 7 weeks before the LTG load date. The major activity is making the “other-switch” data tape.

3.6.2 Continue to Other Switch Dump Step
Go to Step 3.7.3

3.7 EIGHT WEEKS BEFORE LTG

3.7.1 Is the type of LTG being performed a SMART Conversion LTG?
   • If YES, skip this step and go to Step 3.7.4.
   • If NO, continue with the next step.

3.7.2 OVERVIEW
The work in this section takes place 8 weeks before the LTG load date. The major activity is making the “other-switch” data tape.
3.7.3 OTHER SWITCH DUMP

At this time, it is the responsibility of the telephone company to supply Lucent Technologies with an approved tape containing data (for example, line and/or trunk) from the existing mechanized switching system being replaced by an existing 5ESS switch.

Refer to 235-080-100, Translations Guide, Division 1, Section 9, for 5ODA Batch Load Interface specifications for building and shipping the tape(s).

3.7.4 GROWTH ITEMS

In general, hardware should not be in any "growth" state for the LTG. However, some hardware units are allowed to be in the "growth" state without jeopardizing the LTG.

For example, the Module Message Processor (MMP) Synchronous Data Line Controller (SDLC) can be in one of three states: operational, growth, or special growth. The MMP SDLC may be in a growth state and the office can still perform the LTG.

Any growth required for the office that has not yet been accomplished must be completed before the database dump.

There are two available options:

1. Make the unit operational
2. Degrow the unit.

Use 235-105-231, Hardware Change Procedures - Growth and 235-105-331, Hardware Change Procedures - Degrowth, for any required growth/degrowth, respectively.

Use the following steps to determine the equipment presently in a growth state.

1. To list Administrative Module (AM) equipment that is in a growth state, enter message:
   
   MSG OP:CFGSTAT,GROW,AM;

   Response: OP CFGSTAT MESSAGE STARTED
   UNIT MTCE INH DGN
   ...
   [OP CFGSTAT IN PROGRESS]
   OP CFGSTAT COMPLETED

2. To list Communication Module (CM) equipment that is in a growth state, enter message:
   
   MSG OP:EQSTAT,GROWTH;

   Response: OP EQSTAT CM {FIRST|NEXT|LAST} RECORD
   UNIT EQUIPAGE STATE
   ...
   or
   OP EQSTAT CM HAS NO UNITS IN THE REQUESTED STATE

3. To list Switching Module (SM) equipment that is in a growth state, enter message:
   
   MSG OP:CFGSTAT,SM=1&& x,GROWTH;

   Where: \( x = \) highest-numbered SM
Response:  
**OP CFGSTAT SM y** {**FIRST|NEXT|LAST**} **RECORD**  
**UNIT MTCE STATE ACTIVITY HDWCHK DGN RESULT**  
...  
or  
**OP CFGSTAT SM y** **HAS NO CIRCUITS IN THE REQUESTED STATE**  

Where:  
y = SM number.  

### 3.7.5 TAPE DRIVE  
A functional tape drive is required to perform the LTG. If verification of the Tape Drive is required refer to Section 3.10.7 (TAPE DRIVE CLEANING, TESTING, AND VERIFICATION).  

STOP

The work required 8 weeks before the LTG is completed.  
Mark your place.  
Resume work on Section 3.8 at 5 weeks before the LTG.  

### 3.8 FIVE WEEKS BEFORE LTG  

#### 3.8.1 OVERVIEW  
The work in this section takes place 5 weeks before the LTG load date. The major activity is performing the preliminary dumps of the **5ESS** switch ODD and ECD databases. The dump should be performed and shipped so that the tapes will arrive at Lucent Technologies at -15 days.  

#### 3.8.2 ODD RETROCHK TOOL  
The ODD Retrochk tool will report on ODD errors which effect the quality of database evolution.  

**Warning:** Prior to executing the ODD Retrochk tool, verify that a backup ODD is not running or will not be executed. If a backup ODD is running, either cancel it or wait for it to complete.  

1.  
   From the MCC, enter message:  
   ```  
   MSG EXC:AUD=SODD,RELATION=RETROCHK,AM;  
   ```  
   Response:  
   ```  
   OP AUD=SODD STATUS AUDIT: RELATION=RETROCHK ON THE AM  
   REMARKS = THE AUDIT HAS COMPLETED  
   THE "OP AUD=SODD ERRLOG" MESSAGE WILL FOLLOW WITH  
   THE TOTAL ERRORS FOUND  
   OP AUD=SODD ERRLOG SUMMARY  
   RELATION =RETROCHKS AM  
   ALL=Y  
   NUMBER OF: ERRORS = 0  
   DETAILED SUMMARY REPORT=  
   /rclog/SODD/reports/DSRETROCHK.193  
   ```  
2.  
   If there are errors, execute the following command to format into a file:
MSG **OP:AUD=SODD,ERRLOG,all=y,relation=retrochk,am,outfile=filename**;

Response:

```
OP AUD=SODD ERRLOG STATUS
RELATION=RETROCHK, THE AM
ALL=Y
PROCESSING COMPLETED:OUTFILE=/rclog/SODD/reports/filename
```

Where: filename = a specific file name for the report

The error report generated will be located under the /rclog/SODD/reports directory for the given filename. Refer to the Automated SODD audit procedures in 235-105-210, *Routine Operations and Maintenance Procedures* and in 235-105-220, *Corrective Maintenance* for further information.

If conditions for this audit cannot be resolved, escalate to your next level of support.

**Note:** This tool will take from 15 minutes to 4 hours to run depending on office size.

### 3.8.3 VERIFY OFFICE DISK CONFIGURATION

The current office disk configuration is determined and recorded in the following steps:

1. To obtain current office disk configuration, enter message:
   
   **MSG **OP:VERSION**;**
   
   Response: **OP:VERSION;PF**
   
<table>
<thead>
<tr>
<th>OP VERSION</th>
<th>Day</th>
<th>Month</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARTITION</td>
<td>VERSION</td>
<td>BWM</td>
<td></td>
</tr>
<tr>
<td>ECD</td>
<td>5E16(2)xx.xx</td>
<td></td>
<td></td>
</tr>
<tr>
<td>/</td>
<td>5E16xx.xx</td>
<td>BWMxx-xxxx</td>
<td></td>
</tr>
<tr>
<td>/etc</td>
<td>5E16xx.xx</td>
<td>BWMxx-xxxx</td>
<td></td>
</tr>
<tr>
<td>/unixa</td>
<td>5E16xx.xx</td>
<td>BWMxx-xxxx</td>
<td></td>
</tr>
<tr>
<td>/no5odd</td>
<td>5E16xx.xx</td>
<td>BWMxx-xxxx</td>
<td></td>
</tr>
<tr>
<td>/no5text/im</td>
<td>5E16xx.xx</td>
<td>BWMxx-xxxx</td>
<td></td>
</tr>
<tr>
<td>/no5text</td>
<td>5E16xx.xx</td>
<td>BWMxx-xxxx</td>
<td></td>
</tr>
<tr>
<td>/diag</td>
<td>5E16xx.xx</td>
<td>BWMxx-xxxx</td>
<td></td>
</tr>
<tr>
<td>DISK</td>
<td>{2020}</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONFIGURATION</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Record the office disk configuration beside the office name on the General Information Worksheet (Table 9-1).

3. Verify that both the **VERSION** and **BWM** information is correct and consistant for all partions displayed.

4. Use 235-070-100, *Administration and Engineering Guidelines*, to determine if the current office configuration is sufficient for the upcoming LTG.
3.8.4 PRELIMINARY DATABASE DUMPS

3.8.4.1 Overview

The purpose of the preliminary database dumps is to allow detection of any inconsistencies in the databases by the off-line ODD/ECD processing center at Lucent Technologies in Illinois. The preliminary dump will not find all possible database errors. Its main purpose is to ensure the integrity of the final dump.

The databases are checked and field support personnel are notified of any errors the customer can correct using either Recent Change (RC) and/or 235-080-100, Translations Guide. See Division 1, Section 12, ODA Off-Line LTG Plan of the guide for detailed information regarding the schedule and processing responsibilities of each of the parties involved.

Important: The telephone company and the System Equipment Engineer must clean up any errors detected by the processing of the preliminary dump data. Delaying the error cleanup effort until the final dump could jeopardize the LTG load date. The final dump processing interval does not permit enough time to perform extensive error correction without delaying the LTG load date.

The preliminary dump process is designed to permit the location and analysis of database inconsistencies. Consultation with the telephone company is provided so that solutions to any errors found can be corrected in the switch’s database before the final dump. Error correction would include using RC and, if necessary, ODBE changes to the on-site switch database.

3.8.4.2 Predump Setups

1. It is important that any incore ECD RCs be written to disk before performing the ECD dump. If required by your local office practice, obtain approval from the site coordinator before continuing.

   To ensure any ECD recent changes are copied to disk, access MCC page 199, and enter the following data:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.database_name:</td>
<td>incore</td>
</tr>
<tr>
<td>2.reviewonly:</td>
<td>n</td>
</tr>
<tr>
<td>3.journaling:</td>
<td>*</td>
</tr>
<tr>
<td>Enter Form Name:</td>
<td>activate</td>
</tr>
<tr>
<td>1.copy Inc_to_disk:</td>
<td>YES</td>
</tr>
<tr>
<td>Enter Execute...</td>
<td>e</td>
</tr>
<tr>
<td>Enter Form Name:</td>
<td>&lt;</td>
</tr>
</tbody>
</table>

2. ODD backups must not occur during the tape dump.

   To check current ODD backup schedule, enter message:

   MSG OP:BKUPSTAT;

   Response: OP BKUPSTAT
               AM NRODD= 1 TO 192 RODD= EVERY= x AT=y
               or
               NG - NO SCHEDULE REQUEST

   Comment: Record current backup schedule on the Automatic ODD Backup Schedule Worksheet (Table 9-2), if present.
If NG - NO SCHEDULE REQUEST is output, then automatic backups are not scheduled.

a. If an automatic ODD backup may occur during the tape dump, enter message:
   
   MSG CLR:ODDBKUP;
   
   Response: CLR ODD BKUP COMPLETED
   
   Comment: Ensure schedule was removed by entering the previous OP:BKUPSTAT command.

3. To ensure automatic hash reorganization will not start up during the tape dumps, enter message:
   
   MSG INH:REORG;
   
   Response: OK

4. In the following steps, AM REX is inhibited.

a. Enter message:
   
   MSG INH:DMQ,SRC=REX;
   
   Response: OK

b. To verify AM REX is inhibited, enter message:
   
   MSG OP:DMQ;
   
   Response:
   
   OP DMQ REQUEST ACTIVE NONE REQUEST WAITING NONE INHIBIT SOURCES REX
   
   OP DMQ COMPLETED

5. To prepare tape dump and bring disk ODD up to date, enter message:
   
   MSG BKUP:ODD;
   
   Response: BKUP ODD NRODD = a COMPLETED
   ... 
   BKUP ODD NRODD = z COMPLETED 
   BKUP ODD CMP = 0 COMPLETED
   BKUP ODD FULL RODD = xx COMPLETED
   BKUP ODD FULL AM IN PROGRESS
   BKUP ODD FULL AM COMPLETED
   BKUP ODD COMPLETED

3.8.4.3 Write Database Tapes (Preliminary Dump)

In the following steps, the ODD and ECD will be written to DAT.

Note: The time it takes to perform the tape dumps will be based on the call load of the switch. If the tape dump is performed during peak load hours, the tape dump may be exceedingly longer than if performed during non-peak load time.
The copy tape process does not impact interaction with the switch while writing tapes. The tape writing process determines the highest tape speed and greatest tape density that the tape drive is capable of and then writes tapes out at these specifications.

A tape label will be printed on the ROP after the copy tape process is completed. This printed label should be removed from the ROP and affixed to the tape just written.

If the tape writing process needs to be **stopped** for any reason, refer to Section 6.5.14.

If a fault occurs on the tape drive or Magnetic Tape Controller (MTC), refer to Section 6.5.13.

1. Label a tape as a preliminary ODD backup tape. Include the date.
2. Mount the labeled tape into the DAT Unit 0. Make sure that the DAT tape is write-enabled.
3. Write the preliminary data base files to the tape.
   1. All data may be written on one tape.
      1. MCC Page: 1980
         Enter Poke CMD: 80x
         Where: x = LTG Tools
         Response: LTG Tools page
         **Note:** Wait for the 1984 page to populate the different fields.
      2. MCC Page 1984
         Enter Poke CMD: 5yy,MTx
         Where: yy = DUMP_ODD Tool Number
                x = 0 for TU 0 or 1 for TU 1
         Response: MOUNT A TAPE ON MT0
                    USE RESUME TO CONTINUE OR USE STOP TO ABORT PROCEDURE
                    USE BACKOUT TO EXIT
   4. MCC Page: 1984
      Enter Poke CMD: 5yy
      Where: yy = DUMP_ODD Tool Number
   5. After the tape rewinds, remove the tape from DAT Unit 0 and switch-off write-enable.
   6. Label the tape using the label printed on the ROP.
   7. After the copy of the database dump has completed, the following report is displayed at the MCC:
      **COMPLETED <date and time stamp>**

3.8.4.4 Is the type of LTG being performed a SMART Conversion LTG?

- If **YES**, continue with the next step.
- If **NO**, go to Step 3.8.4.6.
3.8.4.5 Shipping Instructions for Preliminary Database Tapes (SMART Conversion LTG Only)

1. Pack the database tapes in an approved container.

   Ship the database tapes to:

   Rob Goldstein
   Lucent Technologies
   500 N. Point Pky
   Alpharetta, GA 30005

2. Continue with Step 3.8.4.7.

3.8.4.6 Shipping Instructions for Preliminary Database Tapes

1. Pack the database tapes in an approved container.

2. *It is important that the tapes arrive at the Lucent Technologies Lisle Center - Lisle, IL location promptly following the preliminary dump. Please ship tapes using an overnight carrier.*

   Ship the database tapes to:

   Lucent Technologies Network Systems
   Network Software Center
   2601 Lucent Lane
   Lisle, IL 60532–3640
   Attn: ODD/ECD Tape Processing

3.8.4.7 Post-Dump Resets

1. If the automatic ODD backup schedule was cleared before the ODD and ECD dumps, enter message:

   MSG BKUP:ODD:EVERY=x,AT=y;

   Where:    x and y = values recorded earlier (in Table 9-2)

   Response: OK

2. If automatic relation reorganization had been enabled before the ODD and ECD dumps, enter message:

   MSG ALW:REORG;

   Response: OK

3. In the following steps, AM REX is allowed.

   a. Enter message:

      MSG ALW:DMQ:SRC=REX;

      Response: ALW DMQ ENABLED REX

   b. Verify REX is allowed for the CM on MCC page 110.

   c. Verify REX is allowed for the SMs on MCC pages 1271, 1272, 1273, etc.

   d. To verify AM REX is allowed, enter message:

      MSG OP:DMQ;

      Response: OP DMQ
**3.8.4.8 Verify AM Off-Line Boot Check**

AM off-line boot was supposed to be run at the -9 week interval. If it was not run, it must be run successfully prior to the final database dump. See Section 3.4.8 for instructions.

**3.8.4.9 Pre-Conditioning Check Status**

1. To verify the results from the pre-conditioning checks, enter message:
   
   ```
   MSG OP:RETROCHK;
   ```

   Response:

<table>
<thead>
<tr>
<th>Operation</th>
<th>Status</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP RETROCHK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ODD RETROCHK</td>
<td>COMPLETED</td>
<td>NO ERROR</td>
</tr>
<tr>
<td>ECD AUDIT</td>
<td>COMPLETED</td>
<td>NO ERROR</td>
</tr>
<tr>
<td>MEM4CAST</td>
<td>See Note 'a'</td>
<td>See Note 'a'</td>
</tr>
<tr>
<td>HW CHECK</td>
<td>NOT COMPLETED</td>
<td>NO ERROR</td>
</tr>
<tr>
<td>OFFLINE BOOT</td>
<td>COMPLETED</td>
<td>NO ERROR</td>
</tr>
<tr>
<td>DOUBLE-LOGGING</td>
<td>STARTED (NOT STARTED)</td>
<td></td>
</tr>
<tr>
<td>DATABASE DUMP</td>
<td>COMPLETED (NOT COMPLETED)</td>
<td></td>
</tr>
</tbody>
</table>

   Since this is being run prior to the final database dump, the double-logging and the database dump status should read NOTSTARTED and NOT COMPLETED.

   **Note:**

   1. The “MEM4CAST” check appearing in the output of the `OP:RETROCHK` does not apply to this procedure because the software release is not changing. Ignore any error messages associated with this check.

   2. The "OFFLINE BOOT" check appearing in the output of `OP:RETROCHK` is a preconditioning audit designed to ensure that a successful off-line boot has been completed before the database dump is performed. For more information about this check, see Section 2.2.4.

**3.8.5 VERIFY ACCEPTANCE TEST PLAN**

Test lines will be required on the night of the LTG. Review the test plan prepared in Section 3.4.2. There should be at least one test line per SM assigned before the final database dump. These lines should be single-party lines. Do not use multiline hunt lines.

As a further check, at least one line from every NXX exchange in the office should be tested.

*****************************************************************************

**Issue 2.02**
STOP

The work required 5 weeks before the LTG load date is completed.
Mark your place.
Resume work in Section 3.9 at 4 weeks before LTG.
3.9  FOUR WEEKS BEFORE THE LTG

3.9.1  GENERAL

The activities in this section take place 4 weeks before the LTG.

3.9.2  CUTOVER RELATION CHECKS

This section checks the ODD database for cutover relations, turns on the cutover program, and cuts back the office to a precut state.

=> Read: It is very important to delete/change the cutover relations for all traffic-carrying SMs and thousands groups. The cutover information for these SMs and thousands groups, if present, must be in a particular state before the cutover program is turned on and the office is cut back later in this section.

Caution:  It is the responsibility of the operating company to understand whether the cutover program needs to be executed as part of the scheduled LTG.  The existence of the cutover relations or views and the use of the cutover program can cause the loss of dial tone to working lines in the office.  If the cutover program is not needed as part of the scheduled LTG there should not be cutover views present in the office.

If cutover relations are present for any postcut, traffic-carrying SMs or thousands groups, they must be in an active state.  This state is indicated by "COACTIVE" in an ODBE batch review of the SM and thousands group cutover relation (IMCOSTAT and THCOSTAT, respectively), and by an "A" in the precut and postcut fields of the SM and thousands group cutover views (11.1 and 11.2, respectively).

If cutover relations are present for any postcut, traffic-carrying SMs or thousands groups and are in an inactive state, related lines will be removed from service either when the cutover program is turned on or when the office is cut back.  The incorrect state is indicated by "COINACTIVE" in an ODBE batch review of the SM and thousands group cutover relations (IMCOSTAT and THCOSTAT, respectively) and by an "I" in the precut and/or postcut fields of the SM and thousands group cutover views (11.1 and 11.2, respectively).

If the cutover relations and views contain the incorrect value (COINACTIVE and "I", respectively), use recent change procedures to modify (delete or change) the data in the cutover views before the cutover program is turned on and the office is cut back.

Review this section with the operating company's maintenance engineer before deleting any SM or thousands groups cutover relations.

1.  Access MCC page 197:
   a.  If OFFICE STATE is PRECUT and CUTOVER ACTIVE is backlit, no further cutover-related work is necessary at this time.  Continue with Section 3.9.3.
   b.  If OFFICE STATE is not PRECUT (either blank or POSTCUT), the following steps must be performed/verified.

      Note:  The following sequence will use ODBE to batch review the IMCOSTAT (SM cutover status), THCOSTAT (Thousands Group cutover status), and NOCCODE relations.

2.  At an RC terminal, enter message:

   MSG RCV:MENU:ODBE;
Response: OFFICE DATA BASE EDITOR version 7.0

a. To batch review the IMCOSTAT relation to a file, enter the following data:

Enter Processor Number (1-217): 194
Enter Relation Name: IMCOSTAT
Enter Tuple Operation: br
Enter UNIX File Name: /tmp/smcut
Review processing completed.
xx tuples written to file: /tmp/smcut
Enter Tuple Operation: 

b. To batch review the THCOSTAT relation to a file, enter the following data:

Enter Relation Name: THCOSTAT
Enter Tuple Operation: br
Enter UNIX File Name: /tmp/thcut
Review processing completed.
xx tuples written to file: /tmp/thcut
Enter Tuple Operation: 

Enter Relation Name: !
Enter Processor Number: <control-d>

3. If any tuples were written to /tmp/smcut or /tmp/thcut, dump them:

MSG DUMP:FILE,ALL,FN="/tmp/smcut";
DUMP:FILE,ALL,FN="/tmp/thcut";
DUMP:FILE,ALL,FN="/tmp/noccode";

Sample output for /tmp/smcut:

<table>
<thead>
<tr>
<th>SM</th>
<th>PRECUT</th>
<th>POSTCUT</th>
<th>ALT</th>
<th>RTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>COACTIVE</td>
<td>COACTIVE</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>COACTIVE</td>
<td>COACTIVE</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>COACTIVE</td>
<td>COACTIVE</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>COACTIVE</td>
<td>COACTIVE</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>COACTIVE</td>
<td>COACTIVE</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>COACTIVE</td>
<td>COACTIVE</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>
4. Using the samples provided previously, review the batch review files.

A value of COINACTIVE in the ODBE batch review indicates that lines in the associated SM or thousands group will not receive dial tone when the office is in the state pertaining to the attribute read. For example, reading the "PRECUT" attribute of the THCOSTAT or IMCOSTAT relation and finding a value of "COINACTIVE" indicates that there will not be dial tone on those lines when the office is in the PRECUT mode.

Conversely, a value of COACTIVE in the ODBE batch review indicates that lines in the associated SM or thousands group will receive dial tone when the office is in the state pertaining to the attribute read. For example, reading the "PRECUT" attribute of the THCOSTAT or IMCOSTAT relation and finding a value of "COACTIVE" indicates that there will be dial tone on those lines when the office is in the PRECUT mode.

The NOCCODE relation output (/tmp/noccode) can be referred to find the Normalized Office Code (NOC) associated with each NXX code.

5. Using recent change procedures (RC Views 11.1 and 11.2) and local office records, delete the appropriate cutover relations for postcut, traffic carrying SMs, and/or thousands groups.

6. To remove the batch review files created by the ODBE batch review, enter messages:

   MSG CLR:FILESYS:FILE,FN="/tmp/smcut";
   CLR:FILESYS:FILE,FN="/tmp/thcut";
   CLR:FILESYS:FILE,FN="/tmp/noccode";

7. Rerun ODBE batch reviews in Step 2 to verify cutover relations have been deleted and/or changed to proper state.

8. To update CUTTRANS attribute in View 8.1 (Office Parameters - Miscellaneous), access MCC page 196 and enter the following data:
9. On MCC pages 116 and 197, the "CUTOVER ACTIVE" fields must be backlit.

10. Enter message:
    
    MSG INH:AUD=PORTLA,SM=1&&x;
    
    Where: $x$ = Highest numbered SM
    
    Response: OK

11. On MCC page 197, enter command to enable cut back:
    
    CMD 700
    
    Response: EXC:CO:CMD=ENCBK;OK
    
    Comment: ENABLE STATE = PRECUT
              OFFICE STATE = POSTCUT

12. On MCC page 197, enter command to cut back:
    
    CMD 701
    
    Response: EXC:CO:CMD=CUTBK;IP
              EXC CO SM a CUTBACK STATUS SUCCESS
              ... EXC CO SM z CUTBACK STATUS SUCCESS
              EXC CO CUTBACK STATUS SUCCESS
    
    Comment: A message will be output for each SM regardless of its
              PRECUT/POSTCUT status.
              ENABLE STATE => PRECUT
              OFFICE STATE => PRECUT
              CUTOVER/CUTBACK EXECUTION STATUS => MIGRATION
              COMPLETE

13. Enter message:
    
    MSG ALW:AUD=PORTLA,SM=1&&x;
    
    Where: $x$ = highest numbered SM.
    
    Response: OK

Caution: It is the responsibility of the operating company to check call
processing for all lines and trunks. If the cutback effects call processing on
any lines/trunks, "recut" the office (poke 600 and poke 601 on MCC page 197)
and seek technical assistance.
3.9.3 GROWTH ITEMS

In general, hardware should not be in any "growth" state for the LTG. However, some hardware units are allowed to be in the "growth" state without jeopardizing the LTG. For example, the Module Message Processor (MMP) Synchronous Data Link Controller (SDLC) can be in one of three states: operational, growth, and special growth. The MMP SDLC may be in the "growth" state and the office perform the LTG.

Any growth required for the office that has not yet been accomplished must be completed before the final 5ESS switch ODD/ECD dump.

There are two available options:
1. Make the unit operational, or
2. Degrow the unit.

Use 235-105-231, Hardware Change Procedures - Growth and 235-105-331, Hardware Change Procedures - Degrowth for any required growth/degrowth, respectively.

Use the following steps to determine the equipment presently in a growth state.

1. To list Administrative Module (AM) equipment that is in a growth state, enter message:

   MSG OP:CFGSTAT,GROW,AM;

   Response:
   
   OP CFGSTAT MESSAGE STARTED
   UNIT MTCE INH DGN
   ...
   [OP CFGSTAT IN PROGRESS]
   OP CFGSTAT COMPLETED

2. To list Communication Module (CM) equipment that is in a growth state, enter message:

   MSG OP:EQSTAT,GROWTH;

   Response:  
   
   OP EQSTAT CM {FIRST|NEXT|LAST} RECORD
   UNIT EQUIPAGE STATE
   ...
   or
   OP EQSTAT CM HAS NO UNITS IN THE REQUESTED STATE

3. To list Switching Module (SM) equipment that is in a growth state, enter message:

   MSG OP:CFGSTAT,SM=1&&x,GROWTH;

   Where: x = highest-numbered SM

   Response:
   
   OP CFGSTAT SM y {FIRST|NEXT|LAST} RECORD
   UNIT MTCE STATE ACTIVITY HDWCHK DGN RESULT
   ...
   or
   OP CFGSTAT SM y HAS NO CIRCUITS IN THE REQUESTED STATE

   Where: y = SM number.
3.9.4 VERIFY HARDWARE CHANGE NOTICES

There are no hardware Change Notices (CNs) to be applied before the LTG to the new databases.

3.9.5 FULL OFFICE BACKUPS

Full office backups provide a copy of the office software (text and ODD and ECD databases) and are performed to provide a reliable vehicle for system recovery in the event that the data on both disk drives becomes mutilated. **Full office backups should be made any time hardware changes are made in the office that would adversely affect the office’s ability to recover.** See 235-105-210, Routine Operations and Maintenance Procedures.

3.9.6 TERMINAL ACCESS

The AM off-line boot feature impacts the states of the various terminals (MCC, STLWS, RC/V, UNIX, etc.) connected to the 5ESS switch during the LTG. These terminals will appear in states different than in previous software releases. The state of a specific terminal depends on which IOP the terminal is connected. The AM off-line boot process isolates equipment on side 1 of the switch. The IOP 1 is taken out-of-service. Therefore, terminals connected to the off-line side of the switch will provide invalid information on the status of the switch. If the MCC is connected to IOP 1, the AM off-line boot process called by the proceed poke in Section 5.6.4 will automatically execute a port switch. When the port switch is executed, the MCC will go blank and is then initialized on IOP 0. **It is very important to ensure that all messages/commands required to perform the LTG and all preliminary activities are input at the MCC. The MCC and SCC guarantee access to the active side of the switch.**

Terminals used when performing a LTG should have access to all command groups. See Table 3-2. The command restriction feature restricts access to 5ESS switch input commands and their associated command pokes based on command groups. To determine the authority level, enter the following message at each terminal that will be used for the new database.

**MSG VFY:AUTH;**

Response: **VFY AUTH COMPLETED**

<table>
<thead>
<tr>
<th>TERM:</th>
<th>AUTHORITY LEVEL:</th>
<th>USER:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>b</td>
<td>c</td>
</tr>
<tr>
<td>d</td>
<td>d</td>
<td>d</td>
</tr>
<tr>
<td>d</td>
<td>d</td>
<td>d</td>
</tr>
<tr>
<td>d</td>
<td>d</td>
<td>d</td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>d</td>
<td>d</td>
</tr>
</tbody>
</table>

or

**NG - UNABLE TO ACCESS AUTHORITY ADMINISTRATION (MCC only)**

Where:  

a = terminal identifier (for example, ttya)  
b = auth_chk field in ECD getty form
c = user identifier

d = command group name [not output if the AUTHORITY LEVEL (b) is equal to n].

Comment: The value following the AUTHORITY LEVEL field for each terminal to be used during the transition should be "n" (none). If this value is not "n", the command restriction administrator for this office should be contacted to make the necessary changes.

For further information on the command restriction feature, refer to the Authority Management section of 235-105-210, Routine Operations and Maintenance Procedures.

Table 3-2 — Command Restriction Command Groups

<table>
<thead>
<tr>
<th>COMMAND GROUP</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMIN</td>
<td>System administrator only activities</td>
</tr>
<tr>
<td>ALARM</td>
<td>Alarm manipulation</td>
</tr>
<tr>
<td>AM</td>
<td>Administrative module maintenance</td>
</tr>
<tr>
<td>AMA</td>
<td>Automatic message accounting</td>
</tr>
<tr>
<td>AUDIT</td>
<td>Audits</td>
</tr>
<tr>
<td>AUTH</td>
<td>Command and authority administration</td>
</tr>
<tr>
<td>CCS</td>
<td>Common channel signaling</td>
</tr>
<tr>
<td>CM</td>
<td>Communications module maintenance</td>
</tr>
<tr>
<td>FHADM</td>
<td>File handling and administration</td>
</tr>
<tr>
<td>MAINT</td>
<td>Routine maintenance activities</td>
</tr>
<tr>
<td>MEAS</td>
<td>Measurements</td>
</tr>
<tr>
<td>NMOC</td>
<td>Overload control and network management</td>
</tr>
<tr>
<td>NOCHK</td>
<td>No authority checking</td>
</tr>
<tr>
<td>ODD</td>
<td>Office Dependent Data activities</td>
</tr>
<tr>
<td>PASS</td>
<td>Personal password modification</td>
</tr>
<tr>
<td>RCV</td>
<td>Recent change and verify</td>
</tr>
<tr>
<td>SM</td>
<td>Switching module maintenance</td>
</tr>
<tr>
<td>SPECRCV</td>
<td>Special RCV commands</td>
</tr>
<tr>
<td>SFTMGT</td>
<td>Software management (Update, LTG)</td>
</tr>
<tr>
<td>SFTUTIL</td>
<td>Software utilities</td>
</tr>
<tr>
<td>SYSRCVY</td>
<td>System recovery</td>
</tr>
<tr>
<td>TRACE</td>
<td>Call trace</td>
</tr>
<tr>
<td>TRKLN</td>
<td>Trunk and line maintenance</td>
</tr>
</tbody>
</table>

3.9.7 TAPE DRIVE CLEANING AND TESTING

1. Refer to Section 3.10.7 to perform this activity.

2. After successfully completing this activity continue with Section 3.9.8.

3.9.8 TEST LINES

At least one test line per SM should be defined in the office database before the final database dump takes place. These lines should be single-party lines. Do not use multiline hunt lines.
As a further check, every exchange in the office should be tested.

3.9.9 FX LINES
Two Foreign Exchange (FX) lines are recommended for the central office on the night of the LTG. The FX lines will be used for voice and data communication with off-site support centers during the LTG. One FX line should also be supplied for each remote site. Plans should be made now to have these lines available 1 day before the LTG.

Data sets may be required to support any FX lines. The following data set, adapter, and cable (or equivalents) may be used:

- ITE-6134 212AR data set
- ITE-9839A Adapter for 212A data set
- ITE-8962 Read-only printer data cable.

3.9.10 AMA OFF-LINE PROCESSING
An existing feature provides the ability to access AMA partitions on the off-line disks. The final AMA session, performed prior to executing the PROCEED stage, will be the last time you will teleprocess AMA data. When your switch is on the new data, your first AMA session will automatically access the AMA records on the off-line disks.

The COMMIT stage of the LTG has been enhanced to prevent the duplexing of the disks until the AMA data residing on the off-line disks has been teleprocessed or written to tape. Depending on your local procedures, special arrangements might be needed to process these AMA records.

If your office verifies the ability to process AMA records after initialization to the new LTG release, please be aware that this means 2 AMA sessions will be required after the switch is on new data. The first session will process data from the off-line disks. The second session will process data from the active disks.

******************************************************************************
STOP
******************************************************************************

The work required 4 weeks before the LTG is completed.

Mark your place.

Resume work on Section 3.10 at 3 weeks before the LTG.
3.10 THREE WEEKS BEFORE THE LTG

3.10.1 OVERVIEW

The activities in this section take place 3 weeks before the LTG. The major activity is
the final dump of the databases to tape. *The procedures in this section (Section
3.10)* should be performed before the LTG, prior to the busy hour and the tapes
shipped early enough to guarantee a -15 days delivery at Lucent Technologies.
*If there is any doubt that the tapes cannot be delivered before noon on Friday
to Lucent Technologies, an earlier dump must be made.*

3.10.2 SM OFF-LINE PUMP CHECK

*Note:* To execute manual procedures for SM Off-Line Pump, refer to the Manual
Procedures Tab and perform the actions described in Section 8.2. To perform an
Automatic SM Off-Line Pump, continue with the following steps.

Off-line pump for all SMs should be checked. Even though each SM will be simplexed
while it is being checked, call processing should not be affected.

If SM(s) fail to off-line pump after repeated attempts, escalate to your next level of
support. Take note of any output responses that may be provided by the switch.

1. On MCC page 1209, ensure that the Office Network and Timing Complex
   (ONTC) is shown ACTIVE MAJOR/MINOR before proceeding.

2. Enter message:

   MSG INH:REX;

   Response: OK

3. Enter message:

   MSG OP:SYSSTAT,UCL;

   Response: *(sample output shown)*

   **OP SYSSTAT SUMMARY {FIRST|NEXT|LAST} RECORD**
   **SYS:** MISC
   **AM:** NORMAL
   **CM:** NO_REQ_PEND
   **CMP x-0 P:** NORMAL
   **CMP y-0 M:** NORMAL
   **S LSM a,x:** [...]
   **B LSM b,x:** [...]
   **L HSM c,x:** [...]
   **L ORM d,x:** [...]
   **L TRM e,x:** [...]
   **L RSM z,x:** [...]

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4. Verify that none of the SMs have "MATE_OOD" as a status.
   a. If any SMs indicate MATE_OOD, access MCC page 1190.x and restore that SM to duplex.
   b. After all SMs are duplex, re-enter OP:SYSSTAT,UCL.
5. Ensure no off-normal status is indicated for any SM.
6. Access the Procedure Summary page by entering the following command:
   CMD 1980
7. Access the 1984 MCC tools page by entering the following command:
   CMD 8XX
   Where: \( xx \) = corresponds to the retrofit transition.
8. Start the automated SM off-line pump check by entering the following command:
   CMD 512,pump act mctsi1 vfy perf
   Response:
   \[ \text{ORD:CPI}=1\&192,\text{CMD}=\text{SW-0}; \]
   \[ \text{INH:HDWCHK,SM}=1\&192; \]
   \[ \text{INH:SFTCHK,SM}=1\&192; \]
   \[ \text{INH:CLNORM;} \]
   \[ \text{ST:OPUMP,SM}=1\&192,\text{ACTDISK,PERF,VFY}; \]
   Comment: All of the SMs in the office are simplex as the automated SM offline pump from the active disk is executed.
9. Monitor SM Offline Pumps for Completion
   Periodic updates on the overall status of the automated SM offline pumps will appear on the 1984 page and the ROP. The 181 through 184 pages can also be viewed to get per SM status of the SM offline pumps. There will also be ROP output from each SM as they progress through their offline pump activities. Individual failure reports will be displayed as they occur, while the overall status will continue to be shown on the 1984 page until all SMs have completed or failed. If the reason for a particular SM offline pump failure is later corrected, then starting the tool again will pick up the failed SM(s).
   Refer to Section 8.2 for manual SM Offline Pump Check procedures.
10. Start the automated SM restorals by entering the following command:
    CMD 612
    Response:
    \[ \text{ORD:CPI}=1\&192,\text{CMD}=\text{CLR}; \]
    \[ \text{ALW:HDWCHK,SM}=1\&192; \]
    \[ \text{ALW:SFTCHK,SM}=1\&192; \]
    \[ \text{ALW:CLNORM;} \]
    \[ \text{RST:MCTSI,SM}=1\&192,\text{RETRO}; \]
    Comment: The MCTSI restoral for all SMs is started. Note that these restorals are not monitored by the automated procedure.
    Refer to Section 8.2.2 for manual SM Restoral procedures.
11. Enter the following command from MCC page 181 to stop any SMs from pumping and clear the DD status key:
    CMD 3000
3.10.3 SOFTWARE UPDATE CHECK

Note: Using the latest issue of the Software Compatibility Matrix [available at URL: http://www.lucent.com/support], determine the cutoff point for SUs to current software release.

In the following SU check, the term “temporary” refers to SUs that have not yet been made official. It does not refer to TMP SUs or Craft (CFT) overwrites.

1. On MCC page 1950, enter command 9103 to display temporary SU(s).

   Response: In the field adjacent to poke 9103, IN PROGRESS backlit followed by either COMPLETED or ABORTED.

   Comment: COMPLETED followed by an output list of SUs to the ROP indicates there may be temporary SUs active within the switch. If all SUs have been made official, then no temporary SU is active within the switch. In addition, MCC page 1990 can be accessed to ensure there are no temporary SUs.

   ABORTED most likely indicates there are either no temporary SUs in the switch (UPD USRERR 4 on ROP) or no SUs in the switch at all (UPD USRERR 1 on ROP).

2. If any SU(s) are in a temporary state, they must be made official.

   Reference: Refer to 235-105-210, Routine Operations and Maintenance Procedures.

3. Have the Switching Control Center (SCC) personnel check Software Change Administration and Notification System (SCANS) and load any SUs that are required before these procedures can be successfully completed.

4. Activate SUs sent from SCANS.

   Reference: Refer to 235-105-210, Routine Operations and Maintenance Procedures.

3.10.4 OFFICE BACKUPS

1. To ensure the incore and disk copies of the ECD match, perform an “activate” on MCC page 199 by entering the following data:

   1. Data base_name: incore
   2. reviewonly: n
   3. journaling: *
   Enter Form Name: activate
   1. copy_inc_to_disk: YES <cr>
   Enter Execute... e
   Enter Form Name: <


   Reference: Refer to 235-105-210, Routine Operations and Maintenance Procedures.

3. Record date and time in appropriate row of the Automatic Office Dependent Data (ODD) Backup Schedule Worksheet (Table 9-3).
3.10.5 UTILITY BREAKPOINT CHECK

Warning: The following steps may involve removing utility breakpoints. Do not remove any current utility breakpoints unless they are non-essential. Obtain approval if breakpoints will be removed.

Approval to remove AM and/or CMP and/or SM Utility Breakpoints

1. Access MCC page 120.
2. Using the following steps, check for AM utility breakpoints and remove if non-essential.
   a. To list AM utility breakpoints, enter message:
      
      MSG OP:UTIL;
      
      Response:  
      OP UTIL COMPLETED #G1 - #G2  
      DTIME = a  
      DCYCLE = b  
      DEATH DELAY = c  
      NO FLAGS DEFINED  
      NO TRACE DEFINED  
      
      Comment: A response of both NO FLAGS DEFINED and NO TRACE DEFINED indicates there are no AM utility breakpoints present. If the indicated responses are not received, there are AM breakpoints in the system.
   
   b. If the AM breakpoints are to be removed, enter message:
      
      MSG CLR:UTIL;
      
      Response:  
      CLR UTIL COMPLETED #G3  
      
3. Using the following steps, check for CMP utility breakpoints and remove if non-essential.
   a. To list utility breakpoints for the primary CMP, enter message:
      
      MSG OP:UT:CMP=0,PRIM,UTIL;
      
      Response:  
      OP UT CMP=x-0 PRIM UTIL COMPLETED - NO WHENS  
      
      Comment: A response of NO WHENS indicates there are no utility breakpoints present for the primary CMP. Any other response indicates that breakpoints are present. If breakpoints exist, they must be removed.
   
   b. If the primary CMP breakpoints are to be removed, enter message:
      
      MSG CLR:UT:CMP=0,PRIM,UTIL;
      
      Response:  
      CLR UT CMP=x-0 PRIM UTIL (COMPLETED) [NO WHENS TO CLEAR]  
      
   c. To list utility breakpoints for the mate CMP, enter message:
      
      MSG OP:UT:CMP=0,MATE,UTIL;
      
      Response:  
      OP UT CMP=x-0 MATE UTIL COMPLETED - NO WHENS  
      
      Comment: A response of NO WHENS indicates there are no utility breakpoints present for the mate CMP. Any other response...
indicates that breakpoints are present. If breakpoints exist, they must be removed.

d. If the mate CMP breakpoints are to be removed, enter message:

MSG CLR:UT:CMP=0,MATE,UTIL;

Response: CLR UT CMP=0 MATE UTIL {COMPLETED|NO WHENS TO CLEAR}

4. Using the following steps, check for SM utility breakpoints and remove if non-essential.

a. To list per SM utility breakpoints, enter message for each SM:

MSG OP:UT:SM=1&&x,UTIL;

Where: x = highest-numbered SM

Response: OP UT SM=a UTIL COMPLETED - NO WHENS (Output for each SM)

Where: a = SM number

Comment: A response of NO WHENS indicates there are no utility breakpoints present for the indicated SM. Any other response indicates that breakpoints are present.

If an "OP UT SM.....PAGING FAILURE" message is output, re-enter the output SM utility breakpoint message for the SM with the paging failure.

b. This step is only necessary if the previous step failed. If the previous OP:UT:SM=1&&x,UTIL message failed, use the following message for each SM:

MSG OP:UT:SM=y,UTIL;

Where: y = any numbered SM (1,2,3,...n).

Note: Repeat input message for each SM in the office.

c. If the SM breakpoints are to be removed, enter message:

MSG CLR:UT:SM=x[&&y],{UTIL | UTILFLAG=z};

Where: x = the SM number or the lower limit of a range of SM numbers on which utility breakpoints are to be removed.

y = the upper limit of a range of SM number on which utility breakpoints are to be removed.

UTIL = option to remove all utility breakpoints on indicated SM.

UTILFLAG = option to remove specific utility breakpoints (z = specific breakpoint) on indicated SM.

Comment: Either UTIL or UTILFLAG must be used.

Response: CLR UT SM=x UTIL {COMPLETED|NO WHENS TO CLEAR}

3.10.6 TRUNK STATUS (OOS-CADN)

1. To list all trunks in an Out-Of-Service Circuit-Administration (OOS-CADN) state, enter message:

MSG OP:LIST,TRUNKS,FULL,OOS,CADN;
Response: A trunk status list is dumped to the ROP.

2. From the output, identify all trunks marked with an OOS state of "CADN" which should be restored to service prior to backing up the ODD (in preparation for the database tape dump).

=> Read: If a trunk is in the OOS-CADN state before the database tape dump, it will be OOS-CADN when the system is switched to the new data (even if the trunk status is manually brought into service after the database tape dump). Therefore, any trunk status changes related to the "CADN" state should be made prior to the ODD backup which is done in preparation for the database tape dump. If the trunks are in the desired state (OOS CADN or in-service), the following steps (a and b) are not necessary. For more information, refer to Section 2.4.10.

a. For any trunk which is in the CADN state that should be in-service (at the switch forward), enter message:
   
   MSG RST:TRK,TKGMN=a-b,ALL;
   
   Where: a = trunk group number
   b = trunk member number

b. For any trunk that should be OOS-CADN (at the switch forward), enter message:

   MSG RMV:TRK,TKGMN=a-b,CADN;
   
   Where: a = trunk group number
   b = trunk member number

3. To ensure that all trunks are in the desired state, enter message:

   MSG OP:LIST,TRUNKS,FULL,OOS,CADN;

   Response: A trunk status list is dumped to the ROP.

   Comment: This list can be compared to the one dumped previously to ensure correctness. After the comparison is made, record this information in Table 9-6, Trunk Status Worksheet.

   Caution: Any trunks that are OOS-CADN at the time of the ODD tape dump will be OOS-CADN after switching to the new database. It is critical to record this information to help prevent loss of service on these trunks after the switch forward.

3.10.7 TAPE DRIVE CLEANING, TESTING, AND VERIFICATION

3.10.7.1 DAT Tape Drive Procedure

1. Clean the tape drive using cleaning cassette KS-23860, L800. To clean the drive, insert the "cleaning" cassette in the drive. The drive will automatically load the cassette, clean the heads, and eject the cassette when the operation is complete. The date should be recorded on the "cleaning" cassette label to maintain a history of use.

2. Power cycle the tape drive.

3. To diagnose, exercise, and restore the tape drive, enter message:

   MSG RST:MT=0;
4. The DAT drive cassette is loaded in the drive by inserting it label up, in the loading slot on the UN376 circuit pack front panel. (Refer to 235-105-510 5ESS Switch 3B21D Hardware Reference Manual.) If the drive has power applied, the cassette will be drawn into the mechanism and positioned for use.

Caution: Do not force the cassette into the drive. The cassette should be inserted gently into the drive. Very little force is required to cause the drive to grab the cassette, after which the drive will pull the cassette in. Excessive force in insertion of the cassette can damage the drive mechanism components.

5. Insert the cartridge tape (cassette) into the drive until the drive takes hold of the cartridge.

6. To verify the tape drive, enter message:
   
   MSG V FY:TAPE,TD="/dev/mt00";
   
   Response:  
   
   VFY TAPE STARTED  
   VFY TAPE COMPLETED RETRIES x HEADER MISMATCHES x  
   DATA MISMATCHES x  

   Comment: This message may take 15 to 20 minutes to complete.

7. If the tape fails to verify, retry the check with another LTG software release text tape. If it still fails, escalate to your next level of support.

8. If your office is equipped with two tape drives, repeat Steps 1 through 7 for the MTC=1 and "/dev/mt10".

9. Record time and date in appropriate row of Tape Drive Testing Worksheet (Table 9-4).

3.10.8 FINAL DATABASE DUMP

3.10.8.1 Is the type of LTG being performed a SMART Conversion LTG?

- If YES, skip the following steps and go to Step 3.10.9. The Final Database Dump will be done at a later time.
- If NO, continue with the next step.

3.10.8.2 Overview

The database dumps should be performed before the LTG, prior to the busy hour and shipped so the tapes will arrive by -15 days before the LTG at Lucent Technologies in Illinois. If there is any doubt that the tapes from the database dump will not arrive at Lucent Technologies by –15 days, an earlier database dump must be made.

If there is a problem with the tape drive or MTC, go to Section 6.5.13.

Before the backup, double-logging, and the database dump, verify the "OP:RETROCHK" command has been run in Step 3.8.4.9. Critical errors may be found at this time. These errors need to be corrected before continuing.
3.10.8.3 Pre-Dump Setups

1. It is important that any incore ECD Recent Changes (RCs) be written to disk before performing the ECD dump. If required by your local office practice, obtain approval from the site coordinator before continuing.

   To ensure any ECD Recent Changes are copied to disk, access MCC page 199, and enter the following data:

   **database_name:** incore
   **reviewonly:** n
   **journaling:** *
   **Enter Form Name:** activate
   **copy_inc_to_disk:** YES <cr>
   **Enter Execute...** e

   Enter Form Name: <

2. To check current ODD backup schedule, enter message:

   MSG OP:BKUPSTAT;

   Response: OP BKUPSTAT
   AM NRODD= 1 TO 192 RODD= EVERY= x AT= y
   or
   NG - NO SCHEDULE REQUEST

   Comment: Verify the current backup schedule in Automatic ODD Backup Schedule Worksheet (Table 9-2), if present.

   If NG - NO SCHEDULE REQUEST is output, then automatic backups are not scheduled.

3. If an automatic ODD backup may occur during either tape dump, enter message:

   MSG CLR:ODDBKUP;

   Response: CLR ODDBKUP COMPLETED

   Comment: Ensure schedule was removed by entering the previous OP:BKUPSTAT command.

4. To ensure automatic hash reorganization will not start up during the tape dumps, enter message:

   MSG INH:REORG;

   Response: OK

5. In the following steps, AM REX is inhibited.

   a. Enter message:

      MSG INH:DMQ,SRC=REX;

      Response: OK

   b. To verify AM REX is inhibited, enter message:

      MSG OP:DMQ;

      Response: OP DMQ
3.10.8.4  RC/CORC Evolution and Double-Logging of RCs and CORCs

1. Recent change batch clerk entry is inhibited during the double-logging period due to file space limitations. (Double-logging will be turned on in Step 8 of this procedure.) To list the active recent change clerk files, enter message:

```
MSG REPT:RCHIST,ACTIVITY;
```

Response:  `REPT RCHIST CLERK = HISTACT STARTED`

Comment: Delayed Release Summary Report is printed at ROP within 15 minutes. Clerk name "full.RCOLD" (recent changes) may be empty or non-existent at this time.

   A "HISTACT ABORTED" response and the associated error message indicate that no clerk files exist in the system. This is not an error. Clerk files will be created during the next backup ODD.

   A "HISTACT CLERK FILE DOES NOT EXIST OR CANNOT BE OPENED" response indicates that a clerk file should exist but does not. This will occur if a BKUP ODD was performed after RC double-logging was started, but no recent changes were made.

2. The batch release of any existing clerk files should be performed now. Once the clerk files are released, they should be removed. Obtain approval from the Site Coordinator before removing any of the clerk files.

   Remove RC clerk files

3. For each clerk file being removed, enter message:

```
MSG EXC:RCRMV,CLERK=a,ALL,COMPLETE,DEMAND;
```

   Where:  \( a \) = clerk file name from RCHIST dump

4. To inhibit batch RC cleanup, access MCC page 196 and enter the following data:
5. To dump a list of all terminals currently using RC, enter message:

```
MSG OP:RCUSER;
```

Response: 
```
OP RCUSERx ACTIVE RC USERS
RC PROCESS TTY/LOGICAL/CLERK-ID PART 1 OF 1
RCV:MENU, APPRC TERM-ID= xxxx
```

or
```
OP RCUSER 0 ACTIVE RC USERS
```

Comment: Notify all users that RC will be inhibited.

6. To inhibit new RC sessions, enter message:

```
MSG INH:RC;
```

Response: 
```
INH RC COMPLETED
SYS INH system status indicator is backlit.
```

7. In the next step, double logging of RCs is started.

   **Caution:** Do not print office records while double logging is active. The office records process uses the same disk space as the double logging process. If this disk space is full, recent changes will be lost.

8. The CORCs will be evolved automatically at the end of each ODD backup run after double logging starts. An output similar to the following should be expected from each manual or automatic BKUP:ODD from now until the LTG interval ends.

   If your office contains the OSPS feature, the following ODD backup should be performed at approximately the same time of day that the System Switch Forward will occur (during execution of Section 5). For example, if the switch forward will occur at 2 a.m., the final ODD backup should be performed at 2 a.m. While this is not mandatory, it will help ensure that the same operator configuration exists when the system initializes on the new data.

   **Caution:** The following message removes recent change evolution files if they exist. Therefore, this message should be entered one time, and one time ONLY during the entire LTG process. If for some reason there is a need to back out and the transition is postponed for a short interval, do not re-enter this message.

To back up ODD and start double logging of RCs and CORCs, enter message:
MSG BKUP:ODD,ODDEVOL,TOGENERIC=162;

Response:  (A copy of the memory forecasting tool output is printed on the ROP. See Section 2.3.2.2.3.)

[BKUP ODD FULL AM IN PROGRESS]
[OSPS EVOLUTION AM COMPLETED]
[BKUP ODD FULL AM IN PROGRESS]
[OSPS EVOLUTION AM COMPLETED]
BKUP ODD FULL AM COMPLETED
[OSPS EVOLUTION SM=xxx COMPLETED]
[BKUP ODD NRODD = xxx IN PROGRESS]
BKUP ODD NRODD = xxx COMPLETED (once for each SM)
[OSPS EVOLUTION CMP COMPLETED]
BKUP ODD CMP = 0 COMPLETED
BKUP ODD RODD COMPLETED
[ASOSPSON: OSPS LTG BIT HAS BEEN SET]
BKUP ODD COMPLETED

(The next two messages may appear at any time during the BKUP:ODD.)

[AUTOEVOL INVOKES MOVELOG TO RECLAIM SPACE IN /rclog]
[THE /rclog DOES NOT HAVE ENOUGH SPACE]
[TOTAL NUMBER OF FREE SPACE ON /rclog is xxxx]
[DB LTG PROCESS MOVELOG COMPLETED]
[DETAIL INFO IN /rclog/mvlog.README]

AUTOMATIC CORC AND RECENT CHANGE LTG PROCESS STARTED
AUTOMATIC CORC AND RECENT CHANGE LTG PROCESS
EVOLUTION PROCESS TARGET SOFTWARE RELEASE IS 5E162
DB LTG PROCESS KEEPLOG COMPLETED
DETAILED INFO IN /rclog/kplog.err

AUTOMATIC CORC AND RECENT CHANGE LTG PROCESS
RECENT CHANGE EVOLUTION STARTED
[CNVT RCLG EVOLUTION INITIALIZATION STARTED]
[CNVT RCLG DATA TABLES INITIALIZED]
[CNVT RCLG EVOLUTION INITIALIZATION IN PROGRESS]
[INITIALIZING NEW VIEW TABLE: RChnewvwtab_tab[ ]]
[INITIALIZING OLD VIEW TABLE: RCholdvwtab_tab[ ]]
[CNVT RCLG EVOLUTION INITIALIZATION COMPLETE]
[CNVT RCLG EVOL: RC EVOLUTION RC STEP STARTED]
[CURRENT ERROR FILE IS /rclog/RCERRx]
[CNVT RCLG EVOL: RC EVOLUTION RC STEP IN PROGRESS]
[VIEW NUMBER xxxx HAS BEEN READ]

(Output approximately every two hundred views)

CNVT RCLG EVOL: RC EVOLUTION RC STEP COMPLETION SUMMARY
xxx VIEWS READ
xxx VIEWS CREATED
xxx VIEWS IN ERROR
FIRST ERROR FILE IS /rclog/RCERRx
LAST ERROR FILE IS /rclog/RCERRx
[RC EVOLUTION LOGFILE ANALYSIS PROCESS STARTED]
[RC EVOLUTION LOGFILE ANALYSIS PROCESS COMPLETED]
[xxx VIEWS LOGGED]
[DETAIL ANALYSIS REPORT FILE IS /rclog/Rctype.rpt]
Note: The next four messages are only output by OSPS offices that have used recent changes that are supported by OSPS evolution.

[CNVT RCLOG EVOLUTION: OSPS STEP STARTED]
[CURRENT ERROR FILE IS /rclog/RCOSPSSERRx]
[CNVT RCLOG EVOLUTION: OSPS STEP COMPLETION SUMMARY]
[xxx VIEWS READ]
[xxx VIEWS CREATED]
[xxx VIEWS IN ERROR]
[FIRST ERROR FILE IS /rclog/RCOSPSSERRx]
[LAST ERROR FILE IS /rclog/RCOSPSSERRx]
[RC EVOLUTION: OSPS LOGFILE ANALYSIS PROCESS STARTED]
[RC EVOLUTION: OSPS LOGFILE ANALYSIS PROCESS COMPLETED]
[xxx VIEWS LOGGED]
[DETAIL ANALYSIS REPORT FILE IS /rclog/RCosps.rpt]

CNVT RCLOG EVOL COMPLETE
AUTOMATIC CORC AND RECENT CHANGE LTG PROCESS
CORC EVOLUTION STARTED
[CNVT CORCLOG EVOL AM COMPLETE]
[xxxx CORCS EVOLVED]
[xxxx CORCS IN ERROR]
[xxxx RDNT CORCS RMVD]
[CNVT CORCLOG EVOL CMP COMPLETE]
[xxxx CORCS EVOLVED]
[xxxx CORCS IN ERROR]
[xxxx RDNT CORCS RMVD]
[CNVT CORCLOG EVOL IN PROGRESS]
[CORC NUMBER xxx HAS BEEN READ]
[CNVT CORCLOG EVOL SM = a COMPLETE]
[xxxx CORCS EVOLVED]
[xxxx TRNCORCS EVOLVED]
[xxxx CORCS IN ERROR]
[xxxx TRNCORCS IN ERROR]
[xxxx RDNT CORCS RMVD]
[xxxx RDNT TRNCORCS RMVD]
[CNVT CORCLOG EVOL IN PROGRESS]
[CORC NUMBER xxx HAS BEEN READ]
[xxxx CORCS xxxx TRNCORCS HAVE BEEN LOGGED IN THE CORC]
[EVOLVED LOGFILES]
CNVT CORCLOG EVOL COMPLETE
AUTOMATIC CORC AND RECENT CHANGE LTG PROCESS COMPLETED

The ODD backup process invokes the memory forecasting tool automatically when it turns on double-logging. If problems associated with the memory forecasting tool are encountered, refer to Section 6.5.12.3.

If OSPS evolution errors are output, proceed to Section 6.5.10.3.

If RC or CORC evolution errors are output, proceed to Section 6.5.10.

Note: This causes subsequent recent changes and CORCs to be logged in special evolution log files.

Due to the double-logging that takes place, batch recent change clerk entry cannot be performed and will not be accepted by the recent change subsystem until the LTG interval is completed.
The MISC system status indicator will remain backlit until the transition interval is completed (about 2 weeks). A SYS NORM indication will not be possible during the remainder of the LTG interval.

9. To allow RC, enter message:
   MSG ALW:RC;
   Response: ALW RC COMPLETED

=> Read: During the remainder of the LTG interval, it is important to check the output from each ODD backup due to the additional RC/CORC evolution-related messages that are generated. This is especially important if the backups take place while the office is unattended. **Escalate to your next level of support immediately if the evolution-related outputs are not received.**

**Warning:** Double-logging only occurs when the ODD EVOL box on MCC page 116 is backlit. The OSPS recent change evolution only occurs when the OSPS EVOL box on MCC page 116 is also backlit. The database LTG process has been enhanced to reset double-logging if a manual 54 initialization is performed any time between now and the actual LTG. If at any time you find the ODD EVOL or the OSPS EVOL (for OSPS offices) boxes are not backlit, contact your Lucent Technologies Software Update Management System (SUMS) Center and proceed immediately to Section 6.5.11.

3.10.8.5 Tape Dump Checklist

Ensure the following items are accounted for prior to making the tape dump (Table 3-3):
Table 3-3 — Tape Dump Checklist

<table>
<thead>
<tr>
<th>ITEM</th>
<th>SIGN OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ECD errors resolved and corrected</td>
<td></td>
</tr>
<tr>
<td>ODD Retrochk started</td>
<td></td>
</tr>
<tr>
<td>Disk Configurations Adequate for New Software Release</td>
<td></td>
</tr>
<tr>
<td>AM/SM Memory Growth Complete</td>
<td></td>
</tr>
<tr>
<td>SM Configuration Parameter Verified/ Set (all SMs)</td>
<td></td>
</tr>
<tr>
<td>Test Lines Defined in ODD</td>
<td></td>
</tr>
<tr>
<td>Growth Items Complete</td>
<td></td>
</tr>
<tr>
<td>Recent Office Backups Available</td>
<td></td>
</tr>
<tr>
<td>Breakpoint Checked/Removed</td>
<td></td>
</tr>
<tr>
<td>Tape Drive Cleaned, Tested and Verified</td>
<td></td>
</tr>
<tr>
<td>ODD Evolution Started</td>
<td></td>
</tr>
<tr>
<td>AM off-line boot was run successfully at least once between the -9 week interval and now</td>
<td></td>
</tr>
</tbody>
</table>

3.10.8.6 Write Database Tapes

In the following steps, the ODD and ECD will be written to magnetic tape.

*Note:* The time it takes to perform the tape dumps will be based on the call load of the switch. If the tape dump is performed during peak load hours, the tape dump may be exceedingly longer than if performed during non-peak load time.

The copy tape process does not impact interaction with the switch while writing tapes. The tape writing process determines the highest tape speed and greatest tape density that the tape drive is capable of and then writes tapes out at these specifications.

The copy tape process has been enhanced to check the memory forecasting report file for the database dump. If a memory shortage is detected during the database dump, the copy tape process will fail. See Section 2.3.2.2.3 for additional information on the memory forecasting tool.

If problems associated with the tape dump or the memory forecasting tool are encountered, refer to Section 6.5.12.

*Note:* Two sets of database dump tapes are required for the database dump. After the first set of tapes has been written, ROP messages will direct the technician to make a second set of tapes.

A tape label will be printed on the ROP after the copy tape process is completed. This printed label should be removed from the ROP and affixed to the tape just written.

If the tape writing process needs to be stopped for any reason, refer to Section 6.5.14.

If a fault occurs on the tape drive or Magnetic Tape Controller (MTC), refer to Section 6.5.13.

1. Check to ensure that the ODD EVOL ACT box on MCC page 116 is backlit. If the ODD EVOL ACT box is not backlit, escalate to your next level of support. For
OSPS offices, **OSPS EVOL ACT** box on MCC page 116 should also be backlit. If the **OSPS EVOL ACT** box is not backlit, escalate to your next level of support.

2. Obtain and label an empty tape as a final ODD copy.

3. Mount the labeled tape into the DAT Unit 0. Make sure that the DAT tape is write-enabled.

4. Write the final data base files to the tape.

   1. All data will be written on one tape.

      1. MCC Page: **1980**
         
         Enter Poke CMD: **80x**
         
         Where: \( x = \) LTG Tools
         
         Response: **LTG Tools page**
         
         **Note:** Wait for the 1984 page to populate the different fields.

      2. MCC Page: **1984**
         
         **Warning:** *The following command must have a space between the “MTx” and “final” arguments.*
         
         Enter Poke CMD: **5yy,MTx final**
         
         Where: \( yy = \) DUMP_ODD Tool Number
               \( x = 0 \) for TU 0 or 1 for TU 1
         
         Response:
         
         **MOUNT A TAPE ON MTx**
         USE RESUME TO CONTINUE OR USE STOP TO ABORT PROCEDURE
         USE BACKOUT TO EXIT PROCEDURE

      5. MCC Page: **1984**
         
         Enter Poke CMD: **5yy**
         
         Where: \( yy = \) DUMP_ODD Tool Number

      6. After the tape rewinds, remove the tape from DAT Unit 0 and switch-off write-enable.

      7. Label the tape using the label printed on the ROP.

3.10.8.7 **Shipping Instructions For the Database Tapes**

1. Pack database tapes in an approved container.

2. It is important that the tapes arrive at Lucent Technologies by the -15 days following the database dump. Please ship the tapes using an overnight carrier.
Ship the tapes to:
Lucent Technologies
Network Software Center
2601 Lucent Lane
Lisle, IL 60532–3640
Attn: ODD/ECD Tape Processing

3.10.8.8 Post-Dump Resets

1. Double-logging was turned on prior to the database dump. During double-logging, the automatic ODD backup schedule should be set to perform a daily backup. The Automatic ODD backup schedule was recorded in Worksheet 9-2. To set the automatic ODD backup schedule to perform a daily backup, enter message:

   MSG BKUP:ODD:EVERY=1,AT=y;

   Where: y = the time of day in hours and minutes (0000-2359) when the ODD is to be backed up.

   Response: OK

2. If automatic relation reorganization had been enabled before the ODD and ECD dumps, enter message:

   MSG ALW:REORG;

   Response: OK

3. In the following steps, AM REX is allowed.
   a. Enter message:

       MSG ALW:DMQ:SRC=REX;

       Response: ALW DMQ ENABLED REX

   b. Verify REX is allowed for the CM on MCC page 110.
   c. Verify REX is allowed for the SMs on MCC pages 1271, 1272, 1273, etc.
   d. To verify AM REX is allowed, enter message:

       MSG OP:DMQ;

       Response: OP DMQ

       REQUEST ACTIVE
       NONE
       REQUEST WAITING
       NONE
       INHIBIT SOURCES
       NONE
       OP DMQ COMPLETED

3.10.8.9 Software Update Application

Caution: Do not apply any software updates after the database dump. Also, if your offices use the Automation BWM/software update process, you must inhibit it. This is done by entering the following message:

   MSG UPD:AUTO:INH;

If a software update is required, contact your SUMS Center for assistance. See Table 1-1.
3.10.8.10 Notes on RC/CORC Evolution and RC Reapplication

3.10.8.10.1 RC Forms

Table 9-13 lists the RC forms that are supported by OFFRCR for the 5E16.2 software release during the LTG. Table 9-14 lists the RC forms that are not supported. Unsupported views may be manually reinserted by recent change personnel after switch forward and before recent change reapplication has been started.

3.10.8.10.2 Save Files

3.10.8.10.2.1 Copies of RCs and CORCs

The RC and CORC evolution processes will save a full copy of the original version of the RCs and CORCs. The files (full.old.xx for CORCs, full.RCOLD for RCs, and full.OSPS for OSPS RCs) will be saved in "/rclog" and will be automatically moved to "/updttmp" when "/rclog" is 75 percent full. These files can be dumped to tape if space in "/updttmp" becomes a problem. Seek technical assistance before moving/removing any files.

3.10.8.10.2.2 RC Activity Report File

At the time of each ODD backup during the final 3 weeks, when RCs and CORCs are evolved automatically, an RC evolution report file is generated (RCtype.rpt). The report file provides summary and detailed reports of the RC evolution activity. Information in the file consists of the number of RC/Vs logged, supported RC/Vs, non-supported RC/Vs, and detailed evolution activity information on specific RC Views.

3.10.8.10.3 CLR:CORCLOG Message

Caution: The CLR:CORCLOG input message, in addition to clearing those CORCs from the normal log files, will also clear the log files being saved for the LTG since the last ODD backup. This message should not be used during the LTG interval unless absolutely necessary. Escalate to your next level of support first.

3.10.8.10.4 Daily RC/CORC Evolution-Related Tasks

The following list of tasks should be performed on a daily basis for the remaining 3 weeks of the LTG interval. Make a copy of this section (Section 3.10.8.10.4) and post it near the MCC.

1. Check MCC page 197. OFFICE STATE must be PRECUT and "CUTOVER ACTIVE" field should be backlit. If either one of the indications is not present, escalate to your next level of support.

2. Make sure the ODD EVOL field on MCC page 116 is backlit. If it is not, seek technical assistance before entering the following message:

   MSG EXC:ENVIR:UPROC,FN="/no5text/rcv/setoddevol";

   Response: SETODDEVL:ODD EVOLUTION BIT HAS BEEN SET EXC ENVIR UPROC/no5text/rcv/setoddevol COMPLETED

   Warning: If the ODD evolution had to be turned back on, seek technical assistance to check the integrity of the log files.

3. List active RC clerk and account files. Enter message:

   MSG REPT:RCHIST,ACTIVITY;
4. Check the ROP output for each and every BKUP:ODD ensuring that the RC and CORC evolution processes started and completed successfully. (See previous ODD Backup for an example of expected output.) Seek technical assistance if the processes abort or do not start.

5. Log all RC and CORC evolution activity from the BKUP:ODD output in the appropriate RC Evolution Worksheet (Worksheet 9-9) or the CORC Evolution Worksheet (Worksheet 9-10). Make additional copies of the worksheets as needed.

6. The recent change LTG error file "RCLTGERR" will contain summary messages on the number of RCs logged since the final ODD dump. To dump the RCLTGERR file, enter message:

```
MSG DUMP:FILE:ALL,FN="/rclog/RCLTGERR",OPL=999;
```

   a. An output of "File does not exist" indicates that no RC activity has occurred since the last ODD backup. If no RC activity has occurred, this is not an error. If there has been RC activity and the response "File does not exist" is received, seek technical assistance.

   b. If there has been RC activity since the last ODD backup, the file will contain a message indicating how many RCs have been logged since the final ODD dump.

   c. If any type of error occurred during the running of the RC LTG report process, a message will appear indicating the error and giving recovery procedures.

7. Dump each newly created CORC error file (corcevl.errx). To list the files in /rclog, enter message:

```
MSG OP:STATUS:LISTDIR,FN="/rclog";
```

If any CORC error files have been created or updated (check date stamp on file) since the previous ODD backup, dump them and escalate to your next level of support:

```
MSG DUMP:FILE,ALL,FN="/rclog/corcevl.errx",OPL=999;
```

8. The contents of the RC evolution log file analysis report file (RCtype.rpt) may be dumped after every BKUP:ODD to provide information on RC evolution. To dump the RC evolution log file, enter message:

```
MSG DUMP:FILE,ALL,FN="/rclog/RCtype.rpt",OPL=999;
```

9. To dump the CORC evolution log file, enter message:

```
MSG DUMP:FILE,ALL,FN="/rclog/corcevl.sum",OPL=999;
```

10. To dump the ISDN line growth log file, enter message:

```
MSG DUMP:FILE,ALL,FN="/rclog/RClcd.rpt",OPL=999;
```

   **Note:** ODBE changes are not double-logged and evolved to the new ODD. Any changes to the database using the ODBE after the final tape dump will not be present on the new ODD.
11. For OSPS offices, perform the following steps:
   a. For OSPS offices, to ensure that the OSPS configuration ODD evolution bit is set, enter message:
      MSG EXC:ENVIR:UPROC, FN="/no5text/prc/ASospson";
      Response: ASOSPSON: OSPS RETROFIT BIT WAS ALREADY SET (on ROP)
                  or [ASOSPSON: CANNOT SET OSPS RETROFIT BIT]
                  EXC ENV UPROC /no5text/prc/ASospson COMPLETED
      Comment: If the following messages are received, continue with the procedures:
                  ASOSPSON: OSPS RETROFIT BIT HAS BEEN SET (on ROP
                  EXC ENV UPROC /no5text/prc/ASospson COMPLETED
   b. To dump a list of OSPS RCs, enter message:
      MSG OP:STATUS:LISTDIR, FN="/updttmp/ospsevol";
      Response: OP STATUS LISTDIR STARTED
                  (Listing of the directory is dumped to the ROP.)
   c. Check the output for any files that have the naming convention of:
      x.error.log
      Where: x = the number of the processor (193=AM, 194=CMP, 255 = redlog, all others are for SMs)
      If any files are listed containing this naming convention, refer immediately to Section 6.5.10.3.
   d. Recent change evolution will evolve separately the 9 recent change views supported by OSPS evolution: 21.2, 21.4, 21.7, 21.8, 21.16, 21.17, 21.18, 21.22, and 21.27. If there has been any activity on these views since the previous ODD backup, then RC evolution will evolve the views and create at least one RCOSPSERRx file (where x = 1, 2, 3, etc.). The RCOSPSERRx file(s) should be dumped to maintain a history of RC activity and RC evolution errors, if any.
      If there was no activity on the 9 OSPS RC views, then no RCOSPSERRx file is created.
      When there has been activity on any of the 9 OSPS RC views, the following messages will appear in the ROP response to the daily ODD backup, indicating which RCOSPSERRx files should be dumped.
      Response:
      CNVT RCLOG EVOL: OSPS STEP COMPLETION SUMMARY
      xxx VIEWS READ
      xxx VIEWS CREATED
      xxx VIEWS IN ERROR
      FIRST ERROR FILE IS /rclog/RCOSPSERRx
LAST ERROR FILE IS /rclog/RCOSPSERRx

Enter the following message for each RCOSPSERRx file created:

```plaintext
MSG DUMP:FILE,ALL,FN="/rclog/RCERROSPSx",OPL=999;
```

Look for any sort of abort or other unexpected entry in the error file, and escalate to your next level of support if anything is encountered.

e. This step is **optional**. If there has been any activity on the 9 OSPS supported RC views, then a summary file is created that may be dumped by entering the following message:

```plaintext
MSG DUMP:FILE,ALL,FN="/rclog/RCosps.rpt",OPL=99;
```

12. From the output of step 7, check if file mvlog.README exists. If the file exists, perform the following steps:

a. `MSG DUMP:FILE,ALL,FN="/rclog/mvlog.README",OPL=999;`

b. The file dumped above reports the status of each execution of the mvlog process. Looking at the output of the file, seek technical assistance if there are indications that mvlog did not complete successfully and/or aborted.

### 3.10.9 OUT-OF-SERVICE (OOS) EQUIPMENT

1. Enter message:

```plaintext
MSG OP:OOS;
```

Response: Dumps AM equipment OOS list.

2. Enter message:

```plaintext
MSG OP:CFGSTAT,OOS;
```

Response: Dumps CM equipment OOS list.

3. Enter message:

```plaintext
MSG OP:OFFNORM,CM;
```

Response: Dumps CM off-normal list.

4. For (each) SM **NOT** indicating **NORMAL** on MCC pages 141, 142, etc., enter message:

```plaintext
MSG OP:CFGSTAT,OOS,SM=x;
```

Where: \( x = \) SM number or sequence/range of SMs

Response: Dumps circuit off-normal and OOS lists for SM(s).

5. Any essential duplex or simplex equipment appearing in the circuit OOS or OFFNRM dumps must be restored to service.

### 3.10.10 LIST OF LINES AND TRUNKS TO BE TESTED AFTER THE LTG

Verify the list of intra-office and interoffice lines to be tested when call processing resumes after the LTG. See Table 9-8 and Section 2.4.7

This should be a prioritized list with the most important test calls at the top. Included in this list should be police, 911 dispatcher, fire, hospitals, and other emergency numbers as determined by local practices and **at least** one line on each SM.
As a further check, at least one line from every NXX exchange in the office should be tested.

Trunk types such as Multifrequency (MF), Common Channel Signaling (CCS), and Inward Wide Area Telephone Service (INWATS) trunks may all be tested. If the office is equipped with the optional Common Network Interface (CNI) ring, then copies of RC Views 15.1, 15.2, and 15.3 may be used for reference when testing is performed.

3.10.11 HOST OFFICE COLLECTOR NOTIFICATION

Offices with the AMA Teleprocessing feature should notify the Host Office Collector (HOC) of the date and the approximate time of the scheduled LTG. The HOC should be instructed to poll the AMA of the transitioning office frequently (approximately once an hour) the night of the LTG. Frequent polling keeps the AMA data on the disk to a minimum. Failure to do this may significantly increase the time interval of the LTG Proceed stage.

3.10.12 REVIEW OF PROCEDURES

Section 5, LTG Implementation contains the procedures to actually perform the LTG. The requirements for starting the LTG should be reviewed at this time to become familiar with what condition the office must be in and what office equipment, other material and documentation will be required on the date of the LTG.

******************************************************************************

Continue with work in Section 4, SYSTEM EVALUATION
10 days before the LTG.

******************************************************************************
5E16.2 Large Terminal Growth Procedures

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4. SYSTEM EVALUATION

4.1 OVERVIEW

Pre-LTG system evaluation consists of a set of tests and exercises used to demonstrate that the 5ESS® switch is capable of performing the required LTG operations.

The system evaluation tests are expected to take 2 days to run, and should be done within the period of 10 days before LTG.

**Unless otherwise noted, the diagnostic portion of each restoration should return All Tests Passed (ATP). Units returning Conditional ATP (CATP) should be retested until ATP and/or repaired if necessary. Units failing diagnostics should be repaired and retested until ATP before proceeding.**

The AM off-line boot feature impacts the states of the various terminals (MCC, STLWS, RCN, UNIX, etc.) connected to the 5ESS switch during the transition. The state of a specific terminal depends on which IOP the terminal is connected. The AM off-line boot process isolates equipment on side 1 of the switch. IOP 1 is taken out-of-service. Therefore, terminals connected to the off-line side of the switch will provide invalid information on the status of the switch. If the MCC is connected to IOP 1, the AM off-line boot process called by the proceed poke in Section 5.6.4 will automatically execute a port switch. When the port switch is executed, the MCC will go blank and is then initialized on IOP 0.

**It is very important to ensure that all messages/commands required to perform the transition and all preliminary activities are input at the MCC. The MCC and SCC are the only terminals that will always have access to the active side of the switch.**

When performing a SMART Conversion LTG, refer to the Method of Procedures (MOP) that is included with the Sun BLADE Processor. This processor is shipped to the site approximately 2 weeks prior to the SMART conversion.

**Note:** The Final Database Dump for the SMART Conversion takes place on the day of the conversion. Consult with the SMART coordinator regarding the allowing/inhibiting of Recent Change during the double logging period. Refer to Step 3.10.8 for the Final Dump procedures.

4.2 TEN DAYS BEFORE THE LTG

4.2.1 LTG NOTES

A copy of the LTG Notes will be arriving (from Lucent Technologies) with the LTG tapes. The LTG Notes provide additional information and procedures for the upcoming LTG that are not included in this document. Supplemental information and procedures that may not have been available at publication of this document or recently developed may be included in the LTG Notes. A copy of the LTG Notes may be obtained by contacting your technical support organization(s), (SUMS Center). It is critical to obtain the latest copy of the LTG Notes, as the notes are updated frequently.

LTG Notes are also available on the web at [http://www.lucent.com/support](http://www.lucent.com/support). All current 5ESS RETROFIT/SRU/ LTG users MUST REGISTER to access this website.

---

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Follow these steps to get to the Retrofit Index Page:

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- Place your mouse over the "Documentation and Downloads" link at the top of the screen.
- Click on the "Product Index" link.
- Click on the "5ESS Switch" link.
- Click on the "Release Information" link. Here you will find access to the most current Retrofit and LTG Notes, the SU Compatibility Notice, and Current CFT Descriptions.

### 4.2.2 MATERIALS ON HAND

The materials listed as follows may be arriving on site. **This material must be on site 1 day before LTG at the very latest.**

- Two sets of new Office Dependent Data (ODD) tapes
- One LTG tools tape (if required for your office)
- Office backup media:
  - Sufficient tapes certified at 6250 bpi for offices equipped with 340-Mb fixed-media disks.
  - One copy of the office records and one copy of the functional listing.
  - One or more Tape Operating Procedure (TOP) tapes.
  - One or more text tapes.

**Note:** If TOP and text tapes are received, they **ARE NOT** loaded as part of the LTG. These tapes are only to be used in accordance with 235-105-250, *System Recovery Procedures*.

### 4.2.3 DUPLEX SYSTEM TESTING

#### 4.2.3.1 AM Testing

1. If equipped, notify Switching Control Center (SCC) of upcoming tests.
2. On MCC page 111, ensure AM 0 is **STBY** before proceeding.
3. To restore AM 0, enter command on MCC page 111:
   ```
   CMD 300
   ```
   **Response:** **RST CU 0 COMPLETED**
   **Comment:** CATP and No Tests Run (NTR) are acceptable.
4. On MCC page 111, ensure AM 1 is **STBY** before proceeding.
5. To restore AM 1, enter command on MCC page 111:
   ```
   CMD 301
   ```
   **Response:** **RST CU 1 COMPLETED**
   **Comment:** CATP and NTR are acceptable.
4.2.3.2 MHD Testing

Caution: The following Disk File Controller (DFC) restoral will simplex the disks as diagnostics are being run. They should only be performed during non-prime traffic periods in accordance with local practice(s).

1. On MCC page 123 and MCC page 125, verify that all MHDs are ACTIVE before proceeding.

2. To verify the integrity of the even-numbered Moving Head Disks (MHDs) and DFC, perform the following steps:

   Caution: The following steps will simplex the system.

   a. Enter message:

      MSG VFY:MHD=x;

      Where: x = 0, 2, [4 through 30] (all even-numbered MHDs except 14)

      Do not run verifies on MHD 14, this disk is for software backup only.

      Response: VFY MHD x STARTED
                VFY MHD x IN PROGRESS (every 2 minutes)
                ...
                VFY MHD x COMPLETED

      Comment: The amount of time necessary to complete each verify will depend upon the size of the disk. Large capacity disks will take significantly longer to run than smaller disks. Wait for completion of each disk before continuing with the next one.

   b. Enter message:

      MSG RMV:DFC=0

      Response: RMV DFC 0 COMPLETED

   c. Enter message:

      MSG RST:DFC=0;

      Response: [RST DFC 0 IN PROGRESS]
                RST DFC 0 COMPLETED
                RST MHD x COMPLETED

      Where: x = all even-numbered MHDs on MCC page 123.

      Comment: An RST MHD x COMPLETED message will be received for all even-numbered MHDs on MCC page 123.

   Caution: Do not continue until DFC 0 (and DFC 2 if equipped) and all even-numbered MHDs (0, 2, etc.) have been successfully restored.

3. To verify the integrity of the odd-numbered MHDs and DFC 1 perform the following steps:

   Caution: The following steps will simplex the system.

   a. Enter message:

      MSG VFY:MHD=x;

      Where: x = 1, 3, [5 through 31] (all odd-numbered MHDs except 15)
Do not run verifies on MHD 15, this disk is for software backup only.

Response: Vfy MHD x STARTED
Vfy MHD x IN PROGRESS (every 2 minutes)
...
Vfy MHD x COMPLETED

Comment: The amount of time necessary to complete each verify will depend upon the size of the disk. Large capacity disks will take significantly longer to run than smaller disks. Wait for completion of each disk before continuing with the next one.

b. Enter message:
    MSG RMV:DFC=1
Response: RMV DFC 1 COMPLETED

c. Enter message:
    MSG RST:DFC=1;
Response: [RST DFC 1 IN PROGRESS]
    RST DFC 1 COMPLETED
    RST MHD x COMPLETED

Where: x = all odd-numbered MHDs on MCC page 123.

Comment: An RST MHD x COMPLETED message will be received for all odd-numbered MHDs on MCC page 123.

Caution: Do not continue until DFC 1 and all odd-numbered MHDs (1, 3, etc.) have been successfully restored.

4.2.3.2.1 Disk Error Resolution

Note: These procedures are only executed if a disk fails verification. If all disks pass verification, there is no need to perform the following steps, proceed to the next section (Section 4.2.3.2.2).

1. This step is only performed if a disk fails verification (the preceding procedure).

   Caution: The following messages will simplex the disks. This step should be performed during non-prime traffic periods in accordance with local practice(s).

   Enter sequence of messages:

   MSG RMV:MHD=x;
   INIT:MHD=x:VFY;
   RST:MHD=x;

   Response: RMV MHD x COMPLETE
    INIT MHD ...
    RST MHD x COMPLETE

2. If the disk drive fails the switch forward and verify sequence (Step 1), replace the disk drive.

   Reference: Refer to 235-105-210, Routine Operations and Maintenance.

3. If restore/diagnostics fail on the MHD again, repair per local practice.
4.2.3.2  VTOC Layout Check

1. Access MCC page 120.

2. To dump the Volume Table Of Contents (VTOC) for the even-numbered MHDs, enter message:
   
   MSG DUMP:MHD=x:VTOC;
   
   Where: x = MHD 0, 2, 4, 6, ..., 30 (all even disks)
   
   Response: MHDx VTOC is dumped at the ROP.

3. Using the MHD number (x) from the previous step and your office disk configuration, refer to Table 9-25 to determine which table your VTOC should match. Verify that the VTOC layout matches the data in the appropriate VTOC layout table for your particular office configuration regarding the "start" and "size" for each partition.

   If your office VTOC layout does not match the data in the appropriate table, escalate to your next level of support immediately.

4.2.3.3  CM Testing

1. Verify CM status indicator (second line of MCC display) is normal before proceeding.

2. Enter message:
   
   MSG RST:MSGS=0;
   
   Response: RST MSGS=0 COMPLETED

3. Verify CM status indicator is normal before proceeding.

4. Enter message:
   
   MSG RST:MSGS=1;
   
   Response: RST MSGS=1 COMPLETED

5. On MCC page 1209, ensure ONTC 0 is ACT MINOR before proceeding.

6. Enter message:
   
   MSG RST:ONTC=0;
   
   Response: RST ONTC=0 COMPLETED

7. On MCC page 1209, ensure ONTC 1 is ACT MINOR before proceeding.

8. Enter message:
   
   MSG RST:ONTC=1;
   
   Response: RST ONTC=1 COMPLETED

9. Ensure CM system status indicator is normal before proceeding.

10. The Foundation Peripheral Controller (FPC) and Pump Peripheral Controller (PPC) must be running in an ACT/STBY mode (either side active).
4.2.4 MCTSI DIAGNOSTICS

The following steps will diagnose and restore Module Controller/Time Slot Interchange (MCTSI) sides 0 and 1 and the Bootstrapper (BTSR) for each SM. If equipped, the BTSR diagnostics must be run twice - once with each controller active (and the MCTSIs duplex). Use the SM Diagnostics Worksheet (Table 9-7) to keep track of SMs as diagnostics return ATP.

The diagnostics may be run in parallel on a per-side basis to save time. No more than ten diagnostics should be run at any one time.

A CATP is not acceptable for any MCTSI or BTSR phase; the only exception being a Remote SM (RSM) which may return CATP on phase 9. For any MCTSI or BTSR not returning ATP for all diagnostic phases (except as noted above), do the following:
   a. Rerun the appropriate diagnostic, or
   b. Repair and retest unit until ATP.

Note: If the SMs have been tested on a regularly scheduled basis by Routine Exercises (REX), the following restores may be bypassed.

1. Access MCC page 120.
2. To determine the status of the MCTSIs in all SMs, enter message:
   MSG OP:SYSSTAT,UCL;
   Response: (sample output shown)

   OP SYSSSTAT  SUMMARY {FIRST|NEXT|LAST} RECORD
   AM: NORMAL
   CMP x-0 P:  [...]  
   CMP y-0 M:  [...]  
   S LSM a,x:  [...]  
   B LSM b,x:  [...]  
   L HSM c,x:  [...]  
   L ORM d,x:  [...]  
   L TRM e,x:  [...]  
   ...  
   L RSM z,x:  [...]  

   Comment: An example of the output is shown. Refer to 235-600-750, Output Message Manual, for more details.

3. If any SMs do not indicate NORMAL, restore appropriate units to obtain NORMAL status for each SM.
4. In this step, MCTSIs are diagnosed and restored to standby.
   Note: It is recommended that only 10 SMs be diagnosed at the same time.
   a. To conditionally restore a range of MCTSIs, enter message:
MSG  RST:MCTSI=a&b-y,STBY;

Where:  
a = first SM in a range of SMs.  
b = last SM in a range of SMs.  
y = MCTSI side (0 or 1).

Response:  RST MCTSI= x-y COMPLETED

Where:  
x = SM number.  
y = MCTSI side (0 or 1).

Comment:  Some diagnostic phases may output an NTR response, which means "No Tests Run." This response is acceptable; it indicates that the particular phase was not necessary for that MCTSI.

b.  Clear any diagnostic failures and retest until ATP or CATP.

5.  Repeat Step 4 for the other MCTSI side.

6.  Repeat Step 2 to ensure MCTSIs are ACT/STBY before starting the BTSR diagnostic and restoral. A NORMAL status from the OP:SYSSTAT,UCL message implies the MCTSIs are ACT/STBY.

   Warning:  If you need to clear a BTSR diagnostic failure by replacing a BTSR board, remove one of the MCTSI controllers from service before removing or inserting the TN878 to prevent possible internal bus errors.  
   Restore the MCTSI to duplex before attempting diagnostics again.

7.  To diagnose and restore BTSRs, enter message:

MSG  RST:BTSR=x;

Where:  
x = SM number.

Response:  RST BTSR=x-y COMPLETED (for non-MCTU2 SMs)

Where:  
y = SM number.

Comment:  No response will be received for SMs equipped with MCTU2s. The previous command will run diagnostics on the BTSR before restoring the unit selected.

8.  At the end of testing, all MCTSIs should be ACT/STBY for all SMs, and all BTSRs should be active. This is verified on page 1190,x; where x is each SM diagnosed. On page 1190,x for some SMs, a block for the BTSR will not be shown. The bootstrapper function for some SMs in the MCTU2 has been integrated into the MCTSI, and these SMs do not have a separate BTSR board.

9.  To verify that all SMs are NORMAL, enter message:

MSG  OP:SYSSTAT,UCL;

Response:  (sample output shown)
OP SYSSTAT SUMMARY {FIRST|NEXT|LAST} RECORD

AM: NORMAL
CMP x-0 P: NORMAL
CMP y-0 M: NORMAL
S LSM a,x: NORMAL
B LSM b,x: NORMAL
L HSM c,x: NORMAL
L ORM d,x: NORMAL
L TRM e,x: NORMAL
...
L RSM z,x: NORMAL

For any SM which is not normal, verify all CLNKS, MCTSI, and DLIs are duplex. Although the BTSR is a simplex unit, it must be tested as if it were duplex, if equipped.

4.2.5 COMMUNICATIONS MODULE PROCESSOR DIAGNOSTICS

1. From the previous OP:SYSSTAT output (Section 4.2.4), if CMP 0-0 is the MATE CMP, perform Steps a and b first then perform Steps c and d.

From the OP:SYSSTAT output, if CMP 1-0 is the MATE CMP, perform Steps c and d first then perform Steps a and b.

a. To diagnose CMP 0-0, on MCC page 1241, enter command:

```
CMD 500,ph=1&&15
```

Response:

```
RST: CMP=0-0; PF
EXC ODDRCVY=ALL CMP=1-0 STOPPED
DGN CMP=0-0 COMPLETED ATP PH 1
DGN CMP=0-0 COMPLETED ATP PH 2
DGN CMP=0-0 COMPLETED ATP PH 3
DGN CMP=0-0 COMPLETED ATP PH 4
DGN CMP=0-0 COMPLETED ATP PH 5
DGN CMP=0-0 COMPLETED ATP PH 11
DGN CMP=0-0 COMPLETED ATP PH 12
DGN CMP=0-0 COMPLETED ATP PH 13
DGN CMP=0-0 COMPLETED ATP PH 14
DGN CMP=0-0 COMPLETED ATP PH 15
DGN CMP=0-0 COMPLETED ATP
REPT CMP=0-0 MATE SWITCH FORWARD
TRIGGER={MANUAL|CRAFT}-REQUEST
[REPT COMMUNICATION RESTORED: AM TO CMP=0-0 MATE]
```

```
RST CMP=0-0 COMPLETED ATP
[EXC ODDRCVY=ALL CMP=0-0 STARTED]
[EXC ODDRCVY=ALL CMP=0-0 {STOPPED|COMPLETED}]
[EXC ODDRCVY=ALL CMP=1-0 STARTED]
INIT CMP=0-0 MATE LVL=FI EVENT=xxx COMPLETED
MANUAL-REQUEST
[ . . . ]
```
Comment: When this message is entered, a 5-minute post-init delay is encountered before CMP 0-0 becomes ACTIVE. Also, several other types of output messages may be received indicating the CMP has been initialized.

_Do not continue until CMP 0-0 has successfully restored._

b. To restore CMP 0-0, on MCC page 1241, enter command:

```
CMD 300,ucl
```

Response: _RST: CMP=0-0; PF_

c. To diagnose CMP 1-0, on MCC page 1251, enter command:

```
CMD 500,ph=1&&15
```

Response: _RST: CMP=1-0; PF_

```
EXC ODDRCVY=ALL CMP=0-0 STOPPED
DGN CMP=1-0 COMPLETED ATP PH 1
DGN CMP=1-0 COMPLETED ATP PH 2
DGN CMP=1-0 COMPLETED ATP PH 3
DGN CMP=1-0 COMPLETED ATP PH 4
DGN CMP=1-0 COMPLETED ATP PH 5
DGN CMP=1-0 COMPLETED ATP PH 11
DGN CMP=1-0 COMPLETED ATP PH 12
DGN CMP=1-0 COMPLETED ATP PH 13
DGN CMP=1-0 COMPLETED ATP PH 14
DGN CMP=1-0 COMPLETED ATP PH 15
DGN CMP=1-0 COMPLETED ATP
REPT CMP=1-0 MATE SWITCH FORWARD
```

```
TRIGGER={MANUAL|CRAFT}-REQUEST
[REPT COMMUNICATION RESTORED: AM TO CMP=1-0 MATE]
RST CMP=1-0 COMPLETED ATP
```

```
[EXC ODDRCVY=ALL CMP=1-0 STARTED]
[EXC ODDRCVY=ALL CMP=1-0 {STOPPED|COMPLETED}]
[EXC ODDRCVY=ALL CMP=0-0 STARTED]
INIT CMP=1-0 MATE LVL=FI EVENT=xxx COMPLETED
```
MANUAL-REQUEST

[ REPT MSKP_ENVIRONMENT:]

[ CMP=1-0 PHASE 1&2 INIT COMPLETION TIME: H’xxx ]

[ CMP=1-0 PHASE 3 INIT COMPLETION TIME: H’xxx ]

[ CMP=0-0 PHASE 1&2 INIT COMPLETION TIME: H’xxx ]

[ CMP=0-0 PHASE 3 INIT COMPLETION TIME: H’xxx ]

Comment: When this message is entered, a 5-minute post-init delay is encountered before CMP 1-0 becomes ACTIVE. Also, several other types of output messages may be received indicating the CMP has been initialized.

Do not continue until CMP 1-0 has successfully restored.

d. To restore CMP 1-0, on MCC page 1251, enter command:

CMD 300,uc1

Response: RST:CMP=1-0; PF

e. Access MCC page 1851 and verify that CMP 0-0 is the ACT CMP (under the CMP 0 PRIM STAT box) and CMP 1-0 is the STBY CMP (under the CMP 0 MATE STAT box).

f. If CMP 0-0 is not the ACTIVE (primary) CMP, enter message:

MSG SW:CMP=0-0;

Response: SW:CMP=0-0; PF

[ EXC ODDRCVY=ALL CMP=1-0 STOPPED ]
[ REPT CMP=0-0 MATE SWITCH FORWARD]

[ TRIGGER=SW-REQUEST ]
[ REPT MSKP_ENVIRONMENT: ]

[ CMP=1-0 PHASE 1&2 INIT COMPLETION TIME: xxxx ]

[ CMP=0-0 PHASE 3; INIT COMPLETION TIME: xxxxxx ]

[ CMP 0-0 becomes PRIMARY (active), CMP 1-0 becomes MATE (standby).]

g. To verify that both CMPs are NORMAL, enter message:
MSG OP:SYSSTAT,UCL;
Response:  (sample output shown)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>OP SYSSTAT</td>
<td>SUMMARY</td>
</tr>
<tr>
<td>SYS:</td>
<td>INHIBITS_MSG</td>
</tr>
<tr>
<td>AM:</td>
<td>NORMAL</td>
</tr>
<tr>
<td>CM:</td>
<td>NO_REQ_PENDING</td>
</tr>
<tr>
<td>CMP x-0 P:</td>
<td>NORMAL</td>
</tr>
<tr>
<td>CMP y-0 M:</td>
<td>NORMAL</td>
</tr>
<tr>
<td>S LSM a,x:</td>
<td>NORMAL</td>
</tr>
<tr>
<td>B LSM b,x:</td>
<td>NORMAL</td>
</tr>
<tr>
<td>L HSM c,x:</td>
<td>NORMAL</td>
</tr>
<tr>
<td>L ORM d,x:</td>
<td>NORMAL</td>
</tr>
<tr>
<td>L TRM e,x:</td>
<td>NORMAL</td>
</tr>
<tr>
<td>...</td>
<td></td>
</tr>
<tr>
<td>L RSM z,x:</td>
<td>NORMAL</td>
</tr>
</tbody>
</table>

4.2.6  CNI RING NODES DIAGNOSTICS (CNI OFFICES ONLY)

4.2.6.1  RPCN and Optional DLN Nodes Diagnostics

The following procedures are used to diagnose the Ring Peripheral Controller Nodes (RPCNs) and the optional Direct Link Nodes (DLNs) equipped in the office. Each diagnostic in the following procedures should return ATP. Any CATP problems must be resolved in order to obtain an ATP result.

**Caution:** Before proceeding with the following, notify your applicable Signal Transfer Point (STP).

1. To diagnose RPCN00 enter message:
   MSG RST:RPCN00=0,RAW,TLP;
   Response:  RST RPCN00 0 COMPLETED
   Wait until RPCN00 is restored to service before continuing.

2. To diagnose RPCN32 enter message:
   MSG RST:RPCN32=0,RAW,TLP;
   Response:  RST RPCN32 0 COMPLETED
   Wait until RPCN32 is restored to service before continuing.

3. If the office is equipped with DLNs, enter the following message to diagnose DLN00:
   MSG RST:LN00=2,RAW,TLP;
   Response:  RST LN00 2 COMPLETED
   Wait until LN00-2 is restored to service before continuing.

4. If the office is equipped with DLNs, enter the following message to diagnose DLN32:
MSG  RST:LN32=2,RAW,TLP;
Response: RST LN32 2 COMPLETED
Wait until LN32-2 is restored to service before continuing.

5. The RPCNs and DLNs are cabled to both AMs for reliability. The AMs must be switched and the diagnostics rerun to verify that the cabling from the other AM is in working order.

To switch AMs, enter the following command on MCC page 111:

CMD 400
Response: SW CU x COMPLETED
Where: x is the side of the AM that is now ACT.

6. Repeat Steps 1 through 4 using the other AM.

4.2.6.2 Link Nodes Diagnostics
The following procedures are used to diagnose the Link Nodes (LNs) equipped in the office.

1. On MCC page 118, choose an LN in the CNI ring to diagnose.

2. If the signaling link for this LN is ACT, then manually remove the link from service using the following message:

MSG CHG:SLK=xx-y,MOOS;
Where: xx = Ring Groups 00, 01, 03, 32, 33, or 34
y = Member number (1,2,3,4,5,6,7,8)
Response: CHG SLK xx y COMPL
SLK xx y CHANGED ACCEPTED, NEW MINOR STATE=MOOS

3. Diagnose the LN using the following message:

MSG DGN:LNxx=y,RAW,TLP;
Where: xx = Ring Groups 00, 01, 03, 32, 33, or 34
y = Member number (1,2,3,4,5,6,7,8)
Response: DGN LNxx y COMPLETED ATP

4. After an ATP message is received from the diagnostic, restore the node to service using the following message:

MSG RST:LNxx=y,UCL;
Where: xx = Ring Groups 00, 01, 03, 32, 33, or 34
y = Member number (1,2,3,4,5,6,7,8)
Response: RST LNxx y COMPLETED

5. If the signaling link was removed from service in Step 2, then place it back in-service using the following message:

MSG CHG:SLK=xx-y,IS;
Where: xx = Ring Groups 00, 01, 03, 32, 33, or 34
y = Member number (1,2,3,4,5,6,7,8)
Response: **CHG SLK xx y COMPL**
**SLK xx y CHANGED ACCEPTED, NEW MINOR STATE=MOOS**

Comment: The link will drop to the OOS state. After synchronizing with the far end it will transition to the ACT state.

6. Repeat Steps 1 through 5 until all LNs have been diagnosed.

************************************************************
**STOP**
************************************************************

The work required 10 days before the LTG load date is completed.
Mark your place.
Resume work in Section 4.3 at 7 days before the LTG.
4.3 SEVEN DAYS BEFORE THE LTG

4.3.1 GENERAL

Seven days before the LTG an off-line pump check of all SMs is performed.

4.3.2 SM OFF-LINE PUMP CHECK

Off-line pump for all SMs should be checked. Even though each SM will be simplexed while it is being checked, call processing should not be affected.

If SM(s) fail to off-line pump after repeated attempts, escalate to your next level of support. Take note of any output responses that may be provided by the switch. Escalate to your next level of support before attempting any actions to accommodate SMs that will not off-line pump. Chapter 6 list messages and recovery actions for problems of off-line pumping from the active disks.

1. On MCC page 1209, ensure that the Office Network and Timing Complex (ONTC) is shown ACTIVE MAJOR/MINOR before proceeding.

2. Enter message:
   MSG INH:REX;
   Response: OK

3. Enter message:
   MSG OP:SYSSTAT,UCL;
   Response: (sample output shown)

   OP SYSSTAT SUMMARY {FIRST|NEXT|LAST} RECORD
   SYS: MISC
   AM: NORMAL
   CMP x-0 P: NORMAL
   CMP y-0 M: NORMAL
   S LSM a,x: [...]  
   B LSM b,x: [...]  
   L HSM c,x: [...]  
   L ORM d,x: [...]  
   L TRM e,x: [...]  
   ...  
   L RSM z,x: [...]  

4. Verify that none of the SMs have "MATE_OOD" as a status.
   a. If any SMs indicate MATE_OOD, access MCC page 1190,x and restore that SM to duplex.
   b. After all SMs are duplex, re-enter OP:SYSSTAT,UCL.

5. Ensure no off-normal status is indicated for any SM.

6. Access the Procedure Summary page by entering the following command:

   CMD 1980
7. Access the LTG Tools page by entering the following command:

```
CMD 80x
```

Where x = LTG Tools page.

8. Start the automated SM off-line pump check by entering the following command:

```
CMD 512,pump act mctsi1 vfy perf
```

Response:

```
ORD:CPI=1&&192,CMD=SW-0;
INH:HDWCHK,SM=1&&192;
INH:SFTCHK,SM=1&&192;
INH:CLNORM;
ST:OPUMP,SM=1&&192,ACTDISK,PERF,VFY;
```

Comment: All of the SMs in the office are simplexced as the automated SM offline pump from the active disk is executed.

9. Monitor SM Offline Pumps for Completion

Periodic updates on the overall status of the automated SM offline pumps will appear on the 1984 page and the ROP. The 181 through 184 pages can also be viewed to get per SM status of the SM offline pumps. There will also be ROP output from each SM as they progress through their offline pump activities. Individual failure reports will be displayed as they occur, while the overall status will continue to be shown on the 1984 page until all SMs have completed or failed. If the reason for a particular SM offline pump failure is later corrected, then starting the tool again will pick up the failed SM(s).

Refer to Section 8.2 for manual SM Offline Pump Check procedures.

10. Start the automated SM restorals by entering the following command:

```
CMD 6xx
```

Where xx = SM_OFL_PUMP.

Response:

```
ORD:CPI=1&&192,CMD=CLR;
ALW:HDWCHK,SM=1&&192;
ALW:SFTCHK,SM=1&&192;
ALW:CLNORM;
RST:MCTSI,SM=1&&192,RETRO;
```

Comment: The MCTSI restoral for all SMs is started. Note that these restorals are not monitored by the automated procedure.

Refer to Section 8.2.2 for manual SM Restoral procedures.

### 4.3.3 AM OFF-LINE BOOT

The AM off-line boot must be run to verify the ability to boot the switch. Even though the AM will be simplexced while this is being done, call processing is not affected.

Read: The AM OFLBOOT feature, as documented in 235-105-210, *Routine Operations and Maintenance* is recommended to be run on a periodic basis in all offices to determine the bootability of the switch.

The AM OFLBOOT feature is required to be run during the LTG at -7 day interval. When run at this -7 day interval, more restrictive parameters are passed to the OFLBOOT feature since these parameters are used during the night of LTG. Offices which do not use the AM OFLBOOT feature in the maintenance mode (as described in
the previous paragraph) risk uncovering hardware problems in the switch which might be difficult to correct during the LTG interval.

If a failure occurs during the off-line boot, analyze the ROP message, take corrective action, and re-run the off-line boot. If you are unable to get off-line boot to complete successfully, escalate to your next level of support. **You will not be able to complete the LTG procedure if off-line boot cannot be run successfully in your office.**

The OFLBOOT feature is a powerful tool that must be used cautiously. It is important that the entire procedure be closely monitored by the technician. During the OFLBOOT procedure, the AM and its disks, CM, and CNI ring will be simplex. IOP 1 and all units attached to it will be removed. During this procedure there is an increased risk of system outage from a hardware failure associated with the on-line side. **It is recommended that OFLBOOT be used during low-traffic hours.**

Before initiating the procedure, the technician must ensure that the system is healthy, with no known hardware faults associated with the AM, CM, IOP, DFC, and CNI.

All IOP subunits and operational support system (OSS) links, provided by IOP 1 will not be available to the system during the OFLBOOT procedure (for example, tape drives, TTYs, SDLs, AMA teleprocessing, data links, etc).

Root ECD (that is, disk) recent changes will be allowed on the off-line side. Office-Dependent Data recent changes are not inhibited. It is recommended that technicians NOT apply software updates, grow hardware, or perform ODD recent changes during this procedure.

1. Enter message:

   MSG **OP:SYSSTAT,UCL;**

   Response: *(sample output shown)*

   ```plaintext
   OP SYSSTAT SUMMARY {FIRST|NEXT|LAST} RECORD
   SYS: INHIBITS MSG
   AM: NORMAL
   CM: NO_REQ_PEND
   CMP x-0 P: NORMAL
   CMP y-0 M: NORMAL
   S LSM a,x: [...]  
   B LSM b,x: [...]  
   L HSM c,x: [...]  
   L ORM d,x: [...]  
   L TRM e,x: [...]  
   ...  
   L RSM z,x: [...]  
   ```

2. Verify that the AM and CM are NORMAL.
   a. If the AM and/or CM are not NORMAL, access MCC pages 111 and 115 and restore any out-of-service hardware.
   b. After all units are duplex, re-enter OP:SYSSTAT,UCL.
c. Access MCC page 115. Verify all units, including CLNKS are normal. Take corrective action for any units which are not normal.

d. Access MCC page 111, Verify all units, including the CNI, DFC, and IOP are normal. Take corrective action for any units which are not normal.

3. Verify SCC link functionality. If your office uses its SCC links to perform LTGs, both links must be verified to insure communication to the office is not lost during AM off-line boot.

   a. Go to page 113 and enter message:

      MSG RMV:SCC=x;

      Where: x = is the number of the ACT SCC link.

   b. Verify that the remaining SCC link is active and is operating.

   c. Now restore the SCC link, enter message:

      MSG RST:SCC=x;

      Where: x = is the number of the Out-Of-Service (OOS) SCC link.

   d. Repeat this procedure for the other SCC link.

4. To check current ODD backup schedule, enter message:

   MSG OP:BKUPSTAT;

Response: OP BKUPSTAT
          AM NRODD= 1 TO 192 RODD= EVERY= x AT= y
          or
          NG - NO SCHEDULE REQUEST

Comment: Verify current backup schedule in Automatic ODD Backup Schedule Worksheet (Table 9-2), if present.

If NG - NO SCHEDULE REQUEST is output, then automatic backups are not scheduled.

5. If an automatic ODD backup may occur during either tape dump, enter message:

   MSG CLR:ODDBKUP;

Response: CLR ODDBKUP COMPLETED

Comment: Ensure schedule was removed by entering the previous OP:BKUPSTAT command.

6. To ensure automatic hash reorganization will not start up during the tape dumps, enter message:

   MSG INH:REORG;

Response: OK

7. In the following steps, AM REX is inhibited.

   a. Enter message:

      MSG INH:DMQ,SRC=REX;

      Response: OK

   b. To verify AM REX is inhibited, enter message:
MSG OP:DMQ;
Response: OP DMQ
REQUEST ACTIVE
   NONE
REQUEST WAITING
   NONE
INHIBIT SOURCES
   REX
OP DMQ COMPLETED

8. Enter message:
MSG INH:DMQ:SRC=ADP;
Response: OK

9. Enter message:
MSG INH:RC;
Response: INH RC COMPLETED

10. Other Office Notification:
    If appropriate, notify effected SCC, TCC, STPs, etc., that CCS7 alarms may
    occur due to running of off-line boot.

11. On MCC page 111, verify that the AM is duplex with AM 0 ACT and AM 1
    STBY.
    a. If the AM is not duplex, restore the OOS AM.
    b. If AM 0 is STBY and AM 1 is ACT, enter command on MCC page 111:
       CMD 400
       Response: SW CU 0 COMPLETED
       Comment: Verify AM 0 is ACT and AM 1 is STBY before proceeding.

12. Access the EAI Page
    Note: With software releases prior to 5E16.2, the secondary MHDs were
    selected on the EAI Page. WIth the AM off-line boot feature, it is necessary to
    select the primary MHDs.

13. Enter the following EAI commands:
    CMD 14 clear eai page
    CMD 20 select primary mhd

14. Ensure odd-numbered EAI commands 31 through 43 are backlit and the
    indicator for the primary MHDs show SET before proceeding.

15. Access normal display (NORM DISP).

16. To switch ports, enter command on MCC page 111:
    CMD 401
    Response:
    SW:PORTSW; PF
    REPT ROP x STOPPED
    REPT ROP y STARTED
    SW PORTSW COMPLETED FOR ROP
Screen blanks while ports are being switched.

REPT MTTY x STOPPED
REPT MTTY y STARTED
SW PORTSW COMPLETED FOR MTTY
EAI page comes up followed by MCC page 111.

Comment: If the port switch fails, ensure that the switches on the EAI boards are in the auto position.

17. Repeat Steps 12 and 16 for the other page.

18. To start the off-line boot of the AM, enter message:

MSG EXC:OFLBOOT,IOP1=MAX,MONITOR;

Comment: If the MTTY and ROP are connected to IOP1, a port switch will be performed automatically at this point.

Response:

EXC:OFLBOOT,TRACE,MONITOR,OOS; IP
EXC OFLBOOT STARTED
EXC OFLBOOT IN PROGRESS
RMV DFC x COMPLETED
RMV IOP 1 COMPLETED
RMV MHD x COMPLETED

(A RMV message appears for each AM/CM hardware unit)

SET FRC MSCU=0 COMPLETED
SET FRC ONTCCOM=0 COMPLETED
SET FRC NCOSC=0 COMPLETED
CU RECOVERY COMPLETE
REPT DEGROWTH TTY x COMPLETED
REPT DEGROWTH TTYC x COMPLETED
REPT DEGROWTH SDL x COMPLETED

(A DEGROWTH message appears for each AM/CM hardware unit)

(The following messages print every 5 minutes)

EXC OFLBOOT INFO
BOOT IN PROGRESS
OLBSTATE LASTATE FUNCTION LINE
SENDBOOT EXC_AIMECD MON_BOOT xxx

Initialization PRMs are output on the ROP. If any failing PRMs are encountered, consult the PRM document. If only failing PRMs are output, escalate to your next level of support immediately.

EXC OFLBOOT COMPLETED
OFFLINE SIDE BOOT
COMPLETE

OLBSTATE   LASTATE   FUNCTION   LINE
EXC_BOOT   EXC_AIMECD   OLB_MSG_HANDLER   xxx

Comment: On MCC page 111, AM 0 should be **ACT** and AM 1 should be **UNEQ**. The output responses should verify that the AM has been completely split. Verify status of all units with those in Figure 4-1.

![Diagram of MCC Page 111](image)

**Figure 4-1 — MCC Page 111**

19. Enter message:

   **MSG** ALW:DMQ,SRC=ADP

   **Response:** ALW DMQ SOURCE ADP IS NOT INHIBITED

20. To stop the off-line boot process and reduplex the switch, enter command:

   **CMD** stop:oflboot,rst;

   **Response:**
   
   ```
   STOP:OFLBOOT,RST;  
   PRM_1 E841 0001 2704 xxxx xx xx  
   PRM_0 ECO0 OFDD 1234 xxxx xx xx  
   STOP:OFLBOOT,RST; IP  
   CLR FRC MSCU COMPLETED  
   REPT DFC x IN GROWTH STATE  
   REPT SBUS x IN GROWTH STATE  
   REPT MHD x IN GROWTH STATE
   ```
(A GROWTH message appears for each AM/CM hardware unit)
EXC OFLBOOT STOPPED
RST MSGS=1 COMPLETED
CLR FRC ONTCCOM COMPLETED
STOP OFLBOOT STARTED
TYPE MANUAL
REPT GROWTH DFC x COMPLETED
REPT GROWTH SBUS x COMPLETED
REPT GROWTH MHD x COMPLETED
REPT GROWTH TTY x IN PROGRESS
REPT GROWTH TTY x COMPLETED

(A GROWTH COMPLETED message appears for each AM/CM hardware unit.)

REPT TTY x IN GROWTH STATE
REPT DFC x OUT OF SERVICE
REPT SBUS x OUT OF SERVICE
REPT MHD x OUT OF SERVICE
REPT IOP 1 OUT OF SERVICE

(Out-of-service messages appear for each AM/CM hardware unit.)
STOP OFLBOOT COMPLETED
EXC ODDRCVY=ALL CMP=1-0 STOPPED
REPT CMP=1-0 MATE INITIALIZATION TRIGGER=MANUAL-REQUEST
RST CMP=1-0 COMPLETED
REPT COMMUNICATION RESTORED: AM TO CMP=1-0 MATE
INIT CMP=1-0 MATE_LVL=FI,PUMP EVENT=1 COMPLETED
RST(UCL) CU 1 TASK x QUEUED
RST(UCL) DFC x TASK x QUEUED
RST IOP 1 TASK x MESSAGE STARTED
RMV MHD x COMPLETED
RST ONTCCOM=1 COMPLETED
RST IOP 1 COMPLETED
RST ROP 1 COMPLETED
RST MTC 1 COMPLETED
RST TTY x COMPLETED
RST CLNK=x-1-1-1 COMPLETED STATE = ACTIVE
RST DFC x TASK x MESSAGE STARTED
RST DFC x IN PROGRESS
RST DFC x COMPLETED
REPT DFC x AUTO PUMP STARTED
REPT DFC x AUTO PUMP COMPLETED
RST MHD x IN PROGRESS
ST MHD x COMPLETED
RST CU 1 IN PROGRESS
RST CU 1 COMPLETED

(RST messages appear for each AM/CM hardware unit.)

Comment: On the MCC page 111, the AM and all of its associated hardware should return to an ACT/STBY state.

21. Double-logging was turned on prior to the database dump. During double-logging, the automatic ODD backup schedule (see Table 9-2) should be set to perform a daily backup. To set the automatic ODD backup schedule to perform a daily backup, enter message:

MSG BKUP:ODD:EVERY=1,AT=y;
22. If automatic relation reorganization had been disabled before the ODD and ECD
dumps, enter message:

MSG ALW:REORG;

Response: ALW:REORG;OK

23. To allow Recent Change, enter message:

MSG ALW:RC;

Response: ALW RC COMPLETED

24. To allow REX for CU, enter message:

MSG ALW:REX,CU;

Response: OK

25. To allow REX for CM, enter message:

MSG ALW:REX,CM;

Response: OK

26. To allow REX for SM, enter message:

MSG ALW:REX,SM=1&&192;

Response: OK

27. To allow DMQ, enter message:

MSG ALW:DMQ:SRC=REX;

Response: ALW DMQ ENABLED REX

28. Clear the EAI page:

Access EAI page and enter command:

CMD 14

**********************************************************************

STOP
**********************************************************************

The work required 7 days before the LTG is completed.

Mark your place.

Resume work in Section 4.5 at 4 days before the LTG.

4.4 Is the type of LTG being performed a SMART Conversion LTG?

- If YES, go to Step 4.6.
- If NO, continue with the next step.
4.5 FOUR DAYS BEFORE THE LTG

4.5.1 GENERAL

Four days before the LTG, the RCLOG files are transmitted to Lucent Technologies via RSCANS. This is only necessary if the Offsite Recent Change Reapplication (OFFRCR) is used.

4.5.2 OFF-SITE RECENT CHANGE REAPPLICATION (OFFRCR)

4.5.2.1 Overview

With the LTG on 5E16.2, offices have the option of using or not using the Off-Site Recent Change Reapplication (OFFRCR) feature.

The advantage of using the OFFRCR feature is that the number of RCs to be reapplied on the night of the LTG is reduced. The number of RCs that will be reapplied on the night of LTG consists of the RCs made since the RSCANS transmission for the OFFRCR process until the day of the LTG (4 days of RCs). This office only reapplies 4 days of accumulated RCs with POSTRCR as opposed to 17 days of RCs without OFFRCR. The disks are off-line for a shorter period of time since the reapplication time is reduced. Offices with large numbers of RCs to reapply benefit the most from using this feature. If OFFRCR is used, the following tasks are performed:

1. Four days before the LTG, RCs made since the database dump are electronically data linked to Lucent Technologies using RSCANS.
2. The RCs made since the database dump are applied to the evolved ODD database by the Lucent Technologies ODD tape processing group.
3. The final database tapes with the RCs reapplied from the RSCANS transmission are shipped to the office for the LTG.

=> Read: If your office is using the OFFRCR feature, continue with this procedure. If your office is not using the OFFRCR feature, the work required 4 days before the LTG is complete. Resume work with Section 4.6, Three Days Before the LTG, tomorrow. If the OFFRCR is not used, RC reapplication will consist of the RCs and CORCs made since the database dump. The RCs and CORCs entered since the database dump will not be active until reapplied to the new database after the initialization.

The RSCANS OFFRCR "preparation procedure" has been designed to operate locally from the switch site or remotely from the Switching Control Center (SCC). The actual RSCANS transmission procedure will be performed by the regional Lucent Technologies SUMS Center which will be supporting the office LTG on day -4 of the LTG. The planning of preparation activity should be such to allow sufficient time for the transmission activity to be completed as soon as possible on day -4. Therefore, the preparation activity (on the following pages), should be started early in the morning.

4.5.2.2 LTG With RSCANS OFFRCR

Note: If an automatic BKUP:ODD was done on the switch overnight (on Sunday night), and the site does not want to include recent changes that will be entered on Monday (day -4) in the OFFRCR transmission, proceed to Step 6 (skip Steps 1 through 5).
If the RSCANS OFFRCR feature will be used for this LTG, the following site preparation steps must first be performed from the SCC or on site by the switch administrators:

1. To dump a list of all terminals currently using RC, enter message:

   MSG OP:RCUSER;

   Response:
   
   OP RCUSER x ACTIVE RC USERS
   RC PROCESS TTY/LOGICAL/CLERK-ID PART 1 OF 1
   RCV:MENU,APPRC TERM-ID= xxxx
   or
   OP RCUSER 0 ACTIVE RC USERS

   Comment: Notify all users that RC will be inhibited.

2. *Notify all local and remote RC centers that RC will be inhibited.*

3. To inhibit new RC sessions, enter message:

   MSG INH:RC;

   Response: INH RC COMPLETED

   SYS INH status indicator is backlit.

   Comment: Access MCC page 110 and verify that box 04 is backlit.

   Access MCC page 116. Verify that the ODD EVOL ACT field is backlit. For OSPS offices, verify that the OSPS EVOL ACT field is backlit.

4. Enter either message:

   MSG BKUP:ODD; or BKUP:ODD,AM;

   Response:

   [BKUP ODD FULL AM IN PROGRESS]
   [OSPS EVOLUTION AM COMPLETED]
   BKUP ODD FULL AM COMPLETED
   BKUP ODD COMPLETED

   *(The next two messages may appear any time during the BKUP:ODD.)*

   [AUTOEVOL INVOKES MOVELOG TO RECLAIM SPACE IN /rclog]
   [THE /rclog DOES NOT HAVE ENOUGH SPACE]
   [TOTAL NUMBER OF FREE SPACE ON /rclog is xxxx]
   [DB RETROFIT PROCESS MOVELOG COMPLETED]
   [DETAIL INFO IN /rclog/mvlog.README]
   AUTOMATIC CORC AND RECENT CHANGE RETROFIT PROCESS STARTED
   AUTOMATIC CORC AND RECENT CHANGE RETROFIT PROCESS
   EVOLUTION PROCESS TARGET SOFTWARE RELEASE IS 5E16.2
   DB RETROFIT PROCESS KEEPLOG COMPLETED
   DETAILED INFO IN /rclog/kplog.err
   AUTOMATIC CORC AND RECENT CHANGE RETROFIT PROCESS
   RECENT CHANGE EVOLUTION STARTED
   [CNVT RCLOG EVOLUTION INITIALIZATION STARTED]
   [CNVT RCLOG DATA TABLES INITIALIZED]
   [CNVT RCLOG EVOLUTION INITIALIZATION IN PROGRESS]
   [INITIALIZING NEW VIEW TABLE: RCnewvwtab_tab[ ]]
   [INITIALIZING OLD VIEW TABLE: RColdvwtab_tab[ ]]
[CNVT RCLOG EVOLUTION INITIALIZATION COMPLETE]
[CNVT RCLOG EVOL: RC EVOLUTION RC STEP STARTED]
[CURRENT ERROR FILE IS /rclog/RCERRx]
[CNVT RCLOG EVOL: RC EVOLUTION RC STEP IN PROGRESS]
[VIEW NUMBER xxxx HAS BEEN READ]
(Output approximately every two hundred views)

CNVT RCLOG EVOL: RC EVOLUTION RC STEP COMPLETION SUMMARY
xxx VIEWS READ
xxx VIEWS CREATED
xxx VIEWS IN ERROR
FIRST ERROR FILE IS /rclog/RCERRxx
LAST ERROR FILE IS /rclog/RCERRxx
[RC EVOLUTION LOGFILE ANALYSIS PROCESS STARTED]
[RC EVOLUTION LOGFILE ANALYSIS PROCESS COMPLETED]
[xxx VIEWS LOGGED]
[DETAIL ANALYSIS REPORT FILE IS /rclog/RCtype.rpt]

Note: The next four messages are only output by OSPS offices that have used the 9 recent changes that are supported by OSPS evolution.

[CNVT RCLOG EVOLUTION: OSPS STEP STARTED]
[CURRENT ERROR FILE IS /rclog/RCOSPSSERRx]
[CNVT RCLOG EVOLUTION: OSPS STEP COMPLETION SUMMARY]
[xxx VIEWS READ]
[xxx VIEWS CREATED]
[xxx VIEWS IN ERROR]
[FIRST ERROR FILE IS /rclog/RCOSPSSERRx]
[LAST ERROR FILE IS /rclog/RCOSPSSERRx]
[RC EVOLUTION: OSPS LOGFILE ANALYSIS PROCESS STARTED]
[RC EVOLUTION: OSPS LOGFILE ANALYSIS PROCESS COMPLETED]
[xxx VIEWS LOGGED]
[DETAIL ANALYSIS REPORT FILE IS /rclog/RCosps.rpt]

CNVT RCLOG EVOL COMPLETE
AUTOMATIC CORC AND RECENT CHANGE LTG PROCESS
CORC EVOLUTION STARTED
[CNVT CORCLOG EVOL AM COMPLETE]
[xxxx CORCS EVOLVED]
[xxxx CORCS IN ERROR]
[xxxx RDNT CORCS RMVD]
[CNVT CORCLOG EVOL IN PROGRESS]
[CORC NUMBER xxx HAS BEEN READ]
[xxxx CORCS xxxx TRNCORCS HAVE BEEN LOGGED IN THE CORC]
[EVOLVED LOGFILES]
CNVT CORCLOG EVOL COMPLETE
AUTOMATIC CORC AND RECENT CHANGE LTG PROCESS COMPLETED

Comment: If the ODD backup fails, re-enter the BKUP:ODD,AM message, if successful, continue with the procedures. If the second ODD backup is unsuccessful, escalate to your next level of support.
If OSPS evolution errors are output, proceed to Section 6.5.10.3.
If RC or CORC evolution errors are output, proceed to Section 6.5.10.

5. The recent change log file must be processed on the switch before it can be transmitted using RSCANS.
Perform the following steps:

a. To determine the quantity of RCs that will be transmitted, enter message:

   MSG REPT:RCHIST,ACTIVITY;

   Response: OFFRCR LOGFILE DUMP TOOL STARTED - DUMPING
   LTG RC LOGFILE
   REPT RCHIST CLERK= HISTACT STARTED
   REPT RCHIST CLERK= HISTACT COMPLETED

   Comment: The data supplied under the "Demand Count" gives the
   pending number of RCs.

b. To prepare the rclog file for transmission, enter message:

   MSG EXC:ENVIR:UPROC,FN="/no5text/rcr/offrcdump",ARGS="LTG";

   Response:

   .
   . OFFRCR LOGFILE DUMP TOOL STARTED - DUMPING
   LTG RC LOGFILE

   .
   . OFFRCR LOG FILE DUMP TOOL COMPLETED

   Comment: If any warning messages are output indicating OFFRCR dump
   errors, escalate to your next level of support.

c. Enter message:

   MSG OP:STATUS:LISTDIR,FN="/rclog";

   Comment: A list of files is output. In addition to other files, the following
   file names should be output:
   
   /rclog/full.offrc.Z
   /rclog/RCrpt.offrc
   /rclog/RClcd.offrc

   d. To dump the hashsum value, enter message:

   MSG EXC:ENVIR:UPROC,FN="/bin/sum",ARGS="-r"="/rclog/full.offrc.Z";

   Response: A hashsum value and block size are output.

   Comment: Record the hashsum value and block size. These values can be
   used (if needed) by the Lucent Technologies SUMS center to
   check the file integrity.

6. To allow Recent Change, enter message:

   MSG ALW:RC;

   Response: ALW RC COMPLETED

7. To diagnose and restore the SCANS data link, enter message:

   MSG RST:SDLC=0;
8. A transaction ID will also be required to transmit the file "full.offrc.Z" using the RSCANS procedure.

   To establish this ID, enter message:

   MSG IN:XFER:START;

   Response: TRANSACTION ID = xxxxxxxxxx

   Record this ID number: ___________________ .

9. Once the proper log file of recent changes has been created in the /rclog directory and a transaction ID number has been obtained, the Lucent Technologies SUMS Center supporting the site LTG should be contacted. (See Section 1.12.) The SUMS Center will verify the following information with the site:

   • Office Base & Control
   • The SEND (DDD1) Number
   • The RECEIVE (DDD2) Number
   • The Transaction ID Number.

   The SUMS Center will also verify that the appropriate file has been created in the /rclog directory.

   With this information, the SUMS Center will establish communications with the Database Evolution RSCANS computer at Lucent Technologies and transmit the log file for OFFRCR processing.

10. The following steps (a and b) are for OSPS offices only:

   a. To dump a list of OSPS RCs, enter message:

      MSG OP:STATUS:LISTDIR,FN="/updtmp/ospsevol";

      Response: OP STATUS LISTDIR STARTED

      (Listing of the directory is dumped to the ROP.)

   b. Check the output for any files that have the naming convention of:

      x.error.log

      Where: x = the number of the processor (193=AM, 194=CMP, 255 = redlog, all others are for SMs)

      If any files are listed containing this naming convention, refer immediately to Section 6.5.10.3.

*******************************************************************************

The work required 4 days before the LTG is complete.

Mark your place.

Resume work in Section 4.6 at three days before the LTG.
4.6 THREE DAYS BEFORE THE LTG

4.6.1 SOFTWARE UPDATE CHECK

Note: Using the latest issue of the Software Compatibility Matrix [available at URL: http://www.lucent.com/support], determine the cutoff point for SUs to current software release.

In the following Software Update (SU) check, the term "temporary" refers to SUs that have not yet been made official. It does not refer to TMP SUs or Craft (CFT) overwrites.

1. On Master Control Center (MCC) page 1950, enter the following command to display all non-official SU(s):

   CMD 9103

   Response: In the field adjacent to poke 9103, IN PROGRESS is backlit followed by either COMPLETED or ABORTED.

   Comment: COMPLETED followed by an output list of temporary SUs to the Read-Only Printer (ROP) indicates there may be temporary SUs active within the switch. If all SUs have been made official, then no temporary SU is active within the switch. In addition, MCC Page 1990 can be accessed to ensure there are no temporary SUs.

   ABORTED most likely indicates there are either no temporary SUs in the switch (UPD USRERR 4 on ROP) or no SUs in the switch at all (UPD USRERR 1 on ROP).

2. If any SU(s) are in a temporary state, they must be made official or backed out. Refer to 235-105-210, Routine Operations and Maintenance.

3. Contact your Lucent Technologies SUMS Center to see if any additional SU’s are required. DO NOT APPLY any SU’s unless directed to do so by Lucent Technologies Technical Support.

4. Activate SUs sent from SCANS. Refer to 235-105-210, Routine Operations and Maintenance.

4.6.2 VERIFY DUPLEX SYSTEM

At this point, the system should be running full duplex in the root partition with no inhibits set (except message class), no major off-normal indicators active, and no utility breakpoints set.

1. Enter message:

   MSG OP:STATUS:FILESYS;

   Response:

   OP STATUS FILESYS STARTED
   /database on /dev/db read/write on Day Month Time Year.
   / on /dev/root read/write on Day Month Time Year
   /etc on /dev/etc read/write on Day Month Time Year
   :
Caution: To ensure that the system is running in root partition, the partitions shown must be part of the output. If these partitions are not part of the output, your system is not running in root partition. If you are NOT running on root, escalate to your next level of support before continuing.

2. On MCC page 111, verify that the AM is duplex with AM 0 ACT and AM 1 STBY.
   a. If the AM is not duplex, restore the OOS AM.
   b. If AM 0 is STBY and AM 1 is ACT, enter command on MCC page 111:
      
      CMD 400
      
      Response: **SW CU 0 COMPLETED**
      
      Comment: Verify AM 0 is ACT and AM 1 is STBY before proceeding.

3. On MCC page 110, field 16 (Routine Audits) should be backlit because the SODD audit has been automatically inhibited at this point in the procedure. SODD is automatically inhibited at the -3 week point by bkup:odd:oddevol,togeneric=111 command.


5. Access EAI page.

6. On EAI page, field 31 (Backup Root) should be backlit. If field 30 is backlit, escalate to your next level of support.

7. Ensure odd-numbered EAI commands 31 through 43 are backlit.

8. Access normal display (NORM DISP).

9. To switch ports, enter command on MCC page 111:

   CMD 401
   
   Response:
   
   SW:PORTSW; PF
   REPT ROP x STOPPED
   REPT ROP y STARTED
   SW PORTSW COMPLETED FOR ROP

   Screen blanks while ports are switched.

   REPT MTTY x STOPPED
   REPT MTTY y STARTED
   STARTED SW PORTSW COMPLETED FOR MTTY
   
   EAI page comes up followed by MCC page 111.

   Comment: If the port switch fails, ensure that the switches on the EAI boards are in the auto position.

10. Repeat Steps 5 through 7 for the other EAI page.
11. Access normal display (NORM DISP).

12. On MCC page 123 and MCC page 125, all disks are **ACTIVE** (with the exception of MHDs 14 and 15, if equipped).

13. Access MCC page 1851 and verify that CMP 0-0 is the **ACT** CMP (under the **CMP 0 PRIM STAT** box) and CMP 1-0 is the **STBY** CMP (under the **CMP 0 MATE STAT** box).

14. **If** CMP 0-0 is **not** the ACTIVE (primary) CMP, enter message:
   
   MSG **SW: CMP=0-0**;

   Response:

   SW: CMP=0-0; PF
   [EXC ODDRCVY=ALL CMP=1-0 STOPPED]
   [REPT CMP=1-0 MATE INITIALIZATION TRIGGER=SW-REQUEST]
   [REPT MSKP_ENVIRONMENT:]
   [CMP=1-0 PHASE 1&2 INIT COMPLETION TIME: xxxxx TYPE:xxx]
   [EVENT=x]  
   EXC ODDRCVY=ALL CMP=1-0 STARTED
   SW CMP=0-0 COMPLETED
   [REPT COMMUNICATION RESTORED: AM TO CMP=1-0 MATE]
   [REPT MSKP_ENVIRONMENT:]
   [CMP=1-0 PHASE 3 INIT COMPLETION TIME: xxxxxxx TYPE:xxx]
   [EVENT=x]  

   **CMP 0-0 becomes PRIMARY (active), CMP 1-0 becomes MATE (standby).**

4.6.3 DETERMINE IF CNI IS EQUIPPED IN THE OFFICE

To determine if your office is equipped with CNI, perform the following:

1. Access MCC page 196.

2. Enter the following data:

   **INPUT VIEW, etc.** 8.15R
   
   *1. OFFICE ID (enter office ID)

   **5ESS SWITCH**

   **SCREEN 1 OF 2** **RECENT CHANGE 8.15**

   **CCS OFFICE PARAMETERS**

   *1. OFFICE ID _________ 9. ADDR COMP _ 19. DIGIT _  
   2. CNI EQUIP _ 10. ANSWER _ 20. BLNO RNSD _  
   3. DLN EQUIP _ 11. COT _ 21. UBL RNSD _

3. If field 2 (CNI EQUIP) is **Y**, then your office is equipped with CNI.

4. Exit recent change.
4.6.4  CNI DATABASE VERIFICATION (CNI OFFICES ONLY)

In this section, the CNI database will be audited to verify the integrity of the data.

1. If your office is equipped with CNI, on MCC page 1980, enter message:

   CMD 803

   Response:

   UPD:GEN:APPLPROC,ARG="cniaud";
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   /no5text/cni/proc/cni.niaud
   DEL:LOG,LG=MTCLOG,KW="NIDATA"; IP (ROP only)
   DEL LOG FILE MTCLOG DELETION COMPLETE xx DELETED
   AUD:NIDATA=1; PF
   AUD NIDATA 1 COMPLETED
   xx ERRORS FOUND
   xx ERRORS CORRECTED
   AUD:NIDATA=2; PF
   AUD NIDATA 2 COMPLETED
   xx ERRORS FOUND
   xx ERRORS CORRECTED
   AUD:NIDATA=3; PF
   AUD NIDATA 3 COMPLETED
   xx ERRORS FOUND
   xx ERRORS CORRECTED
   AUD:NIDATA=4; PF
   AUD NIDATA 4 COMPLETED
   xx ERRORS FOUND
   xx ERRORS CORRECTED
   AUD:NIDATA=5; PF
   AUD NIDATA 5 COMPLETED
   xx ERRORS FOUND
   xx ERRORS CORRECTED
   AUD:NIDATA=8; PF
   AUD NIDATA 8 COMPLETED
   xx ERRORS FOUND
   xx ERRORS CORRECTED
   AUD:NIDATA=10; PF
   AUD NIDATA 10 COMPLETED
   xx ERRORS FOUND
   xx ERRORS CORRECTED
   UPD GEN APPLPROC CNIAUD TOOL REPORT:
   .
   .
   . CNI.NIAUD COMPLETED
   .
   .
   . UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

   Comment: If the cni.niaud fails, refer to Section 6.4.8.4.

4.6.5  VERIFY CLEANUP FROM PREVIOUS TRANSITIONS

1. Enter message:

   MSG OP:STATUS,LISTDIR,FN="/updtmp";

2. From the output, verify that entries for site or retrofit do not exist. If entries for
   site or retrofit do exist, they must be removed. To successfully remove these
directories, seek technical assistance from the SUMS Center.

3. Enter message:

   MSG OP:STATUS,LISTDIR,FN="/etc/log";
4. If an entry for the suprlog directory exists, the character size should be 0 (zero). If an entry for the suprlog exists and the character size is not zero, escalate to your next level of support.

5. Also from the last output (from /etc/log), verify that no entries exist for the following:
   appllog
   appldisklog
   applgrappl
   applswfwdlog

   If any of the above files exist, they must be removed unless they end with a .sv. To successfully remove these files, seek technical assistance from the SUMS Center.

4.6.6 VERIFY AMA PROCESSING ARRANGEMENTS
Depending on local procedures, special arrangements might be needed to process AMA data from the off-line disks. These arrangements should have been made during the -4 week interval of this LTG. See Section 3.9.10, AMA OFF-LINE PROCESSING.

4.6.7 OFFICE BACKUPS
1. Make full office backups.
   Reference: Refer to 235-105-210, Routine Operations and Maintenance.
2. Record date and time in appropriate row of the Office Backups Worksheet (Table 9-3).

******************************************************************************
STOP
******************************************************************************

The work required 3 days before the LTG is completed.
Mark your place.
Resume work in Section 4.7 at 1 day before the LTG.
4.7 ONE DAY BEFORE THE LTG

4.7.1 PRE-LTG CHECKLIST

One day before the LTG, operating company personnel should review the Pre-LTG Office Condition Checklist (Table 4-1) as a final check to make certain the office is ready for the LTG. The LTG coordinator should sign off on the lines supplied in the checklist.

4.7.2 REMOVE UNNECESSARY FILES AND CHECK FILE SPACE

The Enter and Proceed stages save user logins and other files in the /unixa/users directory. To avoid lengthy Enter and Proceed stage processing times, unnecessary files, especially large unnecessary files, should be removed prior to performing the implementation procedures.

1. To produce a list of files and directories in /unixa/users, enter message:

   MSG  OP:STATUS:LISITDIR,FN="/unixa/users";

   Response:  OP STATUS LISTDIR STARTED

   Sample Response shown

   1 drwxrwxrwx  3 root 208 Jul 13 03:06 .
   1 drwxr-xr-x  8 root 144 Jul 8 09:16 ..
   407 Crw-r-r-r  1 root 208240 Jul 12 05:29 CMP.out.adr
   407 Crw-r-r-r  1 root 208240 Jul 12 05:21 CMP.out.sym
   1 drwxr-xr-x  2 manager 32 Jul 12 04:39 manager
   .. .........  .. ... ... ...

   OP STATUS LISTDIR COMPLETED

2. Examine the list produced in the last step and remove unnecessary files. Files ending with the suffix ".adr" and ".sym" will NOT be saved and do not have to be removed. Also the manager directory should NOT be removed.

   If there is any doubt as to which files to remove, ESCALATE TO YOUR NEXT LEVEL OF SUPPORT.

   To remove files from the /unixa/users directory, enter message:

   MSG  CLR:FILESYS,FILE,FN="/unixa/users/ filename";

   Where:  filename = name of file listed in the output from the

   Response:  CLR FILESYS FILE COMPLETED

   MSG  OP:STATUS:FREEDISK,FN="/";

4.7.3 LTG IMPLEMENTATION

If the LTG tapes have arrived at the office, some work may be performed in Section 5, LTG Implementation. All work in the System Preparation stage may be performed one day before the LTG. Do not perform any procedures in the Begin stage until the day of the LTG.

4.7.4 PROCEDURES REVIEW

Section 5 contains the procedures to perform the LTG and should be reviewed at this time to become familiar with the sequence of work that will be necessary.
<table>
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<tr>
<th>ITEM</th>
<th>SIGN OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office has been running all REX tests during the past 3 weeks.</td>
<td></td>
</tr>
<tr>
<td>All REX tests passed. (If not, failing equipment has been repaired and retested ATP.)</td>
<td></td>
</tr>
<tr>
<td>Hardware units in the office are not being removed automatically.</td>
<td></td>
</tr>
<tr>
<td>MCTSI side 0/1 diagnostics are ATP for all SMs except as noted in MCTSI diagnostics section.</td>
<td></td>
</tr>
<tr>
<td>BTSR diagnostics are ATP for both controllers on all SMs.</td>
<td></td>
</tr>
<tr>
<td>CMP diagnostics are ATP (CMP 0-0 and CMP 1-0).</td>
<td></td>
</tr>
<tr>
<td>Office is within limits for asserts, Single Process Purges (SPPs), call completion, etc.</td>
<td></td>
</tr>
<tr>
<td>Office is up to the required CN level.</td>
<td></td>
</tr>
<tr>
<td>Expiration of appropriate soak intervals since last SU, CN application, and/or growth.</td>
<td></td>
</tr>
<tr>
<td>Two FX lines are available for use during the LTG.</td>
<td></td>
</tr>
<tr>
<td>At least one test line per SM is available.</td>
<td></td>
</tr>
<tr>
<td>Tape unit passed most recent verify.</td>
<td></td>
</tr>
<tr>
<td>Correct ODD tapes are available.</td>
<td></td>
</tr>
<tr>
<td>All other tests specified in the LTG procedures up to this point passed.</td>
<td></td>
</tr>
<tr>
<td>AM off-line boot has been run at least once in the last 4 days.</td>
<td></td>
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5. LTG IMPLEMENTATION

5.1 REQUIREMENTS FOR STARTING THE LTG

5.1.1 OVERVIEW

This section contains the procedures to perform the Large Terminal Growth (LTG). Work in this section is done on the day of the LTG. Work up to but not including the Begin stage can be done any time during the day or even one day before the LTG provided that the LTG tapes have arrived at the office.

Throughout the LTG Implementation, a figure pertaining to each stage will show major actions that were performed, a drawing of the system status (at the completion of the stage), and other key indicators of successful completion. Shading is used in the figures to differentiate between the active side (not shaded) and the side of the unit that is Standby (STBY), Off-Line (OFL), Unavailable (UNV), Deactivated (DACT), etc.

The Master Control Center (MCC) pages 1980, 1984, 1985, and 1989 are the Retrofit Control Language (RCL) pages that provide the poke commands required to perform the Large Terminal Growth (see Tables 9-15 through 9-18). The 1980, 1985, and 1989 pages will do the execution of the LTG and display error messages when abnormal conditions occur. The 1984 page is a tools page that is used to manually execute LTG related tools (see Tables 9-18 and 9-24).

All MCC page statuses on the Retrofit Control Language (RCL) pages (1980, 1984, 1985, and 1989) will not be shown due to the frequency of change for each step and the quickness that they change. Only critical points in the night of LTG and at "Pause" points when a 500 poke command is needed to resume the process will be shown. MCC pages shown are for example only and may vary slightly from what is seen during your office’s LTG.

Read: Section 6 and 8.4 contains detailed recovery procedures for most error situations that can occur throughout the LTG. It is important to become familiar with these sections. Contained in the first few pages of the recovery procedures is a section entitled Error Recovery Guidelines. If any unexpected error occurs during the LTG, the starting point for recovery is the Error Recovery Guidelines — DO NOT attempt error recovery without consulting this section first.

Note: The two system lines at the top of all MCC Pages depicted in this manual may not match the actual appearance of these lines on your switch. The fields that are backlit in these MCC Page representations may be different than the fields actually backlit on your Office terminal.

5.1.2 MATERIALS ON HAND

The following materials must be on hand for the LTG:

- A copy of the LTG Notes.
- All items on the critical item list (Table 2-3).
- Equipment and supplies for cleaning the tape drive.
- The list of lines to be tested after the LTG.
- Sufficient supply of paper and a new ribbon for the Read-Only Printer (ROP) so these items will not have to be replenished or changed during the LTG.
• Office spares as applicable.
• For only those offices with the Operator Services Position System (OSPS) feature, OSPS Administrative Processor (OAP) application software.

5.1.3 LTG TAPES

SINGLE TAPE RETROFIT (STR)

Single Tape Retrofit is a streamlined enhancement to the LTG tape reading process. Multiple tapes are not used with STR. Only one tape is required. All required LTG data is contained on the STR Tape. Note that two copies of the ECD and ODD tapes are sent to the office. The duplicate tape is supplied as a backup copy.

The tapes to be used for the LTG should be removed from their shipping cases and allowed to reach room temperature and humidity before use (approximately 4 hours). Make sure all tapes are write protected.

The LTG tape and the duplicate backup copy contain the following:

- AM ODD/ECD.
- SM ODD tapes (number is dependent on office size).
- Disk Options for the optional disk pairs (MHDs 4 and higher)
- Volume Table Of Contents (VTOC).
- TOP/tools

Note: If TOP tapes are received, they ARE NOT loaded as part of the LTG. These tapes are only to be used in accordance with 235-105-250, System Recovery Procedures.

5.1.4 LTG NOTES

A copy of the LTG Notes will be arriving (from Lucent Technologies) with the LTG tapes. The LTG Notes provide additional information and procedures for the upcoming LTG that are not included in this document. Supplemental information and procedures that may not have been available at publication of this document may be included in the LTG Notes. A copy of the LTG Notes may also be obtained by contacting your SUMS Center (see table 1-1). It is critical to obtain the latest copy of the LTG Notes, as the notes are updated weekly.

LTG Notes are also available on the web at http://www.lucent.com/support. All current 5ESS RETROFIT/SRU/LTG users MUST REGISTER to access this website.

To register: Click on the “Register Now” link and complete the required fields on the form.

Follow these steps to get to the Retrofit Index Page:

Note: You must be logged into this site in order to follow the steps below.

• Place your mouse over the "Documentation and Downloads" link at the top of the screen.
• Click on the "Product Index" link.
• Click on the "5ESS Switch" link.
• Click on the “Release Information” link. Here you will find access to the most current Retrofit and LTG Notes, the SU Compatibility Notice, and Current CFT Descriptions.

5.1.5 TERMINAL ACCESS

The AM off-line boot feature impacts the states of the various terminals (MCC, STLWS, RC/V, UNIX, etc.) connected to the 5ESS® switch during the transition. The state of a specific terminal depends on which Input/Output Processor (IOP) the terminal is connected. The AM off-line boot process isolates equipment on side 1 of the switch. IOP 1 is taken out-of-service. Therefore, terminals connected to the off-line side of the switch will provide invalid information on the status of the switch. If the MCC is connected to IOP 1, the AM off-line boot process called by the proceed poke in Section 5.6.4 will automatically execute a port switch. When the port switch is executed, the MCC will go blank and is then initialized on IOP 0. It is very important to ensure that all messages/commands required to perform the transition are input at the MCC. The MCC and SCC are the only terminals that will always have access to the active of the switch.

Terminals used when performing a LTG should have access to all command groups. See Section 3.9.6 (Table 3-2). The command restriction feature restricts access to 5ESS switch input commands and their associated command pokes based on command groups. To determine the authority level, enter the following message at each terminal that will be used for the software release.

MSG V FY: AUTH;

Response:

VFY AUTH COMPLETED

TERM: a AUTHORITY LEVEL: b [USER: c]

... d d d d d d d d

or

NG - UNABLE TO ACCESS AUTHORITY ADMINISTRATION (MCC only)

Where:
a = terminal identifier (for example, ttya)
b = auth_chk field in ECD getty form
c = user identifier
d = command group name [not output if the AUTHORITY LEVEL (b) is equal to n].

Comment: The value following the AUTHORITY LEVEL field for each terminal to be used during the transition should be ”n” (none). If this value is not ”n”, the command restriction administrator for this office should be contacted to make the necessary changes.

For further information on the command restriction feature, refer to the Authority Management section of 235-105-210, Routine Operations and Maintenance Procedures.

---

1. Registered trademark of X/Open Company Ltd.
5.1.6 OSPS OFFICE SOFTWARE
For offices equipped with the Operator Services Position System (OSPS) feature, all
OSPS OAPs on the 5ESS switch must be loaded with new software release application
software (via floppy disks). The procedure for loading the application software is
packaged with the floppy disks.

5.1.7 ODD AND OSPS EVOLUTION CHECK
1. The ODD EVOL ACT box on MCC page 116 should be backlit. If the ODD EVOL
ACT box is not backlit, escalate to your next level of support.
2. For OSPS offices, the OSPS EVOL ACT box on MCC page 116 should also be
backlit. If the OSPS EVOL ACT box is not backlit, escalate to your next level of
support.

5.1.8 OFFICE STABILITY
1. The items listed in Table 4-1, Pre-LTG Condition Checklist, should be considered
when determining office stability.
2. At this point, the LTG Coordinator should confirm office stability before
proceeding with the LTG.

5.1.9 RCL PAGES AND AVAILABLE POKES
There are two ways to initialize tools from the 1980 MCC page:
1. If a 3XX command has not been entered and no procedures are running, enter
8XX. The 1984 page is then displayed showing all the associated tools so that
the appropriate tool may be selected.

Or,
2. Enter 3XX directly from the 1980 page. This starts the procedure while
displaying the 1985 page without accessing the 1984 page. The 1984 page may
be entered to view the procedure at this point but an 8XX command will not be
accepted.

Tables 9-15 through 9-24 show the various commands, arguments and tools used in

The following definitions may be useful in determining how to execute the tools listed
in tables 9-21 and 9-23.

Required Arguments are arguments that must be entered along with a given poke.
For example: 501,sysstat executes the "APPLPROC" tool with an argument requesting
a system status to be printed.

Optional Arguments are arguments that may or may not be entered along with the
poke. Also, when specified, optional arguments are separated by a white space. For
example: 512,ACT NVFY NPERF executes the "SM OFL PUMP" tool with a required
argument of ACT and optional arguments of NVFY and NPERF.

Default Arguments are arguments that the tool supplies if no arguments have been
specified along with the poke.

Some tools on the 1984 page have backout actions (for example, tools such as MOP,
READHDR, etc). Table 9-23 provides a complete list of all tools that do have backout
actions. Other tools do not have any backout actions (for examples, tools such as
"DUMP MHDSTAT", "DUMP SUPR LOG", etc). Table 9-22 provides a complete list of
tools that do not have any backout actions.
5.2 SYSTEM PREPARATION

OVERVIEW

The following will be performed during this stage:

- Check office records queue
- Check/remove utility breakpoints
- Perform final Software Update (SU) check
- Make office backups
- Run Module Controller/Time Slot Interchanger (MCTSI) diagnostics
- Run Communications Module Processor (CMP) diagnostics
- Tape Drive Cleaning, Testing and Verification

Caution: All input messages must be entered at the Master Control Center (MCC). Failure to do so could result in missing the output responses to messages and jeopardize the transition because of differences in the MCC and other terminals in the office.

5.2.1 CHECK OFFICE RECORDS QUEUE

1. Verify that no office records are PROCESSING or PENDING during the procedures:
   Enter MCC MSG: **OP:OFR:STATUS**;

   Sample ROP Response:
   
   ```
   OP OFR STATUS SCHED
   
   REQID CAT FORM DEVICE STATUS
   xx xxx xxxx ttyx xxxxxx
   
   OP OFR STATUS PARM
   PRINTING SCHEDULE: MON TUE WED THU FRI SAT SUN
   xxx xxx xxx xxx xxx xxx
   START TIME = xx DURATION = x STATUS = xxxxxxx
   
   [OP OFR STATUS KEYS]
   [CURRENT KEYS: NO OFFICE RECORDS IN PROGRESS]
   ```

2. **Abort any** PROCESSING or PENDING **office records** that are indicated in the queue:

   Enter MCC MSG: **ABT:OFR**;

   Response:
   
   ```
   ABT OFR STATUS = SUCCESSFUL OFR ABORT
   OR
   NG -- NO JOBS HAVE BEEN SCHEDULED
   ABT OFR STATUS = INVALID REQUEST
   ```

3. **Remove the** /rclog/ORbackup **file** so that the office records will be re-initialized after the system SwitchForward:

   Enter MCC MSG: **CLR:FILESYS:FILE,FN="/rclog/ORbackup"**;

   Response:
   
   ```
   CLR FILESYS FILE COMPLETED
   - (or) -
   [CLR FILESYS FILE STOPPED]
   ```
5.2.2 FINAL UTILITY BREAKPOINT CHECK

Note: Any utility breakpoints remaining after this check will be automatically removed during the system initialization. Record any breakpoints that may be present.

Warning: The following steps may involve removing utility breakpoints. Do not remove any current utility breakpoints unless they are non-essential. Obtain approval if breakpoints will be removed.

Approval to remove AM and/or CMP and/or SM Utility Breakpoints

1. Access MCC page 120.

2. Using the following steps, check for AM utility breakpoints and remove if non-essential.
   a. To list AM utility breakpoints, enter message:
      
      MSG OP:UTIL;

      Response:
      
      OP UTIL COMPLETED #G1 - #G2
      DTIME = a DCYCLE = b DEATH DELAY = c
      NO FLAGS DEFINED
      NO TRACE DEFINED

      Comment: A response of both NO FLAGS DEFINED and NO TRACE DEFINED indicates there are no AM utility breakpoints present. If the indicated responses are not received, there are AM breakpoints in the system.
   b. If the AM breakpoints are to be removed, enter message:
      
      MSG CLR:UTIL;

      Response: CLR UTIL COMPLETED #G1

3. Using the following steps, check for Communications Module Processor (CMP) utility breakpoints and remove them if non-essential.
   a. To list utility breakpoints for the primary CMP, enter message:
      
      MSG OP:UT:CMP=0,PRIM,UTIL;

      Response: OP UT CMP=x-0 PRIM UTIL COMPLETED - NO WHENS

      Comment: A response of NO WHENS indicates there are no utility breakpoints present for the primary CMP. Any other response indicates that breakpoints are present. If breakpoints exist, they must be removed.
   b. If the primary CMP breakpoints are to be removed, enter message:
      
      MSG CLR:UT:CMP=0,PRIM,UTIL;

      Response: CLR UT CMP=x-0 PRIM UTIL {COMPLETED|NO WHENS TO CLEAR}
   c. To list utility breakpoints for the mate CMP, enter message:
      
      MSG OP:UT:CMP=0,MATE,UTIL;

      Response: OP UT CMP=x-0 MATE UTIL COMPLETED - NO WHENS

      Comment: A response of NO WHENS indicates there are no utility
breakpoints present for the mate CMP. Any other response indicates that breakpoints are present. If breakpoints exist, they must be removed.

d. If the mate CMP breakpoints are to be removed, enter message:
   
   MSG CLR:UT:MP=0,MATE,UTIL;
   
   Response: CLR UT CMP=x-0 MATE UTIL {COMPLETED|NO WHENS TO CLEAR}

4. Using the following steps, check for SM utility breakpoints and remove if non-essential.

a. To list per SM utility breakpoints, enter message for each SM:
   
   MSG OP:UT:SM=1&X,UTIL;
   
   Where: X = highest-numbered SM
   
   Response: OP UT SM=A UTIL COMPLETED - NO WHENS (Output for each SM)
   
   Where: A = SM number
   
   Comment: A response of NO WHENS indicates there are no utility breakpoints present for the indicated SM. Any other response indicates that breakpoints are present.

   If an OP UT SM.....PAGING FAILURE message is output, re-enter the output SM utility breakpoint message for the SM with the paging failure.

b. **This step is only necessary if the previous step failed.** If the previous OP:UT:SM=1&X,UTIL message failed, use the following message for each SM:
   
   MSG OP:UT:SM=y UTIL;
   
   Where: y = any numbered SM (1,2,3,...,n), repeat message for each SM.

   **Note:** Repeat input message for each SM in the office.

c. If the SM breakpoints are to be removed, enter message:
   
   MSG CLR:UT:SM=x[&y],{UTIL | UTILFLAG=z};
   
   Where: x = the SM number or the lower limit of a range of SM numbers on which utility breakpoints are to be removed.
   
   y = the upper limit of a range of SM number on which utility breakpoints are to be removed.
   
   UTIL = option to remove all utility breakpoints on indicated SM.
   
   UTILFLAG = option to remove specific utility breakpoints z = specific breakpoint) on indicated SM.

   Comment: Either UTIL or UTILFLAG must be used.

   Response: CLR UT SM=x UTIL {COMPLETED|NO WHENS TO CLEAR}

5.2.3 FINAL SOFTWARE UPDATE CHECK

**Note:** Contact your SUMS Center to determine the cutoff point for Software Updates (SUs) to the current software release. No SUs are to be applied unless specifically instructed by your SUMS Center.
In the following SU check, the term "temporary" refers to SUs that have not yet been made official. It does not refer to TMP SUs or Craft (CFT) overwrites.

1. On Master Control Center (MCC) page 1950, enter the following command to display all non-official SU(s):
   
   CMD 9103

   Response: In field adjacent to poke 9103, **IN PROGRESS** is backlit followed by either **COMPLETED** or **ABORTED**.

   Comment: **COMPLETED** followed by an output list of temporary SUs to the Read-Only Printer (ROP) indicates there may be temporary SUs active within the switch. If all SUs have been made official, then no temporary SU is active within the switch. In addition, MCC page 1990 can be accessed to ensure there are no temporary SUs.

   **ABORTED** most likely indicates there are either no temporary SUs in the switch (UPD USRERR 4 on ROP) or no SUs in the switch at all (UPD USRERR 1 on ROP).

2. If any SU(s) are in a temporary state, they must be made official or backed out. Refer to 235-105-210, *Routine Operations and Maintenance*.

3. Contact your Lucent Technologies SUMS Center to see if any additional SU’s are required. **DO NOT APPLY** any SU’s unless directed to do so by Lucent Technologies Technical Support.

4. Activate SUs sent from SCANS. Refer to 235-105-210, *Routine Operations and Maintenance*.

5.2.4 **FINAL OFFICE BACKUPS**

If office backups were made at the -3 day interval (Section 4.6.5), this step is **optional**. If full office backup tapes have not been made, make them now.

   1. Make full office backup tapes for Moving Head Disks (MHDs).

      Reference: Refer to 235-105-210, *Routine Operations and Maintenance*.

   2. Record date and time in appropriate row of Office Backups Worksheet (Table 9-3).
5.2.5  MCTSI DIAGNOSTICS

The following steps will diagnose and restore Module Controller/Time Slot Interchange (MCTSI) sides 0 and 1 and the Bootstrapper (BTSR) for each SM. If equipped, the BTSR diagnostics must be run twice - once with each controller active (and the MCTSIs duplex). Use the SM Diagnostics Worksheet (Table 9-7) to keep track of SMs as diagnostics return All Tests Passed (ATP).

The diagnostics may be run in parallel on a per-side basis to save time. No more than 10 diagnostics should be run at any one time.

A Conditional All Tests Passed (CATP) is not acceptable for any MCTSI or BTSR phase; the only exception being a Remote SM (RSM) which may return CATP on phase 9. For any MCTSI or BTSR not returning ATP for all diagnostic phases (except as noted above), do the following:
   a. Rerun the appropriate diagnostic, or
   b. Repair and retest unit until ATP.

Note:  If the SMs have been tested on a regularly scheduled basis by Routine Exercises (REX), the following restores may be bypassed.

1.  Access MCC Page 120.

2.  Determine the status of the MCTSIs in all SMs:

   Enter MCC MSG:  OP:SYSSTAT,UCL;

   Sample ROP Response:

   OP SYSSTAT SUMMARY {FIRST|NEXT|LAST} RECORD
   SYS: INHIBITS-MSG MISC
   AM: NORMAL
   CM: NO_REQ_PENDING
   CMP x-0 P: [...]
   CMP y-0 M: [...]
   S LSM a,x: [...]
   O LSM b,x: [...]
   L HSM c,x: [...]
   L ORM d,x: [...]
   L TRM e,x: [...]
   K LSM f,x: [...]
   G RSM z,x: [...]

   Comment: An example of the output is shown. Refer to 235-600-750, Output Message Manual for more details.

3.  Restore SMs that do not indicate NORMAL to obtain NORMAL status for each SM.

4.  Diagnose and restore MCTSIs to standby:

   Note:  It is recommended that only 10 SMs be diagnosed at the same time.

   a.  Conditionally restore a range of MCTSIs:

   Enter MCC MSG:  RST:MCTSI=a&&b-y,STBY;

   Where:
   a = first SM in a range of SMs.
   b = last SM in a range of SMs.
   y = MCTSI side (0 or 1).
Response: **RST MCTSI=x-Y COMPLETED**

Where:  
- **x** = SM number.
- **y** = MCTSI side (0 or 1).

Comment: Some diagnostic phases may output a No Tests Run (NTR) response. This response is acceptable; it indicates that the particular phase was not necessary for that MCTSI.

b. Clear any diagnostic failures and retest until ATP or CATP.

5. Repeat Step (4) for the other MCTSI side.

6. Repeat Step (2) to ensure MCTSIs are ACT/STBY before starting the BTSR diagnostic and restoral.

A **NORMAL** status from the **OP:SYSSTAT,UCL** message implies the MCTSIs are ACT/STBY.

**Warning:** If you need to clear a BTSR diagnostic failure by replacing a BTSR board, remove one of the MCTSI controllers from service before removing or inserting the TN1418 to prevent possible internal bus errors. Restore the MCTSI to duplex before attempting diagnostics again.

7. Diagnose and restore BTSRs (if equipped):

Enter MCC MSG: **RST:BTSR=x**;

Where:  
- **x** = SM number.

Response: **RST BTSR=x Y COMPLETED** (for non-MCTU2 SMs)

Where:  
- **y** = SM number.

Comment: No response will be received for SMs equipped with MCTU2s. The previous command will run diagnostics on the BTSR before restoring the unit selected.

8. Verify that all MCTSIs are ACT/STBY for all SMs, and all BTSRs are active, at the end of testing:

MCC Page: **1190,x**

Where:  
- **x** = each SM diagnosed

**Note:** For some SMs, a block for the BTSR will not be shown. The bootstrapper function for some SMs in the MCTU2 has been integrated into the MCTSI, and these SMs do not have a separate BTSR board.

9. **Verify that all SMs are NORMAL:**

Enter MCC MSG: **OP:SYSSTAT,UCL**;

To verify that all SMs are NORMAL, enter message:

**Sample ROP Response:**

<table>
<thead>
<tr>
<th>Command</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP SYSSTAT</td>
<td>SUMMARY {FIRST</td>
</tr>
<tr>
<td>SYS:</td>
<td>INHIBITS-MSG MISC</td>
</tr>
<tr>
<td>AM:</td>
<td>NORMAL</td>
</tr>
<tr>
<td>CM:</td>
<td>NO_REQ_PENDING</td>
</tr>
<tr>
<td>CMP x-0 P:</td>
<td>NORMAL</td>
</tr>
</tbody>
</table>
10. Verify all CLNKS, MCTSIs, and DLIs are duplex, for any SM which is not normal.

For any SM which is not normal, verify all CLNKS, MCTSIs, and DLIs are duplex. Although the BTSR (if equipped) is a simplex unit, it must be tested as if it were duplex.

5.2.6 COMMUNICATION MODULE PROCESSOR DIAGNOSTICS

Note: If the Communications Module Processor (CMP) has been tested on a regularly scheduled basis by REX, the following diagnostics may be bypassed.

1. Verify the following:

MCC Page: 1850

CMP 0-0 ACT [under the CMP 0 PRIM STAT box]

CMP 1-0 STBY [under the CMP 0 MATE STAT box]

Note: If CMP 0-0 is not the ACTIVE (primary) CMP:
Enter MCC MSG: SW:CMP=0-0;
Sample ROP Response:

   SW:CMP=0-0; PF
   EXC ODDRCVY=ALL CMP=0-0 STOPPED
   REPT MSKP_ENVIRONMENT:
   CMP=1-0 PHASE 1&2 INIT COMPLETION TIME: H
   SW CMP=0-0 COMPLETED EXC ODDRCVY=ALL
   CMP=1-0 STARTED
   REPT MSKP_ENVIRONMENT:
   CMP=1-0 PHASE 3 INIT COMPLETION TIME: H
   REPT COMMUNICATION RESTORED: AM TO CMP=1-0 MATE

Comment: CMP 0-0 becomes PRIMARY (active), CMP 1-0 becomes MATE (standby).

2. Diagnose CMP 1-0 (for CM2 only):

MCC Page: 1251

Enter Poke CMD: 500,ph=1&&15

Sample ROP Response:

   DGN:CMP=1-0,RAW,TLP,ph = 1&15; PF
   EXC ODDRCVY=ALL CMP=1-0 STOPPED
   DGN CMP=1-0 COMPLETED ATP PH 1
   DGN CMP=1-0 COMPLETED ATP PH 2
   DGN CMP=1-0 COMPLETED ATP PH 3
   DGN CMP=1-0 COMPLETED ATP PH 4
   DGN CMP=1-0 COMPLETED ATP PH 5
   DGN CMP=1-0 COMPLETED ATP PH 11
   DGN CMP=1-0 COMPLETED ATP PH 12
   DGN CMP=1-0 COMPLETED ATP PH 13
   DGN CMP=1-0 COMPLETED ATP PH 14
   DGN CMP=1-0 COMPLETED ATP PH 15
   DGN CMP=1-0 COMPLETED
   DGN CMP=1-0 COMPLETED
3. **Restore CMP 1-0 (for CM2 only):**

MCC Page: 1251

Enter Poke CMD: **300,ucl**

*Note:* Some of the following ROP response may not appear depending on the configuration of your switch.

Sample ROP Response:

```
RST:_CMP=1-0,ucl; PF
REPT_CMP=1-0_MATE_INITIALIZATION
TRIGGER=MANUAL-REQUEST
REPT_MSKP_ENVIRONMENT:
  CMP=1-0_PHASE 1\&2_INIT_COMPLETION_TIME: H'
  CMP=1-0_PHASE 3_INIT_COMPLETION_TIME: H'
  INIT_CMP=1-0_MATE_LVL=FI,PUMP_EVENT
REPT_CMP=1-0_MATE_DATA=SCAL-CNTS
REPT_COMMUNICATION_RESTORED: AM_TO_CMP=1-0_MATE
EXC_ODDRCVY=ALL_CMP=1-0_STOPPED
REPT_MSKP_ENVIRONMENT:
  CMP=0-0_PHASE 1\&2_INIT_COMPLETION_TIME: H \text{dd}
  TYPE: H'
  RST_CMP=1-0PLETED
EXC_ODDRCVY=ALL_CMP=0-0_STARTED
REPT_MSKP_ENVIRONMENT:
  CMP=0-0_PHASE 3_INIT_COMPLETION_TIME: H
REPT_COMMUNICATION_RESTORED: AM_TO_CMP=0-0_MATE
```

**Comment:** When this message is entered, a 5-minute post-init delay is encountered before CMP 1-0 becomes ACTIVE. **Also, several other types of output messages may be received indicating the CMP has been initialized.**

*Do not continue until CMP 1-0 has successfully restored.*

4. **Diagnose CMP 0-0 (for CM2 only):**

MCC Page: 1241

Enter Poke CMD: **500,ph=1&&15**

Sample ROP Response:

```
DGN_CMP=0-0_RAW_TLP,ph = 1\&15: PF
EXC_ODDRCVY=ALL_CMP=0-0_STOPPED
DGN_CMP=0-0_COMPLETED_ATP_PH 1
DGN_CMP=0-0_COMPLETED_ATP_PH 2
DGN_CMP=0-0_COMPLETED_ATP_PH 3
DGN_CMP=0-0_COMPLETED_ATP_PH 4
DGN_CMP=0-0_COMPLETED_ATP_PH 5
DGN_CMP=0-0_COMPLETED_ATP_PH 11
DGN_CMP=0-0_COMPLETED_ATP_PH 12
DGN_CMP=0-0_COMPLETED_ATP_PH 13
DGN_CMP=0-0_COMPLETED_ATP_PH 14
DGN_CMP=0-0_COMPLETED_ATP_PH 15
DGN_CMP=0-0_COMPLETED_ATP
DGN_CMP=0-0_COMPLETED
```

5. **Restore CMP 0-0 (for CM2 only):**

MCC Page: 1241

Enter Poke CMD: **300,ucl**

*Note:* Some of the following ROP response may not appear depending on the configuration of your switch.

Sample ROP Response:

```
RST:_CMP=0-0,ucl; PF
REPT_CMP=0-0_MATE_INITIALIZATION
```
Comment: When this message is entered, a 5-minute post-init delay is encountered before CMP 0-0 becomes ACTIVE. Also, several other types of output messages may be received indicating the CMP has been initialized.

Do not continue until CMP 0-0 has successfully restored.

6. Verify that both CMPs are NORMAL:

   Enter MCC MSG: \textbf{OP:SYSSTAT,UCL};

Sample ROP Response:

\begin{verbatim}
OP SYSSTAT SUMMARY \{FIRST\|NEXT\|LAST\} RECORD
SYS: INHIBITS-MSG MISC
AM: NORMAL
CM: NO_REQ_PENDING
CMP \textbf{x}-0 P: NORMAL
CMP \textbf{y}-0 M: NORMAL
S LSM \textbf{a},\textbf{x}: NORMAL
B LSM \textbf{b},\textbf{x}: NORMAL
L HSM \textbf{c},\textbf{x}: NORMAL
L ORM \textbf{d},\textbf{x}: NORMAL
L TRM \textbf{e},\textbf{x}: NORMAL
L RSM \textbf{f},\textbf{x}: NORMAL
K LSM \textbf{g},\textbf{x}: NORMAL
\ldots
G RSM \textbf{z},\textbf{x}: NORMAL
\end{verbatim}

5.2.7 TAPE DRIVE CLEANING, TESTING, AND VERIFICATION

To perform this function see Section 3.10.7.

5.2.8 SMART CONVERSION FINAL DATABASE DUMP

5.2.8.1 Is the type of LTG being performed a SMART Conversion LTG?

- If NO, skip the following steps and go to Step 5.3. The Final Database Dump was previously completed.
- If YES, continue with the next step.

5.2.8.2 Overview

The database dumps should be performed and the tape retained. Do not ship the tape. The tape will be placed in the Blade processor for SMART Conversion processing.

If there is a problem with the tape drive or MTC, go to Section 6.5.13.

5.2.8.3 Pre-Dump Setups

1. It is important that any incore ECD Recent Changes (RCs) be written to disk before performing the ECD dump. If required by your local office practice, obtain approval from the site coordinator before continuing.
To ensure any ECD Recent Changes are copied to disk, access MCC page 199, and enter the following data:

<table>
<thead>
<tr>
<th>Data base_name:</th>
<th>incore</th>
</tr>
</thead>
<tbody>
<tr>
<td>reviewonly:</td>
<td>n</td>
</tr>
<tr>
<td>journaling:</td>
<td>*</td>
</tr>
<tr>
<td>1.copy_inc_to_disk:</td>
<td>YES</td>
</tr>
<tr>
<td>Enter Form Name:</td>
<td>activate</td>
</tr>
</tbody>
</table>

Enter Form Name: activate
Enter Execute... e
Enter Form Name: <

2. To check current ODD backup schedule, enter message:

```plaintext
MSG OP:BKUPSTAT;
```

Response: OP BKUPSTAT
AM NRODD= 1 TO 192 RODD= EVERY= x AT= y
or NG - NO SCHEDULE REQUEST

Comment: Verify the current backup schedule in Automatic ODD Backup Schedule Worksheet (Table 9-2), if present.
If NG - NO SCHEDULE REQUEST is output, then automatic backups are not scheduled.

3. If an automatic ODD backup may occur during either tape dump, enter message:

```plaintext
MSG CLR:ODDBKUP;
```

Response: CLR ODDBKUP COMPLETED

Comment: Ensure schedule was removed by entering the previous OP:BKUPSTAT command.

4. To ensure automatic hash reorganization will not start up during the tape dumps, enter message:

```plaintext
MSG INH:REORG;
```

Response: OK

5. In the following steps, AM REX is inhibited.

a. Enter message:

```plaintext
MSG INH:DMQ,SRC=REX;
```

Response: OK

b. To verify AM REX is inhibited, enter message:

```plaintext
MSG OP:DMQ;
```

Response:

```
OP DMQ
REQUEST ACTIVE
NONE
REQUEST WAITING
NONE
INHIBIT SOURCES
REX
```
5.2.8.4 RC/CORC Evolution and Double-Logging of RCs and CORCs

1. Have you been instructed by the Lucent SMART coordinator to keep Recent Change inhibited during the conversion?
   - If YES, inhibit Recent Change at this time, go to Step 2.
   - If NO, go to Step 4.
   
   **Note:** If you do not know who the Lucent SMART coordinator is, contact the Lucent SUMS Center.

2. To inhibit new RC sessions, enter message:
   
   MSG INH:RC;
   
   Response: INH RC COMPLETED
   
   SYS INH system status indicator is backlit.

3. Go to Step 5.2.8.5.

   **Warning:** You have reached this step because Recent Change will be inhibited during this conversion. Make sure to go to Step 5.2.8.5.

4. Recent change batch clerk entry is inhibited during the double-logging period due to file space limitations. (Double-logging will be turned on in Step 8 of this procedure.) To list the active recent change clerk files, enter message:
   
   MSG REPT:RCHIST,ACTIVITY;
   
   Response: REPT RCHIST CLERK = HISTACT STARTED
   
   Comment: Delayed Release Summary Report is printed at ROP within 15 minutes. Clerk name "full.RCOLD" (recent changes) may be empty or non-existent at this time.

   A "HISTACT ABORTED" response and the associated error message indicate that no clerk files exist in the system. This is not an error. Clerk files will be created during the next backup ODD.

   A "HISTACT CLERK FILE DOES NOT EXIST OR CANNOT BE OPENED" response indicates that a clerk file should exist but does not. This will occur if a BKUP ODD was performed after RC double-logging was started, but no recent changes were made.

5. The batch release of any existing clerk files should be performed now. Once the clerk files are released, they should be removed. Obtain approval from the Site Coordinator before removing any of the clerk files.

   Remove RC clerk files

6. For each clerk file being removed, enter message:
   
   MSG EXC:RCRMV,CLERK=a,ALL,COMPLETE,DEMAND;
Where: \( a = \) clerk file name from RCHIST dump

7. To inhibit batch RC cleanup, access MCC page 196 and enter the following data:

<table>
<thead>
<tr>
<th>Print Option</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detail Option</td>
<td>n</td>
</tr>
<tr>
<td>Summary Option</td>
<td>y</td>
</tr>
<tr>
<td>Input Class...</td>
<td>B.2</td>
</tr>
<tr>
<td>Enter Update...</td>
<td>U</td>
</tr>
<tr>
<td>*1.OFFICEID</td>
<td>enter office ID</td>
</tr>
<tr>
<td>Enter Update...</td>
<td>c</td>
</tr>
<tr>
<td>Change Field:</td>
<td>@</td>
</tr>
<tr>
<td>Should Cleanup Process</td>
<td>y</td>
</tr>
<tr>
<td>Change Field:</td>
<td>&lt;cr&gt;</td>
</tr>
<tr>
<td>Enter Update</td>
<td>u</td>
</tr>
<tr>
<td>*1.OFFICEID</td>
<td>&lt;</td>
</tr>
<tr>
<td>INPUT CLASS...</td>
<td>Q</td>
</tr>
</tbody>
</table>

8. To dump a list of all terminals currently using RC, enter message:

```plaintext
MSG OP:RCUSER;
```

**Response:**

```
OP RCUSERx ACTIVE RC USERS
RC PROCESS TTY/LOGICAL/CLERK-ID PART 1 OF 1
RCV:MNU, APPRC TERM-ID= xxxx
or
OP RCUSER 0 ACTIVE RC USERS
```

**Comment:** Notify all users that RC will be inhibited.

9. To inhibit new RC sessions, enter message:

```plaintext
MSG INH:RC;
```

**Response:**

```
INH RC COMPLETED
SYS INH system status indicator is backlit.
```

10. In the next step, double-logging of RCs is started.

**Caution:** Do not print office records while double-logging is active. The office records process uses the same disk space as the double-logging process. If this disk space is full, recent changes will be lost.

11. The CORCs will be evolved automatically at the end of each ODD backup run after double-logging starts. An output similar to the following should be expected from each manual or automatic BKUP:ODD from now until the LTG interval ends.

If your office contains the OSPS feature, the following ODD backup should be performed at approximately the same time of day that the System Switch Forward will occur (during execution of Section 5). For example, if the switch forward will occur at 2 a.m., the final ODD backup should be performed at 2 a.m. While this is not mandatory, it will help insure that the same operator configuration exists when the system initializes on the new data.
Caution: The following message removes recent change evolution files if they exist. Therefore, this message should be entered one time, and one time ONLY during the entire LTG process. If for some reason there is a need to back out and the transition is postponed for a short interval, do not re-enter this message.

To back up ODD and start double-logging of RCs and CORCs, enter message:

**MSG BKUP:ODD,ODDEVOL,TOGENERIC=162;**

Response: (A copy of the memory forecasting tool output is printed on the ROP. See Section 2.3.2.2.3.)

[BKUP ODD FULL AM IN PROGRESS]
[OSPS EVOLUTION AM COMPLETED]
[BKUP ODD FULL AM IN PROGRESS]
[OSPS EVOLUTION AM COMPLETED]
[BKUP ODD FULL AM IN PROGRESS]
[OSPS EVOLUTION SM=xxx COMPLETED]
[BKUP ODD NRODD = xxx IN PROGRESS]
[BKUP ODD NRODD = xxx COMPLETED (once for each SM)
[BKUP ODD CMP = 0 COMPLETED]
[BKUP ODD RODD = x COMPLETED]
[ASOSPSON: OSPS LTG BIT HAS BEEN SET]
[BKUP ODD COMPLETED]

(The next two messages may appear at any time during the BKUP:ODD.)

[AUTOEVL INVOKES MOVELOG TO RECLAIM SPACE IN /rclog]
[THE /rclog DOES NOT HAVE ENOUGH SPACE]
[TOTAL NUMBER OF FREE SPACE ON /rclog is xxxx]
[DB LTG PROCESS MOVELOG COMPLETED]
[DETAIL INFO IN /rclog/mvlog.README]

AUTOMATIC CORC AND RECENT CHANGE LTG PROCESS STARTED
AUTOMATIC CORC AND RECENT CHANGE LTG PROCESS
EVOLUTION PROCESS TARGET SOFTWARE RELEASE IS 5E162
DB LTG PROCESS KEEPLOG COMPLETED
DETAILED INFO IN /rclog/kplog.err

AUTOMATIC CORC AND RECENT CHANGE LTG PROCESS
RECENT CHANGE EVOLUTION STARTED

[CNVT RCLG EVOLUTION INITIALIZATION STARTED]
[CNVT RCLG DATA TABLES INITIALIZED]
[CNVT RCLG EVOLUTION INITIALIZATION IN PROGRESS]
[INITIALIZING NEW VIEW TABLE: RCnewwwtab_tab[ ]]
[INITIALIZING OLD VIEW TABLE: Rcoldwttab_tab[ ]]
[CNVT RCLG EVOLUTION INITIALIZATION COMPLETE]
[CNVT RCLG EVOL: RC EVOLUTION RC STEP STARTED]
[CURRENT ERROR FILE IS /rclog/RCERRx]
[CNVT RCLG EVOL: RC EVOLUTION RC STEP IN PROGRESS]
[VIEW NUMBER xxxx HAS BEEN READ]

(Output approximately every two hundred views)

CNVT RCLG EVOL: RC EVOLUTION RC STEP COMPLETION SUMMARY
xxx VIEWS READ
xxx VIEWS CREATED
xxx VIEWS IN ERROR
FIRST ERROR FILE IS /rclog/RCERRxx
LAST ERROR FILE IS /rclog/RCERRxx
[RC EVOLUTION LOGFILE ANALYSIS PROCESS STARTED]
[RC EVOLUTION LOGFILE ANALYSIS PROCESS COMPLETED]
[xxxx VIEWS LOGGED]
[DETAIL ANALYSIS REPORT FILE IS /rclog/RCtype.rpt]

Note: The next four messages are only output by OSPS offices that have used recent changes that are supported by OSPS evolution.

[CNVT RCLOG EVOLUTION: OSPS STEP STARTED]
[CURRENT ERROR FILE IS /rclog/RCOSPSERRx]
[CNVT RCLOG EVOLUTION: OSPS STEP COMPLETION SUMMARY]
[xxx VIEWS READ]
[xxx VIEWS CREATED]
[xxx VIEWS IN ERROR]
[FIRST ERROR FILE IS /rclog/RCOSPSERRx]
[LAST ERROR FILE IS /rclog/RCOSPSERRx]
[RC EVOLUTION: OSPS LOGFILE ANALYSIS PROCESS STARTED]
[RC EVOLUTION: OSPS LOGFILE ANALYSIS PROCESS COMPLETED]
[xxxx VIEWS LOGGED]
[DETAIL ANALYSIS REPORT FILE IS /rclog/RCosps.rpt]

CNVT RCLOG EVOL COMPLETE
AUTOMATIC CORC AND RECENT CHANGE LTG PROCESS
CORC EVOLUTION STARTED
[CNVT CORCLOG EVOL AM COMPLETE]
[xxxx CORCS EVOLVED]
[xxxx CORCS IN ERROR]
[xxxx RDNT CORCS RMVD]
[CNVT CORCLOG EVOL CMP COMPLETE]
[xxxx CORCS EVOLVED]
[xxxx CORCS IN ERROR]
[xxxx RDNT CORCS RMVD]
[CNVT CORCLOG EVOL IN PROGRESS]
[CORC NUMBER xxx HAS BEEN READ]
[CNVT CORCLOG EVOL SM = a COMPLETE]
[xxxx CORCS EVOLVED]
[xxxx TRNCORCS EVOLVED]
[xxxx CORCS IN ERROR]
[xxxx TRNCORCS IN ERROR]
[xxxx RDNT CORCS RMVD]
[xxxx RDNT TRNCORCS RMVD]
[CNVT CORCLOG EVOL IN PROGRESS]
[CORC NUMBER xxx HAS BEEN READ]
[xxxx CORCS xxxx TRNCORCS HAVE BEEN LOGGED IN THE CORC]
[EVOLVED LOGFILES]

CNVT CORCLOG EVOL COMPLETE
AUTOMATIC CORC AND RECENT CHANGE LTG PROCESS COMPLETED

The ODD backup process invokes the memory forecasting tool automatically when it turns on double/logging. If problems associated with the memory forecasting tool are encountered, refer to Section 6.5.12.3.

If OSPS evolution errors are output, proceed to Section 6.5.10.3.

If RC or CORC evolution errors are output, proceed to Section 6.5.10.

Note: This causes subsequent recent changes and CORCs to be logged in special evolution log files.
Due to the double-logging that takes place, batch recent change clerk entry cannot be performed and will not be accepted by the recent change subsystem until the LTG interval is completed.

The MISC system status indicator will remain backlit until the transition interval is completed (about 2 weeks). A SYS NORM indication will not be possible during the remainder of the LTG interval.

**Warning:** The next Step will Allow Recent Change. Do not perform this step unless instructed by the Lucent SMART coordinator.

12. To allow RC, enter message:

   MSG ALW:RC;

   Response: ALW RC COMPLETED

=> **Read:** During the remainder of the LTG interval, it is important to check the output from each ODD backup due to the additional RC/CORC evolution-related messages that are generated. This is especially important if the backups take place while the office is unattended. **Escalate to your next level of support immediately if the evolution-related outputs are not received.**

**Warning:** Double-logging only occurs when the ODD EVOL box on MCC page 116 is backlit. The OSPS recent change evolution only occurs when the OSPS EVOL box on MCC page 116 is also backlit. The database LTG process has been enhanced to reset double-logging if a manual 54 initialization is performed any time between now and the actual LTG. If at any time you find the ODD EVOL or the OSPS EVOL (for OSPS offices) boxes are not backlit, contact your Lucent Technologies Software Update Management System (SUMS) Center and proceed immediately to Section 6.5.11.

5.2.8.5 Tape Dump Checklist

Ensure the following items are accounted for prior to making the tape dump (Table 5-1):
Table 5-1 — Tape Dump Checklist

<table>
<thead>
<tr>
<th>ITEM</th>
<th>SIGN OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ECD errors resolved and corrected</td>
<td></td>
</tr>
<tr>
<td>ODD Retrochk started</td>
<td></td>
</tr>
<tr>
<td>Disk Configurations Adequate for New</td>
<td></td>
</tr>
<tr>
<td>Software Release</td>
<td></td>
</tr>
<tr>
<td>AM/SM Memory Growth Complete</td>
<td></td>
</tr>
<tr>
<td>SM Configuration Parameter Verified/ Set</td>
<td></td>
</tr>
<tr>
<td>(all SMs)</td>
<td></td>
</tr>
<tr>
<td>Test Lines Defined in ODD</td>
<td></td>
</tr>
<tr>
<td>Growth Items Complete</td>
<td></td>
</tr>
<tr>
<td>Recent Office Backups Available</td>
<td></td>
</tr>
<tr>
<td>Breakpoint Checked/Removed</td>
<td></td>
</tr>
<tr>
<td>Tape Drive Cleaned, Tested and Verified</td>
<td></td>
</tr>
<tr>
<td>ODD Evolution Started if Required/Needed</td>
<td></td>
</tr>
<tr>
<td>AM off-line boot was run successfully at</td>
<td></td>
</tr>
<tr>
<td>at least once between the -9 week interval</td>
<td></td>
</tr>
<tr>
<td>and now</td>
<td></td>
</tr>
</tbody>
</table>

5.2.8.6 Write Database Tapes

In the following steps, the ODD and ECD will be written to magnetic tape.

**Note:** The time it takes to perform the tape dumps will be based on the call load of the switch. If the tape dump is performed during peak load hours, the tape dump may be exceedingly longer than if performed during non-peak load time.

The copy tape process does not impact interaction with the switch while writing tapes. The tape writing process determines the highest tape speed and greatest tape density that the tape drive is capable of and then writes tapes out at these specifications.

The copy tape process has been enhanced to check the memory forecasting report file for the database dump. If a memory shortage is detected during the database dump, the copy tape process will fail. See Section 2.3.2.2.3 for additional information on the memory forecasting tool.

If problems associated with the tape dump or the memory forecasting tool are encountered, refer to Section 6.5.12.

**Note:** Two sets of database dump tapes are required for the database dump. After the first set of tapes has been written, ROP messages will direct the technician to make a second set of tapes.

A tape label will be printed on the ROP after the copy tape process is completed. This printed label should be removed from the ROP and affixed to the tape just written.

If the tape writing process needs to be *stopped* for any reason, refer to Section 6.5.14.
If a fault occurs on the tape drive or Magnetic Tape Controller (MTC), refer to Section 6.5.13.

1. Have you been instructed by the Lucent SMART coordinator to keep Recent Change inhibited during the conversion?
   - If YES, go to Step 3.
   - If NO, continue with the next step.

   \textbf{Note:} If you do not know who the Lucent SMART coordinator is, contact the Lucent SUMS Center.

2. Check to ensure that the \textbf{ODD EVOL ACT} box on MCC page 116 is backlit. If the \textbf{ODD EVOL ACT} box is not backlit, escalate to your next level of support. For OSPS offices, \textbf{OSPS EVOL ACT} box on MCC page 116 should also be backlit. If the \textbf{OSPS EVOL ACT} box is not backlit, escalate to your next level of support.

3. Obtain a RED label tape from your SMART conversion package as a final ODD copy.

4. Mount the labeled tape into the DAT Unit 0. Make sure that the DAT tape is write-enabled.

5. Write the final data base files to the tape.
   1. All data will be written on one tape.
      1. MCC Page: 1980
         Enter Poke CMD: 80x
         Where: \( x = \text{LTG Tools} \)
         Response: \text{LTG Tools page}
         \textbf{Note:} Wait for the 1984 page to populate the different fields.
      2. MCC Page: 1984
         \textbf{Warning:} The following command must have a space between the \text{“MTx”} and \text{“final”} arguments.
         Enter Poke CMD: 5yy,MTx final
         Where: \( yy = \text{DUMP_ODD Tool Number} \)
         \( x = 0 \) for TU 0 or 1 for TU 1
         Response: MOUNT A TAPE ON MTx
         USE RESUME TO CONTINUE OR USE STOP TO ABORT PROCEDURE
         USE BACKOUT TO EXIT PROCEDURE

6. MCC Page: 1984
   Enter Poke CMD: 5yy
   Where: \( yy = \text{DUMP_ODD Tool Number} \)

7. After the tape rewinds, remove the tape from DAT Unit 0 and switch-off write-enable.
8. After the final database dump has completed, load the final dump tape (with the red label) into the DAT drive attached to the Sun Blade processor. Refer to Step F2 in the Detailed Method of Procedure (MOP) for the SMART Conversion Procedure.

5.2.8.7 Post-Dump Resets

1. If automatic relation reorganization had been enabled before the ODD and ECD dumps, enter message:
   
   MSG ALW:REORG;
   
   Response: OK

2. To restore backup ODD, enter message:
   
   MSG BKUP:ODD:EVERY=x,AT=y;
   
   Where: x and y = values recorded on ODD Backup Worksheet (Table 9-2) earlier in the procedures.
   
   Response: OK

3. In the following steps, AM REX is allowed.
   a. Enter message:
      
      MSG ALW:DMQ:SRC=REX;
      
      Response: ALW DMQ ENABLED REX
   b. Verify REX is allowed for the CM on MCC page 110.
   c. Verify REX is allowed for the SMs on MCC pages 1271, 1272, 1273, etc.
   d. To verify AM REX is allowed, enter message:
      
      MSG OP:DMQ;
      
      Response: OP DMQ

   REQUEST ACTIVE
      NONE
   REQUEST WAITING
      NONE
   INHIBIT SOURCES
      NONE
   OP DMQ COMPLETED

5.2.8.8 Software Update Application

Caution: Do not apply any software updates after the database dump. Also, if your offices use the Automation BWM/software update process, you must inhibit it. This is done by entering the following message:

   MSG UPD:AUTO:INH;

If a software update is required, contact your SUMS Center for assistance. See Table 1-1.

5.2.8.9 Notes on RC/CORC Evolution and RC Reapplication

5.2.8.9.1 RC Forms

Table 9-13 lists the RC forms that are supported by OFFRCR for the 5E16.2 software release during the LTG. Table 9-14 lists the RC forms that are not supported.
Unsupported views may be manually reinserted by recent change personnel after switch forward and before recent change reapplication has been started.

5.2.8.9.2 Save Files

5.2.8.9.2.1 Copies of RCs and CORCs

The RC and CORC evolution processes will save a full copy of the original version of the RCs and CORCs. The files (full.old for CORCs, full.RCOLD for RCs, and full.OSPS for OSPS RCs) will be saved in "/rclog" and will be automatically moved to "/updtmp" when "/rclog" is 75 percent full. These files can be dumped to tape if space in "/updtmp" becomes a problem. Seek technical assistance before moving/removing any files.

5.2.8.9.2.2 RC Activity Report File

At the time of each ODD backup during the final 3 weeks, when RCs and CORCs are evolved automatically, an RC evolution report file is generated (RCtype.rpt). The report file provides summary and detailed reports of the RC evolution activity. Information in the file consists of the number of RC/Vs logged, supported RC/Vs, non-supported RC/Vs, and detailed evolution activity information on specific RC Views.

5.2.8.9.3 CLR:CORCLOG Message

Caution: The CLR:CORCLOG input message, in addition to clearing those CORCs from the normal log files, will also clear the log files being saved for the LTG since the last ODD backup. This message should not be used during the LTG interval unless absolutely necessary. Escalate to your next level of support first.

5.2.8.9.4 Daily RC/CORC Evolution-Related Tasks

The following list of tasks should be performed on a daily basis for the remaining 3 weeks of the LTG interval. Make a copy of this section (Section 5.2.8.9.4) and post it near the MCC.

1. Check MCC page 197. OFFICE STATE must be PRECUT and "CUTOVER ACTIVE" field should be backlit. If either one of the indications is not present, escalate to your next level of support.

2. Make sure the ODD EVOL field on MCC page 116 is backlit. If it is not, seek technical assistance before entering the following message:

   MSG EXC:ENVIR:UPROC,FN="/no5text/rcv/setoddevol";

   Response: SETODDEVOL:ODD EVOLUTION BIT HAS BEEN SET EXC ENVIR UPROC/no5text/rcv/setoddevol COMPLETED

   Warning: If the ODD evolution had to be turned back on, seek technical assistance to check the integrity of the log files.

3. List active RC clerk and account files. Enter message:

   MSG REPT:RCHIST,ACTIVITY;

4. Check the ROP output for each and every BKUP:ODD ensuring that the RC and CORC evolution processes started and completed successfully. (See previous ODD Backup for an example of expected output.) Seek technical assistance if the processes abort or do not start.
5. Log all RC and CORC evolution activity from the BKUP:ODD output in the appropriate RC Evolution Worksheet (Worksheet 9-9) or the CORC Evolution Worksheet (Worksheet 9-10). Make additional copies of the worksheets as needed.

6. The recent change LTG error file "RCLTGERR" will contain summary messages on the number of RCs logged since the final ODD dump. To dump the RCLTGERR file, enter message:

   MSG DUMP:FILE:ALL,FN="/rclog/RCLTGERR",OPL=999;

   a. An output of "File does not exist" indicates that no RC activity has occurred since the last ODD backup. If no RC activity has occurred, this is not an error. If there has been RC activity and the response "File does not exist" is received, seek technical assistance.

   b. If there has been RC activity since the last ODD backup, the file will contain a message indicating how many RCs have been logged since the final ODD dump.

   c. If any type of error occurred during the running of the RC LTG report process, a message will appear indicating the error and giving recovery procedures.

7. Dump each newly created CORC error file (corcevl.errx). To list the files in /rclog, enter message:

   MSG OP:STATUS:LISTDIR,FN="/rclog";

   If any CORC error files have been created or updated (check date stamp on file) since the previous ODD backup, dump them and escalate to your next level of support:

   MSG DUMP:FILE,ALL,FN="/rclog/corcevl.errx",OPL=999;

8. The contents of the RC evolution log file analysis report file (RCtype.rpt) may be dumped after every BKUP:ODD to provide information on RC evolution. To dump the RC evolution log file, enter message:

   MSG DUMP:FILE,ALL,FN="/rclog/RCtype.rpt",OPL=999;

9. To dump the CORC evolution log file, enter message:

   MSG DUMP:FILE,ALL,FN="/rclog/corcevl.sum",OPL=999;

10. To dump the ISDN line growth log file, enter message:

    MSG DUMP:FILE,ALL,FN="/rclog/RClcd.rpt",OPL=999;

    Note: ODBE changes are not double-logged and evolved to the new ODD. Any changes to the database using the ODBE after the final tape dump will not be present on the new ODD.

11. For OSPS offices, perform the following steps:

    a. For OSPS offices, to ensure that the OSPS configuration ODD evolution bit is set, enter message:

       MSG EXC:ENVIR:UPROC,FN="/no5text/prc/ASospson";

       Response: ASOSPSXNS: OSPS RETROFIT BIT WAS ALREADY SET (on ROP)
Comment: If the following messages are received, continue with the procedures:

**ASOSPSON: OSPS RETROFIT BIT HAS BEEN SET** (on ROP
EXC ENV UPROC /no5text/prc/ASospson COMPLETED)

b. To dump a list of OSPS RCs, enter message:

MSG **OP:STATUS:LISTDIR,FN="/updtmp/ospsevol"**;

Response: **OP STATUS LISTDIR STARTED**

(Listing of the directory is dumped to the ROP.)

c. Check the output for any files that have the naming convention of:

```
x.error.log
```

Where: $x$ = the number of the processor (193=AM, 194=CMP, 255 = redlog, all others are for SMs)

If any files are listed containing this naming convention, refer immediately to Section 6.5.10.3.

d. Recent change evolution will evolve separately the 9 recent change views supported by OSPS evolution: 21.2, 21.4, 21.7, 21.8, 21.16, 21.17, 21.18, 21.22, and 21.27. If there has been any activity on these views since the previous ODD backup, then RC evolution will evolve the views and create at least one RCOSPSERRx file (where $x$ = 1, 2, 3, etc.). The RCOSPSERRx file(s) should be dumped to maintain a history of RC activity and RC evolution errors, if any.

If there was no activity on the 9 OSPS RC views, then no RCOSPSERRx file is created.

When there has been activity on any of the 9 OSPS RC views, the following messages will appear in the ROP response to the daily ODD backup, indicating which RCOSPSERRx files should be dumped.

Response:

**CNVT RCLOG EVOL: OSPS STEP COMPLETION SUMMARY**

```
xxx VIEWS READ
xxx VIEWS CREATED
xxx VIEWS IN ERROR
FIRST ERROR FILE IS /rclog/RCOSPSERRx
LAST ERROR FILE IS /rclog/RCOSPSERRx
```

Enter the following message for each RCOSPSERRx file created:

MSG **DUMP:FILE,ALL,FN="/rclog/RCERROSPx",OPL=999**;

Look for any sort of abort or other unexpected entry in the error file, and escalate to your next level of support if anything is encountered.
e. This step is optional. If there has been any activity on the 9 OSPS supported RC views, then a summary file is created that may be dumped by entering the following message:

```
MSG DUMP:FILE,ALL,FN="/rclog/RCosps.rpt",OPL=99;
```

12. From the output of step 7, check if file mvlog.README exists. If the file exists, perform the following steps:

a. MSG DUMP:FILE,ALL,FN="/rclog/mvlog.README",OPL=999;

b. The file dumped above reports the status of each execution of the mvlog process. Looking at the output of the file, seek technical assistance if there are indications that mvlog did not complete successfully and/or aborted.

13. When the final conversion has completed, unload the final dump tape (with the red label) from the DAT drive attached to the Sun Blade processor. Refer to Step G15 in the Detailed Method of Procedure (MOP) for the SMART Conversion Procedure.
5.3 LTG SETUP

OVERVIEW

The following will be performed during the LTG Setup stage:

- Insert the STR tape.
- Select the LTG process.
- Start the LTG process.
- Verify LTG procedure options.
- Tape header check.
- Final Out-Of-Service (OOS) dumps.
- Check the Automatic Customer Station Rearrangement (ACSR) queue.
- Verify quiet duplex system.
- Miscellaneous
- Verify call processing.

5.3.1 INSERT THE STR TAPE INTO THE DAT DRIVE

Note:

- The LTG procedures will automatically access the DAT tape as needed throughout the procedure.
- If performing a SMART conversion, use the blue label that was removed from the SUN Blade.

Leave the STR Tape in the drive throughout the LTG Procedure as automated tools will access the STR Tape as needed without any interaction required by office personnel.

Users will be instructed to remove the STR Tape when appropriate.

5.3.2 SELECT THE LTG PROCESS

1. Access the MCC Procedure Summary Page:

   Enter Poke CMD: 1980
Figure 5-1 shows an example of MCC page 1980.

### 5.3.3 START THE LTG PROCESS

**Start the Retrofit process:**

**MCC Page: 1980**

Enter Poke CMD: **3xx**

Where:  

**xx** = the numeric value for **LTG**

Response:  

**REPT PROC SCHED SETUP PAUSED AT STAGE BOUNDARY - RESUME WHEN READY**

The LTG process is selected and MCC Page **1985** (Procedure Status Page) is displayed as shown in Figure 5-2.
### 5.3.4 VERIFY LTG PROCEDURE OPTIONS

1. **Begin Setup:**
   - **MCC Page:** 1985
   - **Enter Poke CMD:** 500
   - **Response:** `REPT PREP ENV SETUP CONFIGURE OPTIONS AND USE RESUME TO CONTINUE`

   This resume poke command will start the setup activity and display MCC Page 1989 (Procedure Options page), which is shown in Figure 5-3.
At this time, the following options must be set for the transition:

<table>
<thead>
<tr>
<th>OPTION</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconditional Execution</td>
<td>N – Default</td>
</tr>
<tr>
<td>Tape Drive</td>
<td>MTx</td>
</tr>
<tr>
<td>Load Tools Tape</td>
<td>N – Default</td>
</tr>
<tr>
<td>AM Offline Boot</td>
<td>Y – Default</td>
</tr>
<tr>
<td>Automatic SM Offline Pump</td>
<td>Y – Default</td>
</tr>
</tbody>
</table>

Where: \( x = 0, 1, 2, 3, \) or 4

The following list describes activity of the LTG Setup stage that will occur:

- **PREP ENV** - This step establishes the following LTG options, via MCC page 1989:
  - a. Execution mode.
  - b. Tape Drive.
  - c. Loading of Tools Tape (if required).
  - d. AM Offline Boot.
  - e. SM Offline Pump.

- **LOAD TOOLS** - Based on the option setting on MCC page 1989, this step may or may not load tools from tape.
• **INSTL TOOLS** - This step includes:
  
a. Installing private products, if necessary.

b. Checking for enough free inodes and blocks in `/updtmp` and `/tmp`.

**Note:** During the Setup stage, you may execute a manual BKUP ODD. An automatic BKUP ODD will be executed during the Begin stage.

2. Verify that the options are correct for this LTG.

   **Warning:** “Tape Drive” and “Load Tools Tape” are the only options that should be changed without direction of technical support. **DO NOT CHANGE DEFAULT VALUES unless instructed to do so by next level of support.**

   At this point a "cleanup" should have been performed in the `/updtmp` file system (at the -3 day interval). If you are unsure that this "cleanup" has been performed, refer to Section 4.6.5, and perform these steps at this time.

   The tools are included within the software release text and therefore are already present on the 5ESS switch. However, **additional Software tools may be needed for your LTG.** Consult the LTG Notes which should have arrived with the LTG package and perform any procedures given for loading additional tools.

   If no additional tools are required, this step will automatically be skipped (based on the option set previously on the 1989 RCL options page item 3) and the transition process will also automatically execute the installtools command. The following will be displayed later on the ROP:

   **Response:**
   
   REPT LOAD TOOLS NOT LOADED DUE TO OPTIONS SETTING 
   UPD GEN INSTLTOOLS COMPLETED SUCCESSFULLY

3. **If it is necessary to change any options, enter menu command:**

   MCC Page: **1989**

   Enter Poke CMD: **4xx,value**

   **xx** = option number

   **value** = one of the following:

   - **MT0, MT1, MTx** (for Tape Drive)
   - **Y** (for Load Tools Tape)

   **Response:** The selected option is changed to the new value.

   **Note:** Make sure that if a tools tape is required on the 1989 page, the Load Tools Tape option is set to Y prior to executing the next step. Installation of the software tools should be done after the tapes have been received and before reading the tape headers.

4. **Resume LTG activity:**

   MCC Page: **1989**

   Enter Poke CMD: **500**
MCC Page 1985 is displayed and Setup activity continues.

5.3.5 TAPE HEADER CHECK

OVERVIEW

The purpose of the Read Header Check Procedure is to verify that the Read Header matches the office and that the Disk Configuration for your ODDs is correct. (This information, as well as the disk options for the optional disk pairs MHDs 4 and higher, is provided in the "ECD Evolution Report" which is sent with the office records by Lucent Technologies.)

PROCEDURE

Perform the following Verification Steps when the Read Header Process has completed, and Figure 5-4 is displayed:

a. Check the ROP output and verify that the Read Header information matches the office

b. Check the ROP and verify the correct response for the MHD disk pairs equipped in your office:

   Note: Each of the following /dev/vtoc destinations represents a MHD disk pair equipped in the office. (MHD 0/1 is /dev/vtoc, MHD 2/3 is /dev/vtoc1, MHD 4/5 is /dev/vtoc2, etc.) If the ROP output is incorrect, escalate to your next level of support.

   Expected ROP Output:

<table>
<thead>
<tr>
<th>MHD PAIR DESTINATION</th>
<th>TEXT IMAGE</th>
<th>ODD IMAGE</th>
<th>MERGE IMAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>/dev/vtoc</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>/dev/vtoc1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>/dev/vtoc2</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>/dev/vtoc3</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>/dev/vtoc4</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>/dev/vtoc5</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>/dev/vtoc6</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

   Caution: If any of the items listed differ, escalate to your next level of support.

Figure 5-4 shows MCC page 1985 once the tape has headers checked.

Response:

   REPT PROC SCHED BEGIN PAUSED AT STAGE BOUNDARY -
   RESUME WHEN READY
Note: THE LG SETUP STAGE HAS COMPLETED AND IS AT A PAUSE BOUNDARY.

5.3.6 FINAL OOS DUMP

1. Save (or mark on ROP) all OOS and OFFNORMAL lists from this point on. They can be used to remove from service any listed non-essential OOS units, trunks, and lines after initializing on the new Software Release.

2. Enter message:

Figure 5-5 provides an example of the tape label for an office that has AM ODD/ECD and SM ODD tapes.

Figure 5-4 — MCC Page 1985 After Read Headers and 200 Poke Command

Figure 5-5 — Example of LTG Tape Label

5.3.6 FINAL OOS DUMP

1. Save (or mark on ROP) all OOS and OFFNORMAL lists from this point on. They can be used to remove from service any listed non-essential OOS units, trunks, and lines after initializing on the new Software Release.

2. Enter message:
MCC Page 120

Enter MCC MSG: **OP:OOS**;

Sample ROP Response:

```
OP:OOS; PF
[OP OOS MESSAGE STARTED]
[UNIT IMC INH DGN]
[xxxx x xxx x xxx x]
```

3. **Restore all units marked OOS.**

4. **Verify full system normal:**

Enter MCC MSG: **OP:SYSSTAT,UCL**;

Sample ROP Response:

```
OP SYSSTAT SUMMARY {FIRST|NEXT|LAST} RECORD
SYS: INHIBITS-MSG MISC
AM: NORMAL
CM: NO_REQ_PENDING
CMP x-0 P: NORMAL
CMP y-0 M: NORMAL
S LSM a,x: NORMAL
B LSM b,x: NORMAL
L HSM c,x: NORMAL
L ORM d,x: NORMAL
L TRM e,x: NORMAL
L RSM f,x: NORMAL
K LSM g,x: NORMAL
```

5. **Verify that none of the SMs have MATE OOS as a status.**

6. **If a list of out-of-service trunks is required:**

Enter MCC MSG: **OP:LIST,TRUNKS,FULL:OOS**;

Response:

```
OP LIST TRUNKS FULL OOS SEGMENT X {STARTED | CONTINUED}
TKGMN xxx x {LTP|TEN|DEN|SLEN|ILEN|RAF} x x x x OOS a b c
```

Comment: Compare the ROP output list of CADN-OOS trunks with the list of CADN-OOS trunks in Table 9-6. Any trunks listed in the Table that are not on the ROP output list will go from IN-SERVICE to OOS_CADN during the SwitchForward Stage.

**Note:** Table 9-6 includes a list of trunks that were OOS-CADN prior to the office database dump. The trunks listed on this worksheet will go OOS-CADN during the SwitchForward Stage during the LTG, even if they are IN-SERVICE prior to the switchforward. The automated TSM tool, TSMNEW, (run in the Postboot Stage) performs this same comparison and creates a CADN mismatch file containing trunks that go from IN-SERVICE to OOS-CADN during SwitchForward. Either the TSMNEW mismatch file or the mismatches noted here can be used to determine which trunks will be affected during the SwitchForward stage.

7. **Output a list of out-of-service lines:**

Enter MCC MSG: **OP:LIST,LINES,FULL:OOS**;

Response:

```
OP LIST LINES FULL OOS SEGMENT X {STARTED | CONTINUED}
```
5.3.7 CHECK ACSR QUEUE

The Automatic Customer Station Rearrangement (ACSR) feature utilizes RC to activate station changes, and RC is inhibited during the Begin Stage (along with ACSR Enq/Deq). The ACSR QUEUE CHECK should be performed at this point. The ACSR queue should then be allowed to drain (or dequeue).

1. **Enter the following message:**
   Enter MCC MSG: **OP:ACSR,ALL;**
   Response: **OP ACSR NO JOBS IN QUEUE**

2. **Inhibit further enqueuing of ACSR requests prior to the Begin Stage:**
   Enter MCC MSG: **INH:ACSR,ENQ;**
   Response: **OK**
   MCC Page: **110**
   Backlit Box: **05 – (CORC)**
5.3.8 VERIFY QUIET DUPLEX SYSTEM

At this point, the system should be running full duplex in the root partition with no inhibits set (except message class), no major off-normal indicators active, and no utility breakpoints set.

1. **Enter the following message:**
   
Enter MCC MSG: **OP:STATUS:FILESYS;**

   To ensure that the system is running on the root partition, verify that the following output is received:
   
   **OP STATUS FILESYS STARTED**
   
   / on /dev/root read/write on Day Month Time Year

   If you see the following, you are running in backup root (see Caution).
   
   **OP STATUS FILESYS STARTED**
   
   / on /dev/broot read/write on Day Month Time Year

   **Caution:** The LTG procedure will fail if the system is not running in root. If you are running on broot, escalate to your next level of support before continuing.

2. **Verify that the AM is duplex:**

   MCC Page 111

   Required:
   
   **AM 0 ACT**
   
   **AM 1 STBY**

   1. If the AM is not duplex, restore the OOS AM.
      
      MCC Page: 111
      
      Enter Poke CMD: **30x**
      
      Where:   \( x \) = number of the OOS AM

   2. If AM 0 is STBY and AM 1 is ACT, enter command:
      
      MCC Page: 111
      
      Enter Poke CMD: **400**
      
      Response: **SW CU 0 COMPLETED**
      
      Comment: Verify **AM 0 is ACT** and **AM 1 is STBY** before proceeding.

3. **Verify that all disks are ACTIVE**, (with the exception of MHDs 14 and 15, if equipped):

   MCC Page 123

4. **Verify the Following:**

   MCC Page 1850

   CMP 0-0 **ACT** [under the CMP 0 PRIM STAT box]
   
   CMP 1-0 **STBY** [under the CMP 0 MATE STAT box]

   **Note:** **If** CMP 0-0 is **not** the ACTIVE (primary) CMP:
Enter MCC MSG: **SW:CMP=0-0**;

Sample ROP Response:

```
SW:CMP=0-0; PF
EXC ODDRCVY=ALL CMP=0-0 STOPPED
REPT MSKP_ENVIRONMENT:
   CMP=1-0 PHASE 1&2 INIT COMPLETION TIME: H
SW CMP=0-0 COMPLETED EXC ODDRCVY=ALL
   CMP=1-0 STARTED
REPT MSKP_ENVIRONMENT:
   CMP=1-0 PHASE 3 INIT COMPLETION TIME: H
REPT COMMUNICATION RESTORED: AM TO CMP=1-0 MATE
```

**CMP 0-0 becomes PRIMARY (active), CMP 1-0 becomes MATE (standby).**

### 5.3.9 MISCELLANEOUS

1. If paper ROP is equipped, sufficient supply of paper and a new ribbon for the Read-Only Printer (ROP) so these items will not have to be replenished or changed during the LTG.

2. Make sure the software release database tapes are write protected. If using Digital Audio Tapes (DATs), open the write enable window for any tape where the window is closed.

3. Notify appropriate Operations Systems (OS) sites, interconnecting offices, SCC, TCC, STPs, etc., of the scheduled LTG.

### 5.3.10 VERIFY CALL PROCESSING

Operating company personnel should be prepared to verify call processing in all SMs when the system comes up on the new Software Release. The call processing verification worksheet (Table 9-8) is to be used for this purpose.
5.3.11 SYSTEM CONFIGURATION

Figure 5-6 shows the system configuration at the completion of the LTG Setup stage.

- Quiet Duplex
- No Major Units OOS
- AM Side 0 ACTIVE, Side 1 STANDBY
- SMs Side 0 or Side 1 ACTIVE (other side STANDBY)
- CMP 0-0 ACTIVE, CMP 1-0 STANDBY

MCC Page 116:

MCC Page 1985:

<table>
<thead>
<tr>
<th>GENERIC RETROFIT</th>
<th>BEGIN EXECUTING</th>
<th>BEGIN - STAGE PAUSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ODD EVOL ACT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSPS EVOL ACT</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note:* The OSPS EVOL ACT box will only be backlighted for OSPS offices.

Figure 5-6 — Typical System Configuration at Completion of LTG Setup Stage
5.4 BEGIN STAGE

The **Begin** stage is the starting point for the actual LTG to the new databases and takes approximately 1 hour to complete. The following tasks will be performed during this stage:

- Run an AMA session.
- Stop any active or scheduled Routine Exerciser (REX) diagnostics.
- Inhibit RC and run ODD backup.
- Generate the appropriate SUs to be applied during the Enter Stage.
- Start the LTG process.

**Warning:** If the healthcheck feature is run immediately prior to beginning an LTG, the AUTO SU feature MUST be disabled. Failure to disable this feature may result in an interruption of the LTG process if the switch attempts to apply a SU while the LTG is in progress. This feature may be disabled by entering the 9926 poke command on MCC page 1941.

For offices using `cron` to automatically schedule maintenance requests, the system cron files on the old database are compared with the default cron file on the new database. Files containing the differences will be available on the old side after the completion of PROCEED. They will be available on the new side after the completion of the switch forward. The old 5E16(2) system cron files are **NOT** automatically installed on new 5E16(2) as part of the LTG process.

This process also saves user cron files across a LTG. User logins can be created using UNIX system administration commands. Refer to 235-700-200, **UNIX RTR Operating System Reference Manual** for details on the user logins and the cron commands. The user cron files are automatically installed as part of the LTG process.

The Begin stage will print out the contents of the user and system cron files for reference. Save the ROP output if needed.

**Warning:** The Begin Stage Pause resume command disables the system and user crons.
Figure 5-7 shows an example of MCC page 1985 paused before the start of the *Begin* stage.

The following list describes each activity that will occur during the *Begin* stage:

- **Start AMA** - Initiates a WRT:AMA command.
- **AMA Teleprocessing** - Prompts the technician to initiate a manual AMA Teleprocessing or tape session.
- **APPLLOG** - Preparation for the next step.
- **APPLHOOK** - Prepares the switch for LTG (i.e., inhibits REX, RC, etc.).
- **BKUP ODD** - An automatic Backup ODD is executed.
- **VFY TAPE HDR** - Verify the tape sequence. If any tape is missing, read the tape header.

### 5.4.1 AMA SESSION

1. To start the *Begin* stage, on MCC page 1985, enter command:

   ```
   CMD 500
   ```

   **Caution:** In the following step, AMA data that is present in the AM will be written to the MHDs. After WRTAMA completes, the data must be either written to tape or an AMA session with the Host Office Collector (HOC) must be performed (depending on your office option). Each office should estimate the amount of expected AMA data between now and the *Proceed* stage. If a large amount of AMA data exists during the *Proceed* stage, the AMA session could delay the *System Switch Forward.*
Therefore, it is recommended that based on expected AMA data, the following two steps be repeated throughout the LTG interval (up to the Proceed stage) to prevent the build up of AMA data.

2. This will flush (write) all AMA billing data from the AM to the active disk, which is done automatically. See ROP response for output.

Response: Assert 28334 may be output which indicates that AMA records have been lost. AMA records have not been lost at this point. The assert is output because the buffer in the AM is normally written to disk only when full. If the buffer is written to disk and is not full at the time of the write, the assert may be output. The assert occurs when \texttt{wrt:amadata} is entered in a dual stream office, or when \texttt{wrt:amadata} is entered more than once in rapid succession in a single stream office, or when the \texttt{wrt:amadata} is entered two or more times in a dual stream office.

\texttt{WRT:AMADATA; PF}
\texttt{WRT AMA DATA HAS BEEN WRITTEN TO DISK}
\texttt{READY TO TRANSFER DATA FROM DISK TO OUTPUT MEDIUM}
\texttt{REPT LTG BEGIN INITIATE MANUAL AMA TELEPROCESSING OR TAPE SESSION NOW}
\texttt{REPT AMA DISK WRITER FOR STREAM STx RECORDING TO DISK SUSPENDED}
\texttt{REPT AMA DISK WRITER FOR STREAM STx TERMINATION CODE 2}
\texttt{REPT LTG BEGIN RESUME WHEN SESSION HAS STARTED}
\texttt{REPT AMA DISK WRITER FOR STREAM STx INITIALIZATION COMPLETE}
\texttt{REPT AMA DISK WRITER FOR STREAM STx RECORDING TO DISK RESUMED}

Comment: In the preceding response, the term \texttt{STx} means either \texttt{ST1} or \texttt{ST2}. If your office does not use dual stream billing (\texttt{ST1 and ST2}), messages will only be received for \texttt{ST1}. If your office does use dual stream billing, a set of messages will be received for each stream (\texttt{ST1} and \texttt{ST2}).
Figure 5-8 shows MCC page 1985 waiting for initiation of manual AMA teleprocessing or tape session.

3. Initiate manual AMA tape writing or teleprocessing session per local practice.
   
   Comment: If teleprocessing session is being run at a non-standard time, it is necessary to call personnel at the HOC to request a manual poll.

4. Once AMA tape writing or teleprocessing is started, continue with the next section.

**5.4.2 STOP ANY ACTIVE/RUNNING REX DIAGNOSTICS**

**Note:** When the Begin Stage is executed, new REX activities are inhibited. However, any REX activity already in progress must be stopped using procedures in this section.

1. **Stop AM REX diagnostics.**
   a. **List AM REX diagnostics:**
   
   Enter MCC MSG: **OP:DMQ**;
   
   Response:
   
   ```
   REQUEST ACTIVE  
   NONE  
   REQUEST WAITING  
   NONE  
   INHIBIT SOURCES  
   ADP  
   REX  
   **OP DMQ COMPLETED**
   ```
   
   Comment: The output shown is for an office with no active or waiting
deferred maintenance requests in the Deferred Maintenance Queue (DMQ). If requests are waiting or active, they will be output.

b. **If REX diagnostics are running in the AM, they must be stopped.** The following message should be entered if diagnostics are running:

Enter MCC MSG: **STOP:DMQ**;

Response:

Report received from Maintenance Input Request Administrator (MIRA). Major alarm received from REX. Termination messages are received from diagnostic process.

**STP DMQ COMPLETED**

Comment: This message stops any waiting/active diagnostic request on the DMQ.

c. **If any AM units are OOS, they should be manually restored.** When REX diagnostics are stopped in the AM, some AM hardware units may be OOS.

2. **Stop CM REX diagnostics.**

a. **List possible active CM REX diagnostics:**

Enter MCC MSG: **OP:DMQ,CM**;

Response:

```
OP DMQ CM LAST RECORD
  ACTION  UNIT  OPTION  SOURCE  STATUS
  . . .
or
OP DMQ CM HAS NO REQUESTS ON THE DMQ
```

b. **If diagnostics are running in the CM, they must be stopped.** The following messages should be entered if diagnostics are running:

Enter MCC MSG: **STP:REX,CM**;

Response: *(It may take several minutes to receive a response.)*

```
EXC REX CM DGN STOPPED
```

c. **Any units not automatically restored, when CM REX is stopped, should be restored manually.**

*(The REX process typically restores any hardware which REX removes from service.)*

3. **Stop SM REX diagnostics.**

1. Verify REX is inhibited in the SMs:

   MCC Pages: **1271, 1272, 1273 and 1274**

2. **List possible active REX diagnostics in SMs:**

Enter MCC MSG: **OP:DMQ,SM=1&&192**;

Response: *(Output for each SM; x = SM number.)*

```
OP DMQ SM n LAST RECORD
  ACTION  UNIT  SOURCE  STATUS
  . . .
or
OP DMQ SMx HAS NO REQUESTS ON THE DMQ
```
3. **If REX diagnostics are running in any SM, they must be stopped.** The following message should be entered if diagnostics are running:

   Enter MCC MSG: **STP:REX,SM=1&&192;**
   
   Response: *(It may take several minutes to receive a response.)*
   
   **EXC REX SM=n DGN|ELS|FAB STOPPED**

4. **Any units not automatically restored, when SM REX is stopped, should be restored manually.**

   *(The REX process typically restores any hardware which REX removes from service.)*

### 5.4.3 CHECK AND CLEAR ODD BACKUP SCHEDULE

1. **Check ODD backup schedule:**

   MCC Page 120
   
   Enter MCC MSG: **OP:BKUPSTAT;**
   
   Response:
   
   ```
   OP BKUPSTAT
   AM CMP= x TO x NRODD = 1 TO 192 RODD= EVERY= x AT= x
   or
   NG - NO SCHEDULE REQUEST
   ```
   
   Comment: If NG - NO SCHEDULE REQUEST is output, then automatic backups are not scheduled.

2. **Clear the ODD backup schedule (if present):**

   Enter MCC MSG: **CLR:ODDBKUP;**
   
   Response:
   
   ```
   CLR ODDBKUP COMPLETED
   ```

3. **Verify ODD backup schedule has been canceled:**

   Enter MCC MSG: **OP:BKUPSTAT;**
   
   Response:
   
   ```
   NG - NO SCHEDULE REQUEST
   ```

2. **Dump a list of all terminals currently using RC:**

   Enter MCC MSG: **OP:RCUSER;**
   
   Response:
   
   ```
   OP RCUSER x ACTIVE RC USERS
   RC PROCESS TTY/LOGICAL/CLERK-ID PART 1 OF 1
   RCV:(MENU,APPRC | APPTEXT) TERM-ID= xxxx
   or
   OP RCUSER 0 ACTIVE RC USERS
   ```
   
   Comment: **Notify all users that RC will be inhibited.**
5.4.4 START THE LTG PROCESS

Enter the command:

MCC Page: 1985

Enter Poke CMD: 500

Comment: When this 500 Poke command is entered, inhibits will be set and Backup ODD will be started.

---

Note: The Begin Stage automatically inhibits routine exerciser (REX, AMAPS, CM), Automatic Diagnostic Process (ADP), ODD Recent Change, ACSR Enqueueing/Dequeuing, and Static ODD Audit (SODD).

A START BKUP ODD with status COMPLETED indication in the STEP STATUS AREA on MCC Page 1985, will indicate the BKUP ODD has been successfully STARTED. (NOT COMPLETED, JUST STARTED). ROP reports will indicate if the BKUP ODD is still in progress. The BKUP ODD and its associated ROP will occur in parallel while other activities continue to execute.

---

Sample ROP Response:

REPT RETRO BEGIN CONTINUING
UPD GEN BEGIN APP EXECUTING THE FOLLOWING INPUT COMMAND
OP:VERSION
OP:VERSION; PF
OP VERSION Day Month Time
PARTITION VERSION BWM
ECD 5E16xx.xx
/etc 5E16xx.xx BWMxx-xxxx
/unix 5E16xx.xx BWMxx-xxxx
/no5sodd 5E16xx.xx BWMxx-xxxx
/no5text/im 5E16xx.xx BWMxx-xxxx
/no5text 5E16xx.xx BWMxx-xxxx
/diag 5E16xx.xx BWMxx-xxxx
/no5text/rcv/SODD 5E16xx.xx BWMxx-xxxx

DISK CONFIGURATION 2020
UPD GEN BEGIN APP EXECUTING THE FOLLOWING INPUT COMMAND
INH:ALE,PRINT
INH:ALE,PRINT: OK
UPD GEN BEGIN APP EXECUTING THE FOLLOWING INPUT COMMAND
INH:ALE,PER=GEN,SM=1&192
INH:ALE,PER=GEN,SM=1&192; PF
INH:AUD=SODD,FULL; OK
INH:AUD=SODD,INCR; OK
INH:REORG; OK
UPD GEN BEGIN INH:REORG COMMAND SENT
INH:REX; OK
INH:DMQ:SRC=ADP; OK
INH:DMQ:SRC=REX; OK
UPD GEN BEGIN REJECT INHIBIT SENT
UPD GEN BEGIN RECENT CHANGE IS INHIBITED
UPD GEN BEGIN CRAFT ACSR ENQUEUEING/DEQUEUEING INHIBIT SENT

-----------------------------------
Comment: ASM Feature
[ST:DBPROXY,ACTION=OFFLINE; PF]
[ST:DBPROXY,ACTION=REMOVEALL; PF]
-----------------------------------
UPD GEN BEGIN APP EXECUTING THE FOLLOWING INPUT COMMAND
CHG:LPS:MSGCLS=ALL,TOBKUP
CHG:LPS:MSGCLS=ALL,TOBKUP: OK - EXCEPT CNI MSGCLS'S NOT CHANGED
UPD GEN BEGIN APP EXECUTING THE FOLLOWING UNIX COMMAND
/prc/supr/opinfo 2>/dev/null &
UPD GEN BEGIN COMPLETED SUCCESSFULLY

CHG:LPS:MSGCLS=ALL,TOBKUP: OK - EXCEPT CNI MSGCLS'S NOT CHANGED
CHG:LPS:MSGCLS=IOC,LOG=ON,PRINT=ON; OK
CHG:LPS:MSGCLS=TLWS,LOG=ON,PRINT=ON; OK
CHG:LPS:MSGCLS=TRCE,LOG=ON,PRINT=ON; OK
CHG:LPS:MSGCLS=AMA,LOG=ON,PRINT=ON; OK
CHG:LPS:MSGCLS=ADMN,LOG=ON,PRINT=ON; OK

REPT AUDSTAT COMPLETED
ROUTINE AUDIT SCHEDULING IS ALLOWED

OP:AMALOST; PF
OP AMALOST (ON|OFF)
EXC:LIT,OPT=V; PF - FOR PARAMETER VERIFICATION
EXC LIT VERIFY TYP=a RG=b TMD=c TM=d-e
OP:CLID; PF
OP CLID LIST CONTAINS x NUMBERS
SECTION x OF y
BKUP:ODD,FULL; PF

OP:CGAP; PF
OP CGAP COMPLETED
CODE PREFIX GAP ANN DOM
CHG:LPS:MSGCLS=ALL,FROMBKUP; OK

DUMP:FILE:ALL,FN="/updtmp/retrofit/cronfile",OPL=999; PF
DUMP FILE ALL STARTED

---------------------------------------------------
Comment:
<System and User Cron files dumped to ROP>
---------------------------------------------------

REPT BEGINHOOK
COMPLETED SUCCESSFULLY

REPT PRECHKS
ECD CHECK PASSED
BKUP ODD FULL NRODD= 1 IN PROGRESS

REPT BEGIN OLB CHECK
CHECK COMPLETED

REPT PRECHKS
OLB CHECK PASSED

REPT PRECHKS
COMPLETED SUCCESSFULLY
BKUP ODD NRODD= 1 COMPLETED

---------------------------------------------------
Comment:
The BKUP ODD is continuing. Additional ROP relating to the BKUP ODD may be seen.
---------------------------------------------------

REPT RETRO ENTER
PAUSED AT STAGE BOUNDARY - RESUME WHEN READY
5.4.5 SYSTEM CONFIGURATION

Figure 5-9 shows a typical system configuration at the completion of the Begin stage.

- Quiet Duplex
- No Major Units OOS
- AM Side 0 ACTIVE, Side 1 STANDBY
- SMs Side 0 or Side 1 ACTIVE (other side STANDBY)
- CMP 0-0 ACTIVE, CMP 1-0 STANDBY

MCC Page 116:

MCC Page 1985:

Note: The OSPS EVOL ACT box will only be backlit for OSPS offices.

Figure 5-9 — Typical System Configuration at Completion of Begin Stage
5.5 ENTER STAGE

1. If entering this command prior to reading in the tapes, the following commands need to be executed on MCC page 1984 to indicate active disks (ACT-SYSTEM):

   CMD 502

   The following response is to MCC page 1984 poke command "502" or input message UPD:GEN:APPLPROC:ARG=MHDSTAT; in a 2-pair office before starting the transition, all disks duplex:

   Response:
   
   UPD:GEN:APPLPROC, ARG="MHDSTAT"-
   UPD GEN APPLPROC EXECUTING THE FOLLOWING RETROFIT TOOL:
   /PRC/SUPR/MHDSTAT
   REPT MHD STATUS:
   
<table>
<thead>
<tr>
<th>PAIR</th>
<th>EVEN</th>
<th>ODD</th>
</tr>
</thead>
<tbody>
<tr>
<td>STATUS MHD</td>
<td>STATUS MHD</td>
<td>PAIRED</td>
</tr>
<tr>
<td>-----------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DUPLEX 0 ACT-SYSTEM 1 ACT-SYSTEM Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DUPLEX 2 ACT-SYSTEM 3 ACT-SYSTEM Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DUPLEX, NO DISKS SPLIT FOR LTG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>REPT TOOL DUMP MHDSTAT COMPLETED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUCCESSFULLY SEE ROP FOR DETAILS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Before proceeding with the Enter Stage, if the office has an ASM with the Proxy Database feature active, then the removal of that database should have successfully occurred during the Begin Stage. To confirm this, enter message:

   MSG ST:DBPROXY:ACTION=SIZEREPORTALL

   Response:

   ST DBPROXY ACTION=SIZEREPORTALL STOPPED
   SPECIFIED DATABASE DOES NOT EXIST

   Any other ROP indicating the presence of any of the Proxy Database sizes is an error condition that must be resolved before continuing in the Enter Stage. Escalate to your next level of support.

OVERVIEW

During the Enter stage, new software release evolved ECD and ODD are read from tape and written to the off-line disk.

If a bad tape is encountered during the Enter stage, please mail it back to Lucent Technologies for error analysis. The return mailing address for a bad tape is on the tape label.

Also, the Enter stage will not complete until the automatic BKUP:ODD in the Begin stage completes.
Figure 5-10 shows an example of MCC page 1985 paused before the start of the Enter stage.

The following list describes each activity that will occur during the Enter stage:

- **ENTER PREP** - Verifies the switch is ready to start the Enter stage.
- **LOAD_MHDS** - Reads in the new release tapes.
- **DSKPREP** - Initializes file systems on MHD, (x) for use with the new release.
- **WAIT BKUP ODD** - Waits for completion of the ODD Backup which was started in the Begin stage.
- **LOOKODD** - Checks and reports on the new software release ODD.
- **ENTERHOOK** - Starts mounting of off-line partitions.
- **MNT OFL PTNS** - Progression and completion of mounting of off-line partitions used for SM off-line pump.
- **GENDIFF SUs** - Application of GENDIFF SUs.
- **AUTOMATIC/MANUAL OFF-LINE PUMP** - Prompts the technician to manually start and wait for completion of off-line pump of SMs.

The Enter stage is at a pause boundary. Continue with the following manual steps.
5.5.1 STOP ANY ACTIVE/RUNNING REX DIAGNOSTICS

*Note:* When the Begin stage is executed, new REX activities are inhibited. However, any REX activity already in progress must be stopped using procedures in this section.

1. **Stop AM REX diagnostics.**
   1. **List AM REX diagnostics:**

      Enter MCC MSG: **OP:DMQ**;

      Response:

      REQUEST ACTIVE
      NONE
      REQUEST WAITING
      NONE
      INHIBIT SOURCES
      ADP
      REX
      OP DMQ COMPLETED

      Comment: The output shown is for an office with no active or waiting deferred maintenance requests in the Deferred Maintenance Queue (DMQ). If requests are waiting or active, they will be output.

2. **If REX diagnostics are running in the AM, they must be stopped.** The following message should be entered if diagnostics are running:

      Enter MCC MSG: **STOP:DMQ**;

      Response:

      Report received from Maintenance Input Request Administrator (MIRA).
      Major alarm received from REX.
      Termination messages are received from diagnostic process.
      STP DMQ COMPLETED

      Comment: This message stops any waiting/active diagnostic request on the DMQ.

3. **If any AM units are OOS, they should be manually restored.** When REX diagnostics are stopped in the AM, some AM hardware units may be OOS.

5.5.2 GENERAL CHECKS AND SETUPs

*Caution:* Do not change selections on the EAI page from this point on unless explicitly directed to do so by this document or from your next level of support.

1. **Verify that the AM is duplex:**

      MCC Page: **111**

      Enter Poke CMD: **30x**

      Where: \( x \) = OOS AM

      If the AM is not duplex, restore the OOS AM.

2. **Verify the following:**

      MCC Page: **111**

      AM 0 is **ACT**
      AM 1 is **STBY**
If AM 0 is STBY and AM 1 is ACT, enter command:
Enter Poke CMD: 400
Response: SW CU 0 COMPLETED

**ACTION:** Verify AM 0 is ACT and AM 1 is STBY before proceeding.

3. **Ensure that all MHDs are active** with the exception of MHDs 14 and 15, (if equipped)
   MCC Page: 123
   MCC Page: 125 (if more than 2 DFCs are equipped)

---

**Warning:** DO NOT hit the <break> or <DEL> keys during the Enter stage. Hitting the <break> or <DEL> delete keys stops any active Enter stage process, INCLUDING tape reading.

### 5.5.3 TAPE LOADING

#### 5.5.3.1 General

For the LTG, only the **ODD** will be loaded onto the switch.

During the Enter Stage, the new data is loaded onto MHD 1 and MHD 3.

<table>
<thead>
<tr>
<th>FILE</th>
<th>DATA</th>
<th>MHD</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATA.rt0</td>
<td>AM ODD/ECD</td>
<td>MHD 1</td>
</tr>
<tr>
<td>DATA.rt1</td>
<td>SM ODD</td>
<td>MHD 3</td>
</tr>
</tbody>
</table>

#### 5.5.3.2 Loading Tape

All preparation steps must be completed prior to reading in the tape.

**Begin MHD loading:**

Reference: **Figure 5-11 at the Enter Stage Pause**

MCC Page: 1985

Enter Poke CMD: 500

The LOAD_MHD status is displayed on the MCC 1985 Page. Users can check the ROP to monitor the progress of the loading.

At this point, the **BKUP ODD** which was started in the Begin Stage may still be running during the MHD loading.

**Read:** Remember, **two** tapes are sent to the office but only one is loaded during the Enter stage. The second tape is for **backup only**.

**Note:** The Retrofit procedure will automatically load the MHDs. Review the following information to become familiar with the MHD loading for the LTG.

---

**MHD Loading:**

— Data read from STR Tape in the following order:
Note: At this point, if the BKUP ODD which was started in the Begin stage is running, the Enter stage will pause until the BKUP ODD is complete.

The Load MHD Status is displayed on the MCC 1985 Page. Users can check the ROP to monitor the progress of the MHD loading sequence.

Note: All of the following ROP output may not be in the same order as indicated due to switch activity at the time. The PRMs may come out in any order. Some of these PRMs may not appear on the ROP, and others may appear more than once.
MHD LOADING — ROP

RMV:MHD=1; PF
RMV MHD 1 TASK x MESSAGE STARTED
RMV MHD 1 COMPLETED
REPT DIOP SIMPLEX PROCESSING COMPLETED

REPT LOADLDFT MHD_1_DATA
COPYING DATA FROM TAPE TO MHD 1
REPT LOADLDFT MHD_1_DATA
LOADING_DATA 1 PTN - xx
REPT LOADLDFT MHD_1_DATA
MHD_1_DATA COMPLETED SUCCESSFULLY

RST MHD 1 TASK x MESSAGE STARTED
RST MHD 1 IN PROGRESS
RST MHD 1 COMPLETED

RMV:MHD=3; PF
RMV MHD 3 TASK x MESSAGE STARTED
RMV MHD 3 COMPLETED

REPT LOADLDFT MHD_3_DATA
COPYING DATA FROM TAPE TO MHD 3
REPT LOADLDFT MHD_3_DATA
LOADING_DATA 3 PTN - xx
REPT LOADLDFT MHD_3_DATA
MHD_3_DATA COMPLETED SUCCESSFULLY

RST MHD 3 TASK x MESSAGE STARTED
RST MHD 3 IN PROGRESS
RST MHD 1 COMPLETED

Comment:
The following PRMs may be output repeatedly in any order. They indicate the successful mounting and unmounting of file systems that occurs during this stage of the retrofit procedure.

PRM_0 E800 0001 yyzz zzzz hh hh hh
PRM_0 E800 0002 yyzz zzzz hh hh hh
PRM_0 E800 0001 yyzz zzzz hh hh hh
PRM_0 E800 0002 yyzz zzzz hh hh hh

MHDs 4 and Higher Equipped in Office:

Note: If the office disk configuration has more than two pairs of MHDs, there will be additional ROP output messages similar to those already seen for MHD 1 and MHD 3:

Sample ROP Output:

REPT LOADLDFT MHD_x_DATA
LOADING_DATA x PTN - xx

REPT LOADLDFT MHD_x_DATA
MHD_x_DATA COMPLETED SUCCESSFULLY

— OR —

REPT LOADLDFT MHD_x_DATA
GRMKDISK LOADING_DATA.rtx ON MHD x SUCCEEDED
Completion of the MHD loading

Signature: _______________________________________
Date/Time: ___________________

**Note:** At this point, the **BKUP ODD** which was started in the Begin Stage **could** still be running.

- If the **BKUP ODD** is still running, the following pause as shown in Figure 5-12 will be viewable and the Enter Stage will pause until the **BKUP ODD** is complete. The Retrofit process will continue automatically upon completion of **BKUP ODD**.

  Expected ROP Output:

  ```plaintext
  REPT ENTER WAIT_BKUP_ODD
  WAITING FOR COMPLETION OF EVOLUTION

  REPT ENTER WAIT_BKUP_ODD
  EVOLUTION COMPLETED
  ```

- If the **BKUP ODD** is already completed, Figure 5-12 will not be displayed and the LTG process will be continuing automatically.
All of the following ROP output MAY NOT be in the same order as indicated due to switch activity at the time.

**Sample ROP Response:**

---

**Comment:** OSPS office only

ASOSPSON: OSPS RETROFIT BIT HAS BEEN SET

AUTOMATIC CORC AND RECENT CHANGE RETROFIT PROCESS STARTED
AUTOMATIC CORC AND RECENT CHANGE RETROFIT PROCESS
EVOLUTION PROCESS TARGET SOFTWARE RELEASE IS 5E162

DB RETROFIT PROCESS KEEPLOG COMPLETED
DETAILED INFO IN /rclog/kplog.err

AUTOMATIC CORC AND RECENT CHANGE RETROFIT PROCESS
RECENT CHANGE EVOLUTION STARTED

CNVT RCLOG EVOL: RC EVOLUTION RC STEP COMPLETION SUMMARY
x VIEWS READ
x VIEWS CREATED
x VIEWS IN ERROR
FIRST ERROR FILE IS /rclog/RCERR1
LAST ERROR FILE IS /rclog/RCERR1

CNVT RCLOG EVOL COMPLETE

AUTOMATIC CORC AND RECENT CHANGE RETROFIT PROCESS
CORC EVOLUTION STARTED
CORC EVOLUTION STARTED
CONCURRENT CONTROL PROCESS STARTED
CORC EVOLUTION COMPLETED
NO CORC LOGFILE EXISTS
x CORCS x TRNCORCS HAVE BEEN LOGGED IN THE CORC EVOLVED LOGFILES
CORC EVOLUTION COMPLETE
AUTOMATIC CORC AND RECENT CHANGE RETROFIT PROCESS COMPLETED

Comment:
The following PRMs may be output repeatedly in any order. They indicate the successful mounting and unmounting of file systems that occurs during this stage of the retrofit procedure.

PRM_0 E800 0001 yyzz zzzz hh hh hh
PRM_0 E800 0002 yyzz zzzz hh hh hh
PRM_0 E800 0001 yyzz zzzz hh hh hh
PRM_0 E800 0002 yyzz zzzz hh hh hh

CNVT AMA CONFIG
CONFIGURATION FILE FOR STREAM 1 FOR MHD 1 HAS BEEN CONVERTED
CNVT AMA CONFIG
CONFIGURATION FILE FOR STREAM 2 FOR MHD 1 HAS BEEN CONVERTED
CNVT AMA CONFIG
CONFIGURATION FILE FOR STREAM 1 FOR MHD 3 HAS BEEN CONVERTED
CNVT AMA CONFIG
CONFIGURATION FILE FOR STREAM 2 FOR MHD 3 HAS BEEN CONVERTED
CNVT AMA CONFIG
CONVERSION OF AMA CONFIGURATION FILES HAS COMPLETED

DUMP:FILE:ALL, FN="/updtmp/site/toolxfer/info.out"; PF
DUMP FILE ALL COMPLETED

----------------------
AMALOST feature status
----------------------
OP AMALOST OFF
----------------------
ALIT parameters
----------------------
EXC LIT VERIFY TYP=G RG=D TMQ=0 TM=2.0
CLID - Call Trace DNSs
----------------------
CLID LIST CONTAINS 0 NUMBERS
----------------------
CGAP - Call Gapping Code Control
----------------------
CODE  PREFIX  GAP  ANN  DOM
REPT CPYFILE ENTER
COMPLETED SUCCESSFULLY

LOOKODD REPORT: LOOKODD COMPLETED SUCCESSFULLY

!!!!!!!!!!!!!!!!!!!! LOOKODD REPORT !!!!!!!!!!!!!!!!!!!!!

. Common Information:
.  Generic = 5eXX(x).xx.x
.  SU Level = xxxxx-xxxx
.  Date = mm/dd/yy
.  Text Issue = xx.xx
.  Destination = xxxxx
.  ODA Issue = x.xx
.  (SM only) RODD ID = xxxxxxxxxxx
.

!!!!!!!!!!!!!!!!!!!! SUMMARY FOLLOWS !!!!!!!!!!!!!!!!!!!!!

Found ODD files for the AM, CMP, and the following SMs:
<all SMs equipped in the office should be list here>
UPD GEN APPLPROC ISMOP REPORT

!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!

MOP/PTNMGR IS RUNNING: MOPPID = xxxxxxx

THE FOLLOWING OFFLINE PARTITIONS ARE MOUNTED:

```
/tmp/ofl/no5odd/smdata1 on /tmp/ofldevxx
/tmp/ofl/no5odd/cidata on /tmp/ofldevxx
/tmp/ofl/no5odd/data0 on /tmp/ofldevxx
/tmp/ofl/log on /tmp/ofldevxx
/tmp/ofl/smlog on /tmp/ofldevxx
```

ISMOP COMPLETE

!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!

REPT MNT_OFL_PTN
OFFLINE PUMP PARTITIONS MOUNTED

REPT ENTERHOOK
COMPLETED SUCCESSFULLY

DUMP:FILE:ALL, FN="/tmp/cniupd.out", OPL=999; PF
DUMP FILE ALL COMPLETED

CNI.UPD COMPLETE

REPT POST_ENTER
COMPLETED SUCCESSFULLY

CLR:AMA:MAPS; PF
CLR AMA MAPS
PARTITION xx ON OFFLINE MHD 1 HAS BEEN CLEARED
CLR AMA MAPS
PARTITION xx ON OFFLINE MHD 1 HAS BEEN CLEARED
CLR AMA MAPS
PARTITION xx ON OFFLINE MHD 3 HAS BEEN CLEARED
CLR AMA MAPS
PARTITION xx ON OFFLINE MHD 3 HAS BEEN CLEARED
CLR AMA MAPS
CLEARING OF AMA MAPS AND CREATION OF AMA FILES HAS COMPLETED

REPT ENTER SM_OFL_PUMP
READY TO BEGIN OFFLINE PUMPING SMs
ALL SMs WILL BE SIMPLEXED AND HAVE A HIGHER RISK OF SYSTEM OUTAGE
RECOMMEND OFF-PEAK EXECUTION --- RESUME WHEN READY

Allow at least 25 minutes for these output messages. The UPD ENTER COMPLETED message may not print out on the ROP. You should see the process go on to LOOK ODD then see the ENTER HOOK COMPLETED SUCCESSFULLY message.

**Warning:** If error messages are received, escalate to your next level of support.

5.5.4 OFF-LINE DISK ODD LAYOUT CHECK

1. During the Enter stage, the procedure will automatically execute a LOOKODD.

Response:

```
PRM_0 E800 xxxx xxxx xxxx xx xx xx
```

*Will be received several times.*
LOOKODD REPORT: LOOKODD COMPLETED SUCCESSFULLY

!!!!!!!!!!!!!! LOOKODD REPORT !!!!!!!!!!!!!!

. Common Information:
  - Generic = 5E16(2),xx.x
  - SU Level = xxxxxx
  - Date = xx/xx/xx
  - Text Issue = xx.xx
  - Destination = xxxxxx
  - ODA Issue = x.xx
  - Mapping Version = xx
  - (SM only) RODD ID = xxxxxxxxx

!!!!!!!!!!!!!!! SUMMARY FOLLOWS !!!!!!!!!!!!!!!!

Found ODD files for the AM, CMP, and the following SMs:

(List of SMs is output.)

xx xx xx xx xx xx xx xx xx xx
xx xx xx xx xx xx xx xx xx xx
xx xx xx xx xx xx xx xx xx xx

Note: If a failure occurs, call technical support.

2. Verify that the Base & Control for your office matches the output in the Destination field of the LOOKODD report. If the Base & Control output in the Destination field of the LOOKODD report is incorrect, escalate to your next level of support immediately.

3. Verify that the data output is correct and that each SM in the office is listed in the output. If any of the data output is incorrect or any SMs are missing from the output, escalate to your next level of support immediately.

4. Before proceeding, verify that:
   All required tapes - ECD/AM ODD, and SM ODD - have been successfully read into the odd-numbered MHDs.

5. The following output will be displayed on the ROP after mounting off-line file systems.

Response:

PRM_0 E800 xxxx xxxx xxxx xx xx xx

(Will be received several times.)

!!!!!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!

M UPD GEN APPLPROC ISMOP REPORT

!!!!!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!

MNT OFL PTNS OFFLINE PUMP PARTITIONS MOUNTED
REPT ENTER HOOK COMPLETED SUCCESSFULLY
REPT ENTER HOOK PROCEED WITH OFFLINE PUMP IN PARALLEL IF DESIRED
REPT ENTER HOOK OFFLINE PUMP CAN BE PERFORMED
WHILE SUs ARE APPLIED
REPT POST ENTER HOOK COMPLETED SUCCESSFULLY
REPT LTG ENTER OFFLINE PUMP SMS NOW IF YOU HAVE NOT
ALREADY DONE SO
REPT LTG ENTER DO NOT CONTINUE PAST THIS POINT UNTIL
COMPLETED
REPT LTG ENTER RESUME WHEN OFFLINE PUMP IS COMPLETED

6. After reading in the tapes and upon entering the command again, the response
will indicate off-line (ACT-SPLIT) disks:

Note: The following is a response to MCC Page 1984 poke command 502 or
input message UPD:GEN:APPLPROC:ARG=MHDSTAT; in a 2-pair office after
completion of the ENTER stage:

Response:

UPD:GEN:APPLPROC, ARG="MHDSTAT"
UPD GEN APPLPROC EXECUTING THE FOLLOWING RETROFIT TOOL:
IPRC/SUPR/MHDSTAT REPT MHD STATUS:

<table>
<thead>
<tr>
<th>PAIR</th>
<th>EVEN</th>
<th>ODD</th>
</tr>
</thead>
<tbody>
<tr>
<td>STATUS</td>
<td>MHD</td>
<td>MHD</td>
</tr>
<tr>
<td>SIMPLEX 0 ACT-SYSTEM 1 ACT-SPLIT N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIMPLEX 2 ACT-SYSTEM 3 ACT-SPLIT N</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DISKS SPLIT FOR ACTDISK LTG, SYSTEM RUNNING ON OLD SIDE
REPT TOOL DUMP MHDSTAT COMPLETED SUCCESSFULLY
SEE ROP FOR DETAILS

This command can be entered any time after reading in the tapes to
determine the state of the disks.

The system is running on MHDs 0 and 2 (the status of the ACT-SYSTEM) and
MHDs 1 and 3 contain the new release data (the status of ACT-SPLIT). The
value of N in the PAIRED column indicates that MHDs 0 and 1 are not duplex
paired, so they are not identical copies of each other.

The following steps in the **Enter** stage have completed:

- Enter Preparation.
- Execute Tape Read for MHDx.
- Disk preparation X.
- Wait Backup ODD.
- Execute LOOKODD.
- Execute ENTERHOOK.
- Mount off-line partitions.
- Application of GENDIFF SUs.
- Pump pause.

One of the following two screens will appear:
7. If the "Automatic SM Offline Pump" option on the 1989 page is set to "Y", then the screen shown in figure 5-13 is seen.

8. If the "Automatic SM Offline Pump" option on the 1989 page is set to "N", then the screen shown in figure 5-14 is seen.
The RCL has completed to this step of the Enter stage. However, the Enter stage has NOT been completed and off-line processor pump still needs to be executed.

**Note:** Do not forget to pump the SMs or the SWITCHFWD stage will fail.

1. Continue with the following steps.
2. Enter the following message to dump the VTOC for MHD 1 (5E16.2 Software Release):
   
   ```
   MSG       DUMP:MHD=1:VTOC;
   ```

   Response:
   
   ```
   DUMP MHD 1 VTOC STARTED  
   DUMP MHD 1 VTOC SEGMENT x of y  
   MHD 1 VTOC is dumped at ROP. DUMP MHD 1 VTOC IN PROGRESS  
   DUMP MHD 1 VTOC COMPLETED  
   ```

3. Verify that the 5E16.2 VTOC layout for MHD 1 matches the data in Table 9-26 regarding "start" and "size" for each partition.

   **Note:** Partition 8 (LBOOT21) will have a start address of 0 instead of partition 1 (LBOOT) having a start address of 0.

4. Enter the following message to dump the VTOC for MHD 3:
   
   ```
   MSG       DUMP:MHD=3:VTOC;
   ```

   Response:
   
   ```
   DUMP MHD 3 VTOC STARTED  
   DUMP MHD 3 VTOC SEGMENT x of y  
   ```
5. Your office must have a 2020 disk configuration on 5E16.2. Verify that the 5E16.2 VTOC layout for MHD 3 matches the data in Table 5-11 regarding "start" and "size" for each partition.

6. If your office is equipped with more than two pairs of MHDs, enter the following message to dump the VTOCs for the remaining odd numbered MHDs.

`MSG DUMP:MHD=x:VTOC;`

Where: \( x = \) MHD number.

Response:

```
DUMP MHD x VTOC STARTED
DUMP MHD x VTOC SEGMENT x of y
MHD x VTOC is dumped at ROP.
DUMP MHD x VTOC IN PROGRESS
DUMP MHD x VTOC COMPLETED
```

7. Verify that the VTOC layout matches the data in the appropriate 5E16.2 VTOC layout table for your particular office configuration regarding the "start" and "size" for each partition.

### 5.5.5 REMOVE THE STR TAPE

The STR Tape may be removed from the DAT drive at this time. (If the office is currently unmanned, the STR tape may be removed at a later time. There is no harm in leaving the tape in the drive while continuing the LTG procedures.)

#### 5.5.6 SM OFF-LINE PUMP

**OVERVIEW**

**Read: OFFICES WITH HEAVY ISDN EQUIPAGE**

During the Proceed stage, prior to the system switch forward, you will be instructed to enter the message **CNVT:CORCLOG** (Section 5.6.1). This command flushes CORCs from the SM buffers and evolves them to the new data format. Due to the large number of CORCs logged in heavily equipped ISDN offices, this command can take up a considerable amount of time to run.

The SMs are off-line pumped with the new software data. Major tasks performed during this stage are as follows:

- Off-line file systems are mounted.
- The SMs are forced simplex.

It should be noted that the **UPD:GEN:SWITCHFWD** command has the capability to switch SMs from MCTSI side 0 (old software release) to MCTSI side 1 (new software release) and in any combination (that is, SM 1 could be switching from MCTSI side 0 to 1, SM 2 from MCTSI side 1 to 0, and SM 3 from MCTSI side 0 to 1, etc.). In order to simplify the procedures, it is recommended that the new
software release be off-line pumped into MCTSI side 1 of all SMs. The procedures in this manual off-line pump the new software release into MCTSI side 1 of all SMs.

- All SMs are off-line pumped with the new data.
- Off-line file systems are unmounted.

5.5.6.1 OFF-NORMAL STATUS CHECK

1. To check AM, CMP, and SM status, enter message:

   MSG OP:SYSSTAT,UCL;

   Response:
   
   OP SYSSTAT SUMMARY {FIRST|LAST|NEXT} RECORD
   SYS: INHIBITS[-MSG][-RC] MISC
   AM: INHIBITS-AUD-MTCE {MORE}
   CM: INHIBITS-MTCE
   CMP x-0 P: NORMAL
   CMP y-0 M: NORMAL
   LSM a,x: INHIBITS-MTCE
   ... 
   LSM b,x: INHIBITS-MTCE
   ...
   LSM z,x: INHIBITS-MTCE

   Verify that none of the SMs have "MATE_OOS" as a status.

   a. If any SMs indicate MATE_OOS, access MCC page 1190,x and restore that SM to duplex.

   b. After all SMs are duplex, re-enter the OP:SYSSTAT,UCL message.

   Ensure no off-normal status other than INHIBITS-MTCE is indicated for any SM.

   Verify that both CMP 0-0 and CMP 1-0 indicate NORMAL.
5.5.6.2 SMs OFF-LINE PUMP AND SUs APPLICATION OVERVIEW

With the MCC 1985 page pause as shown in figure 5-13 there are 2 more activities that need to be completed before completing the entire ENTER stage. These 2 main activities are:

1. Off-line pumping of the SMs with the new ODD.
2. Applying of SUs (imr11111xx and imr22222xx) that were generated automatically during the BEGIN stage.

**Note:** Do not wait to apply SUs (imr11111xx and imr22222xx) after all SMs have been successfully pumped. Instead, it is recommended that you apply SUs (imr11111xx and imr22222xx) while off-line pumping the SMs is taking place.

**Caution:** Both of the above activities must be completed successfully before attempting to continue with the LTG procedure.

3. VERIFY ONTC LINKS

Verify ONTC 0 is **ACTIVE MAJOR** after loading tapes and before forcing the SMs active for offline pump.

a. At MCC Page 1209 verify that ONTC 0 is ACTIVE MAJOR. If it is not, enter the following:

   CMD 403

   Response: SW ONTC COMPLETED

b. If the switch of ONTC fails, escalate to your next level of support.
5.5.7 SM OFF-LINE PUMP

**Note:** If the “Automatic SM Offline Pump” option on the 1989 page is set to 'N', skip to section 8 and perform the procedures listed in section 8.3 (Manual SM Offline Pump from OFLDISK). Once the SMs have started offline pumping as a result of the 2000 command entered from Section 8.3.4, Step 7, return to Section 5.5.7.2 to Apply Software Update imr111111xx through Section 5.5.7.3 Apply Software Update imr222222xx before continuing on the Section 8.3.4, Step 8.

Once the SM off-line pump is started, each SM will be forced simplex with MCTSI side 0 active-forced (ACTF) and MCTSI side 1 unavailable (UNV). The MCTSI side 1 will then be pumped with the new ODD from the off-line disk(s).

1. Start the automated SM off-line pumps by entering the following command:

   **CMD** 500

   **Response:**
   
   ORD:CPI=1&&192,CMD=SW-0;
   INH:HRDCHK,SM=1&&192;
   INH:SFTCHK,SM=1&&192;
   ST:OPUMP,SM=1&&192,OFLDISK,PERF,VFY;


   Periodic updates on the overall status of the automated SM offline pumps appear on the 1985 page and the ROP. The 181 through 184 pages may also be viewed to get the status of the SM offline pumps for each SM. Tables 9-19 and 9-20 list all the possible states of the mate memory that can be displayed on MCC page 181 during off-line pump. There are also ROP outputs from each SM as they progress through their offline pump activities. Individual failure reports are displayed as they occur, while the overall status continues to be shown on the 1985 page until all SMs have completed or failed. If failures occur, refer to section 6.5.4 and attempt to correct any identified failures. If the reason for a particular SM offline pump failure is later corrected, the failed SM(s) are picked up when the procedure is resumed.

3. If failures occur that can not be corrected, the SM offline pump automation can be by-passed by setting the “Automatic SM Offline Pump” option on the 1989 page to 'N'. It is then up to the craft performing the retrofit to manually (see section 8.3) offline pump the failed SM(s) or isolate the errant SM(s) at the switchforward.

4. If one or more SMs failed during the peripheral pump procedure, execute the steps listed in Recovery Section 6.5.5

5.5.7.1 SM OFF-LINE PUMP and SUs APPLICATION

As stated above, the only remaining activities to be executed as part of the ENTER stage are:

1. Off-line pumping of the SMs with the new ODD.
2. Application of SUs (imr111111xx and imr222222xx).

It should be noted that the **UPD:GEN:SWITCHFWD** command has the capability to switch SMs from MCTSI side 0 (old ODD) to MCTSI side 1 (new ODD) and in any combination (that is, SM 1 could be switching from MCTSI side 0 to 1, SM 2 from...
MCTSI side 1 to 0, and SM 3 from MCTSI side 0 to 1, etc.). In order to simplify the procedures, it is recommended that the new ODD be off-line pumped into MCTSI side 1 of all SMs. The procedures in this manual off-line pump the new ODD into MCTSI side 1 of all SMs.

After the SM off-line pump is started, the first (of two) SU application is also started. Throughout the SM off-line pump, the SU application will be monitored. Once the first SU has been successfully applied, the second SU application is performed.

5.5.7.2 Apply Software Update imr11111xx

The new MCC page 1990 consists of 3 parts. The upper part consists of the Install Stages, Status and Pokes. The Pokes provide the ability to verify, prepare, activate, soak, make official, deactivate and back-out an SU. They also provide the ability to introduce an SU package, stop the installation and print the MSGS file on the ROP.

The install stage status uses colors and text to display the status of the installation stages. The middle of the 1990 page is the Response Line indicator, which reports installation status, user errors and instructions. The lower part of the 1990 page contains the Command Line Display, which displays several command lines at a time from the MSGS file along with their respective execution status. The MSGS file, in an SU Package, contains craft input commands grouped in sections relative to different actions in the SU installation process.

The SU installation will stop if an error occurs or if the stop installation poke command is entered.

The time to apply and soak the following SU will vary, possibly taking over an hour to complete. All data in the following procedure is input as shown (that is, xx in this case is not variable, it is what was generated in the Begin Stage example. See Begin Stage in this document).

1. Any TMP SUs must be backed out at this point. Refer to 235-105-210, *Routine Operations and Maintenance*, for more information.

2. To change the install BWM name, enter the following command on MCC page 1990:

   ```
   CMD  4,imr11111xx
   ```

3. To reset the BWM soak interval timer, enter the following command on MCC page 1990:

   ```
   CMD  22,00:00
   ```

4. To make the SU official, enter the following command on MCC page 1990:

   ```
   CMD  5
   ```

Comment: MCC page 1990 may be used to monitor the progress of the SU installation.

Before continuing, wait until MCC page 1990 appears as shown in Figure 5-16.
5.5.7.3 Apply Software Update imr22222xx

The time to apply and soak the following SU will vary, possibly taking over an hour to complete. All data in the following procedure is input as shown (that is, xx in this case is not variable).

1. To change the install BWM name, enter the following command on MCC page 1990:
   CMD 4,imr22222xx

2. To reset the BWM soak interval timer, enter the following command on MCC page 1990:
   CMD 22,00:00

3. To install the SU, enter the following command on MCC page 1990:
   CMD 5

   Comment: MCC page 1990 may be used to monitor the progress of the SU installation.

4. Before continuing, wait until MCC page 1990 appears as shown in Figure 5-17.
Caution 1: On MCC pages 181, 182, etc., ensure that all SMs indicate MATE_PUMP before proceeding. See Figure 5-18.

Caution 2: On MCC page 1950, verify that both SUs (imr11111xx and imr22222xx) appear in the Official BWM History before proceeding.
Figure 5-19 shows an example of MCC page 1985 paused after the completion of the Enter stage.

<table>
<thead>
<tr>
<th>SYS EMER</th>
<th>CRITICAL</th>
<th>MAJOR</th>
<th>MINOR</th>
<th>BLDG/PWR</th>
<th>BLDG INH</th>
<th>CKT LIM</th>
<th>SYS NORM</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMD: _</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COMMAND</th>
<th>START OPUMP</th>
<th>STOP OPUMP</th>
<th>RETRY PERF</th>
<th>RETORE PERF</th>
<th>OP OPUMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>181 - OFFLINE SM 1-48 STATUS SUMMARY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000 ALL SMS</td>
<td>3000 ALL SMS</td>
<td>4000 ALL SMS</td>
<td>5000 ALL SMS</td>
<td>600X SM X</td>
<td></td>
</tr>
<tr>
<td>200X SM X</td>
<td>300X SM X</td>
<td>400X SM X</td>
<td>500X SM X</td>
<td>600XX SM XX</td>
<td></td>
</tr>
<tr>
<td>20XX SM XX</td>
<td>30XX SM XX</td>
<td>40XX SM XX</td>
<td>50XX SM XX</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Figure 5-18 — MCC Page 181**

Off Line Switching Modules

<table>
<thead>
<tr>
<th>LSM 1,0 MATE PUMP</th>
<th>LSM 2,0 MATE PUMP</th>
<th>LSM 3,0 MATE PUMP</th>
<th>LSM 4,0 MATE PUMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSM 5,0 MATE PUMP</td>
<td>LSM 6,0 MATE PUMP</td>
<td>LSM 7,0 MATE PUMP</td>
<td>LSM 8,0 MATE PUMP</td>
</tr>
<tr>
<td>LSM 9,0 MATE PUMP</td>
<td>LSM 10,0 MATE PUMP</td>
<td>LSM 11,0 MATE PUMP</td>
<td>LSM 12,0 MATE PUMP</td>
</tr>
<tr>
<td>ORM 13,0 MATE PUMP</td>
<td>ORM 14,0 MATE PUMP</td>
<td>ORM 15,0 MATE PUMP</td>
<td>ORM 16,0 MATE PUMP</td>
</tr>
<tr>
<td>LSM 17,0 MATE PUMP</td>
<td>LSM 18,0 MATE PUMP</td>
<td>LSM 19,0 MATE PUMP</td>
<td>LSM 20,0 MATE PUMP</td>
</tr>
<tr>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>LSM 45,0 MATE PUMP</td>
<td>LSM 46,0 MATE PUMP</td>
<td>LSM 47,0 MATE PUMP</td>
<td>LSM 48,0 MATE PUMP</td>
</tr>
</tbody>
</table>
Figure 5-19 — MCC Page 1985 Paused at the Completion of the Enter Stage
5.5.8 SYSTEM CONFIGURATION

Figure 5-20 shows the system configuration at the completion of the Enter stage.

All tasks in the Enter stage have been successfully completed.
5.6 PROCEED STAGE

Caution: Input all messages/commands required to perform the LTG at the MCC. During the Proceed stage, other terminals may not provide an accurate representation of the status of the switch.

OVERVIEW

Read: The AM off-line boot feature greatly changes the proceed stage for the LTG. Please read this overview section carefully before proceeding.

The AM off-line boot feature verifies that the AM and CM can be booted on the new database. This is done by isolating side 1 of the AM, CM, and all hardware units associated with them. Once isolated, side 1 is initialized and verified. During this process, side 0 continues to maintain call processing and other switch activities.

The AM off-line boot process is automatically invoked by the proceed command (Section 5.6.7). When the AM off-line boot process completes, a success message is sent to the ROP and the PROCEED stage continues.

During the execution of the AM off-line boot process, the maintenance terminals (that is, the MCC, STLWS, RC/V, UNIX, etc.) will appear in different states than they have in previous software release updates. The state of a specific terminal depends on which IOP the terminal is attached.

The AM off-line boot process isolates equipment on side 1 of the switch. Some of the impacts are described in the following paragraphs.

To perform the AM off-line boot, the MCC must be connected to IOP 0 and 1. The AM off-line boot process, called by the proceed poke on MCC page 1985, will determine if the MCC is connected to IOP 0. If it is not, a port switch is automatically executed. The MCC will go blank and will come up on IOP 0.

Other equipment, such as other terminals attached to the switch, are also impacted by the AM off-line boot. Terminals which are connected to IOP 1 will display information for the new side. At the same time, terminals which are connected to other IOPs will continue to display information for the old side.

If a problem is encountered by the AM off-line boot process, the AM, CM, and all hardware units associated with them are automatically re-duplexed on the old software database. A failure message is printed on the ROP and the proceed command fails on MCC page 1985.
Figure 5-21 shows an example of MCC page 1985 paused before the start of the Proceed stage.

The following list describes each activity that will occur during the Proceed stage:

- **PROCEED-STAGE** - Setup for Proceed stage.
- **PREP ENV** - Save the selected options for use on the new side.
- **EAI SETUP** - Prompts the technician to manually set up the EAI page.
- **PREP ECD** - Modify old and new side ECD for recovery from the LTG boot.
- **CHG_VTOC** - Modify the new side ECD MHD status to split.
- **PRCDHOOK** - Pre-initializes and modifies user cron jobs.
- **START WRTAMA** - Initiates a **WRT:AMADATA** input command.
- **AMA SESSION** - Prompts the technician to start a manual AMA Teleprocessing or tape session.
- **TSM OLD** - Runs the Trunk Status Mapping command to gather the current status of the trunks.
- **APPLHOOK** - Copies files to the new release and performs AM Off-Line Boot.
- **START WRTAMA** - Initiates another **WRT:AMADATA** input command.
- **PAUSE** - Prior to switchforward.
5.6.1 FLUSH AND EVOLVE CORCS FROM SMS

Caution: The following command evolves and compresses CORCS. The length of time required to complete this step varies with the number of CORCs logged. Skipping this step may result in a failure or timeout of the PROCEED stage.

1. The following message cannot be executed unless ODD evolution is active. This can be verified by accessing MCC page 116 — the ODD EVOL ACT box should be backlit.

2. To flush CORCs from SM buffers and evolve them, enter message:

   MSG CNVT:CORCLOG;

   Response:

   CORCFLUSH: SM=a COMPLETE (once for each SM)
   CORCFLUSH: AM COMPLETE

   (The following messages may take several minutes to complete.)

   [CNVT CORCLOG EVOL AM COMPLETE]
   [xxxx CORCS EVOLVED]
   [xxxx CORCS IN ERROR]
   [xxxx RDNT CORCS RMVD]
   [CNVT CORCLOG EVOL CMP COMPLETE]
   [xxxx CORCS EVOLVED]
   [xxxx CORCS IN ERROR]
   [xxxx RDNT CORCS RMVD]
   [CNVT CORCLOG EVOL SM = x COMPLETE]
   [xxxx CORCS EVOLVED]
   [xxxx TRNCORCS EVOLVED]
   [xxxx CORCS IN ERROR]
   [xxxx TRNCORCS IN ERROR]
   [xxxx RDNT CORCS RMVD]
   [xxxx RDNT TRNCORCS RMVD]

   [CNVT CORCLOG EVOL IN PROGRESS]

   [CORC NUMBER xxx HAS BEEN READ]

   xxx CORCS xxxx TRNCORCS HAVE BEEN LOGGED IN THE CORC EVOLVED LOGFILES

   CNVT CORCLOG EVOL COMPLETED

   Comment: It may take several minutes to receive the entire response, do not proceed until the CNVT CORCLOG EVOL COMPLETED message is output. If CNVT:CORCLOG fails, rerun the preceding message. If it fails again, see Section 6.5.10 and/or escalate to your next level of support.

3. This step is OPTIONAL. The corcevl.sum (CORC) analysis file may be dumped which provides statistics on CORC evolution activity for each SM and/or the AM in the office.

   To dump CORC analysis file, enter message:

   MSG DUMP:FILE:ALL, FN="/rclog/corcevl.sum", opl=999;

   Response:

   DUMP FILE ALL STARTED

   **** {SM = x | AM} ****

   CORC EVOLUTION STARTED -- Date is day mon aa bb:cc:dd yr
SUMMARY OF CORC ACTIVITY

x CORCS READ
x TORCS READ
x TRNCORCS READ
x CORCS EVOLVED CORRECTLY
x TRNCORCS EVOLVED CORRECTLY
x CORCS IN ERROR
x TRNCORCS IN ERROR

[RDNT CORC REMOVED FROM CURRENT LOG -

day mon aa bb:cc:dd yr]
[xx yyyyyyy]

[No compression for evlxx.5E16]

[evlxx.5E16 COMPRESSION STARTED -- Date is
day mon aa bb:cc:dd yr]

[evlxx.5E16 COMPRESSION IS DONE, SUMMARY AS FOLLOWS:]

[xx CORCS READ FROM OLD evlxx.5E16]
[xx CORCS WRITTEN INTO NEW evlxx.5E16]
[xx TRNCORCS READ FROM OLD evlxx.5E16]
[xx TRNCORCS WRITTEN INTO NEW evlxx.5E16]
[FOLLOWING REDUNDANT CORCS ARE REMOVED]
[xx yyyyyyy]

[SUMMARY OF CORCS LOGGED IN CURRENT evlxx.5E16 FILE]
[xx yyyyyyy]

[DUMP FILE ALL IN PROGRESS SEGMENT x]

CORC EVOLUTION COMPLETED -- Date is day mon aa bb:cc:dd yr

(Reports output for each SM/AM with CORC activity)

DUMP FILE ALL COMPLETED SEGMENT x

*****************************************************************************
*****************************************************************************
Total Number Of CORCs Logged in Evolved Logfiles: xxx
Total Number Of TRNCORCs Logged in Evolved Logfiles: xxx
*****************************************************************************
*****************************************************************************

5.6.2 OFLBOOT STABILITY

For oflboot stability, from MCC page 1209, do the following after SM OFL-PUMP:

1. Verify that ONTC 1 is Major. If ONTC 1 is not major, switch it to major using
    the following message:
    MSG SW:ONTC;
    Response: SW ONTC COMPLETED

2. Remove ONTC 1 using the following message:
    MSG RMV:ONTC=1;
    Response: RMV ONTC=1 COMPLETED
3. If removal of ONTC 1 fails:
   a. Repeat step 1 twice.
   b. Repeat step 2.

4. If the removal of ONTC 1 fails a second time, halt RCL and escalate to your next level of support.

   Note: ONTC 1 will be OOS.

5.6.3 VERIFY SYSTEM STATUS

1. On MCC page 111, ensure the AMs are duplex (ACT/STBY). If the AMs are not duplex, restore OOS AM.

2. On MCC page 111, verify that AM 0 is **ACT** and AM 1 **STBY**. If AM 0 is STBY and AM 1 is ACT, on MCC page 111, enter command:
   
   CMD 400
   
   Response: **SW CU 0 COMPLETED**

   Comment: Verify AM 0 is ACT and AM 1 is STBY before proceeding.

3. Access MCC page 1850 and verify that CMP 0-0 is the **ACT** CMP (under the CMP 0 PRIM STAT box) and CMP 1-0 is the **STBY** CMP (under the CMP 0 MATE STAT box).

4. If CMP 0-0 is **not** the ACTIVE (primary) CMP, enter message:
   
   MSG SW: CMP=0-0;
   
   Response:
   
   SW: CMP=0-0; PF[EXC ODDRCVVY=ALL CMP=0-0 STOPPED]
   [REPT CMP=1-0 MATE INITIALIZATION TRIGGER=SW-REQUEST]
   [REPT MSKP_ENVIRONMENT:]
   [CMP=1-0 PHASE 1&2 INIT COMPLETION TIME: xxxx TYPE:xxx]
   [EVENT=xxxx]
   EXC ODDRCVVY=ALL CMP=1-0 STARTED
   SW CMP=0-0 COMPLETED
   [REPT COMMUNICATION RESTORED: AM TO CMP=1-0 MATE]
   [REPT MSKP_ENVIRONMENT:]
   [CMP=1-0 PHASE 3 INIT COMPLETION TIME: xxxxxx TYPE:xxx]
   [EVENT=xxxx]

   **CMP 0-0 becomes PRIMARY (active), CMP 1-0 becomes MATE (standby).**

5. Execute the following command on MCC page 1985 to resume:
   
   CMD 500
   
   Response:
   
   REPT LTG PROCEED PERFORM EAI SETUP AS DIRECTED BY THE TRANSITION MANUAL
   REPT LTG PROCEED RESUME WHEN COMPLETE
5.6.4 EXECUTE PROCEED STAGE

*Read:* Read the following sequences up to Section 5.7.2 before continuing with the procedures. It is important that the sequences be followed and that you become familiar with the necessary inputs and corresponding outputs.

It is important that the persons performing the update be familiar with the various recovery and backout procedures available in Sections 6 and 7.

Prior to executing the resume 500 poke command, execute the following steps manually:

1. At this time, the operating company should notify all carrier systems connected to this office of the impending switch to the new database.

2. Inform the Update Coordinator that the switch will undergo a switch to the new database.

3. To dump the VTOC on MHD 1, enter message:
   
   ```
   MSG DUMP:MHD=1,VTOC;
   ```
   
   Response:
   
   ```
   DUMP MHD 1 VTOC STARTED
   DUMP MHD 1 VTOC SEGMENT 1 OF 2
   ```
   
   Comment: Compare the VTOC with Table 5-16 to verify correct VTOC has been loaded on MHD 1.

5.6.5 SETUP EAI PAGE

1. Access EAI page.

---

**Figure 5-22 — MCC Page 1985 EAI Setup Waiting**
Note: With software releases prior to 5E16.2, the secondary MHDs were selected on the EAI page. With the AM off line boot feature, it is necessary to select the primary MHDs.

2. Enter the following EAI commands:
   CMD 14 clear eai page
   CMD 20 select primary mhd

3. Ensure odd-numbered EAI commands 31 through 43 are backlit and the indicator for the primary MHDs shows SET before proceeding.

4. Access normal display (NORM DISP).

5. To switch ports, enter command on MCC page 111:
   CMD 401
   Response:
   "SW:PORTSW; PF
   REPT ROP x STOPPED
   REPT ROP y STARTED
   SW PORTSW COMPLETED FOR ROP"
   Screen blanks while ports are being switched.
   "REPT MTTY x STOPPED
   REPT MTTY y STARTED
   SW PORTSW COMPLETED FOR MTTY"
   EAI page comes up followed by MCC page 111.
   Comment: If the port switch fails, ensure that the switches on the EAI boards are in the auto position.

6. To check the AM, CMP, and SM status, enter message:
   MSG OP:SYSSTAT,UCL;
   Response:
   "OP SYSSTAT SUMMARY FIRST RECORD
   SYS: INHIBITS-MTCE-RC MORE
   AM: INHIBITS-MTCE-SW MORE
   CM: INHIBITS-MTCE
   CMP x-0 P: NORMAL
   CMP y-0 M: NORMAL
   L LSM a,0: MATE_PUMP FORCED INHIBITS-MTCE-HW-SW CKT_OOS"
   ...
   "B LSM b,0: MATE_PUMP FORCED INHIBITS-MTCE-HW-SW CKT_OOS"
   ...
   "S LSM w,0: MATE_PUMP FORCED INHIBITS-MTCE-HW-SW CKT_OOS"
   ...
   "G LSM z,0: MATE_PUMP FORCED INHIBITS-MTCE-HW-SW CKT_OOS"

7. On MCC pages 141, 142, etc., and on the previous OP:SYSSTAT,UCL report, verify that all SMs indicate MATE_PUMP.

8. For CNI offices, on MCC page 118, verify that all units are ACT/STBY. Notify your Signal Transfer Points (STPs) of the upcoming transition.

9. Wait for approval from Site Coordinator before proceeding beyond this step.
Site Coordinator Approval to Proceed.

10. Execute the following command on MCC page 1985 to resume:

```
CMD 500
```

Response:

```
REPT LTG PROCEED CONTINUING
REPT PREP ECD PROCEED USING '/usr/bin/rcvecd'

FOR ULARP FORM PROCESSING
[REPT PREP ECD PROCEED WARNING: NO SPECIAL RCVECD TOOL FOUND USING /usr/bin/rcvecd]

REPT PREP ECD PROCEED USING '/usr/bin/rcvecd'

FOR ULARP FORM PROCESSING
UPD GEN PROCEED BEFORE GENERIC RETROFIT INITIALIZATION

SELECT PRIMARY ROOT
UPD GEN PROCEED BEFORE GENERIC RETROFIT INITIALIZATION

SELECT MHD 1
UPD GEN PROCEED COMPLETED
[DUMP:FILE:ALL,FN="/tmp/ofl/updtmp/LTG/cronfile"OPL=999; PF]
[DUMP FILE ALL STARTED]
REPT PRCD HOOK COMPLETED SUCCESSFULLY
WRT:AMADATA; PF
WRT AMA DATA HAS BEEN WRITTEN TO DISK
READY TO TRANSFER DATA FROM DISK TO OUTPUT MEDIUM
*C REPT AMA DISK WRITER FOR STREAM STx
RECORDING TO DISK SUSPENDED
* REPT AMA DISK WRITER FOR STREAM STx TERMINATION CODE 2
REPT AMA DISK WRITER FOR STREAM STx INITIALIZATION COMPLETE
REPT AMA DISK WRITER FOR STREAM STx RECORDING TO DISK RESUMED
REPT LTG PROCEED INITIATE MANUAL AMA TELEPROCESSING OR TAPE SESSION NOW
REPT LTG PROCEED RESUME WHEN SESSION HAS STARTED
```

**Note:** In the preceding response, the term STx means either ST1 or ST2. If your office does not use dual stream billing (ST1 and ST2), messages will only be received for ST1. If your office does use dual stream billing, a set of messages will be received for each stream (ST1 and ST2).

### 5.6.6 FINAL AMA SESSION

The switch has the ability to access AMA partitions on the off-line disks. This final AMA session will be the last time you will teleprocess AMA data while on the OLD side. When your switch is on the NEW side, your first AMA session will automatically access the completed AMA records residing on the OLD side off-line disks.

1. This will flush (write) AMA billing data from the AM to the active disk, and is done automatically prior to final AMA session. See ROP for output.

Response: **Assert 28334** may be output which indicates that AMA records have been lost. AMA records have not been lost at this point. The assert is output because the buffer in the AM is normally written to disk only when full. If the buffer is written to disk and is not full at the time of the write, the assert may be output. The assert occurs when a
WRT:AMADATA is entered in a dual stream office, or when the WRT:AMADATA is entered more than once in rapid succession in a single stream office, or when the WRT:AMADATA is entered two or more times in a dual stream office.

2. Initiate final manual AMA tape writing or teleprocessing session per local practice.

Comment: If the teleprocessing session is being run at a non-standard time, it may be necessary to call personnel at the HOC to request a manual poll.

3. This step may be performed in teleprocessing offices to provide backup AMA data in the event that data from the final teleprocessing session is lost or mutilated at the host collector. In performing this step, the time interval from now to the system switch forward is increased by the amount of time required to generate the AMA tape.

For offices that use teleprocessing, an optional manual AMA tape writing session to dump secondary AMA blocks can be performed at this time (see 235-105-210, Routine Operations and Maintenance). This tape should be saved for backup purposes.

4. To verify a successful manual AMA session, use Step 'a' (single-stream office) or Step 'b' (dual-stream office):
   a. Single-stream office - enter message:
      
      MSG OP:AMA:SESSION;

      Response: Response for offices with AMA teleprocessing:

Figure 5-23 — MCC Page 1985 Proceed Stage Continuing

2. Initiate final manual AMA tape writing or teleprocessing session per local practice.

Comment: If the teleprocessing session is being run at a non-standard time, it may be necessary to call personnel at the HOC to request a manual poll.

3. This step may be performed in teleprocessing offices to provide backup AMA data in the event that data from the final teleprocessing session is lost or mutilated at the host collector. In performing this step, the time interval from now to the system switch forward is increased by the amount of time required to generate the AMA tape.

For offices that use teleprocessing, an optional manual AMA tape writing session to dump secondary AMA blocks can be performed at this time (see 235-105-210, Routine Operations and Maintenance). This tape should be saved for backup purposes.

4. To verify a successful manual AMA session, use Step 'a' (single-stream office) or Step 'b' (dual-stream office):
   a. Single-stream office - enter message:
      
      MSG OP:AMA:SESSION;

      Response: Response for offices with AMA teleprocessing:
REPT AMA TELEPROCESSING SESSION FOR STREAM STx

PREVIOUS AMA TELEPROCESSING SESSION STATUS
START TIME xxx x xx:xx:xx
STOP TIME xxx x xx:xx:xx
BLOCKS TRANSMITTED xxx
PRIMARY POLLS REJECTED x
SECONDARY POLLS REJECTED x
NORMAL TERMINATION

or

Response for offices with AMA tape writing:
REPT AMA TAPE SESSION FOR STREAM STx

PREVIOUS AMA TAPE SESSION STATUS
VOL SER NUMBER
START TIME xxx x xx:xx:xx
PRIMARY DATA
FIRST BLOCK x xxx x xx:xx
LAST BLOCK x xxx x xx:xx
TAPE IS xxx% FULL
RECORDS WRITTEN x
NORMAL TERMINATION - NO MORE DATA

Comment: From the output, verify that the message NORMAL TERMINATION is received. If this output is not received, one of the following is true:

- There is an AMA session still in progress.
- The last AMA session was unsuccessful.

b. Dual-stream office - enter message:
   MSG OP:AMA:SESSION,a;
   Where:   a = ST1 or ST2. Enter message once for ST1, and once for ST2.
   Comment: See the Response and Comment for Step 'a'.

5. To verify the percentage of disk space occupied by AMA data, use Step 'a' (single-stream office) or Step 'b' (dual-stream office):
   a. Single-stream office - enter message:
      MSG OP:AMA:DISK;
      Response:
      REPT AMA DISK SUMMARY FOR STREAM STx
      DISK IS CURRENTLY xx% FULL
      NUMBER OF PRIMARY AMA BLOCKS IN USE IS
      APPROXIMATELY: xx
   b. Dual-stream office - enter message:
      MSG OP:AMA:DISK,a;
      Where:   a = ST1 or ST2. Enter message once for ST1, and once for ST2.
      Comment: See the Response and Comment for Step '4a'.

6. AMA will continue to accumulate on the OLD side until the switch is on the NEW side. Once on the NEW side, the first AMA session will automatically access the AMA records on the OLD side off-line disks.
7. To prevent the possible loss of AMA records from having an inadvertent AMA session running, enter message:

```
MSG INH:AMA:SESSION,a;
```

Where: \( a = \text{ST1 or ST2} \). Enter message once for ST1, and once for ST2.

Response: = INH:AMA:SESSION,STa; IP

REPT AMA CONTROL FILE FOR STREAM STa

```
OFFICE ID xxxxxxx
DAYS UNTIL EXPIRATION x
PROCESS START TIME xx:xx
PROCESS STOP TIME xx:xx
DEFAULT MT FOR AUTO TAPE START x
AMA OPTION IS TELEPROCESSING
DATA TRANSFER IS MANUALLY INHIBITED
AMAT PASSWORD xxxxxxxxxxx
HOC PASSWORD xxxxxxxxxxx
BACKUP HOC PASSWORD xxxxxxxxxxx
PASSWORD FROM LAST SESSION xxxxxxxxxxx
TAPE SESSION IS NOT IN PROGRESS
TELEPROCESSING SESSION IS NOT IN PROGRESS
AUTOMATIC TAPE WRITING IS INHIBITED
TAPE SEQUENCE NUMBER x
TAPE DATA SET ID xxxxxxxx
```

5.6.7 PROCEED COMMAND EXECUTION

The following poke command will execute the Proceed process and automatically invoke the AM off-line boot process. The AM off-line boot process will isolate side 1 of the AM, CM, and all hardware units associated with them. Once isolated, side 1 is initialized on the new software release ODD and verified. During this process, side 0 continues to maintain call processing and other switch activities. All messages/commands input to the switch must be entered at the MCC or SCC from this point in the procedures until the AM, CM, and all hardware units associated with them are duplexed on the new ODD.

1. On MCC page 1985, enter command:

```
CMD 500
```

**Note:** All of the following ROP output may not be in the same order as indicated due to switch activity at the time.

Response:

```
REPT LTG PROCEED CONTINUING
PRM_0 E800 xxxx xxxx xxxx xx xx xx on ROP
UPD GEN TSM IN PROGRESS xxx TRUNKS LOGGED
UPD GEN TSM COMPLETED
UPD GEN PROCEED APP EXECUTING THE FOLLOWING INPUT COMMAND
OP:AMA:CONTROLFILE
OP:AMA:CONTROLFILE; PF
(The AMA control file is dumped to the ROP.)
REPT AMA CONTROL FILE FOR STREAM ST1
[UPD GEN RETRCV WARNING: NO SPECIAL RCVECD TOOL FOUND USING /usr/bin/rcvecd]
[UPD GEN PROCEED APP EXECUTOR CORCFLUSH]
[CORCFLUSH: SM=X COMPLETE (once for each SM)]
CORCFLUSH: AM COMPLETE
(A portswitch may occur sometime during this sequence.)
[ UPD GEN PROCEED APP AM SWITCH STARTED ]
```
[ UPD GEN PROCEED APP AM SWITCH COMPLETED ]
[ SW CU 0 COMPLETED ]
UPD GEN PROCEED APP AM OFFLINE BOOT STARTED
EXC OFLBOOT STARTED
EXC OFLBOOT IN PROGRESS
(Messages indicating stopping, removal, degrowth and unequipping of units are now received)

START OF CU-1 RECOVERY
CU RECOVERY COMPLETE

Initialization PRMs appear on the ROP.
If any failing PRMs are encountered, consult the PRM document.
If only failing PRMs are output, escalate to your next level of support immediately.

EXC OFLBOOT INFO
BOOT IN PROGRESS
OLBSTATE LASTATE FUNCTION LINE
EXC_BOOT EXC_AIMECD MON_BOOT XXXX
(The above message is output several times)

UPD GEN PROCEED APP AM OFFLINE BOOT SUCCESSFUL
EXC OFLBOOT COMPLETED
OFFLINE SIDE BOOT COMPLETE

OLBSTATE LASTATE FUNCTION LINE
EXC_BOOT EXC_AIMECD OLB_MSG_HANDLER XXX

(The following messages take several minutes to complete.)

[CNVT CORCLOG EVOL AM COMPLETE]
[xxxx CORCS EVOLVED]
[xxxx CORCS IN ERROR]
[xxxx RDNT CORCS RMVD]

[CNVT CORCLOG EVOL CMP COMPLETE]
[xxxx CORCS EVOLVED]
[xxxx CORCS IN ERROR]
[xxxx RDNT CORCS RMVD]

[CNVT CORCLOG EVOL SM = x COMPLETE]
[xxxx CORCS EVOLVED]
[xxxx TRNCORCS EVOLVED]
[xxxx CORCS IN ERROR]
[xxxx TRNCORCS IN ERROR]
[xxxx RDNT CORCS RMVD]
[xxxx RDNT TRNCORCS RMVD]

[CNVT CORCLOG EVOL IN PROGRESS]
[CORC NUMBER xxx HAS BEEN READ]

xxx CORCS xxxx TRNCORCS HAVE BEEN LOGGED IN THE CORC EVOLVED LOGFILES
UPD GEN PROCEED APP AM OFFLINE BOOT SUCCESSFUL
WRT:AMADATA; PF
WRT AMA DATA HAS BEEN WRITTEN TO DISK
READY TO TRANSFER DATA FROM DISK TO OUTPUT MEDIUM
*C REPT AMA DISK WRITER FOR STREAM STx
RECORDING TO DISK SUSPENDED
* REPT AMA DISK WRITER FOR STREAM STx TERMINATION CODE 2
REPT AMA DISK WRITER FOR STREAM STx INITIALIZATION COMPLETE
REPT AMA DISK WRITER FOR STREAM STx/LI Comment:
RECORDING TO DISK RESUMED
REPT PROC SCHED SWITCHFWD PAUSED AT STAGE
BOUNDARY - RESUME WHEN READY

Comment: On MCC page 111, AM 0 should be ACT and AM 1 should be
UNEQ. The output responses should verify that the AM has been
completely split.

On MCC page 111, verify that OFLBOOT IP-ONLINE appears in
the upper left corner backlit in red. Notice that other workstations
may show OFLBOOT IP-OFFLINE. During this time, the off-line
terminals will show the SMs in COMM LOST. The on-line
terminals will show SMs still in MATE PUMP.

The order of messages (particularly the PRMs) on the ROP may
vary from the order of messages shown in the preceding output
response.

The cronfile dumped during the Proceed stage is the 5E16.2 system
cronfile which will be activated during rmvtools.

Read:

If the Proceed stage fails due to an AM off-line boot error, the AM and AM
hardware units, with the exception of the off-line disk drives, should go from
an UNEQ status to an OOS status. They should then automatically duplex.
The duplexing of these units should start with the units connected to IOP1
(MCC page 121), then continue with units shown on MCC pages 111, 115, 118,
and 1850. If this does not appear to be happening within one minute of the
proceed stage failing, on MCC page 1984 enter 507 to STOP OFLBOOT.

Before continuing, you should make sure that all AM hardware units, except
for the disk drives, are duplexed. Check MCC pages 111, 115, 118, and 1850 for
simplexed units. See Figure 5-24. If there are any simplexed units which are
not automatically duplexing, manually duplex them prior to proceeding.

If you wish to continue the LTG without using AM off-line boot, proceed to Section 8.4
of this document.

Warning: CM3 offices should NOT go forward without using AM Offline
Boot. Failure to use AM Offline Boot with CM3 offices will result in
unacceptably HIGH recovery times. For CM3 offices — resolve AM Offline
Boot failures and retry the Switchforward with AM Offline Boot.
5.6.8 WRITE AMA SESSION

It is not possible to teleprocess the AMA data at this point. Your first AMA session will automatically access the AMA records on the OLD off-line disks.
This step flushes the AMA data to active disk. If this step is not executed, AMA records in the AMA buffers will be lost.

1. To flush (write) AMA billing data from the AM to the active disk, enter command:
   
   **CMD** wrt:amadata

   **Response:** The assertion 28334 may be output which indicates that AMA records have been lost. AMA records have not been lost at this point. The assertion is output because the buffer in the AM is normally written to disk only when full. If the buffer is written to disk and is not full at the time of the write, the assertion may be output. The assertion occurs when a **WRT:AMADATA** is entered in a dual stream office, or when the **WRT:AMADATA** is entered more than once in rapid succession in a single stream office, or when the **WRT:AMADATA** is entered two or more times in a dual stream office.

   **WRT:AMADATA; WRT:AMADATA; PF**

   **(Critical alarm sounds)**

   *C REPT AMA {TELEPROCESSING SUMMARY|DISK WRITER} FOR STREAM STx

   **RECORDING TO DISK SUSPENDED**

   **[REPT DKDRV INFO CODE H’260]**

   *(may be received several times)*

   **[WRT AMA DATA HAS BEEN WRITTEN TO DISK]**

   **[READY TO TRANSFER DATA FROM DISK TO OUTPUT MEDIUM]** *on ROP*

   **INIT AM SUMMARY DLVL=x SLVL=x HLVL=x CLVL=x EVENT=xxxx**

   **INIT SCOPE=AM-FPI PROCESS SCOPE=AIM PROCESS**

   **MODE=OPERATIONAL RC-BACKOUT=NO**

   **INIT TRIGGER=AUTO SOFTWARE INIT TIME =x SECONDS**

   **PROCESS CREATED INITIALIZED**

   **AMDW1 SUCCESS SUCCESS**

   **REPT AMA DISK WRITER FOR STREAM STx**

   **TERMINATION CODE 2**

   **REPT AMA DISK WRITER FOR STREAM STx INITIALIZATION COMPLETE**

   **PRM_x EE00 xxxx 07DD xxxx xx xx xx**

   *(may appear several times)*

   **REPT AMA DISK WRITER FOR STREAM STx**

   **RECORDING TO DISK RESUMED**

   **Comment:** In the preceding response, the term **STx** means either **ST1** or **ST2**. If your office does not use dual stream billing (**ST1 and ST2**), messages will only be received for **ST1**. If your office does use dual stream billing, a set of messages will be received for each stream (**ST1** and **ST2**).

2. The AMA records just written to disk will be processed when you perform your first 5E16.2 AMA session. A feature in 5E16.2 will access AMA records on the off-line disks.
3. Verify the contents of the disk maps for all partitions and the contents of the global maps for each stream.

Enter message:

MSG    OP:AMA:MAPS;

Response:

REPT AMA DISK MAPS FOR STREAM STA
WRITE PARTITION x READ PARTITION x
PARTITION x DISK MAP:
FPO: xx LPO: xx FPS: xx LPS: xx
FSO: xx LSO: xx FSS: xx LSS: xx
FBO: xx LBO: xx FBS: xx LBS: xx

5.6.9 SYSTEM CONFIGURATION

Figure 5-26 shows the system configuration at the completion of the Proceed stage.
Note: The OSPS EVOL ACT box will only be backlit for OSPS offices.

Figure 5-26 — Typical System Configuration at Completion of Proceed Process
5.7 SWITCHFORWARD STAGE

5.7.1 SM, CM, AND AM SWITCH FORWARD

Review this section to become familiar with the sequence of events before continuing.

**Note:** From the time the SMs are switched to side 1 until the AM and CMP recover from their switchforward (approximately 1 minute), the switch does not process new originating calls. (Two-port analog and circuit-switched ISDN stable calls with talking paths should be preserved.)

![Figure 5-27](image)

**Figure 5-27 — MCC Page 1985 Paused at the Switchforward Stage**

Figure 5-27 shows an example of MCC page 1985 paused before the start of the Switchforward stage.

The following list describes each activity that will occur during the **Switchforward** stage:

- **SWITCHFWD-STAGE** - Setup for switchforward.
- **CONFIRM SWFWD** - Requires confirmation before switching the SMs.
- **OLD SIDE SM MANAGER** - Provides (as needed) information and control for switching the SMs forward and backward.
- **APPLHOOK** - Switches the SMs and AM (using AM Off-Line Boot) to the new side.
- **SWFWD STG** - Provides information on backing the SMs out to the old side (if needed).
- The AM and CMP are switched to the new side when the SMs are switched forward.
• After the switchforward is complete, hardware on the old AM side will be Unequipped (UNEQ).

5.7.1.1 Other Office Notification

Notify appropriate Operations Systems (OS) sites, interconnecting offices, SCC, TCC, STPs, etc., of the scheduled LTG.

5.7.1.2 Verify No Emergency Calls are in Progress

Using local procedures, verify that no emergency calls are in progress.

Comment: Wait for any such calls to end before continuing. If any 911 calls are in progress during the initialization, the ability to recall the originator will be lost after the initialization.

5.7.1.3 Perform Switchforward

**Warning:** AM off-line boot will automatically switch to the new software release. Do NOT do a 42-S-54 boot on the EAI page.

1. Turn off External Sanity Monitor (ESM) at miscellaneous frame. This causes a major alarm. Access MCC page 116 (Miscellaneous) and verify that power has been removed from ESM. If power is off, the POWER indicator is backlit, and the word OFF is displayed. If a significant period of time has elapsed since completion of the proceed stage, it may be desirable to save any additional CORCs made during the time. If it is desired, re-execute section 5.6.1, FLUSH AND EVOLVE CORCS FROM SMS before continuing.

Verify AM off-line boot is still running. Access MCC page 111. If all AM units on side 1 display their status as UNEQ, then AM off-line boot is still running. The message **OFLBOOT IP - ONLINE** will also appear backlit in red.

If AM off-line boot is not running, make sure all units on MCC pages 111, 115, 118, and 1850 are duplex with the exception of the odd numbered disk driver which should be SIMPLEX. If you wish to retry AM off-line boot, on MCC page 1985, enter a resume command.

If you wish to continue the LTG without using AM off-line boot, proceed to Section 8 of this document.

If you have any questions as to how to proceed, contact your next level of support.

2. To confirm switchforward of SMs, the CM, and the AM, on MCC page 1985, enter command:

   `CMD 500`

   Response:

   `REPT LTG SWITCHFWD`

   WARNING THE NEXT STEP IS SERVICE AFFECTING NOTIFY EMERGENCY OPERATORS RESUME WHEN READY
3. To switch SMs, the CM, and the AM, on MCC page 1985, enter command:

\[ \text{CMD } 500 \]

The following message appears on the ROP:

\[ \text{WAITING TO SWITCH SMS AND AM.} \]
\[ \text{ENTER 500 TO SWITCH FORWARD.} \]
\[ \text{ENTER 600 TO SWITCH BACK.}^2 \]

The 1985 MCC page appears as shown in Figure 5-29:

---

2. The 600 command should only be used in the event of error recovery.
Read: Entering the next poke/message results in switching the AM, CM, and all SMs from the current software release to the new database. During the initial `UPD:GEN:SWITCHFWD` command, if all the SMs are in the expected state (MATE_PUMP/FORCED or ISOLATED), a log file (applswfd) is written to MHDs 0 and 1. Subsequent SWITCHFWD, SWITCHBCK, or BACKOUT commands determine the destination SM MCTSI side of the Generic LTG Switch (GRSW) from the applswfwd log.

4. On MCC page 1985, enter command:

```
CMD 500
```  
Note: Note that the PRMs may or may not be output to the ROP. This does NOT indicate that a problem condition exists. If the remainder of the response is seen on the ROP output, you may proceed with the next step.

Response:

```
[REPT LTG SWITCHFWD CONTINUING]
UPD GEN SWITCHFWD SM SWITCH STARTED
REPT OFFLINE BOOT IN PROGRESS
UPD GEN SWITCHFWD SM SWITCH COMPLETED
REPT CCS7 CLUSTER FAILURE XXX X X (Repeats Several Times)
RST MTTY 1 COMPLETED
RST ROP 1 COMPLETED
```
RST SCC 1 COMPLETED
REPT SCSDC 1 OUT OF SERVICE
RST SCSDC 1 COMPLETED
REPT ROP 1 STARTED
REPT GROWTH MTTY 1 IN PROGRESS
REPT GROWTH ROP 1 IN PROGRESS
REPT GROWTH SCC 1 IN PROGRESS
REPT GROWTH SCSDC 1 IN PROGRESS
REPT GROWTH MTTY 1 COMPLETED
REPT GROWTH ROP 1 COMPLETED
REPT GROWTH SCC 1 COMPLETED
REPT GROWTH SCSDC 1 COMPLETED
SW OFLBOOT COMPLETED
SWITCH ONLINE SIDE COMPLETED
INH:REX; OK
INH:DMQ:SRC=ADP; OK
INH:DMQ:SRC=REX; OK
INH:REORG; OK
RST:CLNK,ALL; PF
RST CLNK ALL COMPLETED
REPT OFFLINE BOOT IN PROGRESS (output every 2 minutes)
REPT OLBTOOL
STARTING
REPT OLBTOOL
COMPLETED SUCCESSFULLY
REPT SWITCHER
STARTING
REPT SWITCHER
SWITCHING SMs
REPT SWITCHER
WAITING FOR SM TO CLEAR INIT
REPT SWITCHER
SWITCHING SET BREPT SWITCHER
COMPLETED SUCCESSFULLY
REPT SCMG
ISDN-UP NOW BEING MARKED FOR SERVICE
PRM_1 E541 2918 0148 xxxx xx xx xx
PRM_1 EE41 E100 07F9 xxxx xx xx xx
PRM_0 EB00 6001 0000 xxxx xx xx xx
PRM_1 E841 0001 3D08 xxxx xx xx xx
PRM_1 EE41 0300 07F9 xxxx xx xx xx
PRM_1 E841 0001 0A03 xxxx xx xx xx
PRM_1 E841 0001 0703 xxxx xx xx xx
PRM_1 E841 0001 1303 xxxx xx xx xx
PRM_1 E841 0002 0503 xxxx xx xx xx
PRM_1 EE41 0400 07F9 xxxx xx xx xx
If the AM or any SMs fail to switch over. Perform the following ONLY IN THE CASE OF FAILURE:

1. On MCC page 1989, change the Unconditional Execution indicator to Y by entering:
   \[\text{CMD 401,y}\]

2. On MCC page 1985, enter a resume command ONLY IF THE AM OR ANY SMs FAILED TO SWITCH OVER:
   \[\text{CMD 500}\]
   This 500 response matches the previous 500 response. However, this response's second line is, \text{UPD:GEN:SWITCHFWD,UCL};

3. If any SMs fail to switch over, proceed immediately to Recovery Action R-38 (Section 6.6.38). If R-38 does not successfully complete, Site Coordinator must decide to either continue with the procedures, back out, or escalate to your next level of support. For back out, see Table 7-1. Figure 5-31 shows MCC page 1985 at the start of Recovery Preparation

4. If the AM fails to switch over, check that OFLBOOT IP and CSU ACTIVE are backlit on the 111 page and enter:
   \[\text{MSG SW:OFLBOOT,UCL}\]

5. If OFLBOOT IP and CSU ACTIVE are not backlit on the 111 page, perform the following manual procedure:
   a. On MCC page 111, ensure AM 0 ACT. If AM 1 is ACT, AM 0 STBY, on MCC page 111 enter command:
      \[\text{CMD 400}\]
      Comment: Verify AM 0 ACT before proceeding.
   b. Access EAI page.
   c. Ensure odd-numbered EAI commands 31 through 43 are backlit (that is, cleared) before proceeding.
   d. Ensure "SET-INH" box is not visible after "INH-TIMER".
   e. Enter the following EAI commands:
      \[\text{CMD 34 Set hardware inhibits}
      \text{CMD 36 Set software inhibits}
      \text{CMD 10 Force AM 0 (simplexes AM) Response: (y/n)}
      \text{CMD Y Forces AM 0 on-line}
      \text{CMD 22 Select secondary MHD}
      \text{CMD 31 Clear BACK-ROOT}
      \text{CMD 33 Clear min config.}
      \text{Response:}
      \text{REPT CU 1 UNAVAILABLE}
      \text{REPT CU 0 FORCED ONLINE}
   f. Enter the following on the EAI page to set up the application parameter:
      \[\text{CMD 42 (Sets application parameter mode)}
      \text{PARAMETER: 5 (S saves stable calls)}
   g. Enter the following on the EAI page to perform the system initialization:
      \[\text{CMD 54 (Full AM boot on new software release)}
      \text{Boot? (y/n) y (Boot begins after "y" is entered).}
   h. If the AM still fails to switch to the new side, escalate to your next level of support.
5. Log time of boot on Call Processing Verifications Worksheet (Table 9-8).

6. When MCC page 111 is displayed on the new side, enter command:
   ```
   CMD 1985,ltg
   ```
   Note: The first time you enter the 1985 command on the new side, it must be followed by ltg.
5.7.2 VERIFICATION OF SUCCESSFUL RECOVERY ON NEW DATA

5.7.2.1 System Configuration

Figure 5-30 shows the system configuration at the completion of the switch forward.

```
Even-numbered MHDs (0, 2, 4, etc.)
Contain Old Data

Odd-numbered MHDs (1, 3, 5, etc.)
Contain New Data

* As seen in output of 1984 Page, 502

SMs and MHDs Simplex
All SMs side 1 forced active, side 0 unavailable
SMs side 1 contain new data

MCC Page 116:
MCC Page 1985:
MCC Page 181:

GENERIC RETROFIT ACTIVE
RECOVERY PREPARATION EXECUTING
RECOVERY PREPARATION STAGE PAUSE
ODD EVOL ACT
OSPS EVOL ACT
MATE PUMP

Note: The OSPS EVOL ACT box will only be backlighted for OSPS offices.
```

Figure 5-30 — Typical System Configuration at Completion of Switch Forward
5.8 RECOVERY PREPARATION STAGE

5.8.1 AM RECOVERY

On MCC page 111, AM 1 should become **ACT** within 3 minutes. AM 0 will be **UNEQ**.

*Note:* If AM 1 does not become **ACT**, escalate to your next level of support.

5.8.2 CALL PROCESSING VERIFICATION

1. *If call processing is not available within a reasonable amount of time, the Site Coordinator should escalate to your next level of support in order to make a decision on whether to back out or continue with the procedures.*

2. As the SMs become active, verify that call processing is available from the SM and verify intramodule and intermodule call processing. Keep records on the Call Processing Verification Worksheet (Table 9-8).

3. Using list of local and Direct Distance Dialing (DDD) lines prepared earlier, perform a dial-through test of all selected lines.

   *Comment:* Included in this list should be police, fire, hospital(s), 911 dispatcher, and other emergency numbers as determined by local practices.

4. The next several sections verify that critical 5ESS switch hardware is configured correctly after the switch forward. Preliminary call processing tests should be performed as soon as possible after the switch forward. The following sections should be deferred until call processing has been demonstrated.

5.8.3 VERIFY SM RECOVERY

1. On MCC pages 141, 142, etc., each SM should indicate **MATE PUMP**.

   *Caution:* The following step is only for SM switch forward problems.

2. Any SM indicating the status of **GEN DIFF** on MCC pages 141, 142, etc., could indicate one of the following conditions:

   - A loss of communications to the SM has occurred.
   - The SM has failed to switch to the new software release side.
   - Another error has occurred in the SM.

   To determine if a communications problem has occurred, access MCC page 1900,x

   Where: \( x = \text{SM number} \).

   To restore OOS CLNKS, enter command on MCC page 1900,x:

   ```
   CMD 3yyy
   ```

   Where: \( yyy = \text{OOS CLNK} \)

   If the CLNKS do not restore, access MCC page 115 to determine the location of other CM problems. Go to the appropriate MCC pages and attempt to restore communications.

   If the SM remains **GEN DIFF** on MCC pages 141, 142, etc., attempt to switch the SM's sides. Enter message:

   ```
   MSG ORDER:CPI=x,CMD=GRSW-y;
   ```
Where:  

\[ \begin{align*} 
    x &= \text{number of the SM that is GEN DIFF.} \\
    y &= \text{the SM side which was off-line pumped and contains the new software release.} 
\end{align*} \]

If the SM remains GEN DIFF on MCC pages 141, 142, etc., repumping the SM is recommended as follows:

a. To allow auto pump, enter command on MCC page 1800,x (where \( x \) = SM number).

   \[ \text{CMD} \quad 701 \]

   Response:  OK

b. If the status of the SM remains GEN DIFF on MCC page 1800,x, perform an AM directed reset (to initialize and pump the SM) by entering the following commands:

   \[ \begin{align*} 
       \text{CMD} & \quad 924 \\
       \text{Response:} & \quad \text{FI? Y/N (on MCC)} \\
       \text{CMD} & \quad y \\
       \text{Response:} & \quad \text{ORD:CPI=}, \text{CMD=RESET; PF} \\
   \end{align*} \]

   /Read: The 924 poke and the y confirmation should be poked into the switch a second time to pump the SM.

   \[ \begin{align*} 
       \text{CMD} & \quad 924 \\
       \text{Response:} & \quad \text{FI? Y/N (on MCC)} \\
       \text{CMD} & \quad y \\
       \text{Response:} & \quad \text{ORD:CPI=}, \text{CMD=RESET; PF} 
   \end{align*} \]

c. If any SMs still indicate GEN DIFF, proceed immediately to Recovery Action R-38 (Section 6.6.38) in this document and escalate to your next level of support.

   \[ \text{Note:} \quad \text{Any SMs that indicate GEN DIFF will only respond to the following types of commands:} \]

   \[ \begin{itemize} 
       \item \text{Software Release LTG switch commands (Switchfwd, Switchbck, Backout, SMswitch, SMbackout, and ORD:CPI=x,CMD=GRSW).} \\
       \item \text{Reset processor commands (poke 924 on MCC page 1800,x and ORD:CPI=x,CMD=RESET).} 
   \end{itemize} \]

Do not attempt to power cycle an SM without escalating to your next level of support. If an SM that is in a forced simplex condition is power cycled, the SM force will be lost and the SM will attempt to duplex.

3. To verify that all SMs are active on side 1, enter message:

   \[ \begin{align*} 
       \text{MSG} & \quad \text{OP:SYSSTAT,UCL;} \\
       \text{Response:} & \quad \text{OP SYSSTAT SUMMARY {FIRST|NEXT|LAST} RECORD} \\
       \text{SYS} & \quad \text{INHIBITS[-MTCE][-RC] MISC} \\
       \text{AM} & \quad \text{[BLACKOUT-RC] INHIBITS[-MTCE]-SW MORE} \\
       \text{CM} & \quad \text{NO REQ PEND} \\
       \text{CMP 1-0} & \quad \text{P: [BLACKOUT-RC] INHIBITS-HW[-SW]} \\
       \text{CMP 0-0} & \quad \text{M: [BLACKOUT-RC] GEN DIFF [INHIBITS-SW] [-HW][POSTINIT]} \\
       \text{BS} & \quad \text{LSMa,1: MATE_PUMP [BACKOUT-RC] FORCED INHIBITS-MTCE} 
   \end{align*} \]
Comment: At this point, all units (AM, CMP, SMs) may indicate BACKOUT-RC as the RC roll-forward completes.

5.8.4 CMP RECOVERY

Access MCC page 1850. The primary CMP state should be ACT. The mate CMP will be OOSF COMM LOST+. If trouble was encountered in reconfiguring the CMPs during the switch forward, the primary CMP may show that it is being pumped and initialized. On MCC page 1850, if the primary CMP shows that it is being pumped and initialized, wait a reasonable amount of time for the process to complete.

If the primary CMP changes to an ACTIVE state, proceed to the next section.

If the state of the primary CMP still did not change to ACTIVE/POSTINIT, do the following.

**Caution:** The following steps are only for CMP switch forward problems.

1. On MCC page 1850 (logically active CMP), to initialize and pump the CMP, enter commands:
   
   ```
   CMD 923
   FI (Y/N) Y
   ```

2. If the status of the CMP still does not transition to ACTIVE within a reasonable amount of time (10 minutes maximum), escalate to your next level of support.

5.8.5 VERIFY SDFI STATUS

During the SM recovery, equipped Subscriber Digital Facility Interfaces (SDFIs) may go OOS and restore automatically to the in-service state after running full diagnostics. If a large number of SDFIs are affected, customers will experience an unnecessary time with no call processing.

1. Enter message:
   
   ```
   MSG OP:RT,ALM;
   ```

   Response: **PF**

   The Remote Terminals (RTs) with an alarm condition will be output. The RTs with an alarm location of NEAR END will be likely to have SDFIs OOS and those with an alarm level of MAJOR indicate customers down as a result.

   or

   **NG — NO RT’S FOUND**

   **Note:** If there are no MAJOR alarms, Steps 2 through 4 may be skipped.

2. Using the information from the alarm summary, to view the status of the associated SDFIs, access the following MCC page:
   
   ```
   MCC 1150,x,y
   ```
Where: \( x = \text{SM number} \)
\( y = \text{DCLU} \)

Comment: The LRT which is output in the alarm summary has the format of \( X-Y-Z \) with SM \( X \), DCLU \( Y \), RT \( Z \).

3. In order to minimize customer downtime, for each SDFI \( Z \) that is undergoing an automatic restoral (OOS or OOST on MCC page 1150,Y,X), enter message:

   \[ \text{MSG} \quad \text{STP:RST:SDFI} = x-y-z; \]

4. To perform an unconditional restoral on the SDFIs from Step 3, enter the following command on MCC page 1150,Y,X:

   \[ \text{CMD} \quad 3x,uc1 \]

   Where: \( xx = \text{SDFI number} \)

5.8.6 VERIFYAMA BILLING

At this point, AMA billing is already allowed (AMA billing is automatically allowed by the 5ESS switch after the AM switch forward).

Warning: Do not attempt to teleprocess or write AMA data to tape at this point. The first time you do this you will access AMA records from the OLD side off-line disks. This may not be done until the DFCs have been restored later in this document.

1. To verify that AMA is recording properly, enter message:

   \[ \text{MSG} \quad \text{OP:AMA:STATUS}; \]

   Response:

   \[
   \begin{array}{ll}
   \text{SEGMENT} & \text{STATUS} \\
   1 & xxxxx \\
   2 & xxxxx \\
   3 & xxxxx \\
   \end{array}
   \]

   \text{LAST TIME DISK WRITER WROTE TO DISK} hh:mm MM/DD

   Comment: Save the ROP output for use in the next step.

   Note: The percent full (number records) of each of the three SEGMENTS will demonstrate the loading of AMA records in the SDS. Each time the SEGMENT gets full, the disk writer writes that particular SEGMENT to disk. The value of the LAST TIME DISK WRITER WROTE TO DISK will be 00:00 00/00 until the first segment has been written to disk after the boot.

2. Enter message:

   \[ \text{MSG} \quad \text{OP:AMA:MAPS}; \]

   Response:

   \[
   \begin{array}{llllll}
   \text{PARTITION} & \times & \text{DISK MAP:} \\
   \text{FP0:} & xx & \text{LPO:} & xx & \text{FPS:} & xx & \text{LPS:} & xx \\
   \text{FSO:} & xx & \text{LSO:} & xx & \text{FSS:} & xx & \text{LSS:} & xx \\
   \text{FBO:} & xx & \text{LBO:} & xx & \text{FBS:} & xx & \text{LBS:} & xx \\
   \end{array}
   \]
3. Re-enter message:
   MSG   OP:AMA:STATUS;
   Response:
   REPT AMA STATUS FOR STREAM STx
   SEGMENT         STATUS
   -------------   -----------
   1     xxxxx
   2     xxxxx
   3     xxxxx

   LAST TIME DISK WRITER WROTE TO DISK hh:mm MM/DD

4. Enter message:
   MSG   OP:AMA:MAPS;
   Response:
   REPT AMA DISK MAPS FOR STREAM ST1
   WRITE PARTITION  x  READ PARTITION  x
   PARTITION  x DISK MAP:
   FPO: xx  LPO: xx  FPS: xx  LPS: xx
   FS0: xx  LSO: xx  FSS: xx  LSS: xx
   FBO: xx  LBO: xx  FBS: xx  LBS: xx

5. The amount of time it will take to verify AMA recording depends on the amount of traffic on the switch. If your office has light traffic, you should continue with the steps in this document and return to Step 3 every 10 minutes until you are satisfied that AMA is recording properly.

   a. Compare the OP:AMA:STATUS output from Step 1 with the OP:AMA:STATUS output from Step 3.

   The amount of AMA recorded depends on the amount of traffic on the switch.

   To verify that AMA is writing to a segment, compare the percent full (number records) of the segments from Steps 1 and 3. These should increase with traffic on the switch.

   b. When one segment fills, it should be written to disk and a new segment will begin to fill. To verify that AMA has written to disk, check the LAST TIME DISK WRITER WROTE TO DISK - this value should not be 00:00 00/00.

   c. You can also verify the AMA has been written to disk by comparing the output of the OP:AMA:MAPS commands issued in Steps 2 and 4. The second line of the output from the OP:AMA:MAPS gives a number after
WRITE PARTITION. Below this are listed the various partitions available. Locate the partition corresponding to the write partition number. Within this report are values for LPO and LPS. These values should increase when AMA is written to disk.

6. If AMA has successfully written to disk and is writing into a new segment, AMA is recording properly. If AMA is recording properly, proceed to Section 5.8.7.

7. If AMA is being recorded in one SEGMENT, but has not written to disk, proceed to Section 5.8.7 but continue to monitor AMA. To continue the monitoring, re-enter the OP:AMA:STATUS message every 10 minutes until the AMA successfully writes to disk.

8. If it appears that AMA is not recording properly, enter the following command on MCC page 1984:

   CMD 506

   After the 506 successfully completes, repeat the Verify AMA Billing Section until AMA is satisfactorily writing to disk.

   If there is call processing through the switch and if all SEGMENTS indicate EMPTY, seek technical assistance.

   Caution: If at any time you are unsure that AMA is recording properly, do not hesitate to seek technical assistance.

5.8.7 VERIFY MHD CONFIGURATION

To verify MHD configuration complete the following steps:

1. Access MCC page 123 (and MCC page 125 if more than 2 DFCs are equipped).

2. Ensure that all odd-numbered MHDs are ACT with the exception of MHD 15. If equipped, MHD 15 is used for software backup. This disk is not affected by these procedures and should remain in an OOS state.
The RCVPREP stage automatically started running on the new side and continued to the point shown in Figure 5-31. 

**Note:** If the procedure is running and has not yet reached the point shown in Figure 5-31 do not proceed until it reaches that state.

The following list describes each activity that will occur during the Recovery Preparation stage:

- **RCVY/PREP STG** - Setup for new side.
- **PREP ENV** - Restores options page settings used in the transition.
- **NEW SIDE SM MGR** - Provide (as needed) information control for switch the SMs forward and backward.
- **APPLHOOK** - No action on LTG going to Commit.

1. To continue with the Recovery Preparation stage, on MCC page 1985, enter command: 
   
   **CMD 500**

   **Response:**

   - **REPT NEW SIDE SM MGR COMPLETED SUCCESSFULLY**
   - **REPT LTG TOTAL SYSTEM DOWNTIME**
     
   **DOWNTIME = 00:00:xx  EVENT=166**
   - **REPT PROC SCHED POST BOOT PAUSED AT STAGE BOUNDARY - RESUME WHEN READY**
Note: The system downtime message will occur approximately 5 minutes after the boot. For the system downtime message, xx values less than 30 indicate acceptable call processing recovery.

5.8.8 RETROFIT DOWNTIME REPORT

A Retrofit downtime report is automatically printed approximately ten minutes after Switchforward.

REPT RETROFIT TOTAL SYSTEM DOWNTIME
DOWNTIME=hh:mm:ss EVENT=xxx

REPT RETROFIT PARTIAL SYSTEM DOWNTIME
WEIGHTED DOWNTIME=hh:mm:ss EVENT=xxx
RETROFIT PARTIAL SYSTEM OUTAGE: (YES|NO)

op:sysstat,ucl; PF
OP_SYSSTAT SUMMARY FIRST RECORD
SYS: INHIBITS-RC RETROFIT
AM: INHIBITS-MTCE-AUD-HW-SW
CM: INHIBITS-MTCE
CMP 1-0 P: INHIBITS-SW-HW
CMP 0-0 M: COMM_LOST GEN DIFF
L RSM x,1: MATE_PUMP FORCED INHIBITS-SW-MTCE-HW
G RSM x,1: MATE_PUMP FORCED INHIBITS-SW-MTCE-HW
L HSM x,1: MATE_PUMP FORCED INHIBITS-SW-MTCE-HW
K LSM x,1: MATE_PUMP FORCED INHIBITS-SW-MTCE-HW
S TRM x,1: MATE_PUMP FORCED INHIBITS-SW-MTCE-HW

REPT SWITCHER
STARTING

REPT SWITCHER
COMPLETED SUCCESSFULLY

REPT NEW_SIDE_SM_MGR
COMPLETED SUCCESSFULLY

REPT RETRO POSTBOOT
PAUSED AT STAGE BOUNDARY - RESUME WHEN READY

Total system downtime is defined to be the period of total loss of origination and termination capability.

Partial system downtime is defined to be the period of reduced capability when some, but not all, call processing is lost.

Partial system downtime is weighted by the number of terminations affected. A partial system outage event is deemed to have occurred if any individual SM’s outage is greater than 30 seconds, although the weighted time reported may be less than 30 seconds.

- If any of the SMs fail to report downtime to the AM, then downtime is reported, but "TIME MAY BE INVALID" is specified in the message.
- If all SMs fail to report downtime to the AM, then zero downtime is reported and "TIME NOT AVAILABLE" is specified in the message.

Note: In either of these two cases, ensure that SM recovery was verified (Section 5.8, Step 5.8.3.) following the Switchforward.

The Recovery Preparation Stage has completed and is at a pause boundary.

Figure 5-32 shows the MCC Page 1985 paused before the start of the Post-Boot Stage.
Figure 5-32 — MCC Page 1985 at the End of the Recovery Preparation Stage (at the Post-Boot Stage Pause)
5.9 POST-BOOT STAGE

Figure 5-33 shows an example of MCC page 1985 paused before the start of the Post-Boot stage. The following list describes each activity that will occur during the Post-Boot stage:

- **POSTBOOT STG** - Setup for post-boot activities.
- **ALWCHKS** - Allow hardware and software checks.
- **TSM NEW** - Instructs the technician to manually run the TSMNEW and TSMRMV commands.
- **TSM RMV** - Provides the option to run the TSMRMV from 1984 page commands.
- **STP OFLBT** - Stops the AM Off-line Boot and restores the AM/CM/CNI hardware.
- **BOOTHOOK** - Prepares evolved RCs for reapplication, minor CNI setup, restores AMALOST feature setting.

1. The Recovery Preparation stage has completed and is at a pause boundary. Continue with the following manual steps.

### 5.9.1 ALLOW HARDWARE CHECKS, SOFTWARE CHECKS

As the software and hardware inhibits are removed, any equipped Digital Facility Interfaces (DFIs) go to an OOS state but should be automatically restored to service.

1. On MCC page 1985, continue by executing the following command:
   
   CMD 500
   
   Response:
UPD:GEN:APPLPROC,ARG="ALWAMCHKS";
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:HDWCHK;
ALW:HDWCHK; PF
ALW HDWCHK COMPLETED
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:SFTCHK;
ALW:SFTCHK; PF
ALW SFTCHK COMPLETED
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:ERRINT;
ALW:ERRINT; PF
ALW ERRINT COMPLETED
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:ERRSRC;
ALW:ERRSRC; PF
ALW ERRSRC COMPLETED
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

UPD:GEN:APPLPROC,ARG="ALWCMPCHKS";
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:HDWCHK,CMP=0-0;
ALW:HDWCHK,CMP=0-0; PF
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:HDWCHK,CMP=1-0;
ALW:HDWCHK,CMP=1-0; PF
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:SFTCHK,CMP=0;
ALW:SFTCHK,CMP=0; OK
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
ALW HDWCHK CMP=0-0 COMPLETED
ALW HDWCHK CMP=1-0 COMPLETED

UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:HDWCHK,SM=1&&192;
UPD:GEN:APPLPROC,ARG="ALWSMCHKS";ALW:HDWCHK,SM=1&&192; IP
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:HDWCHK,SM=1&&192;
ALW:SFTCHK,SM=1&&192; OK
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
ALW HDWCHK SM=x COMPLETED (once for each SM)

Comment: On MCC page 1800,x (where x = any numbered SM), box 04 SFTCHK and box 08 ALL HDWCHK should not be backlit or transition from a backlit condition to a normal display in a few minutes.

5.9.2 TRUNK STATUS MAPPING (Performed Automatically)

5.9.2.1 TSMNEW

1. Verify that you receive the following response:

   Response:
   UPD:GEN:APPLPROC,ARG="TSMNEW";
   UPD GEN APPLPROC EXECUTING THE FOLLOWING RETROFIT TOOL:
   /prc/supr/tsm NEW
   [UPD GEN TSM IN PROGRESS xxx TRUNKS LOGGED]
   [UPD GEN TSM OOS SUMMARY xx MISMATCHES DETECTED]
   [UPD GEN TSM CADN SUMMARY xx MISMATCHES DETECTED]
UPD GEN TSM COMPLETED
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

Comment: If an error is encountered, refer to Section 6.5.15.

2. If OOS and/or CADN mismatches were detected, an OP-LIST-like report containing each listing can be dumped to the ROP or another printer. The location of these files is as follows:

3. If CADN mismatches are detected, the report should be dumped to a printer (ROP, etc.) and analyzed now.
   This report contains a listing of trunks which were IN SERVICE prior to the boot but are now OOS CADN.
   This state is usually encountered when trunks marked OOS CADN in the ODD dump are brought into service during the RC double-logging interval.
   For each trunk listed in the CADN report, determine whether the trunk should be brought back into service or left as it is. If the trunk should be brought back into service, use the appropriate RST:TRK message (refer to 235-600-700, Input Messages Manual) to restore the trunk(s).

5.9.2.2 TSMRMV

1. The following message appears on the 1985 MCC page before switching to the 1984 page:
   Response:
   ```
   EXECUTE TSMRMV FROM TOOL PAGE IF NEEDED
   WHEN DONE, ENTER 500 TO CONTINUE
   ```
   Comment: The 1984 page displays the following message (see Figure 5-34):
   Response:
   ```
   USE 5XX,RMV TO EXECUTE TSMRMV IF NEEDED
   WHEN DONE, ENTER 1985 POKE
   ```
2. If the summary message from TSMNEW indicated that OOS mismatches were detected, use the following command to remove all trunks listed in the oos.report file from service (/updtmp/tsm/oos.report):

```
CMD 5XX,rmv
Where xx = TSM
```

Response:
```
UPD:GEN:APPLPROC,ARG="TSMRMV"
UPD GEN APPLPROC EXECUTING THE FOLLOWING RETROFIT TOOL:
/prc/supr/tsm RMV
xx TRUNKS
TO BE REMOVED FROM SERVICE
(A RMV:TRK message appears for each trunk in the OOS report)
UPD GEN TSM COMPLETED
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
```

Comment: Do not wait for all of the trunks to be removed from service. Continue with the procedures.

3. Execute the following command whether or not the TSMRMV has been run:

```
CMD 1985
```

---

**Figure 5-34 — Trunk Status Mapping Waiting**
5.9.2.3 Verify Recent Change Roll Forward

During the LTG initialization, the AM, the CMPs, and the SMs are automatically placed in RC backout as the roll forward is activated. The roll forward should take no more than 30 minutes after the initialization to complete. Therefore, no units should indicate BACKOUT-RC in the preceding output. From the OP:SYSSTAT just performed, verify the AM, CMPs, and SMs are not in BACKOUT-RC.

5.9.3 COMPLETE OFFLINE BOOT PROCESS AND DUPLEX AM AND CM HARDWARE:

MCC Page: 1985

Enter Poke CMD: 500

Note: All of the following ROP output may not be in the same order as indicated due to switch activity at the time.

Sample ROP Response:

ALW DMQ ENABLED ADP
REPT OLBTOOL
STARTING
REPT OLBTOOL
STOP OFFLINE BOOT

Comment:
This PRM is used during OFLBOOT to extinguish the CU recovery indicator on the (EAI) page - it is printed for information only.

PRM_1 ECOO OFDD 1234 5678 79 60 00

ALW:DMQ:SRC=ADP

---

Figure 5-35 — Trunk Status Mapping Remove Waiting

5.9.2.3 Verify Recent Change Roll Forward

During the LTG initialization, the AM, the CMPs, and the SMs are automatically placed in RC backout as the roll forward is activated. The roll forward should take no more than 30 minutes after the initialization to complete. Therefore, no units should indicate BACKOUT-RC in the preceding output. From the OP:SYSSTAT just performed, verify the AM, CMPs, and SMs are not in BACKOUT-RC.

5.9.3 COMPLETE OFFLINE BOOT PROCESS AND DUPLEX AM AND CM HARDWARE:

MCC Page: 1985

Enter Poke CMD: 500

Note: All of the following ROP output may not be in the same order as indicated due to switch activity at the time.

Sample ROP Response:

ALW DMQ ENABLED ADP
REPT OLBTOOL
STARTING
REPT OLBTOOL
STOP OFFLINE BOOT

Comment:
This PRM is used during OFLBOOT to extinguish the CU recovery indicator on the (EAI) page - it is printed for information only.

PRM_1 ECOO OFDD 1234 5678 79 60 00

ALW:DMQ:SRC=ADP
REPT OLBTOL
  COMPLETED SUCCESSFULLY

ALW DMQ SOURCE ADP IS NOT INHIBITED

REPT DFC 0 IN GROWTH STATE
REPT SBUS 0 IN GROWTH STATE
REPT MHD 0 IN GROWTH STATE
REPT MHD 14 IN GROWTH STATE
REPT MT 0 IN GROWTH STATE
REPT SBUS 2 IN GROWTH STATE
REPT SBUS 2 IN GROWTH STATE
REPT MT 0 IN GROWTH STATE
REPT MHD 2 IN GROWTH STATE
REPT IOP 0 IN GROWTH STATE
REPT MTTY 0 IN GROWTH STATE
REPT MT 0 IN GROWTH STATE
REPT ROP 0 IN GROWTH STATE

----------------------------------------------------------------------
Comment:
  Repeated for all Even SCSDC's in Office
----------------------------------------------------------------------
REPT SCSDC x IN GROWTH STATE

----------------------------------------------------------------------
CLR FRC MSCU COMPLETED

----------------------------------------------------------------------
Comment:
  Repeated for all TTYC's in Office
----------------------------------------------------------------------
REPT TTYC xx IN GROWTH STATE

----------------------------------------------------------------------
REPT POSTBOOT STP_OFLB
  WAITING ON MHD RESTORAL

----------------------------------------------------------------------
Comment:
  Repeated for all TTYC's in Office
----------------------------------------------------------------------
REPT TTY x IN GROWTH STATE

----------------------------------------------------------------------
REPT DFC 0 OUT OF SERVICE
REPT SBUS 0 OUT OF SERVICE
REPT MHD 0 OUT OF SERVICE
REPT MT 0 OUT OF SERVICE
REPT SBUS 2 OUT OF SERVICE
REPT MHD 2 OUT OF SERVICE
REPT IOP 0 OUT OF SERVICE
REPT MTTY 0 OUT OF SERVICE
REPT ROP 0 OUT OF SERVICE
REPT SCSDC 0 OUT OF SERVICE

RST MSGS=0 COMPLETED EVENT= 668
CLR FRC ONTCCOM COMPLETED EVENT= 668

STOP OFLBOOT STARTED
TYPE MANUAL

REPT GROWTH DFC 0 COMPLETED
REPT GROWTH SBUS 0 COMPLETED
REPT GROWTH MHD 0 COMPLETED
REPT GROWTH MT 0 COMPLETED
REPT GROWTH SBUS 2 COMPLETED
REPT GROWTH MHD 2 COMPLETED
REPT GROWTH IOP 0 IN PROGRESS
REPT GROWTH IOP 0 COMPLETED
REPT GROWTH MTTY 0 IN PROGRESS
REPT GROWTH MTTY 0 COMPLETED
REPT GROWTH MTTY 0 IN PROGRESS
REPT GROWTH MTTY 0 COMPLETED
REPT GROWTH ROP 0 IN PROGRESS
REPT GROWTH ROP 0 COMPLETED
REPT GROWTH SCSDC 0 COMPLETED
5.9.4 [Optional Step] VERIFY THAT AMA IS RECORDING PROPERLY

a. Enter message:

Enter MCC MSG: **OP:AMA:STATUS;**

Response: **REPT AMA STATUS FOR STREAM STa**

<table>
<thead>
<tr>
<th>SEGMENT</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>xxxxx</td>
</tr>
<tr>
<td>2</td>
<td>xxxxx</td>
</tr>
<tr>
<td>3</td>
<td>xxxxx</td>
</tr>
</tbody>
</table>

LAST TIME DISK WRITER WROTE TO DISK hh:mm MM/DD

Comment: **Save** the ROP output for use in the next step.

**Note:** The percent full (number records) of each of the three **SEGMENTS** will demonstrate the loading of AMA records. Each time the **SEGMENT** gets full, the disk writer writes that particular **SEGMENT** to disk. The value of the **LAST TIME DISK WRITER WROTE TO DISK** will be **00:00 00/00** until the first segment has been written to disk after the boot.
b. **Enter message:**
Enter MCC MSG: `OP:AMA:MAPS;`

**Response:**
```
REPT AMA DISK MAPS FOR STREAM STA
WRITE PARTITION x READ PARTITION x
PARTITION x DISK MAP:
FPO: xx LPO: xx FPS: xx LPS: xx
FSO: xx LSO: xx FSS: xx LSS: xx
FBO: xx LBO: xx FBS: xx LBS: xx
```

---

c. **Re-enter message:**
Enter MCC MSG: `OP:AMA:STATUS;`

**Response:**
```
REPT AMA STATUS FOR STREAM STA
SEGMENT STATUS

1 xxxxx
2 xxxxx
3 xxxxx

LAST TIME DISK WRITER WROTE TO DISK hh:mm MM/DD
```

d. **Re-enter message:**
Enter MCC MSG: `OP:AMA:MAPS;`

**Response:**
```
REPT AMA DISK MAPS FOR STREAM STA
WRITE PARTITION x READ PARTITION x
PARTITION x DISK MAP:
FPO: xx LPO: xx FPS: xx LPS: xx
FSO: xx LSO: xx FSS: xx LSS: xx
FBO: xx LBO: xx FBS: xx LBS: xx
```

e. **Continue with the steps in this document and return to Step c every 10 minutes until you are satisfied that AMA is recording properly.**

**Note:** The amount of time it will take to verify AMA recording, depends on the amount of traffic on the switch.

1. **Compare the `OP:AMA:STATUS` output from Step a with the `OP:AMA:STATUS` output from Step c.**

   **Note:** The amount of AMA recorded depends on the amount of traffic on the switch.

   **Verify that AMA is writing to a segment,** by comparing the percent full (number records) of the segments from Steps 1 and 3. These should **increase** with traffic on the switch.

2. **Verify that AMA has written to disk.**

   **Note:** When one segment fills, it should be written to disk and a new segment will begin to fill. **Check the LAST TIME DISK WRITER WROTE TO DISK** - this value should not be 00:00 00/00.
3. You can also verify the AMA has been written to disk by comparing the 
output of the `OP:AMA:MAPS` commands issued in Steps b and d.

   **Note:** The second line of the output from the `OP:AMA:MAPS` 
gives a number after `WRITE PARTITION`. Below this are listed the various 
partitions available. Locate the partition corresponding to the write 
partition number. Within this report are values for `LPO` and `LPS`. These 
values should increase when AMA is written to disk.

   **Note:** AMA is recording properly, if it has successfully written to disk and 
is writing into a new segment.

f. If AMA is recording properly, continue.

<table>
<thead>
<tr>
<th>If it appears that AMA is not recording properly, enter the following poke command:</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCC Page: 1984,retro</td>
</tr>
<tr>
<td>Enter Poke CMD: 5xx</td>
</tr>
<tr>
<td>Where: xx = the numeric value for WRT_AMA_DATA</td>
</tr>
</tbody>
</table>
| **Note:** After WRT_AMA_DATA successfully completes, repeat the Verify AMA 
Billing Section until AMA is satisfactorily writing to disk. |
| If there is call processing through the switch and if all `SEGMENTS` indicate 
EMPTY, seek technical assistance. |
| **Caution:** If at any time you are unsure that AMA is recording properly, 
do not hesitate to seek technical assistance. |

5.9.5 POST-BOOT MODIFICATIONS AND CLEANUP

The "boothook" tool executes the "OFFRCR" script which resides in `/no5text/rcr`. The 
OFFRCR script determines if the OFFRCR process was run on the evolved ODDs. If 
OFFRCR was run, the script performs a series of file manipulations to prepare for RC 
reapplication (which occurs later in the LTG).

For the OFFRCR script, the "success" output is also provided in the response for 
"boothook". If the OFFRCR script fails, "boothook" will also fail. The failure-related 
output from the OFFRCR script provides information regarding potential sources of 
the error. Do not proceed with the LTG unless boothook is successfully completed; 
escalate to your next level of support if necessary.

The "boothook" step rebuilds user logins under `/unixa/users`. An archive file containing 
the directory structure for all logins in `/unixa/users` was copied to the new side earlier 
in the LTG process. This archive file is now used to rebuild user home directories.

The "boothook" step also executes the CNI related processes, `ssauto`, (which 
automatically populates recent change view 15.10 for the CNI Subsystem 3 feature).

For the `ssauto` script, the various "success" outputs are provided in the response for 
"boothook". If the process fails, **escalate to your next level of support before 
continuing the LTG**.

5.9.5.1 Set Clock

If the system clock does not reflect the proper time, enter message:

```
MSG SET:CLK,DATE=mm-dd-yy,TIME=hh-mm-ss;
```
Response: **SET CLK ....**

The proper time and date are displayed on top line of MCC display.

This modification process is executed after a successful initialization and recovery on
the new software release.

**Warning:** Before continuing make sure all AM related hardware is in the
ACT/UNEQ state (MCC page 111/112).

Boothook will automatically populate RC view 15.10 for offices with CNI. Therefore,
boothook will automatically allow recent change permission for the MCC in all offices.
5.9.6 SYSTEM CONFIGURATION

Figure 5-36 shows the system configuration at the completion of the Post-Boot stage.

**Legend:**
- **UNV** = UNAVAILABLE
- **ACTF** = ACTIVE FORCED

**MCC Page 116:** GENERIC RETROFIT ACTIVE

**MCC Page 1985:**
- SOAK EXECUTING
- SOAK - STAGE PAUSE

---

**Figure 5-36 — Typical System Configuration at Completion of the Post-Boot Stage**
5.10 SOAK STAGE

OVERVIEW

The soak interval consists of acceptance testing and the reapplication of RCs and CORCs.

5.10.1 SIMPLEX ACCEPTANCE

Acceptance testing is expected to last up to 1 hour. During the acceptance testing, operating company maintenance personnel perform a series of tests (which have been developed in accordance with local practices) to assess the reliability of the new software release prior to committing the system to full-duplex operation. These tests, among other things, should check for dial tone; check that intramodule and intermodule calls can be made for both incoming and outgoing calls; verify that the basic system features work; and analyze output messages and resolve problems as necessary.

If a need arises to back out to the old software release during the soak interval, refer to the appropriate Backout section.

Caution: The disks are still simplex at this time and only essential testing should be done.

Perform customer acceptance tests of new software such as:

- Intramodule and intermodule calls (both incoming and outgoing).
- Trunk calls (one per trunk group).
- Calls to operators and emergency services.
- Billing system.
- MCC display pages.
- Coin calls.
- Custom calling features such as call forwarding, speed calling, three-way calling, etc.
- OSPS features (if applicable).
- Wireless calls.
- International calls.
- ISDN calls (do not disconnect/connect station sets when testing ISDN calls).
- Packet calls.
- At least one call to and from every NXX in the office.
- Miscellaneous such as output reports, traffic reports, assert summaries, and Trunk and Line Work Station (TLWS).
Figure 5-37 shows an example of MCC page 1985 paused before the start of the Soak stage. MANUAL ACT will prompt the technician to perform acceptance testing activities and other things in the Soak stage of the document.

1. On MCC page 1985, continue with the Soak stage by entering the following command:

   CMD 500

   Response:

   REPT LTG SOAK PERFORM ACCEPTANCE TESTING
   AND OTHER ACTIVITIES LISTED IN
   REPT LTG SOAK THE SOAK STAGE OF THE
   TRANSITION MANUAL
   REPT LTG SOAK RESUME WHEN COMPLETED
   REPT ASM PROCESSING
   NO ASM PROCESSING REQUIRED DUE TO EQUIPAGE

   OR TRANSITION TYPE
Continue with the following manual steps.

5.10.2 Is the type of LTG being performed on a SMART Conversion LTG?

- If YES, go to Step 5.10.4.
- If NO, continue with the next step.

5.10.3 UPDATE ADMINISTRATIVE SERVICES MODULE (ASM) IF EQUIPPED

The ASM is automatically updated during the SOAK stage upgrade with the ASM package that was downloaded during RETROPRP FINAL_PREP stage.

5.10.4 RC/CORC EVOLUTION AND REAPPLICATION

The total reapplication time for RCs and CORCs is dependent on the number to be reapplied. The CORCs go in at a rate of about 4,000 to 5,000 per hour; RCs go in at an overall rate of approximately 400 to 800 per hour. Both CORCs and RCs are reapplied.

Note: The preceding reapplication rates are average values and are influenced by the type and complexity of the CORCs and RCs as well as the amount of traffic on the switch.

Because RC reapplication may take several hours, it is recommended that other LTG-related tasks be performed in parallel with this section. After finishing the first CORC reapplication run and starting up RC reapplication, continue through the Soak stage. Do not perform the "OFFICE BACKUPS" in the End stage until RCs and CORCs have been reapplied to the satisfaction of the operating company.

Please READ the following Hints section. Refer to it periodically for trouble analysis and other recommendations while the CORC and RC reapplication processes are
running. The messages shown in the Hints section give the user additional information on the sections that follow and are for information only.

**Note:** The RC reapplication can be started immediately after stop off-line boot has completed successfully on the new side. If it is later decided that a backout is necessary, RC reapplication will not adversely affect the backout.

If any problems are encountered during the CORC and RC reapplication or a need to stop RC reapplication occurs, refer to Section 6.5.9.

**Note:** It is recommended that CORC and RC reapplication be performed from the MCC since RC access is already allowed for this terminal. If other office terminals will be used for CORC and RC reapplication, RC access permission may have to be reset using the `SET:RCACCESS` message.

### 5.10.5 HINTS - KEEPING TRACK OF RC AND CORC REAPPLICATION

Section 6 contains ODD backup guidelines and a series of problem-solving procedures (Section 6.5.9, Recent Change and CORC Reapplication Troubles). If you encounter any of the following problems while the reapplication processes are running, refer to Section 6.5.9:

- **No response from the RC reapplication process for a long period of time.**
- `/log or /smlog 80% or 85% full. Possible output message is:
  
  ```
  * REPT RCV: RCLOG {80 | 85} PERCENT FULL
  (plus an audible minor alarm).
  ```

- `/log or /smlog 90%, 95-99% full. Possible output message is:
  
  ```
  *** REPT RCV: RCLOG {90 | 95 | ...} PERCENT FULL
  (plus an audible major alarm).
  ```

- **CORC reapplication aborts with a fatal error. Possible output messages include:**
  
  ```
  *** REPT RCV: RC DISABLED, LOG FULL
  (plus an audible major alarm).
  ```

- **CNVT CORCLOG LOAD SM = a STOPPED WITH FATAL ERRORS.**

- Recent change reapplication process aborts. Possible output messages include:
  
  ```
  EXC RCRLS CLERK=RCNEW ODDEVOL ABORTED FAILURES=__, APPLIED=__
  *** REPT RCV: RC DISABLED, LOG FULL
  (plus an audible major alarm).
  ```

- The evolved CORC log file corrupted. Possible output messages include:
  
  ```
  SM x CORC EVOLVED LOG FILE IS CORRUPTED.
  ```

  **Note:** For recovery of this error, escalate to your next level of support.

### 5.10.6 CORC REAPPLICATION

To reapply CORCs, enter message:

```
MSG   CNVT:CORCLOG,LOAD;
```

Response:

```
  cnvt:corclog; PF
  CORCFLUSH: SM= xxx COMPLETE
```
CORCFLUSH: AM COMPLETE
CORC EVOLUTION STARTED
CONCURRENT CONTROL PROCESS STARTED
CORC EVOLUTION: CONCURRENT CHILD PROCESS PID=xxxxxxxx STARTED
CORC EVOLUTION: CONCURRENT CHILD PROCESS PID=xxxxxxxx COMPLETE
xxxx CORCS EVOLVED
xxxx TRNCORCS EVOLVED
xxxx CORCS IN ERROR
xxxx TRNCORCS IN ERROR
xxxx RDNT CORCS RMVD
xxxx RDNT TRNCORCS RMVD

(The previous two messages are output for each SM with CORC activity.)

CORC EVOLUTION: CONCURRENT CHILD PROCESS PID=xxxxxxxx COMPLETED

CORC EVOLUTION: CONCURRENT CONTROL PROCESS COMPLETED
ALL EVOLVED CORC LOGFILES HAVE BEEN PROCESSED
xx CORCS yy TRNCORCS HAVE BEEN LOGGED IN THE
CORC EVOLVED LOGFILES

Note: Errors may occur during the first CORC reapplication run. These errors are generally caused by dependent RCs that have not yet been reapplied. After (all) the RCs have been reapplied, this command should be run again. Most/all of the errors should be eliminated by that time.

If **CNVT CORCLOG LOAD SM = a STOPPED WITH FATAL ERRORS** is output, check the ROP for the major-alarmed message "*** REPT RCV: RC DISABLED, LOG FULL." If that message is on the ROP output, go to Section 6.5.9. Otherwise, simply re-enter the **CNVT:CORCLOG,LOAD** message after RC reapplication completes.

5.10.7 INSTALL UNSUPPORTED RC VIEWS

The manual reapplication of the unsupported RC views should be started now, if it has not been started already. The unsupported RCs are listed in the /rclog/RCERRx files referred to during RETROPRP. These files should have been dumped daily since double-logging was started. The manual reapplication of the unsupported RCs can continue during POSTRCR. Do not wait for the manual reapplication of the unsupported RCs to be completed before proceeding to the next step.

5.10.8 RECENT CHANGE REAPPLICATION

To reapply RCs using POSTRCR:

1. To obtain the number of recent changes to be reapplied, enter message:
   
   **MSG REPT:RCHIST,ACTIVITY;**

   Response: **REPT RCHIST CLERK = HISTACT STARTED**

   *(The following RC history report will only be printed on the ROP.)*

   **REPT RCHIST ACTIVITY OUTPUT**

   PAGE x;

   5ESS SWITCH
   RECENT CHANGE
   DELAYED RELEASE SUMMARY REPORT

   CLERK ID PENDING COUNT COMPLETED COUNT ERROR COUNT DEMAND COUNT
[RCNEW xxxx xxxx xxxx xxxx] or
[RCNEW CLERK FILE DOES NOT EXIST OR CAN NOT BE OPENED]

[RCNEWOSPS xxxx xxxx xxxx xxxx] or
[RCNEWOSPS;CLERK FILE DOES NOT EXIST OR CAN NOT BE OPENED]

REPT RCHIST CLERK = HISTACT COMPLETED

Comment: In the preceding message, the DEMAND COUNT is the number of RCs to reapply (this number will decrease as RCs are reapplied). The ERROR COUNT is the number of errors from OFFRCR. For OSPS offices, ignore counts for RCNEWOSPS unless using Section 6.5.8.2, OSPS Recent Change Evolution and Roll-Forward Failures. RCNEWOSPS should NOT be reapplied unless the OSPS RC evolution process was turned off prior to the initialization.

Note: After the RC reapplication process is started in the next step, a count of the successful and failed RCs will automatically be printed every 3 to 5 minutes. Therefore, it is not necessary to re-enter the REPT:RCHIST,ACTIVITY; message. If this message is re-entered, the summary messages from the RC reapplication process will be delayed.

2. To reapply recent changes, enter message:

MSG EXC:RCRLS,ODDEVOL,CONCURRENT;

Response:

EXC RCRLS CLERK = RCNEW ODDEVOL STARTED
THE ONE-LINE ROP MESSAGES ARE REDIRECTED TO /updtmp/RCBCHSUCCESS AND /updtmp/RCBCHFAIL

The following message appears on the ROP (not on MCC) every 3 to 5 minutes:

RC BATCH IN PROGRESS
  xxx RCs FAILED, listings in /updtmp/RCBCHFAIL
  yyy RCs APPLIED, listings in /updtmp/RCBCHSUCCESS

EXC RCRLS CLERK = RCNEW ODDEVOL COMPLETED
FAILURES = xx,APPLIED = yy

3. The ISDN lines added since the final ODD dump or RSCANS/OFFRCR dump (whichever was performed last) will not be put into service automatically during RC reapplication. The following message can be used to unconditionally restore Line Cards (LCs) on a Line Group Controller (LGC) basis during the LTG after the appropriate RCs have been reapplied to the database.

Using the RCld.rpt output from the Begin stage, determine which (if any) LGCs need to be restored.

To unconditionally restore LGCs, enter message:

MSG RST:ISLULGC=a-b-c,UCL;

Where:  
  a = SM number  
  b = ISLU number  
  c = LGC number
Note: The UCL option is only valid for this message when the GENERIC LTG ACTIVE field is backlit on MCC page 116.

4. When reapplying recent changes, it is normal to receive some errors (that is, RCs that will not reapply). This is due mainly to the RC being dependent on CORCs that have not been reapplied yet. Therefore, if there are any CORCs that did not reapply, another CORC reapplication should be done and then RC reapplications should be performed (Step 3). This should be done until one of the following is true:
   - There are no errors.
   - There is no change in the number of errors (if the reapplication has been done more than once).

5. After RC reapplication is complete, the error file (which contains RCs that did not reapply), can be dumped using the following message.

   The following message will automatically create a file that contains all RC errors up to this point. This file will be created in /uptmp/HIST.RCNEW.

   Note: Each time the following message is entered, the file is recreated.

If needed, enter message:

   MSG  REPT:RCHIST,CLERK=RCNEW,FORMAT=DETAIL,ERROR;

Response:

   REPT RCHIST CLERK = RCNEW STARTED
   - REPORT IS IN /uptmp/HIST.RCNEW
   REPT RCHIST CLERK = RCNEW COMPLETED

   If the preceding message is used and a hardcopy is needed, the file will have to be dumped to a printer, enter message:

   MSG  DUMP:FILE,ALL,FN="/uptmp/HIST.RCNEW",OPL=999;

6. Using local RC procedures and/or your next level of support, attempts should be made to correct and reapply all views in error.

7. If errors occurred during the first CORC reapplication run, re-enter the CNVT:CORCLOG,LOAD message (Step 1) after RC reapplication completes.

5.10.9 CONTINUE WITH THE LTG UPON COMPLETION OF ACCEPTANCE TESTING AND OTHER ACTIVITIES

MCC Page: 1985
Enter Poke CMD: 500

Sample ROP Response:

   REPT RETRO SOAK CONTINUING

Comment:
   Offices not equipped with an ASM

   REPT ASM_PROCESSING
   NO ASM PROCESSING REQUIRED DUE TO EQUIPAGE OR TRANSITION TYPE
   REPT ASM_PROCESSING
   NO ASM PROCESSING REQUIRED FOR THIS OFFICE
   REPT ASM_PROCESSING
   DUE TO EQUIPAGE OR TRANSITION TYPE
Comment:
   Offices equipped with an ASM

REPT ASM_PROCESSING
   ASM PROCESSING STARTED
REPT ASM_PROCESSING
   ASM PROCESSING COMPLETED
---------------------------------------------

REPT RETRO COMMIT
   PAUSED AT STAGE BOUNDARY - RESUME WHEN READY
5.10.10 SYSTEM CONFIGURATION

Figure 5-39 shows the system configuration at the completion of the Soak stage.

**LEGEND:**
- UNV = UNAVAILABLE
- ACTF = ACTIVE FORCED

**MCC Page 116:**
- GENERIC RETROFIT ACTIVE

**MCC Page 1985:**
- COMMIT EXECUTING
- COMMIT - STAGE PAUSE

*As seen in output of 1984 Page, 502*

- AM duplex (either side active, other side standby)
- SMs and MHDs Simplex
- All SMs active on side 1
- CMP duplex (either side ACTIVE, other side STANDBY)

**Figure 5-39 — Typical System Configuration at Completion of Soak Stage**
5.11 COMMIT STAGE

OVERVIEW

The Commit stage follows a successful Soak stage and is expected to last approximately 2 to 3 hours. This stage consists of verifying that the RC/CORC reapply has completed and duplexing both the MCTSI s and system MHDs.

The SMs are duplexed by first removing the force on MCTSI side 1 and then unconditionally restoring MCTSI side 0.

Duplexing the system disks is the last major task. The disks containing the old ODD remain off-line until all SMs are full duplex on the new ODD. This ensures a backout possibility until the disks are committed to the new ODD, that is, until disk restorals begins, there is still a possibility that a backout to the old ODD can be done if the need arises.

Note: In the following section, all MHDs will be duplexed on the new ODD. While the MHDs are being duplexed, do not perform ECD changes.

Obtain approval from the LTG Coordinator before continuing.

---

Permission to Commit MHDs

---

Figure 5-40 — MCC Page 1985 Paused at the Commit Stage

Figure 5-40 shows an example of MCC page 1985 paused before the start of the Commit stage. The following list describes each activity that will occur during the Commit stage:

- **DUPLEX SMs** - Prompts the technician to manually duplex the SMs.
- **REAPP CHECK** - Verifies that RC and CORC reapplication have been started.
• **DUPLEX_MHDs** - Duplexes the MHDs on the new software release.

• **APPLHOOK** - Post tape read processing.

• **CMTHOOK** - Schedule the /rclog cleanup job.

### 5.11.1 AMA ALLOWS

#### Overview

One of the following **ALW:AMA** messages must be entered to allow AMA polling sessions (collection of AMA data).

a. **For offices using the AMATPS or AMADNS option to allow AMA polling sessions:**

   Enter MCC MSG: **ALW:AMA:SESSION[STa]**;

   Where: \( a \) = stream number (1 or 2)

   Sample ROP Response:
   
   **AMA Control file dumped at ROP**
   
   REPT AMA CONTROL FILE FOR STREAM STa
   
   OFFICE ID  xxxxxx
   
   DAYS UNTIL EXPIRATION  y
   
   PROCESS START TIME XX:XX
   
   PROCESS STOP TIME XX:XX
   
   DEFAULT MT FOR AUTO TAPE START  x
   
   AMA OPTION IS xxxxxxxxxxx
   
   . . .
   
   Comment: additional AMA control information dumped
   
   . . .

b. **For offices using automatic tape writing, to allow AMA polling sessions:**

   Enter MCC MSG: **ALW:AMA:AUTOST[STa]**;

   Where: \( x \) = stream number (1 or 2)

   Sample ROP Response:
   
   **AMA Control file dumped at ROP**
   
   REPT AMA CONTROL FILE FOR STREAM STa
   
   OFFICE ID  xxxxxx
   
   DAYS UNTIL EXPIRATION  y
   
   PROCESS START TIME XX:XX
   
   PROCESS STOP TIME XX:XX
   
   DEFAULT MT FOR AUTO TAPE START  x
   
   AMA OPTION IS xxxxxxxxxxx
   
   . . .
   
   Comment: additional AMA control information dumped
   
   . . .

#### 5.11.2 OFF-LINE AMA SESSION

The AMA session processes the AMA records that are on the off-line disks. The AMA software is able to determine whether or not the off-line AMA data has been processed. For this reason perform this session as you would any manual AMA session. This session must be done before the commit stage of the transition is executed.
Warning: If this is a dual stream office, you cannot process both streams at the same time during this stage of transition. For offices which teleprocess AMA this means the HOC must not initiate collection on the second stream until collection on the first stream is complete.

1. Initiate AMA tape writing or teleprocessing session per local practice. This session will automatically process data on the 5E16.2 off-line disks.
   
   Comment: If the teleprocessing session is being run at a non-standard time, it is necessary to call personnel at the HOC to request a manual poll.

2. To verify a successful manual AMA session, use Step 'a' (single-stream office) or Step 'b' (dual-stream office):
   
   a. Single-stream office - enter message:
      
      MSG OP:AMA:SESSION;
      
      Response: Response for offices with AMA teleprocessing:
      
      REPT AMA TELEPROCESSING SESSION FOR STREAM STX
      
      PREVIOUS AMA TELEPROCESSING SESSION STATUS
      START TIME xxx x xx:xx:xx
      STOP TIME xxx x xx:xx:xx
      BLOCKS TRANSMITTED xxx
      PRIMARY POLLS REJECTED x
      SECONDARY POLLS REJECTED x
      NORMAL TERMINATION
      or
      
      Response for offices with AMA tape writing:
      
      REPT AMA TAPE SESSION FOR STREAM STX
      
      PREVIOUS AMA TAPE SESSION STATUS
      VOL SER NUMBER
      START TIME xxx x xx:xx:xx
      PRIMARY DATA
      FIRST BLOCK x xxx x xx:xx
      LAST BLOCK x xxx x xx:xx
      TAPE IS xxx% FULL
      RECORDS WRITTEN x
      NORMAL TERMINATION - NO MORE DATA
      
      Comment: From the output, verify that the message NORMAL TERMINATION is received. If this output is not received, one of the following is true:
      
      - There is an AMA session still in progress.
      - The last AMA session was unsuccessful.

   b. Dual-stream office - enter message:
      
      MSG OP:AMA:SESSION,a;
      
      Where: a = ST1 or ST2. Enter message once for ST1, and once for ST2.
      
      Comment: See the Response and Comment for Step 'a'.

3. To verify the percentage of disk space occupied by AMA data, use Step 'a'
   (single-stream office) or Step 'b' (dual-stream office):
**Warning:** The following OP:AMA:DISK message must not be skipped. In addition to reporting on AMA disk space used, it sets control flags which determine whether to process AMA data on the off-line or the active disks.

a. Single-stream office - enter message:
   
   MSG OP:AMA:DISK;

   Response:
   ```
   REPT AMA DISK SUMMARY FOR STREAM STx
   DISK IS CURRENTLY xx% FULL
   NUMBER OF PRIMARY AMA BLOCKS IN USE
   IS APPROXIMATELY: xx
   ALL THE DATA ON THE OFFLINE
   SIDE HAS BEEN READ. THE AMA
   PROCESS HAS BEEN TRANSITIONED
   TO THE ACTIVE SIDE.
   ```

   Comment: If errors are received as a response try the procedure again. If errors are received again, escalate to your next level of support.

b. Dual-stream office - enter message:
   
   MSG OP:AMA:DISK,a;

   Where: a = ST1 or ST2. Enter message once for ST1, and once for ST2.

5.11.3 AMA ALLOWS ON THE ACTIVE SIDE

One of the following ALW:AMA messages must be entered to allow AMA polling sessions (collection of AMA data) on the active side.

Use either message 'a' or 'b', depending on your AMA option.

a. If your office uses the AMATPS option, allow AMA polling sessions:

   Enter MCC MSG: ALW:AMA:SESSION[,STa];

   Where: a = stream number (1 or 2)

   Sample ROP Response:
   ```
   AMA Control file dumped at ROP
   REPT AMA CONTROL FILE FOR STREAM STa
   OFFICE ID xxxxxxx
   DAYS UNTIL EXPIRATION y
   PROCESS START TIME XX:XX
   PROCESS STOP TIME XX:XX
   DEFAULT MT FOR AUTO TAPE START x
   AMA OPTION IS xxxxxxxxxxx
   . . .
   --------------------------------------------------
   Comment: additional AMA control information dumped
   . . .
   ```

b. If you use automatic tape writing, allow AMA polling sessions:

   Enter MCC MSG: ALW:AMA:AUTOST[:STa];

   Where: a = stream number (1 or 2)

   Response: AMA Control file dumped at ROP
   ```
   REPT AMA CONTROL FILE FOR STREAM STa
   OFFICE ID xxxxxxx
   DAYS UNTIL EXPIRATION y
   ```
5.11.4 DUPLEX SMs

To continue with the **Commit** stage, on MCC page 1985, enter command:
CMD 500

Response:

```
ORD:CPI=1&&192,CMD=CLR;
ORD CPI 192 CMD CLR COMPLETED
REPT COMMIT DUPLEX SMS EXECUTING
ALW:HDWCHK,SM=1;
ALW:SFTCHK,SM=1;
ALW:HDWCHK,SM=2;
ALW:SFTCHK,SM=2;
```

5.11.5 VERIFY ALL SMs ARE DUPLEXED AND STABLE

MSG OP:SYSSTAT,UCL;

Response:  **OP:SYSSTAT,UCL;PF**

OP SYSSTAT SUMMARY {FIRST|NEXT|LAST} RECORD
SYS: MISC
AM: INHIBITS-AUD-MTCE[-MORE]
CM: INHIBITS_MTCE
5.11.6 COMMIT DISKS TO NEW SOFTWARE RELEASE AND REGENERATE PROXY DATABASE

1. Ensure any required Software Update (SU) activity as directed by the LTG Notes has completed before proceeding.

2. If the office has an ASM with the Proxy Database feature active, that database will be regenerated at the same time the MHDs are being restored.

3. If the following process (Commit) is stopped while a disk restoral is in progress, the in-progress disk restoral should complete.

To commit the system to the new software release, on MCC page 1985, enter command:

```
CMD 500
```

Comment: If the CMPs or the SMs are not duplex prior to executing the 500 command, messages concerning this are printed by the Commit process.

Response:

```
THE COMMIT PROCESS IS EXECUTING
UPD:GEN:COMMIT;
REPT MHD 0 OUT OF SERVICE
RST MHD 0 TASK x MESSAGE STARTED
[REPT DIAMON ERROR = x ERNNO = y] (on ROP)
RST MHD 0 IN PROGRESS (every 2 minutes) (on ROP)
RST MHD 0 COMPLETED
[REPT DIOP DUPLEX PROCESSING COMPLETED]
[ST:DBPROXY:RELOADALL COMPLETED]

(Other MHD restoral messages will be received for all even-numbered MHDs.)
UPD GEN COMMIT TRANSFERRING CONTROL TO APPLICATION
UPD GEN COMMIT APP EXECUTING CMTHOOK
UPD GEN COMMIT APPLICATION COMPLETION WITHIN xxxxxx SECONDS
READLOG

(Contents of SUPR log file are printed at ROP.)

OP GEN READLOG COMPLETED
UPD GEN COMMIT COMPLETED
REPT CMT HOOK COMPLETED SUCCESSFULLY
```

4. At this point in the procedures, all MHDs should be ACT on MCC page 123 (and MCC page 125 if more than 2 DFCs are equipped) - Disk File System Access. If all MHDs are ACT on MCC page 123 (and MCC page 125 if appropriate), continue with the procedures. If any MHDs other than the optional software backup disks (MHDs 14 and 15) indicate any state other than ACT, escalate to your next level of support. Do not use other steps or procedures to try to restore any MHD to an "ACT" condition.
5.11.7 SYSTEM CONFIGURATION

Figure 5-42 shows the system configuration at the completion of the Commit stage.

- AMs, SMs, CMPs duplex (either side ACTIVE, other side STANDBY)
- MHDs Duplex

Figure 5-42 — Typical System Configuration at Completion of Commit Stage
5.12 END STAGE

Figure 5-43 shows an example of MCC page 1985 paused before the start of the End stage. The following list describes each activity that will occur during the End stage:

- **APPLHOOK** - Misc allows, clearing LTG environment, etc.
- **ENDHOOK** - Restore ALIT status and CLID DN list. **RMVTOOLS** - Restore default cronfile and user cronfiles, and delete files used by LTG.

5.12.1 EAI SETUP

**Note:** Before beginning the EAI Setup, make sure the Commit stage has completed.

1. Access EAI page.
2. To clear the forces on the EAI page, enter command:
   
   CMD 14

3. Access **NORM DISPLAY**.
4. To switch ports, enter command on MCC page 111:
   
   CMD 401
   
   Response:
   
   SW:PORTSW; PF
   REPT ROP x STOPPED
   REPT ROP y STARTED
   SW PORTSW COMPLETED FOR ROP
   
   Screen blanks while ports are being switched.
   
   REPT MTTY x STOPPED
REPT MTTY STARTED
SW PORTSW COMPLETED FOR MTTY

EAI page comes up followed by MCC page 111.

Comment: If the port switch fails, ensure that the switches on the EAI boards are in the auto position.

5. Reaccess EAI page and verify that the setups for this EAI port are the same as the other EAI port which was set in Step 2. If hardware and software are not cleared, clear them. If the force on the secondary disk has not been cleared, clear it. If these items have been cleared, continue with the next procedure.

5.12.2 END OF LTG INTERVAL

1. For offices with an ASM with the Proxy Database feature active, before proceeding with the End Stage, confirm that the Proxy Database was successfully regenerated and is now on-line.

   MSG ST:DBPROXY:ACTION=STATUS;

Response:

   PROXY DATABASE IS NORMAL

   MSG ST:DBPROXY, ACTION=SIZEREPORTALL

Response:

<table>
<thead>
<tr>
<th>DB</th>
<th>CURRENT SIZE</th>
<th>MAX SIZE</th>
<th>PCT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IN KBYTES</td>
<td>IN KBYTES</td>
<td></td>
</tr>
<tr>
<td>AM</td>
<td>xxxx</td>
<td>xxxx</td>
<td>x</td>
</tr>
<tr>
<td>CMP</td>
<td>yyyy</td>
<td>yyyy</td>
<td>y</td>
</tr>
</tbody>
</table>

Any other ROP indicating failure to access the Proxy DB should be reported to technical support before proceeding with the End Stage.

2. To perform the "end" cycle, on MCC page 1985, enter command:

   CMD 500

Response:

   THE END PROCESS IS EXECUTING
   UPD GEN END APP EXECUTING
   UPD:GEN:END;
   UPD GEN END APP RECENT CHANGE ALLOW SENT
   ALW:REX,CU; OK
   ALW:REX,CM; OK
   ALW:REX,SM=1&192; OK
   ALW:DMQ:SRC=ADP; PF
   ALW DMQ SOURCE ADP IS NOT INHIBITED
   ALW:DMQ:SRC=REX; PF
   UPD GEN END APP REX ALLOW SENT
   ALW DMQ ENABLED REX
   ALW:REORG; OK
   UPD GEN END APP ALW:REORG COMMAND SENT
   UPD GEN END CRAFT ACSR ENQUEUEING/DEQUEUEING ALLOW SENT
   ALW:AUD=SODD,FULL; OK
   ALW:AUD=SODD,INCR; OK
   UPD GEN END STATIC ODD AUDITS ALLOW SENT
   [UPD GEN END AUTO SPARE DISK RESTORED]
   UPD GEN END APP EXECUTING ENDHOOK
   EXC:LIT:OPT=a,TYP=b, RG=c, TMO=d, TM=e-f; PF - FOR PARAMETER MODIFICATION
   EXC LIT VERIFY TYP=b RG=c TMO=d TM=e-f
UPD GEN END APP ENDHOOK REPORT

Date: Day Month Time Year

Tool Name: xxxxxxxx
Generic: 5E16(2)xx.yy Exit Status: 0
Comments: xxxxxxxx

APPLHOOK log file output on ROP.
On MCC page 116, GENERIC LTG field returns to normal.

UPD GEN END COMPLETED SUCCESSFULLY
THE END PROCESS COMPLETED SUCCESSFULLY

Comment: The resume command allows Routine Exerciser (REX) diagnostics, automatic relation reorganization (REORG), and RC. The Auto Spare Disk feature status line on MCC page 123 changes to indicate that the feature has been activated. The SYS INH (system inhibits status) which was backlit should go to normal as the End stage completes.

3. From the output, verify that the Endhook report was received (all tools should have an exit status of 0).

Note: If all tools DO NOT have an exit status of 0, escalate to your next level of support.

4. The End stage has completed and is at a pause boundary for General Cleanup.

5.12.3 AUTOMATIC ODD BACKUP SCHEDULE AND AUTOMATIC RELATION REORGANIZATION

1. To reschedule automatic ODD backups, enter message:
   MSG BKUP;ODD:EVERY=x,AT=y;
   Where: x and y = values recorded on ODD Backup Worksheet (Table 9-2) earlier in the procedures.

   Response: OK

2. Automatic relation reorganization (REORG) is currently set to run at 0200 hours. If a 2:00 a.m. reorganization interferes with any other nightly scheduled activities, use the following message to reset the reorg schedule.

   Enter message:
   MSG SET:REORG,TIME=a-b;
   Where: a = hour (00-23)
          b = minute (00-59).

   Response: OK

5.12.4 VERIFY CALL GAPPING CODE CONTROLS

1. To verify all Call Gapping (CGAP) Code Controls, enter message:
   MSG 0P:CGAP;

   Response:
2. Compare this list with the call gapping code controls output on the ROP during boothook. If needed, various formats of the SET:CGAP command may be used to change this data. See 235-600-700, Input Messages Manual for the syntax of this command.

5.12.5 TRFC30 REPORTS
Obtain the status of the TRFC30 report:

Enter MCC MSG: **OP:STATUS,TRFC30**;

*Note:* TRFC30 reports are not turned on after a Retrofit. Once the TRFC30 report is turned back on, you must also allow the sections of the TRFC30 report that you wish to collect. Use the ROP output generated earlier to determine which report sections were allowed prior to Retrofitting to the new Software Release.

Response: Dumps the status of the TRFC30 report.

Allow collection of a TRFC30 section:

Enter MCC MSG: **ALW:TRFC30,c1ct,y**;

Where: \( y = \) report section name to be allowed

Redirect the TRFC30 sections:

Enter MCC MSG: **ALW:TRFC30,x,y**;

Where: \( x = \) ROP or TRFCH

\( y = \) TRFC30 section

Enter MCC MSG: **OP:STATUS,TRFC30**;

Response: Dumps the status of the restored TRFC30 report.

Consult document 235-600-700, Input Messages Manual for the complete syntax and the complete list of options for this command.

5.12.6 Is the type of LTG being performed a SMART Conversion LTG?

- *If YES*, go to Step 5.12.9.
- *If NO*, continue with the next step.

5.12.7 ASM DSDOWNLOAD CONFIGURATION

*Only for offices with an ASM:* Remember to update the configuration files for dsdownload in order for your download to work properly. Refer to document 235-200-145, 5ESS Switch OneLink Manager™ Administrative Services Module User’s Guide, Section 7.2.1, “Creating a Configuration File for the Remote Server” for additional information.

5.12.8 SCANS UPDATE

The user profile on the SCANS machine must be updated to reflect the correct new generic for the “SCC” and “switch” level. Failure to update the user profile will cause downloaded BWMs to fail to apply due to the generic difference between the SCANS machine and the switch. For more information on updating the SCANS machine user profile contact SCANS Administration at 1–866–LUCE8.
5.12.9 VERIFY MESSAGE CLASS LOG PRINT STATUS

Information on 5E16.2 message classes is available in the User Guidelines and the Message Class Appendix sections of 235-600-750, Output Message Manual.

1. [OPTIONAL step] Check the 5ESS switch message class Log Print Status (LPS) settings:

   Enter MCC MSG: OP:LPS,MSGCLS=ALL;

   Response: A list of all message classes is dumped to the ROP. Each message class LPS setting for the current and backup routing (DAYLOG and ECD) will either be ON or OFF.

   Comment: The log print status of each message class is saved across the Retrofit initialization. New message classes appear at the end of the OP:LPS,MSGCLS printout with a default status.

2. [OPTIONAL Step] Change the LPS message class values:

   Enter MCC MSG: CHG:LPS,MSGCLS=a,PRINT=b,LOG=c;

   Where:  
   a = the message class that is to be changed.  
   b = Print status (ON or OFF).  
   c = Log status (ON or OFF).

   Response: OK

5.12.10 RC REAPPLICATION CLEANUP

Caution: Do not continue beyond this Section (Section 5.12.10) until RC and CORC reapplication has successfully completed.

1. Verify that all RCs and CORCs have been successfully reapplied. 

   If RCs and CORCs have been successfully reapplied, continue with Step 5. If errors still exist after RC reapplication, continue with Step 2.

2. The following message will automatically create a file that contains all RC errors up to this point. This file will be created in /updtmp/HIST.RCNEW. If the RC errors have already been output, it is not necessary to enter this message.

   Note: Each time the following command is entered, the file is re-created.

   If needed, enter message:

   MSG REPT:RCHIST,CLERK=RCNEW,FORMAT=DETAIL,ERROR;

   Response:

   REPT RCHIST CLERK = RCNEW STARTED REPORT
   IS IN /updtmp/HIST.RCNEW

   REPT RCHIST CLERK = RCNEW COMPLETED

   If the preceding message is used and a hardcopy is needed, the file will have to be dumped to a printer, enter message:

   MSG DUMP:FILE,ALL,FN="/updtmp/HIST.RCNEW",OPL=999;

3. Using local RC procedures and/or your next level of support, attempts should be made to correct and reapply all views in error.

4. If CORC reapplication failures were still seen during the last run, enter the following message, otherwise proceed to Step 5.
MSG       CNVT:CORCLOG,LOAD;
Response:

CNVT CORCLOG LOAD SM = xxx STARTED
CNVT CORCLOG LOAD SM = xxx COMPLETE

   xxxx CORCS PROCESSED
   xxxx TRNCORCS PROCESSED
   xxxx CORCS IN ERROR
   xxxx TRNCORCS IN ERROR

(The previous appears for each SM with CORC activity.)

[CNVT CORCLOG LOAD SM = xxx IN PROGRESS]
   [CORC NUMBER xxx HAS BEEN PROCESSED]

[CNVT CORCLOG LOAD AM STARTED]
[CNVT CORCLOG LOAD AM COMPLETE]
   [xxxxx CORCS PROCESSED]
   [xxxxx CORCS IN ERROR]

[CNVT CORCLOG LOAD CMP STARTED]
[CNVT CORCLOG LOAD CMP COMPLETE]
   [xxxxx CORCS PROCESSED]
   [xxxxx TRNCORCS PROCESSED]
   [xxxxx CORCS IN ERROR]
   [xxxxx TRNCORCS IN ERROR]

CNVT CORCLOG LOAD COMPLETED

5. RCs and CORCs have been successfully reapplied.

   ____________________________________________
   RC and CORC Reapplication Complete

6. Turn-on links and modems to remote RC centers.

5.12.11 CONTINUE THE END STAGE
MCC Page: 1985
Enter Poke CMD: 500

5.12.12 LTG PROCEDURE COMPLETED
Ensure Figure 5-44 is displayed before continuing with the manual actions in the next step.
5.12.13 OFFICE BACKUPS

**Warning:** These backup shelf copies are essential for system recovery. Perform them immediately after (but not before) RC/CORC reapplication completes.

1. Make sure primary to backup partition copies are made as a part of the office backup procedures. If the office is equipped with software backup disks (MHD 14 or MHD 15), refer to 235-105-210, *Routine Operations and Maintenance*, for information regarding populating software backup disks.

   Make office backups for base MHDs.

   Reference: Refer to 235-105-210, *Routine Operations and Maintenance*.

2. Record date and time in appropriate row of Disk Backup Worksheet (Table 9-3).

3. Obtain signature from the Site Coordinator before continuing.

   Office Backups Are Complete
EVALUATE THE SYSTEM CRON FILE

OVERVIEW

The 5E16.2 default system cron file (root) was automatically installed at the end of the Retrofit by the rmvtools tool. It is recommended that the site-specific system cron tasks which were in place on the 5E16 Software Release be evaluated at this time and that any required changes be made to the 5E16.2 cron file.

Note: Your 5E16 system cron file was printed at the ROP as part of the Begin Stage.

During the Retrofit, the system cron files on the 5E16 Software Release are compared with the default cron file on 5E16 and certain difference files are generated.

The following three files are created to assist in the evaluation and maintenance of the system cron files. These files are available on the old Software Release after the completion of PROCEED. They are also available on the new Software Release after the completion of the initialization.

- /unixa/spool/cron/retro.crontabs/rootcron.diff
  This file contains the differences between the old Software Release system cron file and default cron file.

- /unixa/spool/cron/retro.crontabs/rootcron.sys
  This file contains the cron entries which were in the old Software Release system cron file, but were not in the old Software Release default cron file.

- /unixa/spool/cron/retro.crontabs/rootcron.def
  This file contains the cron entries which were in the old Software Release default cron file, but were not in the old Software Release system cron file.

Refer to 235-700-200, UNIX RTR Operating System Reference Manual for details on the user logins and the cron commands.

PROCEDURE:

a. Enter the following message:

Note: Examine the contents of the file that contains the differences between the old Software Release system cron file and the old Software Release default cron file.

DUMP:FILE:ALL,FN="/unixa/spool/cron/retro.crontabs/rootcron.diff",OPL=999;

Note: The rootcron.sys and rootcron.def files can be dumped in a similar manner.

Sample ROP Response:

DUMP FILE ALL STARTED
This file contains a listing of the changes that were made to the system cron file on 5E16.
This file contains a differential file comparison, or diff listing of the 5E16 default cron and the 5E16 system cron files.
This file was created during the 5E16 to 5E16(2) Software Release transition on Date and Time.
This file was generated while the switch was on 5E16(2) by the UNIX command:

diff default_root_cron system_root_cron

Additional files created to assist in maintenance of system cron files are:

/unixa/spool/cron/retro.crontabs/rootcron.sys
(Contains the cron entries which were in the old side system cron file, but not in the old side default cron file.)

/unixa/spool/cron/retro.crontabs/rootcron.def
(Contains the cron entries which were in the old side default cron but were not in the old side system cron file.)

-------------------------------------------------------
Comment: Difference information is printed here, or the following response is output.

No root cron modifications detected during the 5E16 to 5E16(2) Software Release Retrofit, date and time.
-------------------------------------------------------

DUMP FILE ALL COMPLETED SEGMENT x

b. AFTER EVALUATING THE DIFFERENCES between the site-specific system cron tasks which were in place on the 5E16 Software Release and the new 5E16.2 Software Release system cron file, one of the following actions will be required based on the differences identified:

• If root cron modifications are detected during the Retrofit from the previous generic to the new generic, then the new generic’s system cron file will need to be modified as required to accommodate any necessary site-specific cron tasks, as well as, possible adjustment to certain existing default cron tasks.

• If no root cron modifications are detected during the Retrofit from the previous generic to the new generic, then no action is required at this time.

5.12.15 SAFETynet SERVICE RECONFIGURATION

The SafetyNet Service Reconfiguration (SSR) feature provides the Operating Company the ability to build and maintain text recent change (RC Text) files for immediate execution on customer request.

Due to RC form layout changes, operating companies must review RC text files and manually make any changes required to provide the required rerouting.

5.12.16 SYSTEM CONFIGURATION

Figure 5-45 shows the system configuration at the completion of the End stage.
Even-numbered MHDs (0, 2, 4, etc.)
Odd-numbered MHDs (1, 3, 5, etc.)

- Quiet duplex
- No major units OOS
- AMs, SMs, CMPs duplex (either side ACTIVE, other side STANDBY)
- MHDs Duplex

Figure 5-45 — System Configuration at the Completion of the End Stage
5.13 DUPLEx REgRESSION TESTS

The operating company should plan to monitor office performance for 2 days following the LTG. The 2-day interval should include one normal business day. Any abnormal conditions that occur should be immediately reported through normal support channels.

After all procedures have been executed successfully, tests may be run to confirm system operation with the new software. The following is a list of tests that could be run:

- Intramodule and intermodule calls (both incoming and outgoing).
- Trunk calls (one call per trunk group).
- Billing systems.
- MCC display pages.
- RC/V pages.
- Coin calls.
- Custom calling features (that is, three-way calling, call waiting, call forwarding, speed calling, etc.).
- ISDN calls.
- Packet calls.
- Hardware diagnostics.
- REX.
- Audits.
- Pump.
- Miscellaneous:
  - Output reports
  - RMV, RST of various units
  - Traffic reports
  - Assert summaries
  - TLWS
- OS tests.
- AP tests.
- AM tests.
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6. RECOVERY PROCEDURES

6.1 OVERVIEW

This section contains recovery procedures for many transition-related troubles that may be encountered during the course of the transition interval. This section is made up of the following major divisions:

- **Transition-Related Error Recovery**
- **Initialization Failures — Boot AM On Old Software Release/Data**
- **Error Definitions — Transition-related**
- **Error Definitions — Non-Transition related**
- **Recovery Actions.**

With the introduction of the Procedure Control Pages (1980, 1985, 1989), all APPLHOOK and SUPR errors will be displayed to the screen of the 1985 and 1989 pages, in addition to being printed to the rop. The screen output is limited to the first 3 lines of the error message. A complete report of the error will be printed to the rop. The last APPLHOOK or SUPR error will reside in the /updtmp/site/message file. The following command will output this file to the rop:

```
MSG DUMP:FILE,ALL,FN="/updtmp/site/message",OPL=999;
```

While it is true that all errors received throughout the transition interval may be "transition-related", Section 6.4, "Error Definitions — Transition-Related" contains error definitions and recovery information for problems exclusively associated with the transition process (that is, the implementation of the transition).

This section (Section 6) does provide recovery information for some situations and troubles that are not specifically due to the transition. However, for most non-transition-related recovery information, refer to 235-105-250, System Recovery Procedures.

It is highly recommended that this entire section be thoroughly reviewed before the transition. This should be done to understand the methods used to recover from problems that may be encountered. A thorough review will also familiarize users with the layouts and location of information.

Section 6.4, **Error Definitions — Transition-Related**, is to be used when a transition-related error occurs. Throughout the course of a transition, there are three types of errors that are specifically related to the transition process. They are as follows:

1. APPLHOOK Errors
2. SUPR Errors
3. Transition software tool errors.

This recovery procedures section gives detailed actions to recover from these errors and, in most cases, successfully continue with the transition.

When an error code procedure instructs you to proceed to Section 7, access Table 7-1, BACKOUT PROCEDURES. This table will direct you to the correct Backout procedure to be initiated.
Section 6.4, Error Definitions — Non-Transition Related, is to be used when a non-transition-related error occurs. In addition to the three specific transition-related errors previously mentioned, this section also contains recovery actions for the following problems/errors. If any of the following errors are encountered, go directly to that particular error definition in the Recovery Procedures section (use the table of contents for the correct page number). The following errors are listed in Section 6.4, Error Definitions — Non-Transition Related:

- Clear AMA Failures
- Duplex Disk Failures
- Active Disk SM Off-Line Pump Failures
- Off-Line Disk SM Off-Line Pump Failures
- Peripheral Off-Line Pump Failures
- ORD:CPI Clear Force Troubles
- ORD:CPI Switch and Force Troubles
- RC and CORC Roll Forward Problems
- RC and CORC Reapplication Troubles (Retrofit, LTG Only)
- RC and CORC Evolution Problems (Retrofit, LTG Only)
- Restarting RC Double-Logging After AM Initialization (Retrofit, LTG Only)
- Database Dump and Memory Forecasting Tool Troubles (Retrofit, LTG Only)
- COPY:ODD:TAPE,ALL Troubles (Retrofit, LTG Only)
- Trunk Status Mapping (TSM) Errors.

For ORD:CPI and off-line pump troubles, the headings have been broken down by the error that may appear on the ROP and/or the MCC. The information necessary to clear a related trouble is supplied at the referenced page.

Section 6.6, Recovery Actions, is to be used when directed by this document or technical support personnel.

6.2 TRANSITION-RELATED ERROR RECOVERY

6.2.1 OVERVIEW

The following guidelines should be used when attempting to recover from any transition-related error. Note that these particular guidelines only address the three types of specific transition errors defined earlier (APPLHOOK, SUPR, and tool failures). The other recovery procedures in this section should be used when directed by this document or by technical assistance personnel.

Figure 6-1 shows when (that is, during which stage) each type of error can occur. This is based on whether or not the process which outputs these errors is active.
6.2.2 ERROR RECOVERY GUIDELINES

Using the following steps, a successful recovery from most transition-related errors is possible. To recover from an error, do the following:

1. Note which transition stage (that is, Begin, Proceed, etc.) you are trying to execute when the error occurs. The recovery action will most likely differ based on which stage you are trying to execute.

2. Using the following examples, identify what type of error has been received. There may be more than one error output — write all errors down (or save the ROP output).
   
   Example of an APPLHOOK Error:
   UPD GEN ENTER APP STOPPED WITH ERROR CODE 5a07
   
   Example of a SUPR Error:
   UPD GEN ENTER STOPPED WITH ERROR CODE 502181
   
   Example of a transition tool error:
   UPD GEN ENTER APP ENTRHOOK FAILED WITH EXIT CODE 10

   If more than one type of error is received, try to resolve the problem in the following order:

   1. Transition Tool errors
   2. APPLHOOK errors
   3. SUPR errors

   For example, if both a SUPR error and an APPLHOOK error are received, first try to resolve the APPLHOOK error (using the following steps).

3. If a transition tool error is received (with or without any other error), go directly to Section 6.4.8.

   For any other type of error, determine whether the transition is continuable — this information is contained in the SUPR log file.

   Note: There is no SUPR log file in the Begin stage.

   To dump the SUPR log file, access MCC page 1984 and enter command: CMD 503
Response: Dump of SUPR log file on ROP
OP GEN READLOG COMPLETED

The APPLHOOK error log should also be dumped for reference. To dump the APPLHOOK log file, access MCC page 1984 and enter command:

CMD 504

In the SUPR log file, look at the most recent log file entry for the current stage (that is, the UPD:GEN:"stage" that failed) that contains the words:

CONTINUABLE: YES/NO

4. If the transition is continuable (YES), go to the Table of Contents for this section and locate the error definition for the error code received. Read the definition of the error(s) and the recovery actions. Using the table of contents, go to Section 6.6 and perform the specified action (R-1 through R-47). In the event two recovery actions are indicated for a given error, do the second one only if the first results in the same SUPR or APPLHOOK error.

If the recovery action(s) fails to get the transition restarted, you should escalate to your next level of support before backing out of the new software release. Use the applicable backout action for the given error code.

If the transition is not continuable (NO), you should escalate to your next level of support before backing out of the new software release. Use the applicable backout action for the error code in question. Refer to Section 7 in this document for all backout procedures.

******************************************************************************
STOP. YOU HAVE COMPLETED
THE ERROR RECOVERY GUIDELINES.
******************************************************************************

6.3 INITIALIZATION FAILURES - BOOT AM ON OLD SOFTWARE RELEASE/DATA

1. Access EAI page.
2. Verify that CU 0 is ACT FONL.
   Verify that CU 1 is FOFL.
3. Ensure the "SET-INH" box is NOT visible after INH-TIMER.
4. Enter the following EAI commands:
5. Access normal display (NORM DISP).

*Note:* If you cannot access normal display, continue with the following procedures.

6. To perform the initialization, enter the following commands on the EAI page:

*Note:* If ONTCs were duplex (that is, ACTIVE MAJOR/MINOR) on MCC page 1209 before the initial boot, use \( S \) as the application parameter (to preserve stable calls). If ONTCs were not duplex before the initial boot, use \( R \) as the application parameter.

7. The MCC display should change from the EAI page to MCC page 111 within approximately 5 to 10 minutes. *Do not attempt to enter pokes or messages until all expected system status indicators are backlit* (that is, SYS INH, AM, AM PERPH, MISC, etc.).

8. On MCC page 111, AM 0 status should be INIT and then change to ACTIVE.

**Exit Points**

*Restart:* Escalate to your next level of support.

*Backout:* Continue with "Backout Action B-4A."

---

**6.4 ERROR DEFINITIONS — TRANSITION-RELATED**

**6.4.1 APPLHOOK ERRORS**

**6.4.1.1 Overview**

During the execution of each SUPR process, processing control is periodically given to APPLHOOK, an application process. If an APPLHOOK process encounters an error condition, an APPLHOOK error will be output along with a SUPR error.
The APPLHOOK processes consist of the BEGIN stage, SM Backout, SM Switch, SWITCHFWD, SWITCHBCK, and END. These processes are invoked with the "UPD:GEN:....." input message or as an action of a 500 or 600 poke from the 1985 page.

During the execution of the APPLHOOK, an appllog file is created and updated by each of the APPLHOOK processes. The appllog file may be dumped to provide additional information on the current transition status by entering a 504 command on MCC page 1984.

If, during the execution of some APPLHOOK process an error condition results, an APPLHOOK error code is output. The following is a list of all APPLHOOK errors, their meaning, and appropriate recovery actions.

6.4.1.2 Error 100x - Unequipped SM Type Requested
The SM type or SM number requested in the SMSWITCH or SMBKOUT command line is not equipped in the office.

Retry the command with different or no SM type as the additional argument.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>100x</td>
<td>R-36 (Section 6.6.36)</td>
<td>———</td>
</tr>
</tbody>
</table>

6.4.1.3 Error 101x - Bad Number of Arguments

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>101x</td>
<td>R-36 (Section 6.6.36)</td>
<td>———</td>
</tr>
</tbody>
</table>

6.4.1.4 Error 102x - Bad Stage Argument

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>102x</td>
<td>R-36 (Section 6.6.36)</td>
<td>———</td>
</tr>
</tbody>
</table>

6.4.1.5 Error 103x - Bad Execution Mode Argument

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>103x</td>
<td>R-36 (Section 6.6.36)</td>
<td>———</td>
</tr>
</tbody>
</table>

Verify the Unconditional option on page 1989 is set to a valid value (Y or N) and fix with the 4xx,value poke if not (where "xx" is the number of the Unconditional option and "value" is "Y" or "N").

6.4.1.6 Error 104x - Off-Line Disk Method Not Specified

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>104x</td>
<td>R-36 (Section 6.6.36)</td>
<td>———</td>
</tr>
</tbody>
</table>

6.4.1.7 Error 105x - Illegal SM Type Specified

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>105x</td>
<td>R-36 (Section 6.6.36)</td>
<td>———</td>
</tr>
</tbody>
</table>
6.4.1.8 Error 106x - Inappropriate Keyword Used
A wrong keyword in the poke command or input message was entered. Look carefully on the output from the ROP to verify what was entered and re-input the poke command or input message using the appropriate keyword (RETRO, LTG, UPDATE).
If errors still persist after re-entering the poke or message with correct the keyword, escalate to your next level of support.

6.4.1.9 Error 107c - Bad Off-Line Boot Argument
A bad argument keyword in the poke command or input was entered. Look carefully on the output from the ROP to verify what was entered and re-input the poke command or input message using the appropriate keyword (RETRO, LTG, UPDATE).
If errors still persist after re-entering the poke or message with the correct keyword, escalate to your next level of support.

Verify the Offline Boot option on page 1989 is set to a valid value (Y or N) and fix with the 4xx,value poke if not (where "xx" is the number of the Offline Boot option and "value" is "Y" or "N").

6.4.1.10 Error 201x - Context Checks On APPLHOOK Log File Failed
The APPLHOOK log file (/etc/log/appllog) is created in the Begin stage and should exist throughout the rest of the procedures. This error could be caused by one of several things:

- The APPLHOOK log file (/etc/log/appllog) exists when trying to run the UPD:GEN:BEGIN message or a 500 poke command on MCC page 1985,x (where x = RETRO, LTG, UPDATE).
- The APPLHOOK log file (/etc/log/appllog) has been inadvertently removed after the Begin stage has been started.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Begin</td>
<td>2011</td>
<td>R-8 (Section 6.6.8)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Enter Forward</td>
<td>201x</td>
<td>R-9 (Section 6.6.9)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Proceed</td>
<td>201x</td>
<td>R-9 (Section 6.6.9)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Commit</td>
<td>201x</td>
<td>R-9 (Section 6.6.9)</td>
<td>—</td>
</tr>
<tr>
<td>End</td>
<td>2011</td>
<td>R-10 (Section 6.6.10)</td>
<td>—</td>
</tr>
<tr>
<td>Enter Backout</td>
<td>201x</td>
<td>R-9 (Section 6.6.9)</td>
<td>—</td>
</tr>
<tr>
<td>Backout Recovery Prep</td>
<td>201x</td>
<td>R-9 (Section 6.6.9)</td>
<td>—</td>
</tr>
<tr>
<td>SM Backout</td>
<td>201x</td>
<td>R-8 (Section 6.6.8)</td>
<td>—</td>
</tr>
<tr>
<td>SM Switch</td>
<td>201x</td>
<td>R-8 (Section 6.6.8)</td>
<td>—</td>
</tr>
<tr>
<td>Switchfwd</td>
<td>201x</td>
<td>R-8 (Section 6.6.8)</td>
<td>—</td>
</tr>
<tr>
<td>Switchback</td>
<td>201x</td>
<td>R-8 (Section 6.6.8)</td>
<td>—</td>
</tr>
</tbody>
</table>
6.4.1.11 Error 202x - Software Release Transition Data Delivery Key In An Incorrect State

The software release transition data delivery key is not expected to be set in the Begin stage. It should be set after the Begin stage and for the rest of the procedures. The box reserved for software release transition on MCC page 116 indicates if the data delivery key is set or not.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Begin</td>
<td>2021</td>
<td>R-8 (Section 6.6.8)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Enter Forward</td>
<td>202x</td>
<td>R-9 (Section 6.6.9)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Proceed</td>
<td>202x</td>
<td>R-9 (Section 6.6.9)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Commit</td>
<td>202x</td>
<td>R-9 (Section 6.6.9)</td>
<td></td>
</tr>
<tr>
<td>End</td>
<td>2021</td>
<td>R-10 (Section 6.6.10)</td>
<td></td>
</tr>
<tr>
<td>Enter Backout</td>
<td>202x</td>
<td>R-9 (Section 6.6.9)</td>
<td></td>
</tr>
<tr>
<td>Backout</td>
<td>202x</td>
<td>R-9 (Section 6.6.9)</td>
<td></td>
</tr>
<tr>
<td>Recovery Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMBackout</td>
<td>202x</td>
<td>R-8 (Section 6.6.8)</td>
<td></td>
</tr>
<tr>
<td>SMSwitch</td>
<td>202x</td>
<td>R-8 (Section 6.6.8)</td>
<td></td>
</tr>
<tr>
<td>Switchfwd</td>
<td>202x</td>
<td>R-8 (Section 6.6.8)</td>
<td></td>
</tr>
<tr>
<td>Switchback</td>
<td>202x</td>
<td>R-8 (Section 6.6.8)</td>
<td></td>
</tr>
</tbody>
</table>

The DD key may have been cleared if the AM took an unexpected initialization, or if the 42-S or 42-R application parameter was omitted from a planned boot.

6.4.1.12 Error 203x - Software Release Transition Data Delivery Key In An Incorrect State

The software release transition data delivery key is not expected to be set in the Begin stage. It should be set after the Begin stage and for the rest of the procedures. The box reserved for software release transition on MCC page 116 indicates if the data delivery key is set or not.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Begin</td>
<td>2031</td>
<td>R-8 (Section 6.6.8)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Enter Forward</td>
<td>203x</td>
<td>R-9 (Section 6.6.9)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Proceed</td>
<td>203x</td>
<td>R-9 (Section 6.6.9)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Commit</td>
<td>203x</td>
<td>R-9 (Section 6.6.9)</td>
<td></td>
</tr>
<tr>
<td>End</td>
<td>2031</td>
<td>R-10 (Section 6.6.10)</td>
<td></td>
</tr>
<tr>
<td>Enter Backout</td>
<td>203x</td>
<td>R-9 (Section 6.6.9)</td>
<td></td>
</tr>
<tr>
<td>Backout</td>
<td>203x</td>
<td>R-9 (Section 6.6.9)</td>
<td></td>
</tr>
<tr>
<td>Recovery Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMBackout</td>
<td>203x</td>
<td>R-8 (Section 6.6.8)</td>
<td></td>
</tr>
<tr>
<td>SMSwitch</td>
<td>203x</td>
<td>R-8 (Section 6.6.8)</td>
<td></td>
</tr>
<tr>
<td>Switchfwd</td>
<td>203x</td>
<td>R-8 (Section 6.6.8)</td>
<td></td>
</tr>
<tr>
<td>Switchback</td>
<td>203x</td>
<td>R-8 (Section 6.6.8)</td>
<td></td>
</tr>
</tbody>
</table>
The DD key may have been cleared if the AM took an unexpected initialization, or if the 42-S or 42-R application parameter was omitted from a planned boot.

6.4.1.13 Error 204x - Cannot Connect To Communications Port

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backout Prep</td>
<td>204x</td>
<td>R-36 (Section 6.6.36)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>204x</td>
<td>R-36 (Section 6.6.36)</td>
<td></td>
</tr>
</tbody>
</table>

6.4.1.14 Error 2051 - Communications Module Processor Is Not Pumped

This error indicates that the Communications Module Processor (CMP) is not pumped with the new data required at the time of the switch forward.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>2051</td>
<td>R-35 (Section 6.6.35)</td>
<td></td>
</tr>
</tbody>
</table>

6.4.1.15 Error 208x - Cannot Connect To RTR Port

This error indicates that there is another APPLHOOK process present. The technician should wait until an output message is printed indicating the result of the stage currently executing.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Begin</td>
<td>208x</td>
<td>R-2 (Section 6.6.2)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Enter Forward</td>
<td>208x</td>
<td>R-2 (Section 6.6.2)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Proceed</td>
<td>208x</td>
<td>R-2 (Section 6.6.2)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Switchfwd</td>
<td>208x</td>
<td>R-2 (Section 6.6.2)</td>
<td></td>
</tr>
<tr>
<td>Commit</td>
<td>208x</td>
<td>R-2 (Section 6.6.2)</td>
<td></td>
</tr>
<tr>
<td>End</td>
<td>208x</td>
<td>R-2 (Section 6.6.2)</td>
<td></td>
</tr>
<tr>
<td>Enter Backout</td>
<td>208x</td>
<td>R-2 (Section 6.6.2)</td>
<td></td>
</tr>
<tr>
<td>Backout</td>
<td>208x</td>
<td>R-2 (Section 6.6.2)</td>
<td></td>
</tr>
<tr>
<td>Recovery Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SM Backout</td>
<td>208x</td>
<td>R-2 (Section 6.6.2)</td>
<td></td>
</tr>
<tr>
<td>SM Switch</td>
<td>208x</td>
<td>R-2 (Section 6.6.2)</td>
<td></td>
</tr>
<tr>
<td>Switchback</td>
<td>208x</td>
<td>R-2 (Section 6.6.2)</td>
<td></td>
</tr>
</tbody>
</table>

6.4.1.16 Error 2091 - Proceed Stage Is Not Complete At Start Of SWITCHFWD

The recovery action (SWITCHFWD only) is printed on the ROP.

1. **Important:** Ensure both the Enter stage and Proceed stage have been completed.

2. To verify that the Proceed stage has completed, access MCC page 1985,x (where x = RETRO, LTG, UPDATE). Both the ENTER and PROCEED field on MCC page 1985,x should be backlit. From MCC page 1984, enter a 503 command to dump the suprlog and a 504 command to dump the applog. The output from these log files will indicate if the Proceed stage completed successfully. The Proceed stage must have completed successfully.
The Proceed stage can also be verified as successfully completing by looking for the **UPD GEN PROCEED COMPLETED** message on the ROP.

3. To verify the disk is bootable, dump the VTOC on MHD=1 by entering message:

   MSG DUMP:MHD=1,VTOC;

   Compare the output with Table ????. The lboot partition must have a start address of 2 on DUMP MHD output. If this partition has a start address of 0 (zero) and Proceed is complete, escalate to your next level of support immediately.

4. Once the Proceed stage has been verified as completing successfully, try the SWITCHFWD again. To resume, access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:

   **CMD 500**

   The unconditional option should only be used if the Proceed stage has completed successfully. If the unconditional SWITCHFWD fails, escalate to your next level of support.

   a. To execute the SWITCHFWD stage unconditionally, access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:

      **CMD 4XX,Y**

      Where: XX = the number of the UNCONDITIONAL EXECUTION

   b. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:

      **CMD 500**

   c. The SWITCHFWD stage executes unconditionally.

   d. On the new side, access MCC page 1989 and enter command:

      **CMD 4XX,N**

      Where: XX = the number of the UNCONDITIONAL EXECUTION

---

### 6.4.1.17 Error 20a1 - SWITCHBCK/BACKOUT Context Check Failed

The SWITCHBCK/BACKOUT context check failed. The `/etc/log/applswfwd` file used to switch MCTSI sides by the SWITCHBCK/BACKOUT process does not exist.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backout Prep</td>
<td>20a1</td>
<td>R-39 (Section 6.6.39)</td>
<td>—</td>
</tr>
<tr>
<td>Switchback</td>
<td>20a1</td>
<td>R-39 (Section 6.6.39)</td>
<td>—</td>
</tr>
</tbody>
</table>

### 6.4.1.18 Error 20b1 - Content Check — ACSR Queue Not Empty At Start Of Begin

This error code is output when an attempt is made to execute the Begin stage and the ACSR queue is not empty.

The ACSR feature rearranges customer DNs automatically when an ISDN station set (equipped with the feature) is moved. The station set has a self-identification...
capability that informs the switch of its DN. The DN is made to appear at another port automatically by unplugging the station set at the old location and plugging it in at the new location.

The ACSR feature uses the RC capability in the switch to make the database changes. The Begin stage inhibits RC. If the ACSR queue is not empty at the time of trying to execute, the Begin stage message or poke command will fail, and this error \textit{20b1} will be received.

The telephone company can inhibit the enqueuing for ACSR, wait for a period of time and let the changes be made into the database by the feature, and the queue will be emptied as the changes are made. When the ACSR queue is emptied, the Begin stage can be executed.

<table>
<thead>
<tr>
<th>ACSR Messages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action</strong></td>
</tr>
<tr>
<td>Dump ACSR Queue</td>
</tr>
<tr>
<td>Inhibit ACSR Enqueuing</td>
</tr>
<tr>
<td>Inhibit ACSR Dequeuing</td>
</tr>
<tr>
<td>Inhibit ACSR Enqueuing and Dequeuing</td>
</tr>
</tbody>
</table>

Another method to continue from this error is to execute the Begin stage unconditionally. However, changes currently in the ACSR queue will not be made since UPD:GEN,BEGIN,[UCL] inhibits RC. If those changes need to be active now, this method should not be used.

\textbf{6.4.1.19 Error 20cx - END Stage Out Of Sequence}

The END command has been entered out of sequence. Legal conditional points of execution are as follows:

- Begin stage complete
- Both Begin and Commit stages complete
- Both Begin and Restore stages complete.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>20cx</td>
<td>R-10 (Section 6.6.10)</td>
<td>——</td>
</tr>
</tbody>
</table>

\textbf{6.4.1.20 Error 20d1 - Unknown From And/Or To Software Release}

The from and/or to software release was not known at the start of the SWITCHFWD, SWITCHBCK, SMBKOUT, SMSWITCH, or BACKOUT commands.

If any SMs are currently GEN DIFF, re-execute the command unconditionally. If this is an attempt to recover SMs to the same software release that the AM is running on \textit{AND} the SMs do not switch, refer to recovery action R-38 (Section 6.6.38) for a forward transition or R-39 (Section 6.6.39) to backout.

Escalate to your next level of support if there are any additional problems.
6.4.1.21  Error 20e1 - Unknown From And/Or To Software Release

The from and/or to software release was not known at the start of the BEGIN, ENTER, PROCEED, COMMIT, or RESTORE commands. This problem **must** be resolved before the command can be restarted. Escalate to your next level of support.

The problem could be caused by one of the following reasons:

- The `/no5text/.version` file could be incorrect or corrupted (BEGIN stage).
- The GLAUTOEVOL ODD evolution parameter could be set incorrectly (BEGIN RETRO stage).
- READHDR on the tapes might show an incorrect value for the SYSTEM TYPE field (BEGIN stage).
- The correct values were initially set, but have become corrupt (any stage).

6.4.1.22  Error 20fx - Command Would Cause Invalid State

The completion of the stage being executed would place the transition into an invalid state; therefore the execution of stage is denied. For example, while performing ODD evolution for a transition, (from old release to new release as in a transition) UPD:GEN:BEGIN:UPDATE:UCL will fail because UPDATE is not valid. An UPDATE is only valid for the same release.

6.4.1.23  Error 210x - No RCL Stage Value Found

A NULL transition stage has been returned when APPLHOOK attempted to read the RCLSTAGE environment variable. Perform the recovery action.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>312x</td>
<td>R-36 (Section 6.6.36)</td>
<td>———</td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

6.4.1.24  Error 221x - One Of The CMPs Is Not GEN DIFF

One CMP must be off-line pumped and in the GEN DIFF state. This error occurs when APPLHOOK determines that no CMP is GEN DIFF.

1. Verify the status of the CMPs by entering message:
   ```
   MSG OP:CMPSTAT;
   ```
2. If either CMP indicates GEN DIFF, escalate to your next level of support before continuing with the procedures.
3. If neither CMP indicates GEN DIFF, CMP 1-0 must be off-line pumped before the SMs will switch forward. Escalate to your next level of support to off-line pump CMP 1-0. After successfully pumping CMP 1-0, re-execute the switch forward command in the Proceed stage.
4. If the error continues, escalate to your next level of support.

6.4.1.25  Error 230x - No RCL Stage Value Found

A NULL Procedural Control Page (RCL Page) pointer has been returned when APPLHOOK attempted to read the RCLPAGE environment variable.
If the error persists after attempting the recovery action escalate to your next level of support.

6.4.1.26 Error 300x - Problem With The Data Delivery Key
1. A problem was found with the data delivery key.
2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter a 500 poke command to resume the transition (or a 600 poke command to Backout).

6.4.1.27 Error 301x - Problem With The Data Delivery Key
1. A problem was found with the data delivery key.
2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter a 500 poke command to resume the transition (or a 600 poke command to Backout).

6.4.1.28 Error 302x - Problem With The Data Delivery Key
1. A problem was found with the data delivery key.
2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter a 500 poke command to resume the transition (or a 600 poke command to Backout).

6.4.1.29 Error 3035 - Problem With The Data Delivery Key
1. A problem was found with the data delivery key.
2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter a 500 poke command to resume the transition (or a 600 poke command to Backout).

6.4.1.30 Error 3045 - Problem With The Data Delivery Key
1. A problem was found with the data delivery key.
2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter a 500 poke command to resume the transition (or a 600 poke command to Backout).

6.4.1.31 Error 305x - Problem With The Data Delivery Key
1. A problem was found with the data delivery key.
2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter a 500 poke command to resume the transition (or a 600 poke command to Backout).

6.4.1.32 Error 306x - Problem With The Data Delivery Key
1. A problem was found with the data delivery key.
2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter a 500 poke command to resume the transition (or a 600 poke command to Backout).

6.4.1.33 Error 307x - Problem With The Data Delivery Key
1. A problem was found with the data delivery key.
2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter a 500 poke command to resume the transition (or a 600 poke command to Backout).
6.4.1.34 **Error 3089 - SMs Not In Legal State**

Legal states are operational and growth.

1. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter a **500** poke command to resume the transition (or a **600** poke command to Backout).
2. If it fails again, escalate to your next level of support.

6.4.1.35 **Error 3099 - Problem With The Data Delivery Key**

1. A problem was found with the data delivery key.
2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter a **500** poke command to resume the transition (or a **600** poke command to Backout).

6.4.1.36 **Error 30a1 - GRget_envir() Failure**

The GRget_envir() function failed to retrieve the transition environment (from and to software release, etc). Escalate to your next level of support.

It is possible to analyze the reason for failure by creating a debugging file and examining the output during the failure. This procedure should not be attempted without support.

The procedures for analyzing the failure are as follows:

1. From the **UNIX** system prompt:
   - `touch /tmp/d.rdappl`
   - `/prc/supr/rdappl`
2. After running the **rdappl** command, examine the `/tmp/d.rdappl` file that was created. Determine where the error occurred and use this information to determine the cause of the failure.

6.4.1.37 **Error 30b5 - Problem With The Data Delivery Key**

1. A problem was found with the data delivery key.
2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter a **500** poke command to resume the transition (or a **600** poke command to Backout).

6.4.1.38 **Error 310x - Data Delivery Read/Write Failed On DDSGRFIT**

1. A problem was found with the data delivery key.
2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter a **500** poke command to resume the transition (or a **600** poke command to Backout).

6.4.1.39 **Error 312x - Error Reading CMP Status**

A problem was encountered during switchfwd/commit/restore while attempting to read the status of the CMP.

---

1. **UNIX** is a registered trademark, in the United States and other countries, licensed exclusively through X/Open Company, Limited
### 6.4.1.40 Error 313x - Error Reading CMP Status

A problem was encountered during switchfwd/commit/restore while attempting to read the status of the CMP.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>313x</td>
<td>R-31 (Section 6.6.31)</td>
<td>—</td>
</tr>
<tr>
<td>Commit</td>
<td>313x</td>
<td>R-32 (Section 6.6.32)</td>
<td>—</td>
</tr>
<tr>
<td>Enter Backout</td>
<td>313x</td>
<td>R-32 (Section 6.6.32)</td>
<td>—</td>
</tr>
</tbody>
</table>

### 6.4.1.41 Error 314x - Error Reading CMP Status

A problem was encountered during switchfwd/commit/restore while attempting to read the status of the CMP.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>314x</td>
<td>R-31 (Section 6.6.31)</td>
<td>—</td>
</tr>
<tr>
<td>Commit</td>
<td>314x</td>
<td>R-32 (Section 6.6.32)</td>
<td>—</td>
</tr>
<tr>
<td>Enter Backout</td>
<td>314x</td>
<td>R-32 (Section 6.6.32)</td>
<td>—</td>
</tr>
</tbody>
</table>

### 6.4.1.42 Error 315x - GRrd_envir() Failure

The GRrd_envir() function failed to retrieve the transition environment (from and to software release, etc.). Escalate to your next level of support.

It is possible to analyze the reason for failure by creating a debugging file and examining the output during the failure. This procedure should not be attempted without support.

The procedures for analyzing the failure are as follows:

1. From the UNIX system prompt:
   - touch /tmp/d.rdappl
   - /prc/supr/rdappl

2. After running the rdappl command, examine the /tmp/d.rdappl file that you created. Determine where the error occurred and use this information to determine the cause of the failure.

### 6.4.1.43 Error 4xxx - Termination Signal Received

This error occurs as a result of either SUPR timing out APPLHOOK or a user killing an active APPLHOOK process. If this occurs during the Proceed stage while CORC evolution is running, wait for completion of evolution before following the recovery action. If the user entered STOP:EXC:USER,PID=X to kill APPLHOOK, then this code is expected.
### 6.4.1.44 Error 501x - CPFILE - UNIX Operating System Error In Copying Files

An error occurred while performing a UNIX operating system call to copy files to the new release disk.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>501x</td>
<td>R-18 (Section 6.6.18)</td>
<td></td>
</tr>
<tr>
<td>Proceed</td>
<td>501x</td>
<td>R-18 (Section 6.6.18)</td>
<td></td>
</tr>
<tr>
<td>Backout Recovery</td>
<td>501x</td>
<td>R-39 (Section 6.6.39)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Prep</td>
<td>501x</td>
<td>R-38 (Section 6.6.38)</td>
<td></td>
</tr>
<tr>
<td>Switchfwd</td>
<td>501x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
<tr>
<td>Switchback</td>
<td>501x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

### 6.4.1.45 Error 510x - CPFILE - Wrong Number Of Arguments In cpfile.enter, cpfile.prc, Or cpfile.swfwd

The /prc/supr/cpfile.prc is a file that contains a list of files that are copied from the active disks to the new release disks during the Proceed stage before the switch is booted on the new software release. Likewise, /prc/supr/cpfile.swfwd contains a listing of files copied between the new release disks and the on-line disks during the switchfwd, switchback, and backout stages.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>501x</td>
<td>R-18 (Section 6.6.18)</td>
<td></td>
</tr>
<tr>
<td>Proceed</td>
<td>510x</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Backout Recovery</td>
<td>510x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
<tr>
<td>Prep</td>
<td>510x</td>
<td>R-38 (Section 6.6.38)</td>
<td></td>
</tr>
<tr>
<td>Switchfwd</td>
<td>510x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
<tr>
<td>Switchback</td>
<td>510x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

### 6.4.1.46 Error 521x - CPFILE - Source File Or Directory Does Not Exist

This error occurs when the source file or directory should exist but does not.
Stage/Cmd | Error | Recovery        | Backout
----------|-------|-----------------|--------
Enter Forward | 521x | R-18 (Section 6.6.18) | ——
Proceed | 521x | R-18 (Section 6.6.18) | (Section 7)
Backout Recovery Prep | 521x | R-39 (Section 6.6.39) | ——
Switchfwd | 521x | R-38 (Section 6.6.38) | ——
Switchback | 521x | R-39 (Section 6.6.39) | ——

If the error persists after attempting the recovery action, escalate to your next level of support.

6.4.1.47 Error 523x - CPFILE - Destination Path Is Not Directory

The destination pathname has to be a directory.

Stage/Cmd | Error | Recovery        | Backout
----------|-------|-----------------|--------
Enter Forward | 523x | R-18 (Section 6.6.18) | ——
Proceed | 523x | R-18 (Section 6.6.18) | (Section 7)
Backout Recovery Prep | 523x | R-39 (Section 6.6.39) | ——
Switchfwd | 523x | R-38 (Section 6.6.38) | ——
Switchback | 523x | R-39 (Section 6.6.39) | ——

If the error persists after attempting the recovery action, escalate to your next level of support.

6.4.1.48 Error 524x - CPFILE - mntfs Failed When Copying Files

The process that copies files to the new release disk failed.

Stage/Cmd | Error | Recovery        | Backout
----------|-------|-----------------|--------
Enter Forward | 524x | R-18 (Section 6.6.18) | ——
Proceed | 524x | R-18 (Section 6.6.18) | (Section 7)
Backout Recovery Prep | 524x | R-39 (Section 6.6.39) | ——
Switchfwd | 524x | R-38 (Section 6.6.38) | ——
Switchback | 524x | R-39 (Section 6.6.39) | ——

If the error persists after attempting the recovery action, escalate to your next level of support.
6.4.1.49 Error 525x - CPFILE - Read Error While Copying File

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>525x</td>
<td>R-18 (Section 6.6.18)</td>
<td>——</td>
</tr>
<tr>
<td>Proceed</td>
<td>525x</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Backout</td>
<td>525x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
<tr>
<td>Recovery Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switchfwd</td>
<td>525x</td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>Switchback</td>
<td>525x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

6.4.1.50 Error 526x - CPFILE - Write Error While Copying File

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>526x</td>
<td>R-18 (Section 6.6.18)</td>
<td>——</td>
</tr>
<tr>
<td>Proceed</td>
<td>526x</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Backout Recovery Prep</td>
<td>526x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
<tr>
<td>Switchfwd</td>
<td>526x</td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>Switchback</td>
<td>526x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

6.4.1.51 Error 527x - CPFILE - falloc() Or create() Failed

The falloc() function could not allocate sufficient file space for a contiguous file. If the file is not contiguous, this error code means the file could not be created.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>527x</td>
<td>R-18 (Section 6.6.18)</td>
<td>——</td>
</tr>
<tr>
<td>Proceed</td>
<td>527x</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Backout Recovery Prep</td>
<td>527x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
<tr>
<td>Switchfwd</td>
<td>527x</td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>Switchback</td>
<td>527x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

6.4.1.52 Error 530x - CPFILE - Error On Mounting Off-Line Partition

The process that mounts the off-line partition failed; no mount points are available for the off-line copy.
<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>530x</td>
<td>R-18 (Section 6.6.18)</td>
<td>——</td>
</tr>
<tr>
<td>Proceed</td>
<td>530x</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Backout Recovery Prep</td>
<td>530x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
<tr>
<td>Switchfwd</td>
<td>530x</td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>Switchback</td>
<td>530x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

6.4.1.53 Error 5407 - CPFILE - MOP Process Unexpectedly Terminated Or Dead

The Mount Off-Line Partition (MOP) Partition Manager process unexpectedly terminated or stops running and/or /tmp may be corrupted.

1. To determine if the mop command is running, access MCC page 1984 and enter command:

   CMD 510

   Response:

   !!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!
   !!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!

   .
   . MOP IS NOT RUNNING AND THERE ARE NO OFFLINE
     PARTITIONS MOUNTED
   .
   . ISMOP COMPLETE
   .
   !!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!
   !!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!

   OR

   !!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!
   !!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!

   OR
. MOP IS RUNNING: mopPID = _________________
.
. THE FOLLOWING OFFLINE PARTITIONS ARE MOUNTED:

/tmp/ofl...
.
. ISMOP COMPLETE
.
!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!

OR

!!!!!!!!!!!!!!!!!!!! WARNING !!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!! WARNING !!!!!!!!!!!!!!!!!!!!!
.
. MOP IS NOT RUNNING AND THE FOLLOWING OFFLINE PARTITIONS ARE MOUNTED:

/tmp/ofl...
.
. SEEK TECHNICAL ASSISTANCE
.
. ISMOP COMPLETE
.
!!!!!!!!!!!!!!!!!!!! WARNING !!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!! WARNING !!!!!!!!!!!!!!!!!!!!!

OR

!!!!!!!!!!!!!!!!!!!! WARNING !!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!! WARNING !!!!!!!!!!!!!!!!!!!!!
2. Verify that no MOP processes are active and that no off-line partitions are mounted.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>5407</td>
<td>R-18 (Section 6.6.18)</td>
<td>———</td>
</tr>
<tr>
<td>Proceed</td>
<td>5407</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Backout</td>
<td>5407</td>
<td>R-39 (Section 6.6.39)</td>
<td>———</td>
</tr>
<tr>
<td>Recovery Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switchfwd</td>
<td>5407</td>
<td>R-38 (Section 6.6.38)</td>
<td>———</td>
</tr>
<tr>
<td>Switchback</td>
<td>5407</td>
<td>R-39 (Section 6.6.39)</td>
<td>———</td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

6.4.1.54 Error 580x - Neither MHD 0 Or MHD 1 Is In An Off-Line State (ERROR Used For Off-Line Disk Method Only)

Note: This error should only be seen when using the Off-line disk method. If this error is seen when using the Active disk method, escalate to your next level of support.

During a software release transition, update, or large terminal growth, MHD 1 is taken to an Off-Line (OFL) state and new data is written to it during the Enter stage. After the switch has been booted on the new software release in the Proceed stage, MHD 1 is active and MHD 0 is OFL. During the interval from the Enter stage to the Commit stage, the primary disks are simplexes. During the Commit stage the even-numbered disks are restored and the disk system is duplexed. This error condition is received because the transition and SUPR process expected a simplex disk system during these stages (Enter stage to part of the Commit stage).
### Stage/Cmd Error Recovery Backout

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backout Prep</td>
<td>580x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
</tbody>
</table>

If this error occurs during any other stage than backout, escalate to your next level of support.

#### 6.4.1.55 Error 5a0x - cpfile.enter, cpfile.prc, Or cpfile.swfwd Missing

If this error occurs during the *Enter* stage, the *cpfile.enter* file is missing. If this error occurs during the *Proceed* stage, the *cpfile.prc* file is missing. If this error occurs during the *SWITCHFWD* or *BACKOUT*, the *cpfile.swfwd* file is missing.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>5a0x</td>
<td>R-29 (Section 6.6.29)</td>
<td>——</td>
</tr>
<tr>
<td>Proceed</td>
<td>5a0x</td>
<td>R-29 (Section 6.6.29)</td>
<td>——</td>
</tr>
<tr>
<td>Switchfwd</td>
<td>5a0x</td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>Backout Prep</td>
<td>5a0x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
</tbody>
</table>

#### 6.4.1.56 Error 5b0x - Could Not Terminate MOP (Partition Manager)

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>5b0x</td>
<td>R-25 (Section 6.6.25)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Proceed</td>
<td>5b0x</td>
<td>R-25 (Section 6.6.25)</td>
<td>——</td>
</tr>
<tr>
<td>Switchfwd</td>
<td>5b0x</td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>Switchback</td>
<td>5b0x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
<tr>
<td>Backout Prep</td>
<td>5b0x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
</tbody>
</table>

#### 6.4.1.57 Error 5c0x - CPFILE - Inconsistent Data In cpfile.enter, cpfile.prc, Or cpfile.swfwd

This error indicates that there is a mismatch between the destination partition (field 3) and the destination pathname (field 4) in the cpfile being used. These names must match exactly for the off-line copy to succeed.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>5c0x</td>
<td>R-18 (Section 6.6.18)</td>
<td>——</td>
</tr>
<tr>
<td>Proceed</td>
<td>5c0x</td>
<td>R-18 (Section 6.6.18)</td>
<td>——</td>
</tr>
<tr>
<td>Backout Prep</td>
<td>5c0x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
<tr>
<td>Switchfwd</td>
<td>5c0x</td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>Switchback</td>
<td>5c0x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.
6.4.1.58 Error 601x - Unexpected SM State

SWITCHFWD

1. Verify SM states:
   
   If this is the first attempt at switchfwd, ensure SMs indicate either MATE PUMP and FORCED or ISOLATED on MCC page 141, 142, etc., and an OP:SYSSTAT report.
   
   If this is a subsequent attempt at switchfwd, ensure SMs indicate MATE PUMP, ISOLATED, or any switch forward state on MCC page 141, 142, etc., and an OP:SYSSTAT report.
   
2. If the SMs do not indicate a valid state (in Step 1), escalate to your next level of support before continuing the procedures.

3. If the SMs indicate valid states (in Step 1), perform an unconditional switchfwd:
   
   a. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:
      
      **CMD 4XX,Y**
      
      Where: **XX = the number of the UNCONDITIONAL EXECUTION**
   
   b. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
      
      **CMD 500**
      
      The Switchfwd stage executes unconditionally.
   
   c. On the new side, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:
      
      **CMD 4XX,N**
      
      Where: **XX = the number of the UNCONDITIONAL EXECUTION**

4. If the same error code is encountered again, proceed to the appropriate recovery action as follows:

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>601x</td>
<td>R-38 (Section 6.6.38)</td>
<td>—</td>
</tr>
<tr>
<td>SMswitch</td>
<td>601x</td>
<td>R-38 (Section 6.6.38)</td>
<td>—</td>
</tr>
<tr>
<td>Backout</td>
<td>601x</td>
<td>R-39 (Section 6.6.39)</td>
<td>—</td>
</tr>
<tr>
<td>Recovery Prep</td>
<td></td>
<td></td>
<td>—</td>
</tr>
<tr>
<td>Switchback</td>
<td>601x</td>
<td>R-39 (Section 6.6.39)</td>
<td>—</td>
</tr>
<tr>
<td>SMBackout</td>
<td>601x</td>
<td>R-39 (Section 6.6.39)</td>
<td>—</td>
</tr>
</tbody>
</table>

SWITCHBCK

1. Verify SM states:

   If this is the first attempt at backout or switchbck, ensure SMs indicate either MATE PUMP and FORCED or ISOLATED on MCC page 141, 142, etc., and an OP:SYSSTAT report.
If this is a subsequent attempt at Switchbck, ensure SMs indicate MATE PUMP, ISOLATED, or any switch forward state on MCC page 141, 142, etc., and an OP:SYSSTAT report.

2. If the SMs do not indicate a valid state (in Step 1), escalate to your next level of support before continuing the procedures.

3. If the SMs indicate valid states (in Step 1), perform an unconditional switchfwd:
   a. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:
      \[ \text{CMD 4XX,Y} \]
      Where: \( XX = \) the number of the UNCONDITIONAL EXECUTION
   b. Access MCC page 1985,x (where \( x = \text{RETRO, LTG, UPDATE} \)) and enter command:
      \[ \text{CMD 600} \]
      The Switchbck stage executes unconditionally.
   c. On the new side, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:
      \[ \text{CMD 4XX,N} \]
      Where: \( XX = \) the number of the UNCONDITIONAL EXECUTION
   d. If the same error code is encountered again, proceed to the appropriate recovery action as follows:

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>601x</td>
<td>R-38 (Section 6.6.38)</td>
<td>———</td>
</tr>
<tr>
<td>SMswitch</td>
<td>601x</td>
<td>R-38 (Section 6.6.38)</td>
<td>———</td>
</tr>
<tr>
<td>Backout</td>
<td>601x</td>
<td>R-39 (Section 6.6.39)</td>
<td>———</td>
</tr>
<tr>
<td>Recovery Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switchback</td>
<td>601x</td>
<td>R-39 (Section 6.6.39)</td>
<td>———</td>
</tr>
<tr>
<td>SMBackout</td>
<td>601x</td>
<td>R-39 (Section 6.6.39)</td>
<td>———</td>
</tr>
</tbody>
</table>

6.4.1.59 Error 603x - RSM Did Not Respond To CPI Request

A Remote SM (RSM) did not react to a CPI that causes the SM to be forced to a side. **Prompt action is required.**

1. On MCC page 1209, verify ONTCs are duplex.
2. On MCC page 1900,x, verify communication links are established.
3. On MCC page 1190,x or 1800,x (for all SMs), verify that the MCTSI switched sides. If all MCTSIs switched sides, continue with the procedures in Section 5. If (some) SMs did not switch, continue with the recovery strategies listed as follows:
6.4.1.60 Error 604x - SM Did Not Respond To CPI Request

An SM did not react to a CPI that causes the module to be forced to a side. *Prompt action is required.*

1. On MCC page 1209, verify ONTCs are duplex.
2. On MCC page 1900,x, verify communication links are established.
3. On MCC page 1190,x or 1800,x (for all SMs), verify that the MCTSI switched sides. If all MCTSIs switched, continue with the procedures in Section 5. If (some) SMs did not switch, continue with the recovery strategies listed as follows:

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>604x</td>
<td>R-38 (Section 6.6.38)</td>
<td></td>
</tr>
<tr>
<td>SMSwitch</td>
<td>604x</td>
<td>R-38 (Section 6.6.38)</td>
<td></td>
</tr>
<tr>
<td>Backout</td>
<td>604x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
<tr>
<td>Recovery Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switchback</td>
<td>604x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
<tr>
<td>SMBackout</td>
<td>604x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
</tbody>
</table>

6.4.1.61 Error 605x - Invalid CLNK Configuration Requested

A CPI request was attempted over a bad CLNK configuration.

1. On MCC page 1209, verify ONTCs are duplex.
2. On MCC page 1900,x, verify communication links are established.
3. On MCC page 1190,x or 1800,x (for all SMs), verify that the MCTSI switched sides. If all MCTSIs switched, continue with the procedures in Section 5. If (some) SMs did not switch, continue with the recovery strategies listed as follows:

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>605x</td>
<td>R-38 (Section 6.6.38)</td>
<td></td>
</tr>
<tr>
<td>SMSwitch</td>
<td>605x</td>
<td>R-38 (Section 6.6.38)</td>
<td></td>
</tr>
<tr>
<td>Backout</td>
<td>605x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
<tr>
<td>Recovery Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switchback</td>
<td>605x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
<tr>
<td>SMBackout</td>
<td>605x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
</tbody>
</table>
6.4.1.62 Error 61xx - Error In Sending CPI Request

The message sent out for the CPI request failed.

1. On MCC page 1209, verify ONTCs are duplex.
2. On MCC page 1900,x, verify communication links are established.
3. On MCC page 1190,x or 1800,x (for all SMs), verify that the MCTSI switched sides. If all MCTSIs switched, continue with the procedures in Section 5. If (some) SMs did not switch, continue with the recovery strategies listed as follows:

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>61xx</td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>SMSwitch</td>
<td>61xx</td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>Backout</td>
<td>61xx</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
<tr>
<td>Recovery Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switchback</td>
<td>61xx</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
<tr>
<td>SMBackout</td>
<td>61xx</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
</tbody>
</table>

6.4.1.63 Error 701x - Did Not Receive Acknowledgment

A message that was to be sent out failed when sending the message.

1. On MCC page 1209, verify ONTCs are duplex.
2. On MCC page 1900,x, verify communication links are established.
3. On MCC page 1190,x or 1800,x (for all SMs), verify that the MCTSI switched sides. If all MCTSIs switched, continue with the procedures in Section 5. If (some) SMs did not switch, continue with the recovery strategies listed as follows:

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>701x</td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>SMSwitch</td>
<td>701x</td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>Backout</td>
<td>701x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
<tr>
<td>Recovery Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switchback</td>
<td>701x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
<tr>
<td>SMBackout</td>
<td>701x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
</tbody>
</table>

6.4.1.64 Error 702x - Error Sending CPI Request To SMARS

A message that was to be sent out failed when sending the message.

1. On MCC page 1209, verify ONTCs are duplex.
2. On MCC page 1900,x, verify communication links are established.
3. On MCC page 1190,x or 1800,x (for all SMs), verify that the MCTSI switched sides. If all MCTSIs switched, continue with the procedures in Section 5. If (some) SMs did not switch, continue with the recovery strategies listed as follows:
<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>702x</td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>SMSwitch</td>
<td>702x</td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>Backout Recovery Prep</td>
<td>702x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
<tr>
<td>Switchback</td>
<td>702x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
<tr>
<td>SMBackout</td>
<td>702x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
</tbody>
</table>

**6.4.1.65 Error 810x - Cannot Create /etc/log/applswfwd File**

This APPLHOOK error deals with the problem of trying to create the `/etc/log/applswfwd` file.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>810x</td>
<td>R-33 (Section 6.6.33)</td>
<td>——</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>Switchback</td>
<td>810x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
<tr>
<td>Backout Recovery Prep</td>
<td>811x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
</tbody>
</table>

**6.4.1.66 Error 830x - Cannot Write /etc/log/applswfwd File**

These APPLHOOK errors deal with the problem of writing to the `/etc/log/applswfwd` file.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>830x</td>
<td>R-33 (Section 6.6.33)</td>
<td>——</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>Switchback</td>
<td>830x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
<tr>
<td>Backout Recovery Prep</td>
<td>830x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
</tbody>
</table>

**6.4.1.67 Error 840x - Cannot Write /etc/log/applswfwd File**

These APPLHOOK errors deal with the problem of writing to the `/etc/log/applswfwd` file.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>840x</td>
<td>R-33 (Section 6.6.33)</td>
<td>——</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>Switchback</td>
<td>840x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
<tr>
<td>Backout Recovery Prep</td>
<td>840x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
</tbody>
</table>

**6.4.1.68 Error 8f0x - Cannot Write /etc/log/applswfwd File**

These APPLHOOK errors deal with the problem of writing to the `/etc/log/applswfwd` file.
### 6.4.1.69 Error 954x - Cannot Read Source Directory

The directory on the new release disk is not readable when a file is to be copied.

### 6.4.1.70 Error 998x - Cannot Read MHD 0 ucb In On-Line ECD

If the error persists, escalate to your next level of support.

### 6.4.1.71 Error 999x - Cannot Read MHD 1 ucb In On-Line ECD

If the error persists, escalate to your next level of support.
6.4.1.72 Error 9nnx - UNIX Operating System Error (nn = UNIX Error)

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Begin</td>
<td>9nnx</td>
<td>R-36 (Section 6.6.36)</td>
<td></td>
</tr>
<tr>
<td>Enter Forward</td>
<td>9nnx</td>
<td>R-18 (Section 6.6.18)</td>
<td></td>
</tr>
<tr>
<td>Proceed</td>
<td>9nnx</td>
<td>R-18 (Section 6.6.18)</td>
<td></td>
</tr>
<tr>
<td>Commit</td>
<td>9nnx</td>
<td>R-18 (Section 6.6.18)</td>
<td></td>
</tr>
<tr>
<td>Backout Recovery Prep</td>
<td>9nnx</td>
<td>R-18 (Section 6.6.18)</td>
<td></td>
</tr>
<tr>
<td>Enter Backout</td>
<td>9nnx</td>
<td>R-18 (Section 6.6.18)</td>
<td></td>
</tr>
<tr>
<td>End</td>
<td>9nnx</td>
<td>R-36 (Section 6.6.36)</td>
<td></td>
</tr>
<tr>
<td>Switchfwd</td>
<td>9nnx</td>
<td>R-36 (Section 6.6.36)</td>
<td></td>
</tr>
<tr>
<td>Switchback</td>
<td>9nnx</td>
<td>R-38 (Section 6.6.38)</td>
<td></td>
</tr>
<tr>
<td>SMSwitch</td>
<td>9nnx</td>
<td>R-36 (Section 6.6.36)</td>
<td></td>
</tr>
<tr>
<td>SMBackout</td>
<td>9nnx</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
</tbody>
</table>

6.4.1.73 Error axxx - All SMs/Peripherals Are Not Duplex

This is not a failure. This tells which SMs are not duplex. A status of the system should be printed if this error occurs.

- Ensure that the CMPs are duplex on MCC page 1850. If they are not duplex, restore the Out-Of-Service (OOS) unit.
- Check for SM/peripheral equipment that is not duplex.
- Enter an OP:SYSSTAT to output the system status.
- Enter an OP:PERPH,SM=x to dump the peripheral unit status for SM x.
- On MCC page 1984 dump the application log file (504 command). Look in the output for any information that might be related to this error condition.
- If any peripheral unit or SM is not duplex, restore the unit to service and continue with the procedures.

6.4.1.74 Error b50x - Problems With /etc/log/applswfwd File

This error indicates that the system could not open the /etc/log/applswfwd file for reading.

1. Enter message:
   ```
   MSG OP:STATUS:LISTDIR,FN="/etc/log";
   ```
2. Check the following items concerning the output for applswfwd:
   - Was the applswfwd file listed in the output from the OP:STATUS:LISTDIR message? It should be listed.
   - Is the applswfwd file zero in size (empty)? It should be non-zero.
   - Are the "rwx," (r)ead, (w)rite, and e(x)ecute permissions set to allow for reading, writing, and execution? They should be allowed.
6.4.1.75  Error b50x - Problems With /etc/log/applswfwd File

This error indicates that the system could not read the applswfwd header.

1. Enter message:
   
   MSG  OP:STATUS:LISTDIR, FN="/etc/log";

2. Check the following items concerning the output for applswfwd:
   
   • Was the applswfwd file listed in the output from the OP:STATUS:LISTDIR message? It should be listed.
   
   • Is the applswfwd file zero in size (empty)? It should be non-zero.
   
   • Are the "rwx," (r)ead, (w)rite, and e(x)ecute permissions set to allow for reading, writing, and execution? They should be allowed.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>b50x</td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>Backout</td>
<td>b50x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
<tr>
<td>Recovery Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switchbck</td>
<td>b50x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
</tbody>
</table>

6.4.1.76  Error b70x - /etc/log/applswfwd File - File ID Is Bad

This error indicates a problem with the applswfwd file.

1. Enter message:
   
   MSG  OP:STATUS:LISTDIR, FN="/etc/log";

2. Check the following items concerning the output for applswfwd:
   
   • Was the applswfwd file listed in the output from the OP:STATUS:LISTDIR message? It should be listed.
   
   • Is the applswfwd file zero in size (empty)? It should be non-zero.
   
   • Are the "rwx," (r)ead, (w)rite, and e(x)ecute permissions set to allow for reading, writing, and execution? They should be allowed.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>b70x</td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>Backout</td>
<td>b70x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
<tr>
<td>Recovery Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switchbck</td>
<td>b70x</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
</tbody>
</table>
### 6.4.1.77 Error b80x - /etc/log/applswfwd File - File Is Greater Than 6 Hours Old

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>b80x</td>
<td>R-38 (Section 6.6.38)</td>
<td></td>
</tr>
<tr>
<td>Switchbck</td>
<td>b80x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
</tbody>
</table>

### 6.4.1.78 Error b90x - /etc/log/applswfwd File - File Has Bad Synchword

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>b90x</td>
<td>R-38 (Section 6.6.38)</td>
<td></td>
</tr>
<tr>
<td>Backout</td>
<td>b90x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
<tr>
<td>Recovery Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switchbck</td>
<td>b90x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
</tbody>
</table>

### 6.4.1.79 Error ba0x - /etc/log/applswfwd File - Error Reading Synchword In File

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>ba0x</td>
<td>R-38 (Section 6.6.38)</td>
<td></td>
</tr>
<tr>
<td>Backout</td>
<td>ba0x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
<tr>
<td>Recovery Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switchbck</td>
<td>ba0x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
</tbody>
</table>

### 6.4.1.80 Error bb0x - /etc/log/applswfwd File - Cannot Read SM Data In File

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>bb0x</td>
<td>R-38 (Section 6.6.38)</td>
<td></td>
</tr>
<tr>
<td>Backout</td>
<td>bb0x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
<tr>
<td>Recovery Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switchbck</td>
<td>bb0x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
</tbody>
</table>

### 6.4.1.81 Error bc00 - /etc/log/applswfwd Has Bad Status

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchfwd</td>
<td>bb0x</td>
<td>R-38 (Section 6.6.38)</td>
<td></td>
</tr>
<tr>
<td>Backout</td>
<td>bb0x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
<tr>
<td>Recovery Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switchbck</td>
<td>bb0x</td>
<td>R-39 (Section 6.6.39)</td>
<td></td>
</tr>
</tbody>
</table>

### 6.4.1.82 Error c01x - Error In Simplexing The Disks In The INCORE ECD

The error occurred during the Enter stage while APPLHOOK was executing one of the following:

1. Collecting the status of the MHDs
2. Removing MHDs from service
3. Splitting the odd numbered MHDs in the incore ECD.

If in the Proceed stage, the error occurred while APPLHOOK was attempting to split the even numbered MHDs in the new release's disk ECD.
6.4.1.83  Error c02x - Cannot Restore Disk From SIMPLEX To DUPLEX

The error occurred during the Commit or Restore stage while APPLHOOK was executing one of the following:

- Collecting the status of the MHDs
- Changing an MHD simplex back to duplex in the incore ECD.

6.4.1.84  Error c03x - Unable To Update ECD

This error occurs when the incore or new release ECD is being configured for active disk transitions. Information related to the active disk transition is missing. This information will need to be inserted before continuing with the transition. Escalate to your next level of support.

6.4.1.85  Error dyyx - BGNHOOK/ENTRHOOK/.../ENDHOOK Error Exit Code yy

The yy contained in this error code is a tool exit code. For example, d11x contains an exit code of 11. For tool exit code recovery, see Section 6.4.8. If you cannot determine the appropriate action, escalate to your next level of support.

6.4.1.86  Error e01x - Corcflush Failure Detected By APPLHOOK

Examine the ROP to determine the SM(s) that failed the corcflush and resolve these problems as per local practices.

- Proceed (and the corcflush) can be rerun using a 500 poke command from MCC page 1985,x (where x = RETRO, LTG, UPDATE).
- If the error from corcflush cannot be corrected, the Proceed process can be restarted unconditionally. This will cause APPLHOOK to ignore the corcflush error.

If using AM Off-Line Boot:

a. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:

   CMD 4XX,Y

   Where:   XX = the number of the UNCONDITIONAL EXECUTION

b. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:

   CMD 500

The Proceed stage executes unconditionally.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>c01x</td>
<td>R-29 (Section 6.6.29)</td>
<td>——</td>
</tr>
<tr>
<td>Proceed</td>
<td>c01x</td>
<td>R-29 (Section 6.6.29)</td>
<td>——</td>
</tr>
</tbody>
</table>
c. When the Proceed stage completes, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:

CMD 4XX,N

Where: XX = the number of the UNCONDITIONAL EXECUTION

If NOT using AM Off-Line Boot:

a. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:

CMD 4XX,Y

Where: XX = the number of the UNCONDITIONAL EXECUTION

b. Change the AM Off-Line Boot to N by entering command:

CMD 4XX,N

Where: XX = the number of AM Off-Line Boot

c. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:

CMD 500

The Proceed stage executes unconditionally.

d. When the Proceed stage completes, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:

CMD 4XX,N

Where: XX = the number of the UNCONDITIONAL EXECUTION

6.4.1.87 Error e021 - /prc/supr/autoappl Command Failed At The Start Of The Stage

A command specified in the autoappl file failed at the start of the stage. Escalate to your next level of support.

**Warning:** If you are performing any SM switch AND your SMs have switched and are GEN DIFF, boot the switch onto the appropriate software release.

It is possible to analyze the reason for failure by creating a debugging file and examining the output during the failure. This procedure should not be attempted without support.

The procedures for analyzing the failure are as follows:

1. From the UNIX system prompt: touch /tmp/d.applhook

2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:

   CMD 500
   OR

   CMD 600 (for Backout)

3. After the command fails, examine the /tmp/d.applhook that was created. Determine where the error occurred and use this information to locate the bad command in the /prc/supr/autoappl file.
6.4.1.88  Error e031 - /prc/supr/autoappl Command Failed At The End Of The Stage

A command specified in the autoappl file failed at the end of the stage. Escalate to your next level of support.

Warning: If you are performing any SM switch AND your SMs have switched and are GEN DIFF, boot the switch onto the appropriate software release.

It is possible to analyze the reason for failure by creating a debugging file and examining the output during the failure. This procedure should not be attempted without support.

The procedures for analyzing the failure are as follows:

1. From the UNIX system prompt: touch /tmp/d.applhook
2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   CMD 500
   OR CMD 600 (for Backout)
3. After the command fails, examine the /tmp/d.applhook that was created. Determine where the error occurred and use this information to locate the bad command in the /prc/supr/autoappl file.

6.4.1.89  Error e04x - CORC Evolution Error Detected By APPLHOOK

Examine the ROP to determine the cause of the evolution error and resolve the error per local practices.

1. Proceed can be rerun using a 500 poke command from MCC page 1985,x (where x = RETRO, LTG, UPDATE).
2. If the error from CORC evolution cannot be corrected, the Proceed process can be restarted unconditionally. This will cause APPLHOOK to ignore the error.

If using AM Off-Line Boot:

a. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:
   CMD 4XX,Y
   Where:  XX = the number of the UNCONDITIONAL EXECUTION
b. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   CMD 500
   The Proceed stage executes unconditionally.
c. When the Proceed stage completes, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:
   CMD 4XX,N
   Where:  XX = the number of the UNCONDITIONAL EXECUTION
If NOT using AM Off-Line Boot:

a. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:
   
   \text{CMD 4XX,Y}

   Where: \( XX = \) the number of the UNCONDITIONAL EXECUTION

b. Change the AM Off-Line Boot to N by entering command:
   
   \text{CMD 4XX,N}

   Where: \( XX = \) the number of AM Off-Line Boot

c. Access MCC page 1985,x (where \( x = \) RETRO, LTG, UPDATE) and enter command:
   
   \text{CMD 500}

   The Proceed stage executes unconditionally.

d. When the Proceed stage completes, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:
   
   \text{CMD 4XX,N}

   Where: \( XX = \) the number of the UNCONDITIONAL EXECUTION

6.4.1.90 Error f03x - AM Off-Line Boot Failed

A failure occurred during the execution of AM off-line boot.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proceed</td>
<td>f03x</td>
<td>R-44 (Section 6.6.44)</td>
<td>———</td>
</tr>
<tr>
<td>Backout Recovery</td>
<td>f03x</td>
<td>R-44 (Section 6.6.44)</td>
<td>———</td>
</tr>
<tr>
<td>Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, seek technical assistance.

6.4.1.91 Error f04x - AM Off-Line Boot Did Not Complete After 3 Attempts

AM off-line boot attempted to complete 3 times unsuccessfully.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proceed</td>
<td>f04x</td>
<td>R-44 (Section 6.6.44)</td>
<td>———</td>
</tr>
<tr>
<td>Backout Recovery</td>
<td>f04x</td>
<td>R-44 (Section 6.6.44)</td>
<td>———</td>
</tr>
<tr>
<td>Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, seek technical assistance.

6.4.1.92 Error f07x - AM Pre-Check Failed During AM Off-Line Boot

A failure occurred during the AM pre-check phase of an AM off-line boot AM switch.
### Stage/Cmd Error Recovery Backout

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proceed</td>
<td>f07x</td>
<td>R-44 (Section 6.6.44)</td>
<td>——</td>
</tr>
<tr>
<td>Backout</td>
<td>f07x</td>
<td>R-44 (Section 6.6.44)</td>
<td>——</td>
</tr>
<tr>
<td>Recovery Prep</td>
<td>f07x</td>
<td>R-44 (Section 6.6.44)</td>
<td>——</td>
</tr>
<tr>
<td>Switchfwd</td>
<td>f07x</td>
<td>R-45 (Section 6.6.45)</td>
<td>——</td>
</tr>
<tr>
<td>Switchbck</td>
<td>f07x</td>
<td>R-46 (Section 6.6.46)</td>
<td>——</td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, seek technical assistance.

#### 6.4.1.93 Error f081 - SM Post-Check Failed During AM Off-Line Boot

A failure occurred during the SM post-check phase prior to an AM off-line boot AM switch.

**SWITCHFWD**

If the error occurs during SWITCHFWD, execute SWITCHFWD unconditionally:

1. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:
   
   **CMD 4XX,Y**

   Where: \ XX = the number of the UNCONDITIONAL EXECUTION

2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   
   **CMD 500**

   The Switchfwd stage executes unconditionally.

3. On the new side, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:
   
   **CMD 4XX,N**

   Where: \ XX = the number of the UNCONDITIONAL EXECUTION

If the Switchfwd fails again, execute the SWITCHBCK unconditionally to switch the processors back to the old software release text load and seek technical assistance.

1. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:
   
   **CMD 4XX,Y**

   Where: \ XX = the number of the UNCONDITIONAL EXECUTION

2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   
   **CMD 600**

   The Switchbck stage executes unconditionally.

3. On the old side, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:
   
   **CMD 4XX,N**
Where:  \( XX = \) the number of the UNCONDITIONAL EXECUTION

**SWITCHBCK**

If the error occurs during SWITCHBCK, execute SWITCHBCK unconditionally:

1. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to \( Y \) by entering command:
   
   \[
   \text{CMD 4XX,Y}
   \]
   
   Where: \( XX = \) the number of the UNCONDITIONAL EXECUTION

2. Access MCC page 1985,\( x \) (where \( x = \text{RETRO, LTG, UPDATE} \)) and enter command:
   
   \[
   \text{CMD 600}
   \]
   
   The Switchbck stage executes unconditionally.

3. On the old side, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to \( N \) by entering command:
   
   \[
   \text{CMD 4XX,N}
   \]
   
   Where: \( XX = \) the number of the UNCONDITIONAL EXECUTION

**If the Switchbck fails again, execute the SWITCHBCK unconditionally to switch the processors back to the new software release text load and seek technical assistance.**

1. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to \( Y \) by entering command:
   
   \[
   \text{CMD 4XX,Y}
   \]
   
   Where: \( XX = \) the number of the UNCONDITIONAL EXECUTION

2. Access MCC page 1985,\( x \) (where \( x = \text{RETRO, LTG, UPDATE} \)) and enter command:
   
   \[
   \text{CMD 500}
   \]
   
   The Switchfwd stage executes unconditionally.

3. On the new side, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to \( N \) by entering command:
   
   \[
   \text{CMD 4XX,N}
   \]
   
   Where: \( XX = \) the number of the UNCONDITIONAL EXECUTION

**6.4.1.94  Error f09x - AM Failed To Switch**

The AM failed to switch during an AM off-line boot switch forward.

**SWITCHFWD**

If the error occurs during SWITCHFWD, execute SWITCHFWD unconditionally:

1. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to \( Y \) by entering command:
   
   \[
   \text{CMD 4XX,Y}
   \]
   
   Where: \( XX = \) the number of the UNCONDITIONAL EXECUTION
2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   CMD 500
   The Switchfwd stage executes unconditionally.

3. On the new side, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:
   CMD 4XX,N
   Where: XX = the number of the UNCONDITIONAL EXECUTION

If the Switchfwd fails again, execute the SWITCHBCK unconditionally to switch the processors back to the old software release text load and seek technical assistance.

1. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:
   CMD 4XX,Y
   Where: XX = the number of the UNCONDITIONAL EXECUTION

2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   CMD 600
   The Switchbck stage executes unconditionally.

3. On the old side, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:
   CMD 4XX,N
   Where: XX = the number of the UNCONDITIONAL EXECUTION

**SWITCHBCK**

If the error occurs during SWITCHBCK, execute SWITCHBCK unconditionally:

1. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:
   CMD 4XX,Y
   Where: XX = the number of the UNCONDITIONAL EXECUTION

2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   CMD 600
   The Switchbck stage executes unconditionally.

3. On the old side, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:
   CMD 4XX,N
   Where: XX = the number of the UNCONDITIONAL EXECUTION
If the Switchbck fails again, execute the SWITCHBCK unconditionally to switch the processors back to the new software release text load and seek technical assistance.

1. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:
   
   CMD 4XX,Y

   Where: XX = the number of the UNCONDITIONAL EXECUTION

2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   
   CMD 500

   The Switchfwd stage executes unconditionally.

3. On the new side, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:
   
   CMD 4XX,N

   Where: XX = the number of the UNCONDITIONAL EXECUTION

6.4.1.95 Error f0ax - Cannot Open pcpmd File Descriptor

A failure occurred when attempting to open the pcpmd file descriptor while changing the AM ACT/STBY configuration.

The AM may be forced. If the AM is forced, clear the force, duplex the AM, and enter the following command on MCC page 1985,x (where x = RETRO, LTG, UPDATE):

   CMD 500

   OR

   CMD 600 (for Backout)

If it fails again, the office may have ECD corruption. Seek technical assistance.

6.4.1.96 Error f0bx - Cannot Open ECD Manager File Descriptor

A failure occurred when attempting to open the ECD manager file descriptor while changing the AM ACT/STBY configuration.

The AM may be forced. If the AM is forced, clear the force, duplex the AM, and enter the following command on MCC page 1985,x (where x = RETRO, LTG, UPDATE):

   CMD 500

   OR

   CMD 600 (for Backout)

If it fails again, the office may have ECD corruption. Seek technical assistance.

6.4.1.97 Error f0cx - Cannot Confirm That AM Side Switch Is Successful

Cannot confirm that an AM side switch is successful while changing the AM ACT/STBY configuration.

The AM may be forced. If the AM is forced, clear the force, duplex the AM, and enter the following command on MCC page 1985,x (where x = RETRO, LTG, UPDATE):

   CMD 500
OR

CMD 600 (for Backout)

If it fails again, the office may have ECD corruption. **Seek technical assistance.**

### 6.4.1.98 Error f0dx - AM Configuration Switch Failed

The AM is not in the correct ACT/STBY configuration for an AM off-line boot. A failure occurred when attempting to switch the AM ACT/STBY configuration prior to an AM off-line boot.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proceed</td>
<td>f0dx</td>
<td>R-42 (Section 6.6.42)</td>
<td>———</td>
</tr>
<tr>
<td>Backout Recovery</td>
<td>f0dx</td>
<td>R-42 (Section 6.6.42)</td>
<td>———</td>
</tr>
</tbody>
</table>

### 6.4.1.99 Error f0ex - Cannot Determine AM ACT/STBY Configuration

A failure occurred when attempting to determine the AM ACT/STBY configuration while changing the AM ACT/STBY configuration.

The AM may be forced. If the AM is forced, clear the force, duplex the AM, and enter the following command on MCC page 1985,x (where x = RETRO, LTG, UPDATE):

CMD 500

OR

CMD 600 (for Backout)

If it fails again, the office may have ECD corruption. **Seek technical assistance.**

### 6.4.1.100 Error f14x - Invalid AM Off-Line Boot Performed

An AM off-line boot was performed without the transition option.

When used for a software release transition, an AM off-line boot must be executed with the TRANSITION option. Use of the TRANSITION option is required to perform essential transition activity on the new software release side.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proceed</td>
<td>f14x</td>
<td>R-43 (Section 6.6.43)</td>
<td>———</td>
</tr>
<tr>
<td>Backout Recovery</td>
<td>f14x</td>
<td>R-43 (Section 6.6.43)</td>
<td>———</td>
</tr>
</tbody>
</table>

### 6.4.1.101 Error f15x - Write To GR Low-Core Area Failed

A failure occurred when attempting to write to the GR low-core area during an AM off-line boot.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>f15x</td>
<td>R-18 (Section 6.6.18)</td>
<td>———</td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, seek technical assistance.
6.4.1.102  Error f16x - Read Of GR Low-Core Area Failed
A failure occurred when attempting to read from the GR low-core area during an AM off-line boot.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>f16x</td>
<td>R-18 (Section 6.6.18)</td>
<td>——</td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, seek technical assistance.

6.4.1.103  Error f17x - Copy Of GR Low-Core Area Failed
A failure occurred when attempting to copy the GR low-core area to the off-line AM side during am AM off-line boot.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>f17x</td>
<td>R-18 (Section 6.6.18)</td>
<td>——</td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, seek technical assistance.

6.4.1.104  Error f18x - Read Of /etc/log/applgrappl Log File Failed
A failure occurred when attempting to read from the /etc/log/applgrappl log file during an AM off-line boot. This error will only appear in the appllog file.

Seek technical assistance.

6.4.1.105  Error f19x - Write To /etc/log/applgrappl Log File Failed
A failure occurred when attempting to write to the /etc/log/applgrappl log file during an AM off-line boot. This error will only appear in the appllog file.

Seek technical assistance.

6.4.1.106  Error f1ax - GR Low-Core And List Of Equipped SMs Is Out Of Sync
An inconsistency was found between the GR low-core and the list of equipped SMs during an AM off-line boot. This error will only appear in the appllog file.

Seek technical assistance.

6.4.1.107  Error f1bx - GR Low-Core Indicates Incorrect SM Equipage State
GR low-core indicates an unequipped SM that is actually equipped. This error will only appear in the appllog file.

Seek technical assistance.

6.4.1.108  Error f1cx - EIH Message Timeout
A timeout in EIH was detected during an AM off-line boot.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proceed</td>
<td>f1cx</td>
<td>R-44 (Section 6.6.44)</td>
<td>——</td>
</tr>
<tr>
<td>Backout</td>
<td>f1cx</td>
<td>R-44 (Section 6.6.44)</td>
<td>——</td>
</tr>
<tr>
<td>Recovery Prep</td>
<td>f1cx</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switchfwd</td>
<td>f1cx</td>
<td>R-38 (Section 6.6.38)</td>
<td>——</td>
</tr>
<tr>
<td>Switchback</td>
<td>f1cx</td>
<td>R-39 (Section 6.6.39)</td>
<td>——</td>
</tr>
</tbody>
</table>
6.4.1.109  Error f1dx - APPLHOOK Is Executing From The Off-Line AM

APPLHOOK is executing from the off-line AM. Check MCC page 111 on the terminal you executed the command from. Only work from terminals connected to the on-line CU (indicated by "OFLBOOT IP-ONLINE" backlit red in upper left of screen on MCC page 111).

6.4.2  SUPR REPLACEMENT ERROR CODES

6.4.2.1  Errors used by GRldlmhd.rcl

The errors in the following sections are used by GRldlmhd.rcl.

6.4.2.2  Error 1

While backing out of the PROCEED stage, ldmhd.rcl has detected that the MHDs are not in the required active simplex state.

If the error persists after attempting the recovery action, escalate to the next level of support.

Continue with recovery action R-49.

6.4.2.3  Error 2

While backing out of the PROCEED stage, ldmhd.rcl has detected that the new side saved vtoc mentioned in the previous message doesn't exist.

In the course of the transition to prevent a premature boot to the new side, the vtoc of the new side boot disk is rendered unbootable.

The new side VTOC is used to restore the new side MHD when the transition is ready to boot to the new software release.

If the error persists after attempting the recovery action, escalate to the next level of support.

Continue with recovery action R-49.

6.4.2.4  Error 3

While backing out of the PROCEED stage, ldmhd.rcl has detected that the new side saved vtoc mentioned in the previous message doesn't exist.

In the course of the transition to prevent a premature boot to the new side, the vtoc of the new side boot disk is rendered unbootable.

The new side VTOC is used to set the new side MHD to an unbootable state while on the old side of the transition.

If the error persists after attempting the recovery action, escalate to the next level of support.

Continue with recovery action R-49.

6.4.2.5  Error 4

While backing out of the PROCEED stage, ldmhd.rcl failed to write the modified VTOC to the new side MHDs.

In the course of the transition to prevent a premature boot to the new side, the vtoc of the new side boot disk is rendered unbootable.

The new side VTOC is used to set the new side MHD to an unbootable state while on the old side of the transition.
If the error persists after attempting the recovery action, escalate to the next level of support.

Continue with recovery action R-49.

**6.4.2.6 Error 5**
The program ldmhd.rcl failed to remove the MHD mentioned in the previous message. Some reasons for this error are:

- MHD didn’t go OOS in the specified time limit
- MHD is in a non-normal state (GROW, INIT, etc.)

Continue with recovery action R-56.

**6.4.2.7 Error 6**
The program ldmhd.rcl failed to change the state of the MHD as mentioned in the previous message. Some reasons for this error are:

- MHD didn’t go change state in the specified time limit
- MHD is in a non-normal state (GROW, INIT, etc.)

Continue with recovery action R-56.

**6.4.2.8 Error 7**
During backout of the ENTER stage, ldmhd.rcl failed in an attempt to backout the loadldft.rcl for the previously mentioned MHD and Tape Type.

Continue with recovery action R-49.

**6.4.2.9 Error 8**
During backout of the ENTER stage, ldmhd.rcl failed in an attempt to backout the dskprep.rcl for the previously mentioned MHD.

If the problem persists, escalate to your next level of support.

Continue with recovery action R-49.

**6.4.2.10 Error 9**
The program ldmhd.rcl failed in an attempt to duplex the MHD mentioned in the previous message using retrcv.rcl.

If the error persists after attempting the recovery action, escalate to your next level of support.

Continue with recovery action R-56.

**6.4.2.11 Error 10**
The program ldmhd.rcl failed in an attempt to restore the MHD mentioned in the previous message to the ACT duplex state.

Enter the MML command:

\[ RST: MHD=X \]

Where X is the MHD mentioned in the previous message.

Wait for the MHD to restore.

Continue with recovery action R-48.
6.4.2.12  Error 11
The program ldmhd.rcl failed in an attempt to load the SEQOPTS file mentioned in the following RCL abort message.

If the stage is in backout and this file doesn’t exist then use the following MML command to create a zero length SEQOPTS file that will enable backout to continue:

```
MSG EXC:ENVIR,UPROC,FN="/bin/sh/",ARGS="&gt;""X";
```

Where X is the name of the SEQOPTS file from the following message.

If the stage is progressing forward and this file doesn’t exist, then escalate to your next level of support.

Continue with recovery action R-56.

6.4.2.13  Error 12
The program ldmhd.rcl expects both MHDs of the disk pair to be in the ACT state.

Enter the MML command:
```
RST:MHD=X
```

Where X is the MHD mentioned in the previous message.

Wait for the MHD to restore.

Continue with recovery action R-48.

6.4.2.14  Error 13
The program ldmhd.rcl determined that the MHDs were incorrectly in the SIMPLEX state.

If the error persists after attempting the recovery action, escalate to your next level of support.

Continue with recovery action R-48.

6.4.2.15  Error 14
The program ldmhd.rcl expects the specified MHD of the disk pair to be in the INIT state.

Enter the MML command:
```
RST:MHD=X
```

Where X is the MHD mentioned in the previous message.

Wait for the MHD to restore.

Continue with recovery action R-48.

6.4.2.16  Error 16
While executing the PROCEED stage, the program ldmhd.rcl determined that the MHDs were not in the SIMPLEX state.

If the error persists after attempting the recovery action, escalate to your next level of support.

Continue with recovery action R-48.
6.4.2.17 Error 17
In the course of the transition to prevent a premature boot to the new side, the VTOC of the new side boot disk is rendered unbootable.

The program ldmhd.rcl attempted to save a copy of the modified VTOC to support backout of the PROCEED stage.

If the error persists after attempting the recovery action, escalate to your next level of support.

Continue with recovery action R-48.

6.4.2.18 Error 18
The program ldmhd.rcl failed in an attempt to write the correct bootable VTOC to the new side MHD.

If the error persists after attempting the recovery action, escalate to your next level of support.

Continue with recovery action R-48.

6.4.2.19 Error 19
The program ldmhd.rcl attempted to copy the incore ECD tp disk.

If the error persists after attempting the recovery action, escalate to your next level of support.

Continue with recovery action R-48.

6.4.2.20 Error 20
The program ldmhd.rcl attempted to split the MHD mentioned in the previous message.

If the error persists after attempting the recovery action, escalate to your next level of support.

Continue with recovery action R-48.

6.4.2.21 Error 21
The program ldmhd.rcl failed in an attempt to execute disprep.rcl on the MHD mentioned in the previous message.

If the error persists after attempting the recovery action, escalate to your next level of support.

Continue with recovery action R-48.

6.4.2.22 Error 23
The program ldmhd.rcl failed in an attempt to execute loadldft.rcl.

If the error persists after attempting the recovery action, escalate to your next level of support.

Continue with recovery action R-48.

6.4.2.23 Error 24
During an OSDE transition, ldmhd.rcl failed in an attempt to verify the SEQOPTS of the evolved data.
If the error persists after attempting the recovery action, escalate to your next level of support.

Continue with recovery action R-48.

6.4.2.24 Errors Used by GRldldft.rcl
The errors covered in the following sections are used by GRldldft.rcl

6.4.2.25 Error 50
The MHD being processed for tape reading encountered a problem, the call to etc/dgnnm was unable to reserve the MHD for tape reading.

Continue with recovery action R-50.

6.4.2.26 Error 51
Failed to initiate GRmkdisk tape reading from the ASM in an OSDE transition.
One reason for the error is that the ASM may not be communicating with the 5ESS switch.

Continue with recovery action R-51.
If this problem persists, seek technical assistance.

6.4.2.27 Error 52
GRmkdisk failed trying to execute on the ASM in an OSDE transition.
One reason for the error is that the OSDE feature may not be unlocked. OSDE software on the ASM may also have been corrupted.

Continue with recovery action R-52.

6.4.2.28 Error 53
GRmkdisk on the ASM failed while reading a LDFT message. No error message was returned by this failure.

There are a number of reasons for this error:

- GRmkdisk was killed on the ASM.
- The ASM took a fault.
- The DCI link to the ASM failed.

Continue with recovery action R-51.
If the problem persists, seek technical assistance.

6.4.2.29 Error 54
GRmkdisk on the 5ESS failed while reading a tape. No error message was returned by this failure.

One reason for the error is that the GRmkdisk was killed.

Continue with recovery action R-53.

6.4.2.30 GRmkdisk Failure Messages

Note: Messages from GRmkdisk are in the 100-199 range. For comparable OSDE versions of these errors, loadldft will add 100 to the GRmkdisk error. Some GRmkdisk error messages will not have a OSDE counterpart.
6.4.2.31 Error 100
GRmkdisk tape reading in the Enter Stage tried to create a segment using makeseg(). This was to be used as a buffer when reading in a new partition from the Load Disk From Tape (LDFT) and writing it to a MHD. Makeseg() may have failed because there was not enough spare memory for the segment.

Continue with recovery action R-18.

6.4.2.32 Error 200
GRmkdisk tape reading in the Enter Stage tried to malloc() memory. This was to be used as a buffer when reading in a new partition from the Load Disk From Tape (LDFT) image on the ASM and writing it to a MHD. Malloc() may have failed because there was not enough space in memory.

Continue with recovery action R-51

6.4.2.33 Error 101
GRmkdisk was unable to open the tape drive. The tape drive does not appear to be on line, or the tape was not correctly mounted on the tape drive. Ensure that the tape is correctly mounted on the tape drive.

Continue with recovery action R-18.

6.4.2.34 Error 201
GRmkdisk was unable to open the LDFT file on the ASM. The LDFT image name argument passed to GRmkdisk was incorrect or the LDFT image was unreadable.

Continue with recovery action R-51.

6.4.2.35 Error 102
Note: This is a 5ESS only message.
The setio() call failed when GRmkdisk attempted to set the I/O mode for the MHD being updated to physical I/O.

If this problem persists, seek technical assistance.

Continue with recovery action R-18.

6.4.2.36 Error 103
The open() call failed when GRmkdisk attempted to open the MDH that is being updated.

If this problem persists, seek technical assistance.

Continue with recovery action R-18.

6.4.2.37 Error 203
The open() call failed when GRmkdisk attempted to open the MDH that is being updated.

Continue with recovery action R-51.

If this problem persists, seek technical assistance.

6.4.2.38 Error 204
Note: This is an ASM only message.
GRmkdisk detected a multi-file LDFT image. This is not allowed while reading LDFT images from the ASM.
Seek technical assistance.

6.4.2.39 Error 105
Note: This is a 5ESS-only message.
GRmkdisk requires an RCL environment when reading multi-tape sequences on the 5ESS.
RCLTOOLID must be set for GRmkdisk to continue.
Continue with recovery action R-54.

6.4.2.40 Error 106
Note: This is a 5ESS-only message.
GRmkdisk requires an RCL environment when reading multi-tape sequences on the 5ESS.
RCLSTAGE must be set for GRmkdisk to continue.
Continue with recovery action R-54.

6.4.2.41 Error 107
Note: This is a 5ESS-only message.
GRmkdisk requires an RCL environment when reading multi-tape sequences on the 5ESS.
RCLPAGE must be set for GRmkdisk to continue.
Continue with recovery action R-54.

6.4.2.42 Error 108
Note: This a 5ESS-only message.
The msgenab() system call failed. This is required when reading multi-tape sequences on the 5ESS.
Mount the first tape of the sequence.
Continue with recovery action R-18.

6.4.2.43 Error 109
Note: This is a 5ESS-only message.
The creat() system call failed when trying to generate the continuation tape log file. This file is used when reading multi-tape sequences on the 5ESS.
Mount the first tape of the sequence.
Continue with recovery action R-18.

6.4.2.44 Error 110
Note: This is a 5ESS-only message.
The function GRrtn_vtoc() in GRmkdisk failed. This function is used to get a copy of the current VTOC so that it can be saved in the continuation log file. This file is used when reading multi-tape sequences on the 5ESS.
Mount the first tape of the sequence.
Continue with recovery action R-18.

6.4.2.45  Error 111
The creat() system call failed when GRmkdisk was generating the partition status file.
Continue with recovery action R-18.

6.4.2.46  Error 211
The creat() system call failed when GRmkdisk was generating the partition status file.
Continue with recovery action R-51.
If the problem persists, seek technical assistance.

6.4.2.47  Error 112
The Load Disk From Tape (LDFT) header on the tape is invalid. Possible reasons for the failure are:
- A tape read failure occurred while trying to read the LDFT header.
- The tape is not a LDFT tape.
- GRmkdisk is executing on a 3B21 but the LDFT tape is written for the 3B20.
- GRmkdisk is executing on a 3B20 but the LDFT tape is written for the 3B21.
Continue with recovery action R-17.

6.4.2.48  Error 212
The Load Disk From Tape (LDFT) image header on the ASM is invalid. Possible reasons for the failure are:
- A tape read failure occurred while trying to read the LDFT header.
- The image is not a LDFT image.
- A read failure occurred when trying to read the LDFT header.
Continue with recovery action R-51.

6.4.2.49  Error 113
The Generic ID found in the Load Disk From Tape header doesn’t match the current transition. One possible reason for the error is that an incorrect LDFT tape was mounted.
Continue with recovery action R-17.

6.4.2.50  Error 213
The Generic ID found in the Load Disk From Tape header doesn’t match the current transition. One possible reason for the error is that incorrect LDFT images were mounted on the ASM.
Continue with recovery action R-51.

6.4.2.51  Error 114
The tape Type from the Load Disk From Tape header is for a 'DATA' tape. The requested tape to be loaded is type "TEXT".
Continue with recovery action R-51.
If the problem persists, seek technical assistance.

6.4.2.52  Error 214
The tape Type from the Load Disk From Tape header is for a 'DATA' tape. The requested tape to be loaded is type 'TEXT'.

Continue with recovery action R-51.
If the problem persists, seek technical assistance.

6.4.2.53  Error 115
The tape Type from the Load Disk From Tape header is for a 'TEXT' tape. The requested tape to be loaded is type 'DATA'.

Continue with recovery action R-17.

6.4.2.54  Error 215
The tape type from the Load Disk From Tape header is for a 'TEXT' tape. The requested tape to be loaded is type 'DATA'.

Continue with recovery action R-51.
If the problem persists, seek technical assistance.

6.4.2.55  Error 116
Only one VTOC is allowed per single or multi-tape sequence. Multiple VTOCs were found.

Verify that the correct tape in sequence is mounted. Only the first tape in a tape sequence contains a VTOC. If the wrong tape is mounted, unmount it, mount the correct tape, and go to recovery action R-18.

If the correct tape in sequence is mounted, the could be a bad tape sequence. Try to resolve the problem using recovery action R-16 followed by recovery action R-17.

6.4.2.56  Error 216
Only one VTOC is allowed per single or multi-tape sequence. Multiple VTOCs were found.

Continue with recovery action R-51.
If the problem persists, seek technical assistance.

6.4.2.57  Error 117
The size of the VTOC on the Load Disk from Tape (LDF) tape is greater than the maximum size allowed. The VTOC may be damaged on MHD. GRmkdisk attempted to populate an internal VTOC library with the information of the VTOC from the source mentioned in first error.

Possible reasons for the error include:
- a transient memory problem.
- a memory I/O error.

Continue with recovery action R-18.
6.4.2.58  Error 220
GRmkdisk uses the VTOC when writing data to the MHD so that the data ranges are validated against the partition numbers on the MHD. GRmkdisk attempted to populate an internal VTOC library with the information of the VTOC from the source mentioned in first error.

Possible reasons for the error include:

- a transient memory problem.
- a memory I/O error.

Continue with recovery action R-51.

6.4.2.59  Error 121
GRmkdisk detected an incorrect LDFT image being loaded from the ASM. This may be a transient error.

Continue with recovery action R-17.

6.4.2.60  Error 221
GRmkdisk detected an incorrect LDFT image being loaded from the ASM. This may be a transient error.

Continue with recovery action R-51.

6.4.2.61  Error 122
A creat() system call failed while trying to create the saved VTOC file that will be used to prevent premature booting of the new side MHDs.

Continue with recovery action R-18.

6.4.2.62  Error 222
A creat() system call failed while trying to create the saved VTOC file that will be used to prevent premature booting of the new side MHDs.

Continue with recovery action R-51.

If the problem persists, seek technical assistance.

6.4.2.63  Error 123
A write() system call failed while trying to write the saved VTOC file that will be used to prevent premature booting of the new side MHDs.

Continue with recovery action R-18.

6.4.2.64  Error 223
A write() system call failed while trying to write the saved VTOC file that will be used to prevent premature booting of the new side MHDs.

Continue with recovery action R-51.

If the problem persists, seek technical assistance.

6.4.2.65  Error 124
A GRrtvn_vtoc() function call failed to save the VTOC in memory before making the changes necessary to prevent premature booting of the new side MHDs.

Continue with recovery action R-18.
6.4.2.66  Error 224
A GRrttn_vtoc() function call failed to save the VTOC in memory before making the changes necessary to prevent premature booting of the new side MHDs.

Continue with recovery action R-51.

If the problem persists, seek technical assistance.

6.4.2.67  Error 225
The GRchg_startblk() function call failed to make the changes necessary in the VTOC to prevent premature booting of the new side MHDs.

Continue with recovery action R-51.

If the problem persists, seek technical assistance.

6.4.2.68  Error 126
The lseek() system call failed while GRmkdisk was attempting to position the MHD before writing data to the MHD. Some reasons for the error include:

a. the file descriptor of the MHD was undefined.

b. the lseek() call attempted to seek beyond the size of the MHD.

Check the status of all DFCs, MHDs, and SBUs on MCC page 123 (and MCC page 125 if more than two DFCs are equipped). Only the MHD being written to should be OOS.

Continue with recovery action R-50.

6.4.2.69  Error 226
The lseek() system call failed while GRmkdisk was attempting to position the MHD before writing data to the MHD. Some reasons for the error include:

- The file descriptor of the MHD was undefined.
- The lseek() call attempted to seek beyond the size of the MHD.
- DCI communications between the ASM and 5ESS failed.

Check the status of all DFCs, MHDs, and SBUs on MCC page 123 (and MCC page 125 if more than two DFCs are equipped). Only the MHD being written to should be OOS.

Continue with recovery action R-55.

6.4.2.70  Error 127
The write() system failed when GRmkdisk attempted to write a partition to the MHD. Some reasons for the error include:

- Physical I/O error.
- Bad memory I/O with write buffers.

Check the status of all DFCs, MHDs, and SBUs on MCC page 123 (and MCC page 125 if more than two DFCs are equipped). Only the MHD being written to should be OOS.

Continue with recovery action R-55.
6.4.2.71 Error 227

The write() system failed when GRmkdisk attempted to write a partition to the MHD. Some reasons for the error include:

- Physical I/O error.
- Bad memory I/O with write buffers.
- DCI communications between the ASM and 5ESS failed.

Check the status of all DFCs, MHDs, and SBUs on MCC page 123 (and MCC page 125 if more than two DFCs are equipped). Only the MHD being written to should be OOS.

Continue with recovery action R-55.

6.4.2.72 Error 128

Note: 5ESS only message.

The open() system call failed when trying to open the Continuation LDFT log file. This file is used during multi-tape sequences when GRmkdisk was stopped in between reading tapes.

If the recovery action for this error does not solve the problem, continue by going back to reading the first tape of the current sequence.

Continue with recovery action R-17.

6.4.2.73 Error 129

Note: 5ESS only message.

The GRread_header() function failed when trying to open the Continuation LDFT log file. This file is used during multi-tape sequences when GRmkdisk was stopped in between reading tapes.

If the recovery action for this error does not solve the problem, continue by going back to reading the first tape of the current sequence.

Continue with recovery action R-17.

6.4.2.74 Error 130

Note: 5ESS only message.

The GRread_data() function failed when trying to open the Continuation LDFT log file. This file is used during multi-tape sequences when GRmkdisk was stopped in between reading tapes.

If the recovery action for this error does not solve the problem, continue by going back to reading the first tape of the current sequence.

Continue with recovery action R-17.

6.4.2.75 Error 131

Note: 5ESS only message.

GRmkdisk is attempting to continue reading a multi-tape sequence after it was stopped.

GRmkdisk examined the LDFT header sequence numbers and determined that the next tape to be read was not mounted. Examine the first previous message to identify which tape of the multi-tape sequence is needed.
Continue with recovery action R-17.

6.4.2.76  Error 132

Note:  5ESS only message.

GRmkdisk is attempting to continue reading a multi-tape sequence after it was stopped.

GRmkdisk examined the LDFT header tape ID and determined that the currently mounted tape is not part of the current tape sequence being read.

Continue with recovery action R-17.

6.4.2.77  Error 133

Note:  5ESS only message.

GRmkdisk examined that the tape being read does not have a VTOC, nor is GRmkdisk expecting the second or greater tape of a multi-tape sequence. The first tape of the requested tape sequence should be mounted.

Continue with recovery action R-17.

6.4.2.78  Error 134

GRmkdisk detected multiple LDFT headers without finding a VTOC entry. GRmkdisk is not expecting the second or greater tape of a multi-tape sequence. If the recovery action still produces this result, seek technical assistance. A reason for the error are bad LDFT tapes.

Continue with recovery action R-17.

6.4.2.79  Error 234

GRmkdisk detected multiple LDFT headers without finding a VTOC entry while reading LDFT images from the ASM. A reason for the error are bad LDFT images on the ASM.

Continue with recovery action R-51.

6.4.2.80  Error 135

GRmkdisk detected a data block on the LDFT tape that was larger than a memory segment. A reason for the error are that the LDFT tape was written with incorrect sizes of data blocks.

If the recovery action causes this failure again, seek technical support.

Continue with recovery action R-18.

6.4.2.81  Error 235

GRmkdisk detected a data block on the LDFT image on the ASM that was larger than the currently allocated memory. When GRmkdisk attempted to re-size its memory buffer, the malloc() system call failed.

Continue with recovery action R-51.

If the problem persists, seek technical support.
6.4.2.82 Error 136
GR_read() data function call failed while trying to read MHD partition data from the LDFT tape.
If the problem persists, seek technical support.
Continue with recovery action R-18.

6.4.2.83 Error 236
GR_read() data function call failed while trying to read MHD partition data from the LDFT image on the ASM.
Continue with recovery action R-51.
If the problem persists, seek technical support.

6.4.2.84 Error 137
The GRgv_gtptn() function call failed to get a valid partition number for the data block range mentioned in the previous error message. This error may occur because of the data on the LDFT tape does not match the VTOC from the tape.
If the problem persists, seek technical assistance.
Continue with recovery action R-18.

6.4.2.85 Error 237
The GRgv_gtptn() function call failed to get a valid partition number for the data block range mentioned in the previous error message. This error may occur because of the data on the LDFT image does not match the VTOC from the image on the ASM.
Continue with recovery action R-51.

6.4.3 ERROR 435xxx - TRANSITION EXECUTED FROM OFF-lINE AM
This error occurs when an AM off-line boot completed. The user attempted to execute a transition process from an off-line AM.
Check MCC Page 111 on the terminal you executed the command. Only work from terminals connected to the on-line AM (indicated by OFLBOOT IP-ONLINE backlit red in the upper left of the screen on MCC Page 111 ).

6.4.3.1 Error 438xxx - RC or CORC Reapplication Has Not Started
This error may have occurred because RC or CORC reapplication may not have been started. Start the reapplication before reattempting the Commit stage.
If you do not have RCs or CORCs to reapply, or if you do not wish to reapply them, use recovery action in Section 6.6.23.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commit</td>
<td>438xxx</td>
<td>R-23 (Section 6.6.23)</td>
<td>(Section 7)</td>
</tr>
</tbody>
</table>

6.4.3.2 Error 439xxx - AMA Data On New Release Disk Has Not Been Processed
This error occurred because AMA data on the new release disks has not been written to tape or teleprocessed. Process the AMA data on the new release disks by performing the steps in Section 5.6.6 before reattempting the Commit stage.
If you do not wish to process the AMA data on the new release disks, enter the following message then reattempt the Commit stage.

**Warning:** *This command message may cause loss of AMA data.*

MSG CLR:FILESYS,FILE,FN="/updtmp/site/access.oflama"

Response: **CLR FILESYS FILE COMPLETED**

To execute the Commit process UCL:

a. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:

   CMD 4XX,Y  
   Where: XX = the number of the UNCONDITIONAL EXECUTION

b. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:

   CMD 500  
   The Proceed stage executes unconditionally.

c. When the Proceed stage completes, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:

   CMD 4XX,N  
   Where: XX = the number of the UNCONDITIONAL EXECUTION

### 6.4.4 ERROR 440xxx - NO RCL STAGE VALUE FOUND

A NULL transition stage has been returned when supr_init() attempted to read the RCLSTAGE environment variable.

If the error persists after attempting recovery action, seek technical assistance.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>440xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Others</td>
<td>440xxx</td>
<td>R-18</td>
<td>(Section 7)</td>
</tr>
</tbody>
</table>

### 6.4.5 ERROR 442xxx - INVALID RCL LANGUAGE VALUE FOUND

A NULL Retrofit Control Language Page (RCL Page) pointer has been returned when supr_init() attempted to read the RCLPAGE environment variable.

If the error persists after attempting recovery action, seek technical assistance.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>440xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Others</td>
<td>440xxx</td>
<td>R-18</td>
<td>(Section 7)</td>
</tr>
</tbody>
</table>

### 6.4.6 ERROR 443xxx - RESUME FAILED TO START A SUPR PROCESS

The Resume (Continue) process failed to start a SUPR Process when requested by RCL.

If the error persists after attempting recovery action, seek technical assistance.
6.4.7  ERROR 444xxx - RCL ATTEMPTED TO START AN UNKNOWN STAGE

The SUPR Stage which RCL has requested RESUME to start is not valid.

If the error persists after attempting recovery action, seek technical assistance.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>443xxx</td>
<td>R-18</td>
<td></td>
</tr>
</tbody>
</table>

6.4.7.1  Error 501xxx - Time Limit Message Error

This error may have occurred because:

- APPLHOOK did not send a message indicating a time limit that it needs to do its processing.
- The message that APPLHOOK sent to set a time limit was damaged.
- The UNIX RTR Operating System send() process failed when the application process tried to use it to send a time limit message to the SUPR process.

If the error occurred because the application process did not send a time limit message, start the application process over using the recovery action.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>501xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td></td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

6.4.7.2  Error 502xxx - Application Process Failed Or Did Not Return

The Application Hook (APPLHOOK) process failed or did not return. Obtain the APPLHOOK error code from the ROP (just prior to the failure message) and proceed to the “APPLHOOK Errors” section for resolution. After resolving the APPLHOOK error, return to this error code for continuation.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proceed</td>
<td>502xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>All</td>
<td>502xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td></td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

6.4.7.3  Error 601xxx - User Is Not Privileged For Execution

The user is not privileged for execution. The SUPR process must be executed from a login that has super user permissions. After resolving the problem, try to continue the procedures using the recovery action.
If the error persists after attempting the recovery action, escalate to your next level of support.

6.4.7.4 Error 602xxx - Time-Out For System Integrity Monitor (SIM) Message

When SUPR sends SIM a message, it sets a time-out limit by which it must receive the return message from SIM. This error occurred when SUPR was waiting for the return message from SIM. This error may have occurred because:

- SUPR did not receive a return message from SIM within the time-out limit.
- The recvw() process that waits for the return message from SIM failed.

Try to continue the procedures using the recovery action.

If the error persists, follow the recovery action.

6.4.7.5 Error 603xxx - Time-Out For MIRA Message

When SUPR sends MIRA a message, it sets a time-out limit by which it must receive the return message from MIRA. This error occurred when SUPR was waiting for the return message from MIRA. This error may have occurred because:

- SUPR did not receive a return message from MIRA within the time-out limit.
- The recvw() process that waits for the return message from MIRA failed.

If the error persists after attempting the recovery action, escalate to your next level of support.

6.4.7.6 Error 604xxx - Time-Out For Disk Driver Message

When SUPR sends the disk driver a message, it sets a time-out limit by which it must receive the return message from the disk driver. This error occurred when SUPR was waiting for the return message from the disk driver. This error may have occurred because:

- SUPR did not receive a return message from the disk driver within the time-out limit.
• The recvw() process that waits for the return message from the disk driver failed. Try to continue the procedures using the recovery action.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>604xxx</td>
<td>R-18 (6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Commit</td>
<td>604xxx</td>
<td>R-28 (6.6.28)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Enter Backout</td>
<td>604xxx</td>
<td>R-20 (6.6.20)</td>
<td>R-27 (6.6.27)</td>
</tr>
<tr>
<td>Others</td>
<td>604xxx</td>
<td>R-18 (6.6.18)</td>
<td>——</td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

**6.4.7.7 Error 605xxx - Bad MIRA Return On Message**

When SUPR receives a return message from MIRA, it checks certain fields in the message for bad values. This error occurs when SUPR finds a bad value in one of the fields in the return message.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>605xxx</td>
<td>R-18 (6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Enter Backout</td>
<td>605xxx</td>
<td>R-20 (6.6.20)</td>
<td>R-27 (6.6.27)</td>
</tr>
<tr>
<td>Commit</td>
<td>605xxx</td>
<td>R-28 (6.6.28)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Others</td>
<td>605xxx</td>
<td>R-18 (6.6.18)</td>
<td>——</td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

**6.4.7.8 Error 606xxx - Bad Disk Driver Return On Message**

When SUPR receives a return message from the disk driver, it checks the return code that is in the message. The value of the return code must be zero. This error occurred because the return code was a value other than zero. Continue the procedures using the recovery action.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>606xxx</td>
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<td>(Section 7)</td>
</tr>
<tr>
<td>Enter Backout</td>
<td>606xxx</td>
<td>R-20 (6.6.20)</td>
<td>R-27 (6.6.27)</td>
</tr>
<tr>
<td>Commit</td>
<td>606xxx</td>
<td>R-28 (6.6.28)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Others</td>
<td>606xxx</td>
<td>R-18 (6.6.18)</td>
<td>——</td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

**6.4.7.9 Error 607xxx - Wrong Disk State**

After MIRA changes the state of the disk (to ACT or OOS), SUPR checks the UCB of that disk in the ECD to make sure that the change actually took place. This error occurred when SUPR thought it changed the state of the disk, but the UCB of that
disk does not reflect the change. Either MIRA did not change the state correctly, or the state field in the UCB is damaged.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>607xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>——</td>
</tr>
<tr>
<td>Enter Backout</td>
<td>607xxx</td>
<td>R-20 (Section 6.6.20)</td>
<td>——</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R-27 (Section 6.6.27)</td>
<td></td>
</tr>
<tr>
<td>Commit</td>
<td>607xxx</td>
<td>R-28 (Section 6.6.28)</td>
<td>(Section 7)</td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

**6.4.7.10 Error 608xxx - No Active Boot Disks**

The SUPR process checks the UCB in the ECD to find out which disk is the current system disk that is in the active state. This error occurred because there were not any disks that were in the active state.

*Caution: If the switch is in Disk Independent Operation (DIOP), escalate to your next level of support immediately.*

Try to continue the procedures using the recovery action command.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>608xxx</td>
<td>R-19 (Section 6.6.19)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Others</td>
<td>608xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>——</td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

**6.4.7.11 Error 610xxx - Recent Change Error**

This error occurred when SUPR was performing a recent change on the ECD. The journal file will be saved in `/tmp/supr.rcv`. The error messages will be saved in `/tmp/supr.rcvout` and `/etc/rcvecd.err`. After resolving the problem, try to continue the procedures using the recovery action.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>610xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>——</td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

**6.4.7.12 Error 611xxx - Copy Failed**

The copy command failed. This error may have occurred when SUPR was copying the log from the old software release to the new software release. Additional error codes can be found in `/tmp/supr.cp`. After resolving the problem, try to continue the procedures using the recovery action.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>611xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>——</td>
</tr>
</tbody>
</table>
If the error persists after attempting the recovery action, escalate to your next level of support.

6.4.7.13  Error 612xxx - ECDMAN ugucbn() Error

This error occurred when SUPR used the ECD function ugucbn() to get information about the UCB record associated with a specified disk.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>612xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Proceed</td>
<td>612xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R-26 (Section 6.6.26)</td>
<td></td>
</tr>
<tr>
<td>Enter Backout</td>
<td>612xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>——</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R-20 (Section 6.6.20)</td>
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<tr>
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<td>R-27 (Section 6.6.27)</td>
<td></td>
</tr>
<tr>
<td>Commit</td>
<td>612xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R-28 (Section 6.6.28)</td>
<td></td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

6.4.7.14  Error 613xxx - ECDMAN ugetucb() Error

This error occurred when SUPR used the ECD function ugetucb() to get the Unit Control Block (UCB) record for a specified disk.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>613xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
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<tr>
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<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
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<td></td>
<td>R-26 (Section 6.6.26)</td>
<td></td>
</tr>
<tr>
<td>Enter Backout</td>
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<td>R-18 (Section 6.6.18)</td>
<td>——</td>
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<tr>
<td></td>
<td></td>
<td>R-20 (Section 6.6.20)</td>
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<tr>
<td></td>
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<td>R-27 (Section 6.6.27)</td>
<td></td>
</tr>
<tr>
<td>Commit</td>
<td>613xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R-28 (Section 6.6.28)</td>
<td></td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

6.4.7.15  Error 614xxx - ECDMAN ugmamirids() Error

This error occurred when SUPR used the ECD function ugetrec() to get the pointer to the UCBs for the two disks that are associated with the procedures. Try to continue the procedures using the recovery action.
<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>614xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Proceed</td>
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<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
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<td>R-26 (Section 6.6.26)</td>
<td></td>
</tr>
<tr>
<td>Enter Backout</td>
<td>614xxx</td>
<td>R-18 (Section 6.6.18)</td>
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<td></td>
<td></td>
<td>R-20 (Section 6.6.20)</td>
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<tr>
<td></td>
<td></td>
<td>R-27 (Section 6.6.27)</td>
<td></td>
</tr>
<tr>
<td>Commit</td>
<td>614xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R-28 (Section 6.6.28)</td>
<td></td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

### 6.4.7.16 Error 615xxx - ECDMAN ursvucb() Error

This error occurred when SUPR used the ECD function ursvucb() to reserve a UCB. The disk that SUPR is trying to update must first be reserved so that no other processes can write to it. This is done by reserving the disk's UCB. The ursvucb() function may have failed because another process has already reserved the disk that is trying to be reserved. Try to continue the procedures using the recovery action.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>615xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Proceed</td>
<td>615xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td></td>
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<td>R-26 (Section 6.6.26)</td>
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<td></td>
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</tr>
<tr>
<td>Commit</td>
<td>615xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R-28 (Section 6.6.28)</td>
<td></td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

### 6.4.7.17 Error 616xxx - ECDMAN ugsdf() Error

This error occurred when SUPR used the ECD function ugsdf() to get the special device file name associated with the disk to be updated so that SUPR can access that disk. Try to continue the procedures using the recovery action.
### 6.4.7.18 Error 617xxx - ECDMAN urelucb() Error

This error occurred when SUPR used the ECD function urelucb() to release (unreserve) a reserved UCB. Try to continue the procedures using the recovery action.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>617xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Proceed</td>
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<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
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<tr>
<td>Enter Backout</td>
<td>617xxx</td>
<td>R-18 (Section 6.6.18)</td>
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<tr>
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<td>R-20 (Section 6.6.20)</td>
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<td>Commit</td>
<td>617xxx</td>
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<tr>
<td></td>
<td></td>
<td>R-28 (Section 6.6.28)</td>
<td></td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

### 6.4.7.19 Error 618xxx - ECDMAN ursdf() Error

This error occurred when SUPR used the ECD function ursdf() to give back to the system the special device file name of the updated disk that was obtained by the ugsdf() command. Try to continue with the procedures using the recovery action.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>618xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td>Proceed</td>
<td>618xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R-26 (Section 6.6.26)</td>
<td></td>
</tr>
<tr>
<td>Enter Backout</td>
<td>618xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R-20 (Section 6.6.20)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>R-27 (Section 6.6.27)</td>
<td></td>
</tr>
<tr>
<td>Commit</td>
<td>618xxx</td>
<td>R-18 (Section 6.6.18)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R-28 (Section 6.6.28)</td>
<td></td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.
If the error persists after attempting the recovery action, escalate to your next level of support.

6.4.7.20  **Error 621xxx - Unable To Stop Process With pkill**

The SUPR `stop` command could not stop the currently running SUPR process using the `pkill()` function call. If the `stop` command cannot kill a SUPR in progress using the `kill()` function call, it then tries to kill it using the `pkill()` function call. The `pkill` function call may have failed because there was a bad process ID number (PID) in the SUPR log file for the process that needed to be terminated. The `stop` command looks in the log file to find the PID of the process that is currently running and calls `pkill` with that PID. If the PID is damaged in the log file, the `pkill` command may be executed manually using the correct PID of the process that needs to be terminated.

<table>
<thead>
<tr>
<th>Stage/Cmd</th>
<th>Error</th>
<th>Recovery</th>
<th>Backout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Forward</td>
<td>621xxx</td>
<td>R-7 (Section 6.6.7)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R-2 (Section 6.6.2)</td>
<td></td>
</tr>
<tr>
<td>Proceed</td>
<td>621xxx</td>
<td>R-7 (Section 6.6.7)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R-2 (Section 6.6.2)</td>
<td></td>
</tr>
<tr>
<td>Commit</td>
<td>621xxx</td>
<td>R-7 (Section 6.6.7)</td>
<td>(Section 7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R-2 (Section 6.6.2)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>621xxx</td>
<td>R-7 (Section 6.6.7)</td>
<td>——</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R-2 (Section 6.6.2)</td>
<td></td>
</tr>
</tbody>
</table>

If the error persists after attempting the recovery action, escalate to your next level of support.

6.4.7.21  **Error 622xxx - Unable To Stop Process With kill**

The SUPR `stop` command could not stop the currently running SUPR process using the `kill()` function call. The `kill()` function call is used in the `stop` command to terminate the SUPR process that is currently running. The `kill` function call may have failed because:

- The process to be killed does not exist.
- The sending process is not a super user, and the sending and receiving processes do not have the same effective user ID.
- The process ID (PID) of the process being terminated is damaged in the SUPR log. The `stop` command passes this PID as a parameter to `kill()`.

If the SUPR still needs to be stopped, execute the SUPR Stop process unconditionally using the recovery actions.
6.4.7.22  Error 623xxx - SUPR Process Terminated

A SUPR process was terminated due to a phase 1 signal. SUPR may not get a chance to print this error message when the interrupt occurs. Continue the SUPR process by accessing MCC page 1985,x (where x = RETRO, LTG, UPDATE) and entering command:

CMD 500

OR

CMD 600 (for Backout)

The 500 command will put this error code in the end entry of the SUPR log file.

6.4.8  TRANSITION TOOL FAILURES

6.4.8.1  General

The following information and procedures are used to resolve failures that may occur while executing any of the transition tools.

Most transition tool errors look like the following:

**UPD GEN ENTER APP ENTRHOOK FAILED WITH EXIT CODE XX**

Where: XX = an exit code.

For a complete list of error exit codes and their definitions, refer to Table 6-1. This information may help resolve the problem. If not, continue with the following steps.
### Table 6-1 — Tool Error Exit Codes

<table>
<thead>
<tr>
<th>EXIT CODE</th>
<th>EXIT CODE NAME</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>EBADSEQ</td>
<td>Tool executed out of sequence</td>
</tr>
<tr>
<td>2</td>
<td>ERDAPPL</td>
<td>The rdappl tool returned a failure</td>
</tr>
<tr>
<td>3</td>
<td>EINSTL</td>
<td>Install tools not run</td>
</tr>
<tr>
<td>4</td>
<td>EBADSUM</td>
<td>Sumcheck failure on transition tools tape</td>
</tr>
<tr>
<td>5</td>
<td>EINSTLPRIV</td>
<td>Install of private products failed</td>
</tr>
<tr>
<td>6</td>
<td>ECRONRST</td>
<td>Could not restore cron on new software release</td>
</tr>
<tr>
<td>7</td>
<td>EMOP</td>
<td>Mount off-line partitions failed</td>
</tr>
<tr>
<td>8</td>
<td>ECNI</td>
<td>CNI evolution tool failed</td>
</tr>
<tr>
<td>9</td>
<td>ECLROFL</td>
<td>Clear off-line file systems failed</td>
</tr>
<tr>
<td>10</td>
<td>ESAVE</td>
<td>Save suprllog failed</td>
</tr>
<tr>
<td>11</td>
<td>ECRON</td>
<td>CRON modify on the off-line disk failed</td>
</tr>
<tr>
<td>12</td>
<td>EGENERIC</td>
<td>Boot call is only allowed on new software release</td>
</tr>
<tr>
<td>13</td>
<td>EOFFRCR</td>
<td>OFFRCR failed</td>
</tr>
<tr>
<td>14</td>
<td>ERSTPRIV</td>
<td>Could not back out private product installation</td>
</tr>
<tr>
<td>15</td>
<td>EGETGENID</td>
<td>Error while retrieving the value/address of the software release id</td>
</tr>
<tr>
<td>16</td>
<td>EBADGENID</td>
<td>The values of the software release ids are not correct</td>
</tr>
<tr>
<td>17</td>
<td>ENOSUPRLOG</td>
<td>Suprllog missing on new software release side</td>
</tr>
<tr>
<td>18</td>
<td>ENOAPPLLOG</td>
<td>Appllog missing on new software release side</td>
</tr>
<tr>
<td>19</td>
<td>ENOAPPLGRAPPL</td>
<td>Applgrappl missing on new software release side</td>
</tr>
<tr>
<td>20</td>
<td>EGENBWMS</td>
<td>The software release id bwms exist at the beginning of installtools</td>
</tr>
<tr>
<td>21</td>
<td>ENOBLOCKS</td>
<td>Not enough free blocks or inodes in /tmp or /etc/bwm</td>
</tr>
<tr>
<td>22</td>
<td>ENOINODES</td>
<td>Not enough free i-nodes for transition tools</td>
</tr>
<tr>
<td>23</td>
<td>ODDINFO</td>
<td>Oddinfo tool returned a failure during lookodd</td>
</tr>
<tr>
<td>24</td>
<td>EAIMRC</td>
<td>Unable to modify off-line aimrc files during LTG</td>
</tr>
<tr>
<td>25</td>
<td>E_SSAUTO</td>
<td>SSAUTO failed to update Recent Change View 15.10</td>
</tr>
<tr>
<td>26</td>
<td>E_NONCNI</td>
<td>NONCNICREAT failed to copy or write to a file</td>
</tr>
<tr>
<td>27</td>
<td>EWRONGTOOL</td>
<td>Tools for incorrect software release or transition detected</td>
</tr>
<tr>
<td>28</td>
<td>ENOSUMVER</td>
<td>Installtools found tools but not sumfile or toolversion files</td>
</tr>
<tr>
<td>30</td>
<td>EUSER_RST</td>
<td>Failure to restore user directories from previous generic</td>
</tr>
<tr>
<td>31</td>
<td>EINAVALVER</td>
<td>Toolversion file does not have all its values set</td>
</tr>
<tr>
<td>32</td>
<td>RCVCPFAIL</td>
<td>Copy of retrcv into /usr/bin failed</td>
</tr>
<tr>
<td>33</td>
<td>NOROOTRCV</td>
<td>Cannot find a copy on retrcv in root</td>
</tr>
</tbody>
</table>

**RECOVERY PROCEDURES 235-106-306**

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Table 6-1 — Tool Error Exit Codes (Contd)

<table>
<thead>
<tr>
<th>EXIT CODE</th>
<th>EXIT CODE NAME</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>ENOGENSET</td>
<td>The from and/or to generic value is not set</td>
</tr>
<tr>
<td>35</td>
<td>ENOTONROOT</td>
<td>Not running on /dev/root</td>
</tr>
<tr>
<td>36</td>
<td>EOPINFO</td>
<td>OPINFO tool failed, see toollog.</td>
</tr>
<tr>
<td>60</td>
<td>MOP_PRIMERR</td>
<td>General primitive failures</td>
</tr>
<tr>
<td>61</td>
<td>MOP_BADUSAGE</td>
<td>Invalid input/parm usage</td>
</tr>
<tr>
<td>62</td>
<td>MOP_AMODDERR</td>
<td>MOP cannot open AM ODD file</td>
</tr>
<tr>
<td>63</td>
<td>MOP_RUNNING</td>
<td>MOP already running</td>
</tr>
<tr>
<td>64</td>
<td>MOP_TERMERR</td>
<td>Could not terminate MOP</td>
</tr>
<tr>
<td>65</td>
<td>MOP_NUMPTNS</td>
<td>Invalid number ptns on MOP command line</td>
</tr>
<tr>
<td>66</td>
<td>MOP_OPENERR</td>
<td>Failed to open MOP status file</td>
</tr>
<tr>
<td>77</td>
<td>ETSM</td>
<td>This error code indicates a trunk status mapping error. If this error is</td>
</tr>
<tr>
<td></td>
<td></td>
<td>received, a trunk status mapping error will also be received. The trunk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>status mapping error should be corrected using the Trunk Status Mapping</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Errors Section.</td>
</tr>
<tr>
<td>128 to 255</td>
<td>UNIX system error)</td>
<td>Negative exit code - 2s compliment notation</td>
</tr>
</tbody>
</table>

Note(s):
a. These error codes occur when the called tool exits with a negative number. These error codes should normally not occur with the exception of stopmop. When these errors occur on tools other than stopmop, escalate to your next level of support.

6.4.8.2 Readhdr Failures

The following errors will occur as a result of the readhdr process failing. These errors are self-explanatory. If the recovery fails, escalate to your next level of support.

1. Response:

   **OP GEN READHDR STOPPED**
   
   **CANNOT ACCESS TAPE DRIVE**
   
   or
   
   **TAPE DRIVE MAY NOT BE MOUNTED CORRECTLY**
   
   or
   
   **TAPE DRIVE MAY NOT BE ON LINE.**
   
   **Recovery:** Verify that the tape is mounted correctly and the tape drive is on-line. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and re-enter command:
   
   CMD 500
   
   **OP GEN READHDR STOPPED TAPE DOES NOT APPEAR TO BE IN LDFT FORMAT.**
   
   a. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and re-enter command:
      
      CMD 500
   
   b. If Readhdr fails again with the same error message, mount the backup copy of the tape and re-enter the **500 poke command.**
Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and re-enter command:

CMD 500

6.4.8.3 OPINFO Failures

1. Manually dump the opinfo file. Enter message:

```shell
MSG DUMP:FILE:ALL,FN="/updtmp/site/toolxfer/info.out";
```

Comment: If the file is not dumped to the ROP, perform steps 3-a through 3-e of this procedure. The responses must be saved for entry later in the transition.

2. Examine the ROP output. Verify whether or not each section contains the information listed, then proceed to the next step. The first section should contain a listing of the RCU access permissions for all terminals in the office. The second section should report whether the AMALOST feature is turned on or off. The third section contains the programmed parameters for LIT (ALIT) testing. The fourth section lists the call trace DNs (CLID) or reports that there are none. The fifth section reports on the Call Gapping Code Control (CGAP) status.

3. If any or all of the sections viewed does not contain the information described in step 2, execute the appropriate step (a-e) dealing with the affected section.

   a. **RCACCESS**: To dump the recent change access permission for an office terminal, enter message:

   ```shell
   MSG OP:RCACCESS,TTY="x";
   ```

   Where: x = terminal name. For example `OP:RCACCESS,TTY="ttya"`. 

   Response: OP RCACCESS TTY x ACCESS h'yyyyy

   Comment: Save this response for use later in the transition.

   b. **AMALOST**: The AMALOST feature provides information on lost AMA billing records. The AMALOST feature is inhibited by the system initialization and must be reactivated after the initialization. To dump the status of AMALOST feature, enter message:

   ```shell
   MSG OP:AMALOST;
   ```

   Response: One of the following responses is output.

   - OP AMALOST OFF
   - OP AMALOST ON TRC=OFF
   - OP AMALOST ON TRC=ON

   c. **ALIT**:

   1. Access MCC page 120.

   2. To dump the ALIT parameters, enter message:
**d. CLID:** To dump a list of DNs on the call trace list, enter message:

```plaintext
MSG OP:CLID;
```

Response:

```plaintext
OP CLID LIST CONTAINS x NUMBERS
Listing of DNs is output
or
OP CLID LIST CONTAINS 0 NUMBERS
SECTION 0 OF 0
```

e. **CGAP:** To dump a list of all Call Gapping (CGAP) code controls, enter message:

```plaintext
MSG OP:CGAP;
```

Response:

```plaintext
OP CGAP COMPLETED
CODE PREFIX GAP ANN DOM
```

Comment: Save this response for use later in the transition.

If errors occur while executing any of these steps, escalate to your next level of support.

### 6.4.8.4 cni.niaud Failures (Retrofit, LTG Only)

#### 6.4.8.4.1 General

The `cni.niaud` process can only be executed manually (using 515 on MCC page 1984). The following recovery procedures can be used if a `cni.niaud` failure is encountered.

#### 6.4.8.4.2 CNI NIDATA Problems

The following steps are to recover from CNI NIDATA failures.

1. If the CNI NIDATA audit fails, read the failing audit from the ROP (see ROP example for location of error).
2. Refer to 235-600-750, Output Message Manual to define the error.
3. Correct the error. If necessary, consult your next level of support.
4. After correcting the error, re-execute the audits by entering the following command on MCC page 1984:
   
   CMD 515

5. If the CNI audits still fail, escalate to your next level of support.

6.4.8.5 SSAUTO Errors In Boothook

1. If the following output was received, the RC insert failed.

   Response:

   .
   !!!!!!!!!!!!!!!!!!!!!  WARNING  !!!!!!!!!!!!!!!!!!!!!
   !!!!!!!!!!!!!!!!!!!!!  WARNING  !!!!!!!!!!!!!!!!!!!!!
   .
   . SSAUTO: INSERT SUBSYSTEM 3 VIEW 15.10 FAILED
   .
   . SEEK TECHNICAL ASSISTANCE
   .
   !!!!!!!!!!!!!!!!!!!!!  WARNING  !!!!!!!!!!!!!!!!!!!!!
   !!!!!!!!!!!!!!!!!!!!!  WARNING  !!!!!!!!!!!!!!!!!!!!!
If the preceding output was received, RC was probably not allowed. Perform the following steps:

a. Enter message:
   
   MSG ALW:RC;
   
   b. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
      
      MSG 500
      
      Return to the documentation where the error occurred and continue with the transition.
   
   c. If the error still occurs, **escalate to your next level of support**.

### 6.4.8.6 NONCNIOFFC Errors In Boothook

1. If the output from boothook contained the following response, the office is a non-CNI office and the NONCNIOFFC process was not able to copy a file necessary for future CNI growth. Escalate to your next level of support before continuing the transition.

   Response:
   
   ![WARNING]
   
   NONCNIOFFC: CAN'T COPY xxxx FILE
   
   SEEK TECHNICAL ASSISTANCE
   
   WHERE: xxxx is a CNI file required for future CNI growth.

2. If the output from boothook contained the following response, the office is a non-CNI office and the NONCNIOFFC process was not able to write to the CLKDATA file. The CLKDATA file is required for future CNI growth. Escalate to your next level of support before continuing the transition.

   Response:
   
   ![WARNING]
6.5 ERROR DEFINITIONS — NON-TRANSITION RELATED

6.5.1 CLEAR AMA FAILURES

6.5.1.1 General

This recovery section is accessed when a failure occurs in the Enter stage while attempting to clear the AMA maps or convert the AMA configuration files to the new software release. These messages access and manipulate information on the odd-numbered MHDs. Access MCC page 123 (and MCC page 125 if more than 2 DFCs are equipped) and verify that the odd-numbered MHDs that were written with new data during the Enter stage are in an Off-Line (OFL) state.

Note that before the "clear AMA maps" and "convert AMA configuration files" messages are run, all of the tapes in the Enter stage should have been successfully read in. Verify that all the tapes that are to be read in the Enter stage have been successfully read in. If tapes remain to be read in during the Enter stage, return to Section 5 and finish reading in tapes. If all of the tapes in the Enter stage have been successfully read in, then escalate to your next level of support.

6.5.1.2 CLR:AMA-MAPS Failures


6.5.1.3 CNVT:AMA-CONFIG Failures


6.5.2 DUPLEX DISK FAILURES

The Disk Independent Operation (DIOP) feature provides the capability to maintain uninterrupted call processing when the essential duplex primary system disks (for example, MHDs 0 and 1) fail. The DIOP feature is also called Disk Limp Mode (DLM).
The switch is capable of sustaining operation in this mode indefinitely in the absence of other faults. If the office is a Common Channel Signaling (CCS) office, note that during DIOP, CCS trunk call processing is halted.

**Note:** No Automatic Message Accounting (AMA) will be written to disk during DIOP. The AMA data will be stored in the SM buffers. There is a possibility of loss of AMA data as the SM buffer space becomes full.

With duplex primary disk failures, the switch automatically tries to enter DLM operation. If this operation is successful, call processing is preserved.

**Note:** These steps provide a very basic approach for getting the disks back up. For duplex disk failures, escalate to your next level of support before attempting recovery actions.

The type of recovery actions taken for duplex disk failures during these procedures depend upon the following:

1. With duplex disk failures, has the system successfully entered DIOP and is call processing occurring?
2. What stage was being executed when the duplex disk failure occurred?

Basically, there are two types of recovery actions that are taken with duplex disk failures:

1. Recover from DIOP (repair one or both of the essential system’s disks and boot the system)
2. Perform DIOP office dead start recovery.


Generally, the first action is taken (recover from DIOP) if call processing is up. The second action is taken if call processing has been lost and is more severe in nature.

If duplex disk failures occur during the System Preparation or Begin stage, the problem should be corrected as it would during normal office operation. Once the problem is fixed, start the procedures over from the beginning of the implementation stage.

During these procedures, the disks (with the exception of the software backup disks) are simplex during the Enter stage and remain simplex until the Commit stage. The new software release load should not be booted on until the “UPD GEN PROCEED COMPLETED” message is received in the Proceed stage. If duplex disk failures occur prior to the “UPD GEN PROCEED COMPLETED” message, repair and restore MHD 0 and try to recover from DIOP on MHD 0.

If a disk is suspected of mutilation, then recovery from tape is necessary (office recovery using software backup disk).

If duplex disk failures occur in the Commit stage (the system goes into DIOP) and a decision is made to return to the old software release load, you should recover from DIOP using MHD 0 (old software release load). Once the system has been recovered on the old software release load, follow "Backout Action B-3A or B-3B." Refer to Table 7-1 and all pointers to other backout actions to restore the SMs and the system to the old software release load. The Backout Actions are located in the "Backout Procedures" Section of this document.
6.5.3 ACTIVE DISK SM OFF-LINE PUMP FAILURES

6.5.3.1 General

It is expected that this section will only be used during the off-line pump testing, which occurs in System Evaluation, 7 days before the transition.

Note: MCC page 181 can be used to monitor the pump status of the SMs only. Do not use any poke command from MCC page 181 unless directed to do so by this document or technical support personnel. Poke commands on MCC page 181 are intended for off-line SM pump from the off-line disks. The off-line pump in this section is for off-line pump from the active disks.

6.5.3.2 Assert Logged

Enter message:

MSG ST:OPUMP,SM=a,ACTDISK,VFY,PERF;

Comment: If the SM pumps successfully, the trouble has been cleared. Return to the procedures.

If the SM fails off-line pump again, dump the day log from the time of the assert and continue in accordance with local practice for asserts.

6.5.3.3 BTSR Bad Or Unavailable

1. Repair or replace bootstrapper (BTSR) board per local practice.
2. Enter message:

   MSG ST:OPUMP,SM=a,ACTDISK,VFY,PERF;

Comment: If SM pumps successfully, trouble has been cleared. Return to the procedures.

If SM fails pump again, escalate to your next level of support.

6.5.3.4 Cannot Connect Data Path

1. Ensure Office Network and Timing Complexes (ONTCs) are ACT MAJOR/MINOR.
2. Enter message:

   MSG ST:OPUMP,SM=a,ACTDISK,VFY,PERF;

Comment: If SM pumps successfully, trouble has been cleared. Return to the procedures.

Note: If this response is received several times for a particular SM, the SM should be pumped at a period of low or minimum office traffic. If at that time the SM still does not pump successfully, escalate to your next level of support.

6.5.3.5 Cannot Open Disk File

1. Enter message:

   MSG OP:STATUS,FILESYS;

Ensure that the following partitions are mounted:

Response: OP STATUS FILESYS STARTED

   /database on /dev/db read/write on Day Month Time Year
If these partitions are mounted, continue with Step 2; otherwise, escalate to your next level of support.

2. Enter message:

```
MSG ST:OPUMP,SM=a,ACTDISK,VFY,PERF;
```

Comment: If SM pumps successfully, trouble has been cleared. Return to the procedures.

If SM fails pump again, escalate to your next level of support.

### 6.5.3.6 Lack Of Progress

1. Enter message:

```
MSG ST:OPUMP,SM=a,ACTDISK,VFY,PERF;
```

2. If SM pumps successfully, trouble has been cleared. Return to the procedures.

3. If SM fails pump again, access MCC page 181 and enter command:

```
CMD 3 XXX
```

Where: XXX = SM number.

Response: **OK - PUMPING SMS WILL REPORT**

4. Enter message:

```
MSG ST:OPUMP,SM=a,ACTDISK,VFY,PERF;
```

Comment: If SM pumps successfully, trouble has been cleared. Return to the procedures.

If SM fails pump again, escalate to your next level of support.

### 6.5.3.7 Mate Hashsum Errors

In the following steps, the ONTCs will be switched and the Pump Peripheral Controller (PPC) will be removed and restored to service. These actions reinitialize the data associated with these units and may resolve the mate hashsum error.

1. To switch the PPC, access MCC Page 1241 and enter command:
2. Enter message:
   MSG \texttt{ST:OPUMP,SM=a,ACTDISK,VFY,PERF;}
   Where: \( A \) = the numbered SM with mate hashsum error
   Comment: If the SM pumps successfully, return to the procedures.
   If off-line pump still fails with hashsum errors, perform the following steps.

3. Access MCC page 1209 - ONTC 0 & 1, enter command:
   CMD \texttt{403} to switch ONTCs

4. When the command has finished executing, enter command:
   CMD \texttt{403} to switch ONTCs back

5. To remove PPC 0, enter message:
   MSG \texttt{RMV:PPC=0}

6. If the previous command has finished executing, to restore PPC 0, enter message:
   MSG \texttt{RST:PPC=0}

7. If the previous command has finished executing, to remove PPC 1, enter message:
   MSG \texttt{RMV:PPC=1}

8. If the previous command has finished executing, to restore PPC 1, enter message:
   MSG \texttt{RST:PPC=1}

9. Enter message:
   MSG \texttt{ST:OPUMP,SM=a,ACTDISK,VFY,PERF;}
   Where: \( A \) = the numbered SM with the mate hashsum error.

10. If the SM pumps successfully, the trouble has been cleared. Return to the procedures.

11. If a mate hashsum error is received again while attempting to off-line pump from the active disk, escalate to your next level of support.

6.5.3.8 Mate Not Ready

1. On MCC page 1190,\( x \), ensure SM is ACTF/UNV before proceeding. Enter message to force SM if necessary:
   MSG \texttt{ORD:CPI=a,CMD=SW-\texttt{x};}
   Where: \( a \) = SM number.
   \( x \) = side to be forced ACTIVE.

2. Enter message:
   MSG \texttt{ST:OPUMP,SM=a,ACTDISK,VFY,PERF;}
Comment: If the SM pumps successfully, the trouble has been cleared. Return to the procedures.
If the SM fails pump again, escalate to your next level of support.

6.5.3.9 Off-Line Verify Failure
Enter message:
MSG ST:OOPUMP,SM=a,ACTDISK,VFY,PERF;
Comment: If the SM pumps successfully, the trouble has been cleared. Return to the procedures.
If the SM fails pump again, escalate to your next level of support.

6.5.3.10 PPC/TMS Failure
1. On MCC page 1209, ensure ONTCs are ACT MAJOR/MINOR before proceeding.
2. On MCC pages 1240 and 1250, ensure PPC 0 or 1 is active before proceeding.
3. Enter message:
   MSG ST:OOPUMP,SM=a,ACTDISK,VFY,PERF;
   Comment: If SM pumps successfully, trouble has been cleared. Return to the procedures.
   If SM fails pump again, escalate to your next level of support.

6.5.3.11 Requested
1. If manually stopped, resolve trouble before proceeding.
2. Enter message:
   MSG ST:OOPUMP,SM=a,ACTDISK,VFY,PERF;
   Comment: If the SM pumps successfully, the trouble has been cleared. Return to the procedures.
   If the SM fails pump again, escalate to your next level of support.

6.5.3.12 All SMs Indicate MATE_OOD, No Error(s) Reported
If all SMs go from MATE_UPD to MATE_OOD without any error being reported, use the following message to reinitialize the pump control (PUCR) process.

1. To stop pumping in all SMs, access MCC page 181 and enter command:
   CMD 3000
2. To reinitialize PUCR, enter message:
   MSG INIT:AM,PUCR,FPI;
Response:
   IP
   PRM_0 EE00 xxxx xxxx 6122 xx xx xx
   PRM_0 EE00 xxxx xxxx 6A20 xx xx xx
   PRM_0 EE00 xxxx xxxx 7D00 xx xx xx
   PRM_0 EE00 xxxx xxxx 0000 xx xx xx
3. To off-line pump all SMs, enter message:

   MSG ST:OPUMP,SM=1&&x,ACTDISK,VFY,PERF;

   Where: \( x = \) highest-numbered SM in office.

   Comment: If the SMs successfully pump, return to procedures in Section 5.

   If the SMs fail to pump, escalate to your next level of support.

### 6.5.4 OFF-LINE DISK SM OFF-LINE PUMP FAILURES

#### 6.5.4.1 Assert Logged

1. To repump the SM, enter command on MCC pages 181 through 184:

   CMD 2XXX

   Where: \( XXX = \) SM number

   Comment: If SM pumps successfully, trouble has been cleared. Return to the procedures.

   If the SM fails off-line pump again, dump the day log from the time of the assert and continue in accordance with local procedures for asserts.

#### 6.5.4.2 BTSR/Pump HW Bad Or Unavailable

1. Check state of BTSR. If BTSR is Active (ACT), go to Step 2. If BTSR is Out-Of-Service (OOS), restore it and repump the SM, by entering the following command on MCC pages 181 through 184:

   CMD 2XXX

   Where: \( XXX = \) SM number

   Comment: If SM pumps successfully, trouble has been cleared. Return to the procedures.

   If SM fails pump again, continue with the following procedures.

2. Repair or replace BTSR board per local practice.

3. To repump the SM, enter command on MCC pages 181 through 184:

   CMD 2XXX

   Where: \( XXX = \) SM number

   Comment: If SM pumps successfully, trouble has been cleared. Return to the procedures.

   If SM fails pump again, escalate to your next level of support.

#### 6.5.4.3 Cannot Connect Path

1. On MCC page 1209, ensure ONTCs are ACT MAJOR/MINOR.

2. To repump the SM, enter command on MCC pages 181 through 184:

   CMD 2XXX
Where: XXX = SM number

Comment: If SM pumps successfully, trouble has been cleared. Return to the procedures.
If SM fails pump again, escalate to your next level of support.

6.5.4.4 Cannot Open Disk File

1. Check if the mop process is running by entering the following command on MCC page 1984:

   CMD 510

   If mop is not running and there are no off-line partitions mounted, proceed to Step 5.
   If mop is running and/or partitions are mounted, continue with Step 2.

2. To unmount off-line disk file systems, access MCC Page 1984 and enter command:

   CMD 609

   Response: UPD:GEN:APPLPROC,ARG="STOPMOP";
UPD GEN APPLPROC EXECUTING THE FOLLOWING TRANSITION TOOL:
/no5text/prc/mop
[PRM_0 E800 0002 xx03 xxxx xx xx xx] (may be received several times)
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

3. To ensure that the mop command is no longer running, access MCC page 1984 and enter command:

   CMD 510

   Response: UPD:GEN:APPLPROC,ARG="ISMOP";
UPD GEN APPLPROC EXECUTING THE FOLLOWING TRANSITION TOOL:
/prc/supr/ismop
UPD GEN APPLPROC ISMOP REPORT
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!!!!!!!!!

   . MOP IS NOT RUNNING
   . THERE ARE NO OFFLINE PARTITIONS MOUNTED
   . ISMOP COMPLETE

   !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!!!!!!!!!
   !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!!!!!!!!!
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

4. If mop is running and/or off-line partitions are mounted, escalate to your next level of support.

5. Access MCC page 1984 and enter command:

   CMD 509
Caution: The file systems that are mounted in this step are necessary to off-line pump the CMPs and the SMs. Continuing before the off-line file systems are mounted could result in off-line pump failures. Wait for the UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY message to be output before proceeding.

Response: UPD:GEN:APPLPROC,ARG="MOP";

UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
CHG:LPS,MSGCLS=INT_MON,PRINT=ON,LOG=ON;
CHG:LPS,MSGCLS=INT_MON,PRINT=ON,LOG=ON; OK

UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
CHG:LPS,MSGCLS=GENRMON,PRINT=ON,LOG=ON;
CHG:LPS,MSGCLS=GENRMON,PRINT=ON,LOG=ON; OK

UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
CHG:LPS,MSGCLS=INT,PRINT=ON,LOG=ON;
CHG:LPS,MSGCLS=INT,PRINT=ON,LOG=ON; OK

UPD GEN APPLPROC EXECUTING THE FOLLOWING TRANSITION TOOL:
/no5text/prc/INoflmop

PRM_0 E800 xxxx xxxx xxxx xx xx xx (appears several times)

UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

6. To repump the SM, enter command on MCC pages 181 through 184:

CMD 2XXX

Where: XXX = SM number with error

Comment: If the SM pumps successfully, the trouble has been cleared. Return to the procedures.

If the SM fails pump again, escalate to your next level of support.

6.5.4.5 Critical Mate MP Errors

Escalate to your next level of support.

6.5.4.6 In Progress

Perform one of the following (Step 1 or 2):

1. Wait until pump finishes.

2. Perform steps "a" and "b":
   a. To stop off-line pump, enter command on MCC pages 181 through 184:
      CMD 3XXX
      Where: XXX = SM number with error
   b. To repump the SM, enter command on MCC pages 181 through 184:
      CMD 2XXX
Where: XXX = SM number with error

6.5.4.7 Inconsistent SM Numbers

Escalate to your next level of support.

6.5.4.8 Lack of Progress

1. If all of the SMs are mate updating (MATE_UPD) from an OP:SYSSTAT,UCL report, wait 15 minutes. It takes approximately 15 minutes for the first response from off-line pump. The SMs then pump at a rate of 1 every 2 to 4 minutes.

2. If some of the SMs indicate mate updating (MATE_UPD) while other SMs indicate either "MATE PUMP" or "MATE OOD" (from an OP:SYSSTAT,UCL report) and a period of 10 minutes has elapsed since the last SM pumped, enter message:

   MSG INIT:AM,PUCR,FPI;

   Response:

   IP
   PRM_0 EE00 xxxx xxxx 6122 xx xx xx
   PRM_0 EE00 xxxx xxxx 6A00 xx xx xx
   PRM_0 EE00 xxxx xxxx 7D00 xx xx xx
   PRM_0 EE00 xxxx xxxx 0000 xx xx xx
   PRM_0 EE00 xxxx xxxx 1000 xx xx xx
   PRM_0 EE00 xxxx xxxx 6000 xx xx xx

   Comment: This message reinitializes the pump control (PUCR) process.

3. After reinitializing PUCR, wait 15 minutes. Enter OP:SYSSTAT,UCL to get the status of the SMs. Those SMs indicating "MATE_UPD" should change one at a time to "MATE_PUMP." If new SMs have not indicated "MATE_PUMP," or no progress is being made, continue with the following procedures.

4. For any SM that indicates "MATE OOD" from an OP:SYSSTAT,UCL report, to repump the SM, enter command on MCC pages 181 through 184:

   CMD 2XXX

   Where: XXX = any SM indicating "MATE OOD."

   Comment: SM "a" should change after several minutes from a "MATE OOD" to a "MATE_UPD" as a result of restarting off-line pump. Entering the OP:SYSSTAT,UCL message will cause the status for all SMs to be printed on the ROP.

5. Repeat the Step 4 for other SMs indicating "MATE_OOD".

6. If the SM or SMs pump successfully (MATE_PUMP), trouble has been cleared and progress is being made. Continue to monitor the progress of off-line pump by periodically entering the OP:SYSSTAT,UCL message. Return to the procedures. If no progress is being made, continue with the following procedures.

7. If SM fails pump again, access MCC page 181 and enter command:

   CMD 3XXX
Where: XXX = SM number.

Response: OK - PUMPING SMS WILL REPORT

8. To repump the SM, enter command on MCC pages 181 through 184:

CMD 2XXX

Where: XXX = SM number with error

Comment: If SM pumps successfully, trouble has been cleared. Return to the procedures.

If SM fails pump again (MATE_ODD), escalate to your next level of support.

6.5.4.9 Mate Hashsum Errors

In the following steps, the ONTCs will be switched and the PPC will be removed and restored to service. These actions reinitialize the data associated with these units and may resolve the mate hashsum error.

1. To switch the PPC, access MCC Page 1241 and enter command:

CMD 450

2. To repump the SM, enter command on MCC pages 181 through 184:

CMD 2XXX

Where: XXX = the numbered SM with the mate hashsum error.

Comment: If the SM pumps successfully, return to the procedures.

If the off-line pump still fails with hashsum errors, perform the following steps.

3. To switch ONTCs, access MCC page 1209 - ONTC 0 & 1 and enter command:

CMD 403

4. When the command has finished executing, to switch ONTCs back, enter command:

CMD 403

5. To remove PPC 0, enter message:

MSG RMV:PPC=0

6. If the previous command has finished executing, to restore PPC 0, enter message:

MSG RST:PPC=0

7. If the previous command has finished executing, to remove PPC 1, enter message:

MSG RMV:PPC=1

8. If the previous command has finished executing, to restore PPC 1, enter message:

MSG RST:PPC=1

9. To repump the SM, enter command on MCC pages 181 through 184:
CMD 2XXX
Where: XXX = the numbered SM with the mate hashsum error.

10. If the SM pumps successfully, trouble has been cleared. Return to procedures.
11. If a mate hashsum error is received again while attempting to off-line pump from the off-line disk, escalate to your next level of support.

6.5.4.10 Mate Not Ready
1. Verify that the status of the MCTSI is not ACTF/UNVP. This status indicates the MCTSI on side 1 is unavailable due to loss of power. Verify the MCTSI is powered up before continuing.
2. On MCC page 1190,x, ensure SM is ACTF/UNV before proceeding. Enter message to force SM if necessary:

   MSG ORD:CPI=a,CMD=SW-x;

   Where: a = SM number.
   x = side to be forced ACTIVE.
3. If the MCTSI has a bootstrapper, remove the bootstrapper by entering the following command on MCC page 1190,x (where x = SM number):

   CMD 202
4. If the bootstrapper was removed in the previous step, restore the bootstrapper by entering the following command on MCC page 1190,x:

   CMD 302
5. To repump the SM, enter command on MCC pages 181 through 184:

   CMD 2XXX
   Where: XXX = SM number with error
   Comment: If SM pumps successfully, trouble has been cleared. Return to the procedures.
            If SM fails pump again, escalate to your next level of support.

6.5.4.11 Off-Line Verify Failed
To repump the SM, enter command on MCC pages 181 through 184:

   CMD 2XXX
   Where: XXX = SM number with error
   Comment: If SM pumps successfully, trouble has been cleared. Return to the procedures.
            If SM fails pump again, escalate to your next level of support.

6.5.4.12 PPC/TMS Problem
1. On MCC page 1209, ensure that the ONTCs are ACT MAJOR/MINOR before proceeding.
2. On MCC pages 1240 and 1250, ensure that PPC 0 or 1 is active before proceeding.
3. To repump the SM, enter command on MCC pages 181 through 184:
6.5.4.13 Requested

1. If manually stopped, resolve trouble before proceeding.
2. To repump the SM, enter command on MCC pages 181 through 184:
   
   **CMD 2XXX**
   
   Where: XXX = SM number with error
   
   Comment: If SM pumps successfully, trouble has been cleared. Return to the procedures.
   
   If SM fails pump again, escalate to your next level of support.

6.5.4.14 All SMs Indicate MATE_OOD, No Error(s) Reported

If all SMs go from MATE_UPD to MATE_OOD without any error being reported, use the following message to reinitialize the pump control (PUCR) process.

1. To reinitialize PUCR, enter message:
   
   **MSG INIT:AM,PUCR,FPI;**
   
   Response:
   
   IP
   
   PRM_0 EE00 xxxx xxxx 6122 xx xx xx
   PRM_0 EE00 xxxx xxxx 6A00 xx xx xx
   PRM_0 EE00 xxxx xxxx 7D00 xx xx xx
   PRM_0 EE00 xxxx xxxx 0000 xx xx xx
   PRM_0 EE00 xxxx xxxx 1000 xx xx xx
   PRM_0 EE00 xxxx xxxx 6000 xx xx xx
   
2. To off-line pump all SMs, enter command on MCC page 181:
   
   **CMD 2000**
   
   Comment: If the SMs pump successfully, return to the procedures in Section 5. If the SMs fail to off-line pump, escalate to your next level of support.

6.5.5 PERIPHERAL OFF-LINE PUMP ERROR CODES

6.5.5.1 Peripheral Side Failed To Off-Line Pump

**Warning:** In the event of a peripheral pump failure, DO NOT execute a 500 poke as this would cause the entire SM to pump again.
Note: In the following recovery procedure, the term ISLU can also mean RISLU.

1. Identify which SMs failed the peripheral pump action due to non-duplexed ISLUCCs.

2. Verify that all ISLUCCs in the failing SM are duplex. The attempted off-line pump may leave the ISLUCCs in an OOS state. When duplex, the ISLUCC will be in an ACT/STBY configuration. Verify that the Active (ACT) ISLUCC is on the same side as the Active (ACT) MCTSI. Thus, if MCTSI 0 has been forced Active (ACT), ISLUCC 0 should also be Active (ACT). (ISLUCC 1 should be standby.)
   a. On MCC page 1190,x (where x is the SM which failed the peripheral off-line pump), note which MCTSI is forced ACT.
   b. On MCC page 1010,x (where x is the SM which failed the peripheral off-line pump), note which ISLUUs are equipped in the SM.
   c. Access MCC page 170y,x (where y is an equipped ISLU and x is the SM which failed off-line pump).
   d. To restore the OOS ISLUCC, enter command:
      ```
      CMD 30X
      Where: X = OOS ISLUCC
      Response: DGN ISLUCC=x-y-z ATP PH v RST ISLUCC=x-y COMPLETED
      Note: CATP is an acceptable response for phase 1. The CATP occurs when the MCTSIs are not duplex.
      ```
   e. After the ISLUCC restoral is finished, verify the ACT ISLUCC is on the same side as the ACT MCTSI. To switch ISLUCCs, access MCC page 170y,x and enter command:
      ```
      CMD 400
      Response: SW ISLUCC x-y COMPLETED
      ```
   f. Repeat Steps c through e for each ISLU in the failing SM.

3. To pump the SM peripherals, enter command on MCC pages 181 through 184:
   ```
   CMD 4XXX
   Where: XXX = SM number with error
   Comment: If the SM successfully completes the pump (indicates MATE PUMP on MCC pages 181 through 184), continue with the procedure 4.b. If the SM still does not indicate MATE PUMP, continue with step 4.a.
   ```

4. Proceed with the following steps:
   a. If the entire SM needs to be repumped, enter command on MCC pages 181 through 184:
      ```
      CMD 2XXX
      Where: XXX = SM number with error
      Comment: If the error still persists, escalate to your next level of support.
b. If this attempt to perform a peripheral pump is successful, and all SMs are
MATE PUMP on MCC pages 181 through 184, execute the following
command on MCC page 1985:

CMD 500

5. The preceding 500 command returns the switch to the SM offline pump pause
shown in Figure 5-15. To continue, enter the following command.

CMD 500

6. Verify MCC page 1985 looks like Figure 5-19 in Section 5.5.7, if so continue with
Section 5.6.

7. If peripherals continue to fail pump and an office wants to continue, execute the
following steps:
   a. Go to MCC page 1989
   b. Turn off the Automatic SM Off-Line Pump feature by entering the following
      command.
      CMD 405,n
   c. To resume, go to MCC 1985, and enter the following command:
      CMD 500
   d. The preceding 500 command returns the switch to the SM offline pump
      pause shown in Figure 5-15. To continue, enter the following command.
      CMD 500
      The retrofit will continue forward, even though some peripherals may not
      be pumped.

8. Verify MCC page 1985 looks like Figure 5-19 in Section 5.5.7, if so continue with
Section 5.6.

9. If the attempt to perform a peripheral pump fails again, and it is desirable to
backout, execute Backout procedure B-9 in the Backout Section of this manual.

6.5.5.2 Peripheral Side Failed To Restore To Duplex
1. To restore the OOS ISLUCC, enter command:

   CMD 30X
   Where: X = OOS ISLUCC
   Response: DGN ISLUCC=x-y-z ATP PH v
   RST ISLUCC=x-y COMPLETED
   Note: CATP is an acceptable response for phase 1. The CATP
   occurs when the MCTSIs are not duplex.

2. After the ISLUCC restoral is finished, verify the ACT ISLUCC is on the same
side as the ACT MCTSI. To switch ISLUCCs, access MCC page 170y,x and enter
command:

   CMD 400
   Response: SW ISLUCC -xy COMPLETED
3. If the error still persists, escalate to your next level of support.

6.5.6 **ORD:CPI CLEAR FORCE TROUBLES**

6.5.6.1 Fault

1. On MCC page 1209, ensure that the ONTCs are ACT MAJOR/MINOR before proceeding.

2. Enter message:

   ```
   MSG ORD:CPI=a,CMD=CLR;
   ```

   Where: \(a\) = any numbered SM that indicates **FORCED** on MCC page 141.

3. If force clears successfully, trouble has been cleared. Return to the procedures.

4. If SM fails switch again, enter message:

   ```
   MSG DGN:MI=x,PH=6;
   ```

   Where: \(x\) = number of ACT-MAJOR ONTC

5. Access MCC page 1209 and enter command:

   ```
   CMD 30X,UCL
   ```

   Where: \(X\) = number of OOS ONTC

6. On MCC page 1209, ensure that the ONTCs are ACTIVE MAJOR/MINOR before proceeding.

7. If diagnostic returns ATP, enter message:

   ```
   MSG ORD:CPI=a,CMD=CLR;
   ```

   Where: \(a\) = any numbered SM that indicates **FORCED** on MCC page 141.

8. If diagnostic fails, repair Message Interface (MI) and retest until ATP, then enter message:

   ```
   MSG ORD:CPI=a,CMD=CLR;
   ```

   Where: \(a\) = any numbered SM that indicates **FORCED** on MCC page 141.

   Comment: If force clears successfully, trouble has been cleared. Return to the procedures.

   If force fails to clear again, escalate to your next level of support.

6.5.6.2 **Status Unknown**

Same as FAULT.

6.5.6.3 **Time-Out**

Same as FAULT.

6.5.7 **ORD:CPI SWITCH AND FORCE TROUBLES**

6.5.7.1 Fault

1. On MCC page 1190,x, ensure that the MCTSIs are ACT/STBY before proceeding.

2. On MCC page 1209, ensure that the ONTCs are ACT MAJOR/MINOR before proceeding.

3. Enter message:
MSG **ORD:CPI=a,CMD=SW-B,UCL;**

Where:
- **a** = SM number
- **b** = side (0 or 1) to be ACTF

4. If switch and force is successful, trouble has been cleared. Return to the procedure.

5. If switch and force fails on an RSM, enter command **401** on MCC page 1190,x to switch remote link interfaces (RLIs). Repeat Steps 1 through 4.

6. If switch and force fails on an SM, enter command **400** on MCC page 1190,x to switch MCTSIs. Repeat Steps 1 through 4.

7. If switch and force still fails, enter message:

   **MSG DGN:MI=x,PH=6;**

   Where: **x** = number of ACT-MAJOR ONTC

   Comment: Wait for diagnostic to complete.

   If diagnostic fails, repair MI and retest until ATP before proceeding.

8. Access MCC page 1209 and enter command:

   **CMD 30X,UCL**

   Where: **X** = number of OOS ONTC

9. Repeat Steps 1 through 4.

10. If switch and force still fails, escalate to your next level of support.

### 6.5.7.2 Status Unknown

1. Verify that diagnostics are not running in the SM with the "STATUS UNKNOWN." If diagnostics are running, stop them and re-execute the "ORD:CPI" message for the SM in question. If this resolves the problem, return to the procedures. If diagnostics are not currently running in the SM, continue with the following procedures.

2. Access MCC page 1190 for the SM with "STATUS UNKNOWN" (1190,x where x is the failing SM). To switch MCTSIs, enter command:

   **CMD 403**

3. Once the command has finished executing and the MCTSIs are switched, to switch MCTSIs back, enter command:

   **CMD 403** Once the command has finished executing and the MCTSIs are switched back, enter message:

   **MSG **ORD:CPI=x,CMD=SW-0;**

4. If switch and force still fails, to switch ONTCs, on MCC page 1209 enter command:

   **CMD 403**

5. When the command has finished executing, to switch ONTCs back, enter command:

   **CMD 403**
6. Once the command has finished executing and the ONTCs are switched back, the message in this step may be entered. Enter message:

`MSG ORD:CPI=a,CMD=SW-B,UCL;`

Where:  
- `a` = SM number
- `b` = side (0 or 1) to be ACTF

Comment: If the switch and force is successful in making MCTSI-0 active forced (ACTF) and MCTSI-1 unavailable (UNV), repeat Steps 1 through 5 for other SM(s) that failed the switch and force and returned "STATUS UNKNOWN." Once all SMs have been switched and forced MCTSI-0 ACTF and MCTSI-1 UNV, return to the procedures.

7. If problems still persists in switching and forcing the SM(s) after trying all the recovery actions to this point, escalate to your next level of support.

6.5.7.3 Time-Out

Same as FAULT.

6.5.7.4 Unable to Switch

Same as FAULT.

6.5.8 RC AND CORC ROLL FORWARD PROBLEMS

6.5.8.1 General

This section contains information for determining why RCs could not be rolled forward. This section also contains procedures to recover from these problems.

1. Before attempting the following recovery actions, another attempt to roll forward the recent changes should be made (using the following lettered steps).

   **Note:** If any unit failed to roll forward RCs, an indication of RC BACKOUT will be shown on the appropriate MCC page.

   If after attempting the following lettered steps, the unit still does not complete RC roll forward, continue with the Step 2.

   a. If RCs failed to roll forward in the AM (AM indicates RC BACKOUT on MCC page 110), enter message:

      `MSG EXC:ODDRCVY=ALL,AM;`

   b. If RCs failed to roll forward in an SM (SM indicates RC BACKOUT on MCC page 1800,x), enter message:

      `MSG EXC:ODDRCVY=ALL,SM=x;`

      Where:  
      - `x` = SM that failed to roll forward RCs

   c. If RCs failed to roll forward in CMP 0-0 (CMP indicates RC BACKOUT on MCC page 1850 or 1851), enter message:

      `MSG EXC:ODDRCVY=ALL,CMP=0-0;`

   d. If RCs failed to roll forward in CMP 1-0 (CMP indicates RC BACKOUT on MCC page 1850 or 1851), enter message:

      `MSG EXC:ODDRCVY=ALL,CMP=1-0;`

2. Access MCC page 1984 and enter command:
CMD 501, setoddbk

3. The RCs that will be rolled forward on the new software release load will be stored in log files. The AM and CMP RCs will be stored in /log and the SM RCs will be stored in /smlog.

To list the files in "/log," enter message:

MSG OP: STATUS, LISTDIR, FN="/log";

This message is equivalent to entering an "ls -ls" command in the shell. A truncated example of its output follows:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>210</td>
<td>-rwxrwxrwx 1 root 105608 Jun 22 03:53</td>
<td>cplog</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>101</td>
<td>-rwxrwxrwx 1 root 55725 Jun 22 03:53</td>
<td>cmp0rc</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. To list the files in /smlog, enter message:

MSG OP: STATUS, LISTDIR, FN="/smlog";

This message is equivalent to entering an "ls -ls" command in the shell. A truncated example of its output follows:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>82</td>
<td>-rw-r--r-- 1 root 41440 Jun 22 03:56</td>
<td>im1rc</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>96</td>
<td>-rw-r--r-- 1 root 48440 Jun 22 03:56</td>
<td>im2rc</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>...</td>
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<td>...</td>
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<td>...</td>
<td>...</td>
</tr>
<tr>
<td>13</td>
<td>-rw-r--r-- 1 root 5888 Jun 22 03:56</td>
<td>im17rc</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>-rw-r--r-- 1 root 3076 Jun 22 03:53</td>
<td>im18rc</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The RCs applicable to the AM are stored in /log/cplog. The RCs applicable to the SMs are stored in log files /smlog/im1rc, /smlog/im2rc, etc.

Check columns 1 and 5. Those two columns contain the number of blocks and bytes, respectively, in the AM log file (/log/cplog) and each SM log file (/smlog/im__.rc). The "im__.rc" file sizes generally indicate which SMs have a lot of RC activity.

5. If attempts to roll forward RCs fail, error log files (cplog.err for the AM and im__.rc.err for the SMs) will be created in "/log" and "/smlog." The error files cannot be dumped to the printer. They must be dumped using the RC decode message, "EXC:RCDECODE."
If RC(s) in any of the SMs fail to roll forward, the message to decode the SM RC error log file should be entered.

To decode the SM RC error log files, enter message:

**MSG EXC:RCDECODE,ERRLOG,SM=a,ROP**;

Where:  
\(a = \text{SM number with RC roll forward aborting.}\)

Comment:  
The error log will be dumped at the ROP.

6. If RC(s) in the AM fail to roll forward, the message to decode the AM RC error log file should be entered. To decode the AM RC error log file, enter message:

**MSG EXC:RCDECODE,ERRLOG,AM,ROP**;

Comment:  
The error log will be dumped at the ROP.

7. If the RCs in the CMP fail to roll forward, the message to decode the CMP RC error log file should be entered. To decode the CMP RC error log file, enter message:

**MSG EXC:RCDECODE,ERRLOG,CMP=0-x,ROP**;

Where:  
\(x = 0 \text{ for CMP 0-0, or } x = 1 \text{ for CMP 0-1.}\)

Comment:  
The CMP error log will be dumped at the ROP.

8. Examine the output from the RC error log file. This output may give a clue as to why the RC cannot be rolled forward. If the RC error log files indicate some correctable problem, attempt to fix it and try to roll forward the RCs on the AM or SM which is failing.

To roll forward RCs in the AM, enter message:

**MSG EXC:ODDRCVY=ALL,AM**;

To roll forward RCs in all SMs, enter message:

**MSG EXC:ODDRCVY=ALL,SM=1&&x**;

Where:  
\(x = \text{highest numbered SM}\)

To roll forward RCs for CMP 0-0, enter message:

**MSG EXC:ODDRCVY=ALL,CMP=0-0**;

To roll forward RCs for CMP 1-0, enter message:

**MSG EXC:ODDRCVY=ALL,CMP=1-0**;

If the RC error log file does not provide sufficient information to identify the problem, continue with the following procedures.

9. If the RCs are failing to roll forward in an SM, access MCC page 1800,x (where \(x = \text{SM with RC roll forward aborts.}\) Verify that box 07 "RC BKOUT" is backlit. If box 07 is **not** backlit, enter command:

**CMD 407**
On MCC page 1800.x, box 07 "RC BKOUT" should be backlit. A number should be present on the third line of box 07. The number has the following meaning:

- From 100 to 0 is RC backout (100 means RCs are still fully backed out; 0 meaning RC is fully rolled forward).

10. Repeat the previous step for all remaining SMs that have failed to fully roll forward RCs.

11. If the RCs are failing to roll forward in CMP 0-0, access MCC page 1850. Verify that box 07 "RC BKOUT" is backlit. If box 07 is not backlit, enter command:

```
CMD 407
```

On MCC page 1850, box 07 should be backlit. A number should be present on the third line of box 07 showing the progress of the backout. The number has the following meaning:

- From 100 to 0 is RC backout (100 means RC is still fully backed out; 0 meaning RC is fully rolled forward).

12. If the RCs are failing to roll forward in CMP 1-0, access MCC page 1851. Verify that box 07 "RC BKOUT" is backlit. If box 07 is not backlit, enter command:

```
CMD 407
```

On MCC page 1851, box 07 should be backlit. A number should be present on the third line of box 07 showing the progress of the backout. The number has the following meaning:

- From 100 to 0 is RC backout (100 means RC is still fully backed out; 0 meaning RC is fully rolled forward).

13. If the RCs are failing to be rolled forward in the AM, access MCC page 110. Verify that box 21 "RC BKOUT" is backlit. If box 21 is not backlit, enter command:

```
CMD 421
```

On MCC page 110.x, box 21 "RC BKOUT" should be backlit. A number should be present on the third line of box 21 showing the progress of the backout. The number has the following meaning:

- From 100 to 0 is RC backout (100 means RC is still fully backed out; 0 meaning RC is fully rolled forward).

14. To obtain a list of the number of RCs to be rolled forward in the AM, CMP, and SMs, enter message:

```
MSG OP:RCSTAT,AM,CMP=0,SM=1&&x;
```

Where: \( x \) = highest numbered SM.

Response:
```
OP RCSTAT
AM NO. OF RC=x
CMP= 0 NO. OF RC= y SM= n NO. OF RC=z
```

OP RCSTAT
AM LOG IS x PERCENT FULL
SM LOG IS x PERCENT FULL
CMP LOG IS x PERCENT FULL
RED LOG IS x PERCENT FULL

OP RCSTAT COMPLETED

15. If RCs have not been rolled forward, attempt to roll forward RCs in the AM, enter message:
   MSG EXC:ODDRCVY=ALL,AM;

16. If RCs have not been rolled forward, attempt to roll forward RCs in an SM, enter message:
   MSG EXC:ODDRCVY=ALL,SM=x;
   Where: x = SM number with RCs to be rolled forward.

17. Repeat last step for other SM(s) that have RCs to be rolled forward.

18. To roll forward RCs for CMP 0-0, enter message:
   MSG EXC:ODDRCVY=ALL,CMP=0-0;

19. To roll forward RCs for CMP 1-0, enter message:
   MSG EXC:ODDRCVY=ALL,CMP=1-0;

20. If RCs are failing to be rolled in the AM, escalate to your next level of support.

21. If RCs are still aborting for SMs, access 5ESS® switch RC/VFY and make a manual RC on the SM that is failing to roll forward the RCs. After the RC has been made, try to roll forward RCs for the SM in question. If the RC(s) fails to roll forward, escalate to your next level of support.

6.5.8.2 OSPS Recent Change Evolution And Roll-Forward Failures

Warning: Perform the following step ONLY if you are an OSPS office AND have NOT used the OSPS recent change evolution and roll-forward processes due to a failure.

1. To apply OSPS RCs, enter message:
   MSG EXC:RCRLS,CLERK=RCNEWOSPS;
   Response: EXC RCLS, CLERK=RCNEWOSPS STARTED
   EXC RCLS, CLERK=RCNEWOSPS COMPLETED
   FAILURES=xx,APPLIED=yy

2. Examine the values recorded in Step 3 of Section 6.5.10.3 If AUTO RECONFIG or SCHED IFLOW were Y for your office, proceed with the following:
   At an RCV terminal or the MCC, access MCC page 196.
3. Change the values in fields 126 (AUTO RECONFIG) and 127 (SCHED IFLOW) to match those recorded on the "old" software release.

4. Exit Recent Change.

6.5.9 **RECENT CHANGE AND CORC REAPPLICATION TROUBLES (RETROFIT, LTG ONLY)**

*Note:* If you have backed out of the transition after executing any part of Section 5.10.6, and are proceeding forward for the second time, and you are experiencing CORC and/or RC reapplication troubles, seek technical assistance.

In addition to procedures to stop RC reapplication and a set of ODD backup guidelines to be used during RC and CORC reapplication, this section also contains procedures to recover from the following troubles:

- Recent change log 80 percent or 85 percent full
- Recent change log 90 percent full
- CORC reapplication aborts
- No response from the recent change reapplication process for a long period of time
6.5.9.1 Stopping RC Reapplication

**Note:** The following message will terminate RC reapplication, do not enter the following command unless directed to do so by this document or technical support personnel.

To stop RC reapplication, the following message is used:

MSG STP:RCRLS;

6.5.9.2 ODD Backup Guidelines

6.5.9.2.1 Overview

An ODD backup should be performed under the following circumstances:

a. The output message """"REPT RCV: RCLOG { 80 | 85 } PERCENT FULL"""" is received.

b. The response to the OP:RCSTAT input message indicates that the AM LOG (AM ODD), SM LOG (SM ODD), or RED LOG (redundant ODD) space is greater than 75 percent full, or

c. Whenever the reapplication process is stopped (that is, aborts or is manually stopped).

**Note:** The ODD backup and RC reapplication processes may be executed simultaneously. However, several things should be considered. First, there is a window, as the AM and each SM is backed up, where a valid RC may not reapply if the RC is associated with the module being backed up. The number of RCs involved will be small, usually 1 or 2 per module. The failed RCs may be applied later either manually or by re-executing the RC reapplication process.

Stopping the RC reapplication process will avoid the problem of the failed RCs due to ODD backup. However the ODD backup process may take from 3 to 5 minutes per module. An office backing up a large number of SMs should consider the total amount of time required to complete the ODD backup.

1. Enter message:

   MSG OP:RCSTAT,SM=1&&x,AM;

   Where: \( x \) = highest numbered SM in the office.

   Response:

   OP RCSTAT
   AM NO. OF RC= \( x \)
   SM= 1 NO. OF RC= \( x \)
   SM= 2 NO. OF RC= \( x \)
   SM= 3 NO. OF RC= \( x \)
   .
   .
   .
SM = \text{n NO. OF RC} \times \text{OP RCSTAT}

\text{AM LOG PERCENT FULL = } \text{xx}

\text{SM LOG PERCENT FULL = } \text{xx}

\text{RED LOG PERCENT FULL = } \text{xx}

2. The ODD backup may be performed on just the AM, a range of SMs, all SMs, or the redundant ODD. Offices may wish to backup selected SMs to reduce the size of the SM log file. Refer to 235-600-700, \text{Input Message Manual}, for the appropriate input messages.

\text{6.5.9.2.2 Recent Change Log 80 Percent Or 85 Percent Full}

Perform an ODD backup using Section 6.5.9.2.

\text{6.5.9.2.3 Recent Change Log 90 Percent Full}

When the RC reapplication process fills up the recent change buffers in `/log` and `/smlog` to 90 percent of capacity, the process should be stopped, the ODD backed up, and the reapplication process restarted.

1. To stop the RC reapplication process, enter message:

   \text{MSG STP:RCRLS;}

   Response: \text{STP RCRLS COMPLETED}

   \text{RC BATCH ERROR view NOT UPDATED } \text{xxx TERM-ID = ttyx}

   \text{EXC RCRLS CLERK = RCNEW ODDEVOL ABORTED FAILURES=x,}

   \text{APPLIED=x}

   \text{\textit{Warning: It may take up to 20 minutes to receive the abort message. In all cases, you must wait for it to be output before proceeding.}}

2. Verify that the abort message has been received before proceeding.

3. Stop all recent change activity in the office, including Remote Memory Administration System (RMAS).

4. The following input messages will clear any open RC transactions.

   a. Enter message:

      \text{MSG \text{AUD:TRNDC,SM=1\&x;} }

      Where: \text{x = highest numbered SM in the office.}

      Response: \text{AUD SM=1 TRNDC COMPLETED ERRORS=a EVENT=b}

      \text{AUD SM=x TRNDC COMPLETED ERRORS=a EVENT=b}

      \text{Comment: Before entering the next message, wait for output reports from all SMs.}

   b. Enter message:

      \text{MSG \text{AUD:TRNDC,ENV=OKP;} }

      Response: \text{AUD ENV=OKP TRNDC COMPLETED ERRORS=a EVENT=b}
Comment: Before entering the next message, wait for output report.

c. Enter message:

MSG **AUD:MEMMAN,ENV=OKP**;

Response: **AUD ENV=OKP MEMMAN COMPLETED ERRORS=a EVENT=b**

Comment: Before entering the next message, wait for output report.

d. Enter message:

MSG **AUD:MEMMAN,SM=1&&x;**

Where: x = highest numbered SM in the office.

Response: **AUD SM=1 COMPLETED ERRORS=a EVENT=b**  **AUD SM=x COMPLETED ERRORS=a EVENT=b**

Comment: Before entering the next message, wait for output reports from all SMs.

e. Enter message:

MSG **CLR:TRN**;

5. Perform an ODD backup using Section 6.5.9.2.

6. Enter message:

MSG **EXC:RCRMV:CLERK=RCNEW,COMPLETE**;

Response: **EXC RCRMV CLERK = RCNEW STARTED**  **RC BATCH RECORD REMOVAL xxx REMOVED xxx 0 0**  **TERM-ID=TTYx**  **EXC RCNEW CLERK = RCNEW COMPLETED**

Comment: This step removes the RCs that have successfully reapplied from the log file.

**Note:** The following step is optional. The following message will automatically create a file that contains all RC errors up to this point. This file will be created in * updtmp/HIST.RCNEW*. If the RC errors have already been output, it is not necessary to enter this message. If this message is used and a hardcopy is needed, the file will have to be dumped to a printer (using **DUMP:FILE**...). Each time the following command is entered, the file is recreated.

7. If needed, enter message:

MSG **REPT:RCHIST,CLERK=RCNEW,FORMAT=DETAIL,ERROR**;

Response: **REPT RCHIST CLERK = RCNEW STARTED - REPORT IS IN */updtmp/HIST.RCNEW**  **REPT RCHIST CLERK = RCNEW COMPLETED**

8. To reapply CORCs, enter message:

MSG **CNVT:CORCLOG,LOAD**;

Response:

**CNVT CORCLOG LOAD SM =a STARTED**  **CNVT CORCLOG LOAD SM = a IN PROGRESS**
CORC NUMBER xx HAS BEEN PROCESSED (every few minutes)
CNVT CORCLOG LOAD SM = a COMPLETE
xxxx CORCS PROCESSED
xxxx CORCS IN ERROR

CNVT CORCLOG LOAD COMPLETED

9. Return to the procedures and restart RC reapplication with the
   EXC:RCRLS,ODDEVOL message.
   MSG EXC:RCRLS,ODDEVOL;

6.5.9.2.4 CORC Reapplication Aborts
The CORC reapplication process aborts if /smlog or /sclog fill to capacity during
reapplication. The following messages will be printed at the ROP if this occurs:
Response:  *** REPT RCV: RC DISABLED, LOG FULL
   CNVT CORCLOG LOAD SM = a STOPPED WITH FATAL ERRORS

1. Stop all RC activity in the office including RMAS.
2. The following input messages will clear any open RC transactions.
   a. Enter message:
      MSG AUD:TRND,SM=1&&x;
      Where:  x = highest numbered SM in the office.
      Response:  AUD SM=1 TRND COMPLETED ERRORS=a EVENT=b
                  AUD SM=x TRND COMPLETED ERRORS=a EVENT=B
      Comment:  Before entering the next message, wait for output reports from
                all SMs.
   b. Enter message:
      MSG AUD:TRND,ENV=OKP;
      Response:  AUD ENV=OKP TRND COMPLETED ERRORS=a EVENT=b
      Comment:  Before entering the next message, wait for output report.
   c. Enter message:
      MSG AUD:MEMMAN,ENV=OKP;
      Response:  AUD ENV=OKP MEMMAN COMPLETED ERRORS=a EVENT=b
      Comment:  Before entering the next message, wait for output report.
   d. Enter message:
      MSG AUD:MEMMAN,SM=1&&x;
      Where:  x = highest numbered SM in the office.
      Response:  AUD SM=1 COMPLETED ERRORS=A EVENT=B
                  AUD SM=x COMPLETED ERRORS=A EVENT=B
Comment: Before entering the next message, wait for output reports from all SMs.

e. Enter message:

   MSG CLR:TRN;

3. Perform an ODD backup using Section 6.5.9.2.

4. Return to the procedures and restart the CORC reapplication with the CNVT:CORCLOG,LOAD message.

6.5.9.2.5 No Response For A Long Period Of Time

1. To stop the RC reapplication process, enter message:

   MSG STP:RCRLS;

   Response: STP RCRLS COMPLETED

   EXC RCRLS CLERK = RCNEW ODDEVOL ABORTED FAILURES=x,
   APPLIED=x

   Warning: It may take up to 20 minutes to receive the abort message. In all cases, you must wait for it to be output before proceeding.

2. Verify that the abort message has been received before proceeding.

3. Stop all RC activity in the office including RMAS.

4. The following input messages will clear any open RC transactions.

   a. Enter message:

      MSG AUD:TRNDC,SM=1&&x;

      Where: x = highest numbered SM in the office.

      Response: AUD SM=1 TRNDC COMPLETED ERRORS=a EVENT=b

      Comment: Before entering the next message, wait for output reports from all SMs.

      b. Enter message:

         MSG AUD:TRNDC,ENV=OKP;

         Response: AUD ENV=OKP TRNDC COMPLETED ERRORS=a EVENT=b

         Comment: Before entering the next message, wait for output report.

   c. Enter message:

      MSG AUD:MEMMAN,ENV=OKP;

      Response: AUD ENV=OKP MEMMAN COMPLETED ERRORS=a EVENT=b

      Comment: Before entering the next message, wait for output report.

   d. Enter message:

      MSG AUD:MEMMAN,SM=1&&x;

      Response: AUD SM=1 COMPLETED ERRORS=a EVENT=b

      AUD SM=x COMPLETED ERRORS=a EVENT=b

      Comment: Before entering the next message, wait for output reports from all SMs.
e. Enter message:

MSG CLR:TRN;

5. Perform an ODD backup using Section 6.5.9.2.

6. To determine if an automatic relation reorganization (REORG) is needed, enter messages:

MSG INH:REORG; EXC:REORG;

Comment: A "REORG NEEDED" list will be dumped if any relations are in need of a reorg. This step is used to determine if "reorg" is needed. The next step is used to perform "reorg" if needed.

7. If the EXC:REORG indicated that an automatic relation reorganization is needed, enter messages:

MSG ALW:REORG; EXC:REORG;

Response: REPT REORG COMPLETED RELATION = a [AM | SM = b] (for each relation reorganized)

8. To restart the reapplication of RCs, do the following:

a. If automatic relation reorganization is allowed, enter message:

MSG INH:REORG;

b. Return to the procedures and restart the RC reapplication by entering the following message:

MSG EXC:RCRLS,ODDEVOL;

The reapplication process will attempt to reapply first the RCs that have already failed. As a result, a large number of RCs may fail to reapply initially. Do not be alarmed if you see the same RCs that previously failed to reapply, fail again. After the process either fails to reapply or successfully reapplies these RCs, RCs which have not had the first attempt at reapplying will be tried.

6.5.9.2.6 Recent Change Reapplication Aborts/ Stops

When the RC reapplication process gets hung up, aborts, or is manually stopped, the process has not completed until the abort message shown below is output on the ROP:

EXC RCRLS CLERK = RCNEW ODDEVOL ABORTED FAILURES = x, APPLIED =x

Warning: It may take up to 20 minutes to receive the abort message. In all cases, you must wait for it to be output before proceeding.

1. Verify that the abort message has been received before proceeding.

2. If required, perform an ODD backup using Section 6.5.9.2.

3. Enter message:

MSG EXC:RCRMV:CLERK=RCNEW,COMPLETE;
Response: EXC RCRMV CLERK = RCNEW STARTED
RC BATCH RECORD REMOVAL xxx REMOVED xxx 0 0
TERM-ID=TTY
...
EXC RCNEW CLERK = RCNEW COMPLETED
EXC RCNEW CLERK = RCNEW COMPLETED REMOVED = x

Comment: This step removes the RCs that have successfully reapplied from the log file. This results in a smaller log file.

4. If any CORCs had previously failed, enter message:
   MSG CNVT:CORCLOG,LOAD;
   Response: CNVT CORCLOG LOAD SM = xxx STARTED
   CNVT CORCLOG LOAD SM = xxx COMPLETE
   xxx CORCS PROCESSED
   xxx TRNCORCS PROCESSED
   xxx CORCS IN ERROR
   xxx TRNCORCS IN ERROR

   [CNVT CORCLOG LOAD SM = xxx IN PROGRESS]
   [CORC NUMBER xxx HAS BEEN PROCESSED]
   [CNVT CORCLOG LOAD AM STARTED]
   [CNVT CORCLOG LOAD AM COMPLETE]
   [xxx CORCS PROCESSED]
   [xxx CORCS IN ERROR]

   [CNVT CORCLOG LOAD CMP STARTED]
   [CNVT CORCLOG LOAD CMP COMPLETE]
   [xxx CORCS PROCESSED]
   [xxx TRNCORCS PROCESSED]
   [xxx CORCS IN ERROR]
   [xxx TRNCORCS IN ERROR]

   CNVT CORCLOG LOAD COMPLETED

5. The following input messages will clear any open RC transactions:
   a. Enter message:
      MSG AUD:TRNDC,SM=1&&x;
Where: x = highest numbered SM in the office.
Response: AUD SM=1 TRNDC COMPLETED ERRORS=A EVENT=B
          AUD SM=x TRNDC COMPLETED ERRORS=A EVENT=B
Comment: Before entering the next message, wait for output reports from all SMs.

b. Enter message:
   MSG AUD:TRNDC,ENV=OKP;
   Response: AUD ENV=OKP TRNDC COMPLETED ERRORS=a EVENT=b
   Comment: Before entering the next message, wait for output report.

c. Enter message:
   MSG AUD:MEMMAN,ENV=OKP;
   Response: AUD ENV=OKP MEMMAN COMPLETED ERRORS=A EVENT=B
   Comment: Before entering the next message, wait for output report.

d. Enter message:
   MSG AUD:MEMMAN,SM=1&&x;
   Where: x = highest numbered SM in the office.
   Response: AUD SM=1 COMPLETED ERRORS=A EVENT=B
              AUD SM=x COMPLETED ERRORS=A EVENT=B
   Comment: Before entering the next message, wait for output reports from all SMs.

e. Enter message:
   MSG CLR:TRN;

6. To determine if an automatic relation reorganization (REORG) is needed, enter messages:
   MSG INH:REORG;
   EXC:REORG;
   Comment: A "REORG NEEDED" list will be dumped if any relations are in need of a reorg. This step is used to determine if "reorg" is needed. The next step is used to perform "reorg" if needed.

7. If the EXC:REORG indicated that an automatic relation reorganization is needed, enter messages:
   MSG ALW:REORG;
   EXC:REORG;
   Response: REPT REORG COMPLETED RELATION = a [AM | SM = b] (for each relation reorganized)

8. To restart the reapplication of RCs, do the following:
   a. If automatic relation reorganization is allowed, enter message:
      MSG INH:REORG;
   b. Return to the procedures and restart the RC reapplication by entering the following message:
MSG EXC:RCRLS,ODDEVOL;

The reapplication process will attempt to reapply first the RCs that have already failed. As a result, a large number of RCs may fail to reapply initially. Do not be alarmed if you see the same RCs that previously failed to reapply, fail again. After the process either fails to reapply or successfully reapplies these RCs, RCs which have not had the first attempt at reapplying will be tried.

6.5.10 RC AND CORC EVOLUTION PROBLEMS (RETROFIT, LTG ONLY)

6.5.10.1 RC/CORC Evolution Error Message

The following message is an RC/CORC evolution error. If this message is received, escalate to your next level of support to clean up the rclog partition.

AUTOEVOL INVOKES MOVELOG TO RECLAIM SPACE IN /rclog
THE /rclog DOES NOT HAVE ENOUGH SPACE
TOTAL NUMBER OF FREE SPACE ON /rclog IS xxx
DB TRANSITION PROCESS MOVELOG FAILED
DETAIL INFO IN /rclog/mvlog.README

If RC/CORC failed because there was not enough space in /rclog, perform the following steps:

1. The /rclog directory may have files that need to be removed. Input the following message:

   MSG OP:STATUS:LISTDIR,FN="/rclog";

2. Examine the rop from the previous message. The files that start with tmp.evl and tmp.old must be removed before the RC/CORC tool is run again. The number in the file name represents the SM number. The following are examples of typical file names:
   
   tmp.old2
   tmp.old70
   tmp.old140
   tmp.evl2
   tmp.evl170
   tmp.evl140

3. Use the following message to remove the files, one at a time:

   MSG CLR:FILESYS:FILE,FN="/rclog/tmp.old2";

   Note 1: The number 2 in the previous message is the SM number. Remove all file that start with tmp.old and tmp.evl.

   Note 2: If there are a large number of files to be removed, logging in through UNIX may be faster. If you are not familiar with UNIX, input the previous CLR:FILESYS message for each file or contact your next level of support for assistance using UNIX.

4. If the files have been removed and the RC/CORC tool still fails, contact your next level of support.
6.5.10.2 RC Evolution Status (Retrofit, LTG Only)

The RCtype.rpt analysis file may be dumped to provide statistics on RC evolution activity.

To dump analysis file, enter message:

MSG DUMP:FILE:ALL,FN="/rclog/RCtype.rpt",OPL=999;

Response:

DUMP FILE ALL STARTED

*********************************************************

Date: Day Mon. Date Time Year

RC EVOLUTION LOGFILE ANALYSIS REPORT:

Total number of RCV logged: xxx

the supported RCVs logged: xxx

    INSERT: xxx
    UPDATE: xxx
    DELETE: xxx

not supported RCVs logged: xxx

    INSERT: xxx
    UPDATE: xxx
    DELETE: xxx

*********************************************************

DETAIL ACTIVITY REPORT FOR EACH RCV:

*** RC View: x.x RC_VIEW VIEW NAME ***

Total number of views logged: x

    INSERT: xxx
    UPDATE: xxx
    DELETE: xxx

*********************************************************

(Other activity reports for other RC/V Views follows)

DUMP FILE ALL COMPLETED SEGMENT x

Comment: Examine the ROP output and check for RC evolution activity reports for Class 9 or Class 10 (for example, *** RC View: 9.3 RC_LDIT LOCAL DIGIT ***). If any Class 9 or Class 10 RCs (which deal with routing changes) exist in this report, call processing may be affected after the system initialization in the Proceed stage until RC reapplication is complete. Therefore, it is critical that if RCs to Class 9 or Class 10 are contained in
this report, RC reapplication should be started in a timely manner. If Class 9 or Class 10 changes exist, consult your next level of support and advise them concerning RC reapplication.

### 6.5.10.3 OSPS Configuration ODD Backup Failures

1. At an RCV terminal or the MCC, access MCC page 196.

2. Enter the following data:

```plaintext
Form 8.9R (accesses RCV 8.9)
*1. OFFICE ID ______ (enter your office ID)
Screen # 6 (accesses screen 6 of 8)
```

3. Record the values in fields 105 and 106. These values will be used in the Soak stage.

4. Exit Recent Change.
**Warning:** The following step will remove all OSPS recent change log files. The OSPS recent changes made during the double-logging period will NOT be automatically reapplied to the new software release by the roll-forward process. These RCs must be reapplied using the POSTRCR process during the Soak stage of the transition.

5. If the OSPS Evolution failed, perform the following:
   a. Enter message:
      ```
      MSG EXC:ENVIR:UPROC, FN="/no5text/prc/ASospsoff";
      
      Note: This message turns off the evolution process for OSPS recent changes in OSPS offices. This message will have no impact on the 5ESS switch for non-OSPS offices.
      
      Response: ASOSPSoFF: OSPS TRANSITION BIT HAS BEEN CLEARED EXC ENV UPROC /NO5TEXT/PRC/ASOSPSoFF COMPLETED
      
      Comment: The OSPS EVOL ACT box is no longer backlit on MCC page 116.
      
      b. To remove all OSPS configuration ODD evolution files, enter message:
      ```
      ```
      MSG EXC:ENVIR:UPROC, FN="/bin/rm", args="-rf="/updtmp/ospsevol";
      
      Response: EXC ENVIR UPROC /BIN/RM COMPLETED
      
      c. Continue with the transition from the point the failure was encountered.

6.5.11 RESTARTING RC DOUBLE-LOGGING AFTER AM INITIALIZATION

The following procedures are only executed if a manual AM initialization has occurred since the last procedure.

If a manual AM initialization has occurred after the start of double-logging, perform the following steps:

1. To restart ODD evolution, enter message:
   ```
   MSG EXC:ENVIR:UPROC, FN="/no5text/rcv/setoddevol";
   
   Comment: Ensure the ODD EVOL ACT box on MCC page 116 is backlit before proceeding.
   
   2. For OSPS offices, to allow the OSPS configuration ODD evolution process, enter message:
   ```
   ```
   MSG EXC:ENVIR:UPROC, FN="/no5text/prc/ASospson";
   
   Response: ASOSPSON: OSPS TRANSITION BIT HAS BEEN SET (on ROP) (Ensure this message is received before continuing)
   EXC ENV UPROC /no5text/prc/ASospson COMPLETED
   
   Comment: Ensure the OSPS EVOL ACT box on MCC page 116 is backlit before proceeding.

   Note: This message turns on the evolution process for OSPS recent changes in OSPS offices. This message will have no impact on the 5ESS switch for non-OSPS offices.
6.5.12 DATABASE DUMP AND MEMORY FORECASTING TOOL TROUBLES

6.5.12.1 Overview

The memory forecasting tool must be used in the transition planning stage to predict the amount of memory needed by the AM, the CMP, and the SM processors, in preparation for the standard hardware ordering for the software release transition. Sufficient memory boards should be grown into the switch during the Advance Preparation Stage (-9 weeks). To ensure that the transition office has proper memory equipage, the database dump procedures automatically invoke the memory forecasting tool and evaluate the report file. If a memory shortage problem is detected in the database dump, a minor system alarm is generated with additional warning messages printed on the ROP. If a memory shortage is still detected during the database dump, the database dump process will abort. Also, the database dump process has been enhanced to ensure that double-logging has been started and that an ODD backup or growth process is not running. The following sections provide recovery procedures for problems that may develop during the database dump.

6.5.12.2 Database Dump Troubles

6.5.12.2.1 Incorrect Database Dump Command Entered

To distinguish between the database dump processes (for performing different integrity checks), the MCC input command for the database dump has been changed to "COPY:ODD:TAPE,ALL,PRELIM". The following error messages and a major system alarm are output if the "PRELIM" option keyword is not entered for the database dump.

Response:

```
DBretrochk() ABORTED: DOUBLE LOGGING HAS NOT BEEN STARTED
"COPY:ODD:TAPE,ALL" IS RESERVED FOR FINAL DATABASE DUMP USE ONLY
PLEASE USE "COPY:ODD:TAPE,ALL,PRELIM" FOR PRELIMINARY DUMP DOUBLE LOGGING MUST BE STARTED BEFORE TAKING FINAL DATABASE DUMP,
EXECUTE "BKUP:ODD,ODDEVOL,TOGENERIC=xx" TO START DOUBLE LOGGING
```

DB TRANSITION FUNCTION DBretrochk() FAILED
PLEASE SEEK TECHNICAL ASSISTANCE

To recover from this error, enter message:

```
MSG COPY:ODD:TAPE,ALL,PRELIM;
```

Continue with the procedures in Section 3.10.8.6.

6.5.12.2.2 ODD Backup In Progress

To prevent inconsistent data from being dumped to the database dump tape, the database dump process has been enhanced to ensure the ODD backup process is not running. If the ODD backup process is in progress, the following error messages and a major system alarm are output.
Response:
   DBretrochk() ABORTED: ODD BACKUP IS RUNNING
   DATABASE DUMP SHOULD NOT BE PERFORMED WHILE ODD BACKUP IS RUNNING
   DB TRANSITION FUNCTION DBretrochk() FAILED
   PLEASE SEEK TECHNICAL ASSISTANCE
To recover from this error, wait until the ODD backup process has completed, then enter the database dump command again.

6.5.12.2.3 ODD Growth In Progress
To prevent inconsistent data from being dumped to the database dump tape, the database dump process has been enhanced to ensure the ODD growth process is not running. If the ODD growth process is in progress, the following error messages and a major system alarm are output.

Response:
   DBretrochk() ABORTED: ODD GROWTH IS RUNNING
   DATABASE DUMP SHOULD NOT BE PERFORMED WHILE ODD GROWTH IS RUNNING
   DB TRANSITION FUNCTION DBretrochk() FAILED
   PLEASE SEEK TECHNICAL ASSISTANCE
To recover from this error, wait until the ODD growth process has completed, then enter the database dump command again.

6.5.12.2.4 Memory Forecasting Tool Failed
The database dump process will automatically invoke the memory forecasting tool. If the tool fails, the following error messages and a minor system alarm are output:

Response:
   DBretrochk() ABORTED: MEMORY FORECASTING FOR 5E162 FAILED
   IF THIS DATABASE DUMP IS NOT FOR TRANSITIONING TO NEXT RELEASE,
   THE WARNING MESSAGES COULD BE IGNORED
   DB TRANSITION FUNCTION DBretrochk() FAILED
   PLEASE SEEK TECHNICAL ASSISTANCE
If these messages are output, perform the following steps:

1. On MCC page 114, ensure that no SMs are in an off-normal state in which the box of the SM is red backlit. If any SMs are in the isolation or RC backout state, resolve that problem first and then re-enter the database dump command.

2. If all SMs are in the normal state, manually invoke the memory forecasting tool by entering message:

   MSG OP:MEMSIZE,TORELEASE="5E162";
Comment: The OP:MEMSIZE message could take up to 15 minutes to get the results printed on ROP.

Response:

```
OP MEMSIZE PAGE x OF y

BASE & CONTROL: xxxx
FROM: xxx TO yyy
PROC TYPE LTG SABM MEG KILO MEG % MEMORY
NO CONFIG MEM ODD TOTAL EQUIP NEEDED (MIN)

xxx xxx xxx xxx xxx xxx xxx xxx xxx

OP MEMSIZE PAGE x OF y

BASE & CONTROL: xxxx
FROM: xxx TO yyy
PROC CORE TN56 TN2012 TN1374TN1376 TN1661TN1685 TN1806 TOTAL
NO BD 2MEG 4MEG 4MEG 8MEG 16MEG 32MEG 64MEG 128MEG

xxx xxx xxx xxx xxx xxx xxx xxx xxx
```

3. If the memory forecasting tool is successful, return to the procedures and retry the database dump.

4. If the memory forecasting tool failed or the second attempt of the database dump aborted for the same reason, escalate to your next level of support.

6.5.12.2.5 Memory Shortage Detected In Database Dump

If a memory shortage is detected in the database dump, the following error messages and a major system alarm are output.

Response:

```
DBretrochk() ABORTED: MEMORY FORECASTING TOOL INDICATES MEMORY SHORTAGE FOR TRANSITIONING TO 5E162
WARNING! WARNING! WARNING!
MEMORY SHORTAGE IN TRANSITION HAS BEEN DETECTED
IF THIS DATABASE DUMP IS NOT FOR TRANSITIONING TO NEXT RELEASE, THE WARNING MESSAGES COULD BE IGNORED
DB TRANSITION FUNCTION DBretrochk() FAILED
PLEASE SEEK TECHNICAL ASSISTANCE
```

These error messages will not abort the database dump process. However, additional memory boards must be grown into switch before the database dump.
6.5.12.2.6 File System Overflow

The COPY:ODD:TAPE process has been enhanced to write the database tape in LDFT format. This reduces the tape writing time by 50 percent for an average size office. When the LDFT database tapes are generated, the ECD database files are copied to the ODD partition first. This may cause the following file system overflow warning message to be printed on the ROP.

Response:    REPT FILESYS WARNING OVERFLOW /no5odd/cpdata

This warning message should be ignored. The file system overflow in the ODD partition is only temporary. After the database tapes have been written, the temporary files will be removed.

6.5.12.2.7 COPY:ODD:TAPE Problems

If problems are encountered during the COPY:ODD:TAPE process, refer to Section 6.5.13.

6.5.12.3 Starting CORC/RC Double-Logging

6.5.12.3.1 Memory Forecasting Tool Failed

The CORC/RC double-logging is started by entering a special ODD backup command (BKUP:ODD,ODDEVOL,TOGENERIC=151). The ODD backup process has been enhanced to automatically invoke the memory forecasting tool. If the tool fails, the following error messages and a major system alarm are output.

Response:    DBretrochk() ABORTED: MEMORY FORECASTING FOR 5E162 FAILED

    IF THIS DATABASE DUMP IS NOT FOR TRANSITIONING TO NEXT RELEASE,
    THE WARNING MESSAGES COULD BE IGNORED
    DB TRANSITION FUNCTION DBretrochk() FAILED
    PLEASE SEEK TECHNICAL ASSISTANCE

These error messages do not abort the ODD backup. The ODD backup functionality is not affected by the memory forecasting result. If these messages are output, perform the following steps.

1. On MCC page 114, ensure that no SM is in an off-normal state in which the box of the SM is red backlit. If any SMs are in the isolation or RC backout state, the ODD backup process will abort. Resolve the problem and then re-enter the ODD backup command.

2. If all SMs are in the normal state, manually invoke the memory forecasting tool, enter message:

    MSG OP:MEMSIZE,TORELEASE="5E162";

    Comment: The OP:MEMSIZE message could take up to 15 minutes to get the results printed on ROP.

Response:
3. If the memory forecasting tool completes successfully, continue the database dump process after the ODD backup has completed.

4. If the memory forecasting tool fails, escalate to your next level of technical support.

6.5.12.3.2 Memory Shortage Detected

If a memory shortage has been detected in the ODD backup when starting double-logging, the following error messages and a major system alarm are output.

Response:

```
DBretr chk() ABORTED: MEMORY FORECASTING TOOL INDICATES MEMORY SHORTAGE FOR TRANSITIONING TO 5E162
WARNING! WARNING! WARNING!
MEMORY SHORTAGE IN TRANSITION HAS BEEN DETECTED
SUFFICIENT MEMORY BOARDS MUST BE GROWN INTO SWITCH BEFORE FINAL DUMP
GROW ADDITIONAL MEMORY, THEN EXECUTE
OP:MEMSIZE,TORELEASE="5E162" TO VERIFY FOR SUFFICIENT MEMORY
DB TRANSITION FUNCTION DBretr chk() FAILED
PLEASE SEEK TECHNICAL ASSISTANCE
```

These error messages will not abort the ODD backup process. Grow additional memory boards and then rerun the memory forecasting tool manually. See Section 2.3.2.2.3. Sufficient memory must be grown into the switch before the database dump or the database dump process will fail.
6.5.12.4 Database Dump Troubles

6.5.12.4.1 ODD Backup In Progress

To prevent inconsistent data from being dumped to the database dump tape, the database dump process has been enhanced to ensure the ODD backup process is not running. If the ODD backup process is in progress, the following error messages and a major system alarm are output.

Response:

```
DBretrochk() ABORTED: ODD BACKUP IS RUNNING
DATABASE DUMP SHOULD NOT BE PERFORMED WHILE ODD BACKUP IS RUNNING
DB TRANSITION FUNCTION DBretrochk() FAILED
PLEASE SEEK TECHNICAL ASSISTANCE
```

To recover from this error, wait until the ODD backup process has completed, then enter the database dump command again.

6.5.12.4.2 ODD Growth in Progress

To prevent inconsistent data from being dumped to the database dump tape, the database dump process has been enhanced to ensure the ODD growth process is not running. If the ODD growth process is in progress, the following error messages and a major system alarm are output.

Response:

```
DBretrochk() ABORTED: ODD GROWTH IS RUNNING
DATABASE DUMP SHOULD NOT BE PERFORMED WHILE ODD GROWTH IS RUNNING
DB TRANSITION FUNCTION DBretrochk() FAILED
PLEASE SEEK TECHNICAL ASSISTANCE
```

The ODD growth process should not run during the database dump period. If the ODD growth process is running, wait until the ODD growth process has completed, then enter the database dump command again.

6.5.12.4.3 Double-Logging Not Started

The database dump process has been enhanced to ensure that CORC/RC double-logging has been started. If the double-logging data delivery key is not set when the database dump is performed, following error messages and a major system alarm are output.

Response:

```
DBretrochk() ABORTED: DOUBLE LOGGING HAS NOT BEEN STARTED
"COPY:ODD:TAPE,ALL" IS RESERVED FOR DATABASE DUMP USE ONLY
PLEASE USE "COPY:ODD:TAPE,ALL,PRELIM" FOR PRELIMINARY DUMP
```
DOUBLE LOGGING MUST BE STARTED BEFORE TAKING FINAL DATABASE DUMP,
EXECUTE "BKUP:ODD,ODDEVOL,TOGENERIC=xx" TO START DOUBLE LOGGING

DB TRANSITION FUNCTION DBretrochk() FAILED
PLEASE SEEK TECHNICAL ASSISTANCE

Enter the following message to start CORC/RC double-logging:
MSG BKUP:ODD,ODDEVOL,TOGENERIC=121;
When the ODD backup has completed, retry the database dump.

6.5.12.4.4 Final Database Dump Previously Done
If the switch has already performed the database dump, the following error messages and a major system alarm are output.

Response:
DBretrochk() ABORTED: FINAL DATABASE DUMP HAS BEEN DONE ALREADY
DB TRANSITION FUNCTION DBretrochk() FAILED
PLEASE SEEK TECHNICAL ASSISTANCE

If the database dump has been performed, no further actions are required. This check is to prevent redundant database tapes from being shipped to Lucent Technologies. Check with office personnel to ensure that the database dump was made and mailed to Lucent Technologies. If necessary, escalate to your next level of support.

6.5.12.4.5 Memory Shortage Detected in Final Dump
If a memory shortage has been detected in the database dump, the following error messages and a major alarm are output. The database dump process will also abort.

Response:
DBretrochk() ABORTED: MEMORY FORECASTING TOOL INDICATES MEMORY SHORTAGE FOR TRANSITION
WARNING! WARNING! WARNING!
MEMORY SHORTAGE IN TRANSITION HAS BEEN DETECTED
SUFFICIENT MEMORY BOARDS MUST BE GROWN INTO SWITCH BEFORE RETRYING FINAL DUMP
GROW ADDITIONAL MEMORY, EXECUTE
OP:MEMSIZE,TORELEASE="5E162" TO VERIFY FOR SUFFICIENT MEMORY THEN RETRY FINAL DUMP
DB TRANSITION FUNCTION DBretrochk() FAILED
PLEASE SEEK TECHNICAL ASSISTANCE
To recover from this error, perform the following steps:

1. Grow the required memory boards into the switch and manually invoke the memory forecasting tool (see Section 2.3.2.2.3).
2. Retry the database dump.
3. If the database dump fails again, escalate to your next level technical support.

6.5.12.4.6 File System Overflow
See Section 6.5.12.2.6.

6.5.12.4.7 COPY:ODD:TAPE Problems
If problems are encountered during the COPY:ODD:TAPE process, refer to Section 6.5.13.

6.5.12.4.8 ODD Backup Inhibited

6.5.12.4.8.1 Overview
To avoid inconsistent data being dumped while the database dump process is running, once the initial ODD backup has completed, no subsequent ODD backup is allowed until two sets of database dump tapes have been made.

6.5.12.4.8.2 Before First Set Of Tapes
If a scheduled or a manual ODD backup request is entered before the first set of database dump tapes has completed, a "NG" response is output following the input command. The following error messages and a major system alarm are also output.

Response:
```
DBretrochk() ABORTED: FINAL DATABASE DUMP HAS NOT BEEN COMPLETED
SUBSEQUENT ODD BACKUP IS NOT ALLOWED IF FINAL DUMP IS NOT DONE
DB TRANSITION FUNCTION DBretrochk() FAILED
PLEASE SEEK TECHNICAL ASSISTANCE
```

The ODD backup request is rejected. No actions are required to correct the situation. The ODD backup is inhibited until the database dump has completed.

6.5.12.4.8.3 Before Second Set Of Tapes
If a scheduled or a manual ODD backup request is entered before the second set of final database dump tapes has completed, a "NG" response is output following the input command. The following error messages and a major system alarm are also output.

Response:
```
DBretrochk() ABORTED: FINAL DATABASE DUMP HAS NOT BEEN COMPLETED
SUBSEQUENT ODD BACKUP IS NOT ALLOWED IF FINAL DUMP IS NOT DONE
WARNING! WARNING! WARNING!
THE SECOND SET OF DATABASE DUMP TAPES IS REQUIRED FOR FINAL DUMP
EXECUTE "COPY:ODD:TAPE,ALL" TO OBTAIN THE DATABASE DUMP TAPES
DB TRANSITION FUNCTION DBretrochk() FAILED
PLEASE SEEK TECHNICAL ASSISTANCE
```
Follow the instructions output on the ROP to write the second set of tapes. The ODD backup is inhibited until the database dump is complete.

6.5.13 COPY:ODD:TAPE,ALL TROUBLES

The following procedures should be used if problems develop during the COPY:ODD:TAPE,ALL procedure. The following procedures will produce one or more ODD tapes and one ECD tape. If problems are encountered while using the following procedure, seek technical assistance.

1. Ensure that the tape is correctly mounted, that the tape drive is on line, and that it is write enabled.

2. Verify that enough free blocks and free i-nodes exist in the /updtmp file system, enter message:

   MSG OP:STATUS:FREEDISK, FN="/updtmp";

   Response: OP STATUS FREEDISK COMPLETED /updtmp (/dev/updtmp):
   xxxx blocks xxx i-nodes

   Comment: If less than 10,000 blocks and 25 i-nodes are available, it may be necessary to clear files from the /UPDTMP file system. Do not remove any files without technical support.

3. Enter message:

   MSG CLR:FILESYS:FILE, FN="/updtmp/debugerr"

   Note: This message clears log files associated with the COPY:ODD:TAPE command.

4. To write ODD files to tape, enter message:

   MSG COPY:ODD:TAPE[:TU=A]

   Where: A = tape drive (0 or 1). Tape drive 0 is the default.

   Comment: The COPY:ODD:TAPE message could take up to 15 minutes (or longer) before the mounted tape starts to move and tape writing begins. Tape writing begins at Step P of the ODD tape writing process.

   Record PID ______________________________

   Response: COPY ODD TAPE BEGINNING: PROCESS PID = xxxxxxxx
   COPY ODD TAPE 0 STEP Z COMPLETED - EXECUTING STEPS AP
   COPY ODD TAPE x STEP A COMPLETED
   COPY ODD TAPE x CONTINUING AT STEP P (every 5 minutes)
   ...
   COPY ODD TAPE x STEP P COMPLETED COPY ODD TAPE: RMV
   TAPE n AND USE ROP LABEL
   COPY ODD TAPE LABEL
   (A tape label is printed on the ROP.)
   COPY TAPE x COMPLETED MOUNT TAPE y AND CONTINUE
   or COPY ODD TAPE COMPLETED

5. After tape rewinds, unmount ODD tape and remove write enable ring. Remove the printed tape label from the ROP output and affix it to the ODD tape.
6. If the **COPY TAPE x COMPLETED MOUNT TAPE y AND CONTINUE** message was output, mount a new tape that is write enabled, and continue the ODD dump by entering message:

**MSG COPY:ODD:TAPE=[A]:CONTINUE;**

Where: \( A \) = tape number (that is, 2, 3, etc.)

Response: Same as for COPY ODD TAPE in Step 2.

**Note:** The tape drive (0 or 1) that was used to write the first tape must be used to write the remaining tapes.

7. When **COPY ODD TAPE COMPLETED** is output, record time and date in appropriate row of the Database Dump Worksheet (Table 9-5). Continue with the procedures to dump the ECD database to tape.

8. At tape drive, mount a tape that is enabled.

9. To write ECD to tape, enter message:

**MSG COPY:ECD:TAPE[:TU=A];**

Where: \( A \) = tape drive (0 or 1). Tape drive 0 is the default.

Comment: The COPY:ECD:TAPE message could take up to 45 minutes (or longer) before the mounted tape starts to move and tape writing begins. Tape writing begins at Step C of the ECD tape writing process.

Record PID ______________________________.

Response: 

**COPY ECD TAPE BEGINNING: PROCESS PID = xxxxxxx**

**COPY ECD TAPE 0 STEP Z COMPLETED - EXECUTING STEPS ABC**

**COPY ECD TAPE 0 CONTINUING AT STEP B (every 5 minutes)**

**COPY ECD TAPE 0 CONTINUING AT STEP C (every 5 minutes)**

**COPY ECD TAPE: RMV TAPE x AND USE ROP LABEL**

**COPY ECD TAPE LABEL**

*(A tape label is printed on the ROP.)*

**COPY ECD TAPE 0 COMPLETED**

**COPY ECD TAPE A COMPLETED**

10. After the tape rewinds, unmount the ECD tape and remove the write-enable. Remove the printed tape label from the ROP output and affix it to the ECD tape.

11. After the tape has been written, record time and date in appropriate row of Database Dump Worksheet (Table 9-5).

### 6.5.14 STOPPING DATABASE TAPE WRITING PROCESS

If either the ODD or ECD tape writing process needs to be stopped for any reason, enter message:

**MSG STOP:EXC:USER,PID=a;**

Where: \( a \) = PID recorder earlier.
Response: STOP EXC USER COMPLETED
COPY ECD TAPE n STOPPED WITH ERROR CODE XXX AT STEP Z

6.5.15 TRUNK STATUS MAPPING ERRORS

6.5.15.1 Overview
This section contains the definitions and recovery actions for errors that can occur during the execution of Trunk Status Mapping (TSM). See Table 6-2.

Table 6-2 — TSM Error Code Definitions

<table>
<thead>
<tr>
<th>ERROR CODE</th>
<th>GENERAL DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000 to 0099</td>
<td>General start-up problems</td>
</tr>
<tr>
<td>0100 to 0199</td>
<td>Port connection failures</td>
</tr>
<tr>
<td>0200 to 0299</td>
<td>Failures encountered while opening disk files</td>
</tr>
<tr>
<td>0300 to 0399</td>
<td>Failures encountered when sending OSDS messages</td>
</tr>
<tr>
<td>0400 to 0499</td>
<td>Failures encountered while waiting for OSDS messages</td>
</tr>
<tr>
<td>0500 to 0599</td>
<td>Time-out failures</td>
</tr>
<tr>
<td>0600 to 0699</td>
<td>Op list errors</td>
</tr>
<tr>
<td>0700 to 0799</td>
<td>Failures encountered writing disk files</td>
</tr>
<tr>
<td>0800 to 0899</td>
<td>Failures encountered when flushing file buffers to disk</td>
</tr>
<tr>
<td>0900 to 0999</td>
<td>Failures encountered when reading from disk files</td>
</tr>
<tr>
<td>1000 to 1099</td>
<td>File integrity failures</td>
</tr>
<tr>
<td>1100 to 1199</td>
<td>Failures encountered while moving file pointers within disk files</td>
</tr>
<tr>
<td>1200 to 1299</td>
<td>Failures encountered when allocating dynamic memory</td>
</tr>
<tr>
<td>1300 to 1399</td>
<td>Not currently used</td>
</tr>
<tr>
<td>1400 to 1499</td>
<td>Internal errors</td>
</tr>
</tbody>
</table>

6.5.15.2 Error 0010 - No Arguments Passed To TSM Process
This error code should not be encountered during normal execution of TSM. If executing TSM with either the commands available on MCC page 1984 or the UPD:GEN,TSM input message, escalate to your next level of support.

6.5.15.3 Error 0020 - First Argument Passed To TSM Is Bad
This error code should not be encountered during normal execution of TSM. If executing TSM with either the commands available on MCC page 1984 or the UPD:GEN,TSM input message, escalate to your next level of support.

6.5.15.4 Error 0030 - Second Argument Passed To TSM Is Bad
This error code should not be encountered during normal execution of TSM. If executing TSM with either the commands available on MCC page 1984 or the UPD:GEN,TSM input message, escalate to your next level of support.

6.5.15.5 Error 0040 - Too Many Arguments Passed To TSM
This error code should not be encountered during normal execution of TSM. If executing TSM with either the commands available on MCC page 1984 or the UPD:GEN,TSM input message, escalate to your next level of support.
6.5.15.6 Error 0100 - TSM Port Up - TSM Is Already Running
Another TSM session may already be in progress. Wait for it to finish, then re-execute the command. If it fails again with the same error, escalate to your next level of support.

6.5.15.7 Error 0110 - Cannot Connect To TSM Port (PT_GRTSM)
The TSM process cannot attach to the TSM port.
Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.8 Error 0200 - port_oos.old Exists
The /updtmp/tsm/port_oos.old file already exists.
1. Ensure the correct TSM command (OLD,NEW,RMV) is being executed before proceeding.
2. *The following command will overwrite the existing port_oos.old file.*
   To bypass this error, enter the following input message:
   MSG UPD:GEN,TSM,OLD,UCL;

6.5.15.9 Error 0205 - port_oos.new Exists
The /updtmp/tsm/port_oos.new file already exists.
1. Ensure the correct TSM command (OLD,NEW,RMV) is being executed before proceeding.
2. *The following command will overwrite the existing port_oos.new file.*
   To bypass this error, enter the following input message:
   MSG UPD:GEN,TSM,NEW,UCL;

6.5.15.10 Error 0210 - Cannot Open TSM Logfile For Writing
The TSM process cannot open the /etc/log/tsmlog file.
1. To check available file space in /etc, enter message:
   MSG OP:STATUS,FREEDISK,FN="/etc";
2. If there is not at least 50 blocks of file space and 10 i-nodes remaining, escalate to your next level of support.
3. To check existence of the tsmlog file, enter message:
   MSG OP:STATUS,LISTDIR,FN="/etc/log";
4. If the tsmlog exists, remove it using the following message:
   MSG CLR:FILESYS,FILE,FN="/etc/log/tsmlog";
5. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.11 Error 0211 - Cannot Open port_oos.old For Writing
The TSM process cannot open the /updtmp/tsm/port_oos.old file.
1. To check available file space in /etc, enter message:
2. If there is not at least 1000 blocks of file space and 10 i-nodes remaining, escalate to your next level of support.

3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.12 Error 0220 - Cannot Open TSM Logfile For Writing
The TSM process cannot open the /etc/log/tsmlog file.

1. To check available file space in /etc, enter message:
   MSG OP:STATUS,FREEDISK,FN="/etc";

2. If there is not at least 50 blocks of file space and 10 i-nodes remaining, escalate to your next level of support.

3. To check existence of the tsmlog file, enter message:
   MSG OP:STATUS,LISTDIR,FN="/etc/log";

4. If the tsmlog exists, remove it using the following message:
   MSG CLR:FILESYS,FILE,FN="/etc/log/tsmlog";

5. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.13 Error 0221 - Cannot Open port_oos.old For Reading
The TSM process cannot open the /updtmp/tsm/port_oos.old file for reading.

1. To check for the existence of the file, enter message:
   MSG OP:STATUS,LISTDIR,FN="/updtmp/tsm";

2. If the file is present, re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

3. If on the new side of the transition, escalate to your next level of support.
   If on the old side, ensure that the correct TSM command (OLD, NEW, RMV) is being executed.

6.5.15.14 Error 0222 - Cannot Open port_oos.new For Writing
The TSM process cannot open the /updtmp/tsm/port_oos.new file.

1. To check available file space in /updtmp, enter message:
   MSG OP:STATUS,FREEDISK,FN="/updtmp";

2. If there is not at least 1000 blocks of file space and 10 i-nodes remaining, escalate to your next level of support.

3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.15 Error 0223 - Cannot Open port_oos.cadn For Writing
The TSM process cannot open the /updtmp/tsm/port_oos.cadn file.

1. To check available file space in /updtmp, enter message:
   MSG OP:STATUS,FREEDISK,FN="/updtmp";
2. If there is not at least 1000 blocks of space and 10 i-nodes, escalate to your next level of support.

3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.16 Error 0224 - Cannot Open port_oos.diff For Writing
The TSM process cannot open the /updtmp/tsm/port_oos.diff file.
1. To check available file space in /updtmp, enter message:
   
   MSG OP:STATUS,FREEDISK,FN="/updtmp";

2. If there is not at least 1000 blocks of file space and 10 i-nodes, escalate to your next level of support.

3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.17 Error 0225 - Cannot Open RCtrunk.rpt For Reading
The TSM process cannot open the /rclog/RCtrunk.rpt file.
1. To list files in /rclog, enter message:
   
   MSG OP:STATUS:LISTDIR,FN="/rclog";

2. If the /rclog/RCtrunk.rpt file is present, ensure that it has read permissions on the file.

3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.18 Error 0227 - Cannot Open cadn.report For Writing
The TSM process cannot open the /updtmp/tsm/cadn.report file.
1. To check available file space in /updtmp, enter message:
   
   MSG OP:STATUS,FREEDISK,FN="/updtmp";

2. If there is not at least 1000 blocks of file space and 10 i-nodes, escalate to your next level of support.

3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.19 Error 0228 - Cannot Open oos.report For Writing
The TSM process cannot open the /updtmp/tsm/oos.report file.
1. To check available file space in /updtmp, enter message:
   
   MSG OP:STATUS,FREEDISK,FN="/updtmp";

2. If there is not at least 1000 blocks of file space and 10 i-nodes, escalate to your next level of support.

3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.
6.5.15.20  Error 0230 - Cannot Open TSM Logfile For Writing
The TSM process cannot open the /etc/log/tsmlog file.
1. To check available file space in /etc, enter message:
   MSG OP:STATUS,FREEDISK,FN="/etc";
2. If there is not at least 50 blocks of file space and 10 i-nodes remaining, escalate to your next level of support.
3. To check existence of the tsmlog file, enter message:
   MSG OP:STATUS,LISTDIR,FN="/etc/log";
4. If the tsmlog exists, remove it using the following message:
   MSG CLR:FILESYS,FILE,FN="/etc/log/tsmlog";
5. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.21  Error 0231 - Cannot Open port_oos.diff For Reading
The TSM process cannot open the /updtmp/tsm/port_oos.diff file.
Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.22  Error 0232 - Cannot Open tsmrmv.list For Writing
The TSM process cannot open the /updtmp/tsm/tsmrmv.list file.
1. To check available file space in /updtmp, enter message:
   MSG OP:STATUS,FREEDISK,FN="/updtmp";
2. If there is not at least 1000 blocks of file space and 10 i-nodes, escalate to your next level of support.
3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.23  Error 0233 - Cannot Open tsmrmv.scr For Writing
The TSM process cannot open the /updtmp/tsm/tsmrmv.scr file.
1. To check available file space in /updtmp, enter message:
   MSG OP:STATUS,FREEDISK,FN="/updtmp";
2. If there is not at least 1000 blocks of file space and 10 i-nodes, escalate to your next level of support.
3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.24  Error 0300 - Cannot Get PID For UNIX Operating System - OSDS Communication Port
Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.25  Error 0400 - Incorrect Message Type Sent Back By OSDS
An incorrect message was sent to the TSM process.
Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.26 Error 0401 - OSDS Open Port Request Not Successful
Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.27 Error 0402 - Unexpected OSDS Message Received During OPLIST Run
An incorrect message was sent to the TSM process.
1. Dump the log file to the ROP:
   MSG DUMP:FILE,ALL,FN="/etc/log/tsmlog";
2. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.28 Error 0500 - Time-Out During OPLIST Run
Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.29 Error 0600 - OP LIST Already In Progress
An OP:LIST process is already in progress.
1. Wait for the OP LIST run to finish then re-execute the TSM command.
2. If it fails again with the same error and an OP LIST is not in progress, escalate to your next level of support.

6.5.15.30 Error 0610 - OP LIST Error
An OP:LIST error was encountered during the TSM run.
Re-execute the TSM command. If it fails again with the same error, escalate to your next level of support.

6.5.15.31 Error 0620 - OP LIST Stopped - Manual Request
The TSM-generated OPLIST run was stopped by a manual STP:LIST request.
Re-execute the TSM command.

6.5.15.32 Error 0630 - OP LIST Stopped - Automatic Request
The TSM-generated OPLIST run was stopped by a system request.
1. Ensure no other OPLIST processes are running.
2. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.33 Error 0700 - Cannot Write Header To port_oos.{old|new} File
1. To ensure enough file space exists in /updtmp, enter message:
   MSG OP:STATUS,FREEDISK,FN="/updtmp";
2. If there is not at least 500 blocks of file space and 10 i-nodes remaining in /updtmp, escalate to your next level of support.
3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.
6.5.15.34 Error 0701 - Cannot Write Header To port_oos.{old|new} File
1. To ensure enough file space exists in /updtmp, enter message:
   MSG OP:STATUS,FREEDISK,FN="/updtmp";
2. If there is not at least 500 blocks of file space and 10 i-nodes remaining in /updtmp, escalate to your next level of support.
3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.35 Error 0710 - Cannot Write Record To port_oos.{old|new} File
1. To ensure enough file space exists in /updtmp, enter message:
   MSG OP:STATUS,FREEDISK,FN="/updtmp";
2. If there is not at least 500 blocks of file space and 10 i-nodes remaining in /updtmp, escalate to your next level of support.
3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.36 Error 0711 - Cannot Write Record To port_oos.new File
1. To ensure enough file space exists in /updtmp, enter message:
   MSG OP:STATUS,FREEDISK,FN="/updtmp";
2. If there is not at least 500 blocks of file space and 10 i-nodes remaining in /updtmp, escalate to your next level of support.
3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.37 Error 0712 - Cannot Write Record To port_oos.{old|new} File
1. To ensure enough file space exists in /updtmp, enter message:
   MSG OP:STATUS,FREEDISK,FN="/updtmp";
2. If there is not at least 500 blocks of file space and 10 i-nodes remaining in /updtmp, escalate to your next level of support.
3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.38 Error 0720 - Cannot Write Record To port_oos.{diff|cadn} File
1. To ensure enough file space exists in /updtmp, enter message:
   MSG OP:STATUS,FREEDISK,FN="/updtmp";
2. If there is not at least 500 blocks of file space and 10 i-nodes remaining in /updtmp, escalate to your next level of support.
3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.39 Error 0721 - Cannot Write Record To port_oos.{diff|cadn} File
1. To ensure enough file space exists in /updtmp, enter message:
   MSG OP:STATUS,FREEDISK,FN="/updtmp";
2. If there is not at least 500 blocks of file space and 10 i-nodes remaining in 
/updtmp, escalate to your next level of support.

3. Re-execute the TSM command. If it fails again with the same error code, 
escalate to your next level of support.

6.5.15.40 Error 0800 - fflush() Failed
1. To ensure enough file space exists in /updtmp, enter message:
   MSG OP:STATUS,FREEDISK,FN="/updtmp";
2. If there is not at least 500 blocks of file space and 10 i-nodes remaining in 
/updtmp, escalate to your next level of support.
3. Re-execute the TSM command. If it fails again with the same error code, 
escalate to your next level of support.

6.5.15.41 Error 0810 - fflush() Failed
1. To ensure enough file space exists in /updtmp, enter message:
   MSG OP:STATUS,FREEDISK,FN="/updtmp";
2. If there is not at least 500 blocks of file space and 10 i-nodes remaining in 
/updtmp, escalate to your next level of support.
3. Re-execute the TSM command. If it fails again with the same error code, 
escalate to your next level of support.

6.5.15.42 Error 0820 - fflush() Failed
1. To ensure enough file space exists in /updtmp, enter message:
   MSG OP:STATUS,FREEDISK,FN="/updtmp";
2. If there is not at least 500 blocks of file space and 10 i-nodes remaining in 
/updtmp, escalate to your next level of support.
3. Re-execute the TSM command. If it fails again with the same error code, 
escalate to your next level of support.

6.5.15.43 Error 0830 - fflush() Failed
See TSM Error 0800 (Section 6.5.15.40) to recover from this error.

6.5.15.44 Error 0900 - Cannot Read Header From port_oos.old File
1. To list files in /updtmp/tsx, enter message:
   MSG OP:STATUS,LISTDIR,FN="/updtmp/tsx";
2. Ensure the port_oos.old file exists and has read permissions set properly.
3. Re-execute the TSM command. If it fails again with the same error code, 
escalate to your next level of support.

6.5.15.45 Error 0901 - Cannot Read Header From port_oos.new File
1. To list files in /updtmp/tsx, enter message:
   MSG OP:STATUS,LISTDIR,FN="/updtmp/tsx";
2. Ensure the port_oos.new file exists and has read permissions set properly.
3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.46 Error 0902 - Cannot Read Header From port_oos.diff File
1. To list files in /updtmp/tsm, enter message:
   
   MSG OP:STATUS,LISTDIR,FN="/updtmp/tsm";
2. Ensure the port_oos.diff file exists and has read permissions set properly.
3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.47 Error 0903 - Cannot Read Header From port_oos.cadn File
1. To list files in /updtmp/tsm, enter message:
   
   MSG OP:STATUS,LISTDIR,FN="/updtmp/tsm";
2. Ensure the port_oos.cadn file exists and has read permissions set properly.
3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.48 Error 0910 - Cannot Read Record From port_oos.old File
1. To list files in /updtmp/tsm, enter message:
   
   MSG OP:STATUS,LISTDIR,FN="/updtmp/tsm";
2. Ensure the port_oos.old file exists and has read permissions set properly.
3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.49 Error 0911 - Cannot Read Record From port_oos.new File
1. To list files in /updtmp/tsm, enter message:
   
   MSG OP:STATUS,LISTDIR,FN="/updtmp/tsm";
2. Ensure the port_oos.new file exists and has read permissions set properly.
3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.50 Error 0912 - Cannot Read Record From port_oos.diff File
1. To list files in /updtmp/tsm, enter message:
   
   MSG OP:STATUS,LISTDIR,FN="/updtmp/tsm";
2. Ensure the port_oos.diff file exists and has read permissions set properly.
3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.51 Error 0913 - Cannot Read Record From port_oos.cadn File
1. To list files in /updtmp/tsm, enter message:
   
   MSG OP:STATUS,LISTDIR,FN="/updtmp/tsm";
2. Ensure the port_oos.cadn file exists and has read permissions set properly.
3. Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.52 Error 1000 - Corrupt Header Found In port_oos.old File

A bad header was found in the port_oos.old file.

1. If running tsmold, re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

2. If running tsmnew, escalate to your next level of support.

6.5.15.53 Error 1001 - Corrupt Header Found In port_oos.new File

A bad header was found in the port_oos.new file.

Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.54 Error 1002 - Corrupt Header Found In port_oos.diff File

A bad header was found in the port_oos.diff file.

Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.55 Error 1003 - Corrupt Header Found In port_oos.cadn File

A bad header was found in the port_oos.cadn file.

Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.56 Error 1010 - Corrupt Record Found In port_oos.old File

A bad record was found in the port_oos.old file.

1. If running tsmold, re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

2. If running tsmnew, escalate to your next level of support.

6.5.15.57 Error 1011 - Corrupt Record Found In port_oos.new File

A bad record was found in the port_oos.new file.

Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.58 Error 1012 - Corrupt Record Found In port_oos.diff File

A bad record was found in the port_oos.diff file.

Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.59 Error 1013 - Corrupt Record Found In port_oos.cadn File

A bad record was found in the port_oos.cadn file.

Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.60 Error 1100 - Cannot fseek() To End of port_oos.new File

Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.
6.5.15.61 Error 1101 - fseek() Failed During GRqsort()
Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.62 Error 1200 - Cannot Allocate Enough Memory For qsort()
Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.63 Error 1400 - Bad GRTSMTYPE Encountered In main()
Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.64 Error 1405 - Bad GRTSMTYPE Passed To GRopenfiles()
Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.65 Error 1410 - Incorrect Return Received From GRqs_comp()
Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.66 Error 1415 - Bad File Pointer Encountered When Trying To Read Header
Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.67 Error 1420 - Bad File Pointer Encountered When Trying To Check Header Sanity
Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.68 Error 1425 - Bad File Pointer Encountered When Trying To Read Record
Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.69 Error 1430 - Bad File Pointer Encountered When Trying To Check Record Sanity
Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.5.15.70 Error 1450 - TSM Stopped By A Signal Call
Re-execute the TSM command. If it fails again with the same error code, escalate to your next level of support.

6.6 RECOVERY ACTIONS

6.6.1 R-1
Dump the Volume Table Of Contents (VTOC) on MHD by entering message:

MSG DUMP:MHD=X:VTOC;

Response: VTOC dumped
Where: X = MHD number.
6.6.2 R-2
Perform Step 1 or 2:
   1. Wait for the APPLHOOK or SUPR process to stop.
   2. Stop active APPLHOOK or SUPR processes as follows:
      a. Enter message:
         MSG OP:STATUS,PROCESS,ALL;
      b. Scan the output for any active APPLHOOK or SUPR process and record the process ID.
      c. Enter message:
         MSG STOP:EXC:USER,PID=xxxxx;
         Where: xxxxx = PID recorded above.

6.6.3 R-3
Not used.

6.6.4 R-4
   1. To dump the SUPR log, access MCC page 1984 and enter command:
      CMD 503
   2. If the dump of the SUPR log fails, escalate to your next level of support.
      Otherwise, continue with the next step.
   3. To resume, access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
      CMD 500

6.6.5 R-5
Verify that the input line for starting the stage (UPD:GEN:"stage") or the poke command was entered correctly.

6.6.6 R-6
   1. If reading in the tape in the Enter stage, make sure that the tape drive is on-line.
   2. Make sure the tape drive is on-line.
   3. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
      CMD 500
      For the tape drive cleaning and testing procedure, go to Section 3.9.7 and follow the procedure for the tape drive that is in the office.
   4. The following command can only be used if all MHDs are on-line. Access MCC page 123 (and MCC page 125 if more than 2 DFCs are equipped) to verify that no MHDs are off-line.
   5. To execute the Enter stage unconditionally, access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:
CMD $4XX,Y$
Where: $XX =$ the number of the UNCONDITIONAL EXECUTION

6. Access MCC page 1985, x (where $x =$ RETRO, LTG, UPDATE) and enter command:
CMD 500 The Enter stage executes unconditionally.

7. When the Enter stage completes, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:
CMD $4XX,N$
Where: $XX =$ the number of the UNCONDITIONAL EXECUTION

6.6.7 R-7
Perform Steps 1 or 2.

1. Wait for SUPR process (Enter, Proceed, Commit, Backout, Restore) to complete.

2. Access MCC page 1985, x (where $x =$ RETRO, LTG, UPDATE) and enter command:
CMD 200

OR

1. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:
CMD $4XX,Y$
Where: $XX =$ the number of the UNCONDITIONAL EXECUTION

2. Access MCC page 1985, x (where $x =$ RETRO, LTG, UPDATE) and enter command:
CMD 200
The Enter stage executes unconditionally.

3. When the Enter stage completes, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:
CMD $4XX,N$
Where: $XX =$ the number of the UNCONDITIONAL EXECUTION

Caution: If STOP is executed unconditionally, the SUPR process will be terminated by a more extreme method than a kill. Some system resources in use by the process may not be released automatically.

6.6.8 R-8
Perform the appropriate step (1 or 2 or 3) as follows:

- If this recovery action was reached during the first attempt at the Begin stage during the transition, perform Step 1.
- If performing the Switchfwd, Switchbck, SMswitch, or SMbackout, perform Step 2.
• For all other cases, perform Step 3.

1. Perform the following:
   a. To backout of Begin, enter command on MCC page 1985,x (where x = RETRO, LTG, UPDATE):
      
      CMD 600
   b. To resume Begin, enter command on MCC page 1985,x (where x = RETRO, LTG, UPDATE):
      
      CMD 500

2. Perform the following:
   a. Enter message:
      
      MSG UPD:GEN:BEGIN,xxxxx,UCL;
      
      Where: xxxxx = RETRO, LTG, UPDATE.
   b. If above message fails, enter command:
      
      CMD UPD:GEN:END,UCL;
   c. Re-enter Step a. If it still fails, escalate to your next level of support.
   d. Re-enter appropriate command (for example, 500 poke, 600 poke, Switchfwd, Switchback, SMswitch, or SMbackout).

3. Perform the following steps as necessary.
   a. Enter message:
      
      MSG UPD:GEN:BEGIN,xxxxx,UCL;
      
      Where: xxxxx = RETRO, LTG, UPDATE.
   b. If above message fails, enter command:
      
      CMD UPD:GEN:END,UCL;
   c. Re-enter Step a. If it still fails, escalate to your next level of support.

6.6.9 R-9
1. Enter message:
   
   MSG UPD:GEN:BEGIN,xxxxx,UCL;
   
   Where: xxxxx = RETRO, LTG, UPDATE.
2. If going forward, to resume, access MCC page 1985,x (where x is RETRO, LTG, UPDATE) and enter command:
   
   CMD 500
3. If backing out, to resume, access MCC page 1985,x (where x is RETRO, LTG, UPDATE) and enter command:
   
   CMD 600

6.6.10 R-10
To end the transition cycle, enter message:

MSG UPD:GEN:END,UCL;
6.6.11 R-11

1. Using the ROP, verify that all LDFT tapes have been read by the READHDR process.

2. If all tapes have not been read, seek technical assistance.

6.6.12 R-12

This recovery action is exclusively used for SM switch forward problems. If the status of an SM does not change to MATE PUMP or FORCED, perform the following steps:

1. To allow auto pump, access MCC page 1800,x (where x = SM number) and enter command:
   
   CMD 701
   
   Response: OK

2. If the status of the SM remains GEN DIFF on MCC page 1800,x, perform an AM directed reset (to initialize and pump the SM) by entering the following commands:
   
   CMD 924,UCL
   
   Response: FI PUMP? Y/N (on MCC)
   CMD Y
   
   Response: ORD:CPI=x, CMD=RESET,UCL; PF
   
   Comment: This message may have to be repeated more than five times before the SM is completely reset.

3. If the status of the SM remains GEN DIFF, escalate to your next level of support immediately.

   Note: Do not attempt to power cycle an SM without support from technical assistance. If an SM that is in a forced simplex condition is power cycled, the SM force will be lost, and the SM will attempt to duplex.

6.6.13 R-13

1. If reading in tapes in the Enter stage, make sure the appropriate tape is mounted and that the tape drive is on-line.

2. Verify the tape header.

3. Mount the tape.

4. Access MCC page 1984 and enter command (this will output the tape header to the rop):
   
   MSG 505
   
   After executing the READ HEADER command (505 command) perform the following:

   a. A Volume Table Of Contents (VTOC) was dumped as part of the output from the READ HEADER command (505 command). Verify that the dumped VTOC matches the VTOC dumped from the disk which was performed in Recovery Action R-1 (Section 6.6.1. (Only the first tape in a tape sequence contains a VTOC.)
b. If the VTOCs do not match, the tape may be damaged, escalate to your next level of support. These two VTOCs should also match the appropriate 5E16.2 VTOC table. Use Table 9-25 to determine which table the VTOC should match.

c. If the VTOCs do match, continue with the next referenced Recovery Action in sequence to resolve the problem or escalate to your next level of support.

6.6.14 R-14
1. Remove the tape that is on the tape drive.
2. Mount the tape.
3. To continue, access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   CMD 500

6.6.15 R-15
This recovery action is not currently used.

6.6.16 R-16
1. Verify the tape header.
2. Mount the tape.
3. Access MCC page 1984 and enter command (this will output the tape header to the rop):
   MSG 505
   After executing the READ HEADER command (505 command), perform the following:
   • Compare information on magnetic tape label of the mounted tape with the information from the READ HEADER command (505 command). This information should match.
   • Verify that the "TAPE NO. IN SEQUENCE" is the correct tape that should be loaded at this point. If the wrong tape is mounted, unmount it, and mount the next tape in sequence, and continue with Step 2.
   • Verify that the "TAPE DENSITY" is the same as specified in the UPD:GEN:ENTER... message. All tapes loaded in the "Enter stage" must have the same tape density.
   • If a Volume Table Of Contents (VTOC) was dumped as part of the output from READ HEADER command (505 command), verify that the dumped VTOC matches the appropriate 5E16.2 VTOC table. Use Table 9-25 to determine which table the VTOC should match. Only the first tape in a tape sequence contains a VTOC.

4. Verify that tape drive is ON LINE.
5. Verify that the correct tape is being used.
6. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command to continue:
   CMD 500
6.6.17 R-17
1. Verify that the tape is fully rewound and at its beginning.
2. Verify that the correct tape is being used.
3. To continue, access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   CMD 500
4. If tape continues to fail, perform the following:
   a. Clean tape drive, then repeat Step 3.
   b. Switch to corresponding tape from other set or retension tape (fast-forward to end, rewind) and repeat Step 3.
   c. Diagnose tape drive, then repeat Step 3.
   d. Replace tape drive controller board and repeat Step 3.
5. If tape still fails, perform the appropriate Backout Action for this error code. All Backout Actions are located in the Backout Procedures Section 7 of this document.

6.6.18 R-18
1. Wait 30 seconds for all processes to terminate after the error message was received.
2. To continue from the error, access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   CMD 500
   OR, in the event that a backout procedure was being executed, enter the following command:
   CMD 600
3. If you are in the Enter stage, the message may instruct you to MOUNT TAPE FOR APPROPRIATE DISK AND RESUME transition.
   This message applies to the tape which failed. Ensure that the tape which did not read is mounted and the tape drive is on-line. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   CMD 500

6.6.19 R-19
The transition procedures do not allow disks to be in an Out-Of-Service (OOS) state (except MHDs 14 and 15 if equipped).
1. Restore system disks that are OOS (except MHDs 14 and 15 if equipped).
2. Wait until disk restoral(s) has completed.
3. To resume, access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   CMD 500
6.6.20 R-20
1. To stop any in-progress transition activity, access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   CMD 200

2. To restore MHDs to the old software release, access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   CMD 600
   This command takes 20 to 30 minutes to restore each MHD. If the output is a SUPR/APPLHOOK error code, refer to the SUPR/APPLHOOK errors entry point in the Table of Contents and proceed as directed.

3. Enter command:
   CMD 500
   at each pause during the backout activity until indicators on MCC page 1985,x (where x = RETRO, LTG, UPDATE) pause at the start of the Enter stage.

4. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:
   CMD 4XX,Y
   Where: XX = the number of the UNCONDITIONAL EXECUTION

5. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   CMD 500 The Enter stage executes unconditionally.

6. When the Enter stage completes, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:
   CMD 4XX,N
   Where: XX = the number of the UNCONDITIONAL EXECUTION

6.6.21 R-21
The transition process does not allow disks to be in an OOS state (except MHDs 14 and 15 if equipped).
1. Restore system disks that are OOS (except MHDs 14 and 15 if equipped).
2. Wait until disk restoral(s) has completed.
   a. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:
      CMD 4XX,Y
      Where: XX = the number of the UNCONDITIONAL EXECUTION
   b. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
      CMD 500
      The Enter stage executes unconditionally.
c. When the Enter stage completes, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:

CMD 4XX,N

Where: XX = the number of the UNCONDITIONAL EXECUTION

6.6.22 R-22
Verify that the Enter stage completed successfully. On MCC page 1985,x (where x = RETRO, LTG, UPDATE), the ENTER field is backlit upon successful completion.

6.6.23 R-23
1. Access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:

CMD 4XX,Y

Where: XX = the number of the UNCONDITIONAL EXECUTION

2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:

CMD 500

The Proceed stage executes unconditionally.

3. When the Proceed stage completes, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:

CMD 4XX,N

Where: XX = the number of the UNCONDITIONAL EXECUTION

6.6.24 R-24
1. Clean the tape drive.

2. To continue from the error, access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:

CMD 500

3. If the tape read completes successfully, continue with the transition procedures in Section 5.

4. If the tape read did not complete successfully, return to the Transition Implementation section and execute Section 5.3.5.

After executing the Tape Header Check section, perform the following:

a. Compare information on magnetic tape label of the mounted tape with the information from the Tape Header Check procedure. This information should match.

b. Verify that the "TAPE NO. IN SEQUENCE" is the correct tape that should be loaded at this point. If the wrong tape is mounted, unmount it, mount the next tape in sequence, and continue with Step 2.

c. Verify that the "TAPE DENSITY" is the same as specified in the UPD:GEN:ENTER... message. All tapes loaded in the "Enter stage" must have the same tape density.
5. If tape continues to fail, perform the following:
   a. Switch to corresponding tape from other set or retension tape (fast-forward to end, then rewind) and repeat Step 4.
   b. Diagnose tape drive and repeat Step 4.
   c. Replace tape drive controller (UN145 or UN145B) and repeat Step 4.
6. If tape still fails, perform the appropriate Backout Action for this error code.

6.6.25 R-25
1. To determine if the mop command is running, perform the following steps:
   Access MCC page 1984 and enter command:
   CMD 510
   Response:
   !!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!!
   !!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!!
   .
   . MOP IS NOT RUNNING AND THERE ARE NO OFFLINE PARTITIONS MOUNTED
   .
   . ISMOP COMPLETE
   .
   !!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!!
   !!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!!

2. To stop the mop process, access MCC page 1984 and enter command:
   CMD 609
   Response:
   UPD:GEN:APPLPROC,ARG="STOPMOP";
   UPD GEN APPLPROC EXECUTING THE FOLLOWING TRANSITION TOOL:
   /no5text/prc/mop
   [PRM_0 E800 0002 xx03 xxxx xx xx xx] (may be received several times)
   UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

3. To continue, access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   CMD 500

6.6.26 R-26
1. To determine if the mop command is running, access MCC page 1984 and enter command:
   CMD 510
Response:

!!!!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!!!!

MOP IS RUNNING: mopPID = _________________

THE FOLLOWING OFFLINE PARTITIONS ARE MOUNTED:
/tmp/ofl...

ISMOP COMPLETE

!!!!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!!!!

2. To stop the mop process, access MCC page 1984 and enter command:
   CMD 609
   Response: UPD:GEN:APPLPROC,ARG="STOPMOP";
   UPD GEN APPLPROC EXECUTING THE FOLLOWING TRANSITION TOOL:
       /no5text/prc/mop
       [PRM_0 E800 0002 xx03 xxxx xx xx xx] (may be received several times)
   UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

3. To ensure that the mop command is no longer running, access MCC page 1984 and enter command:
   CMD 510
   Response:
   UPD:GEN:APPLPROC,ARG="ISMOP";
   UPD GEN APPLPROC EXECUTING THE FOLLOWING TRANSITION TOOL:
       /prc/supr/ismop
   UPD GEN APPLPROC ISMOP REPORT

!!!!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!!!!

MOP IS NOT RUNNING

THERE ARE NO OFFLINE PARTITIONS MOUNTED
. ISMOP COMPLETE
.

!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!

UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

4. If mop is running and/or off-line partitions are mounted, escalate to your next level of support.

5. If mop was successfully stopped, access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command to continue:

   CMD 500

6.6.27 R-27

In this recovery action, the disks containing the new software release is manually restored to the old software release. If there is any question as to which MHD pair is to be duplexed, escalate to your next level of support.

1. Access MCC page 123 (or MCC page 125 if more than 2 DFCs are equipped). Verify that the odd numbered MHDs to be restored are in an Out-Of-Service (OOS) state. If any odd-numbered MHDs are Off-Line (OFL), escalate to your next level of support.

2. To restore the odd-numbered OOS MHD(s), enter command:

   CMD RST:MHD=X;

   Where: X = the number of the MHD being restored)

   Response: RST MHD x COMPLETED

   If any disk restoral failed, seek technical assistance.

3. To continue, access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:

   CMD 500

6.6.28 R-28

In this recovery action, the disks containing the old software release will be updated with the new software release.

1. Access MCC page 1984 and enter command to dump the suprlog to the ROP:

   CMD 503

   From the suprlog printed to the ROP, verify the successful completion of the Proceed stage.

2. To execute the Commit stage unconditionally, access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:

   CMD 4XX,Y

   Where: XX = the number of the UNCONDITIONAL EXECUTION
3. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:

   CMD 500

   The Commit stage executes unconditionally.

4. Perform the following steps ONLY if the previous step failed.
   a. Access MCC page 123 (or MCC page 125 if more than 2 DFCs are equipped).
   b. Verify that none of the even-numbered MHDs are Off-Line (OFL). If any even-numbered MHDs are off-line, escalate to your next level of support; otherwise, continue to restore MHDs.
   c. To restore the even-numbered Out-Of-Service (OOS) MHD(s), enter command:

      CMD RST:MHD=X;

      Where: X = the number of the MHD being restored

      Response: RST MHD x COMPLETED
   d. If the disk restore is successful and other even-numbered MHDs are OOS, repeat the previous step to restore the MHDs. If the disk restore failed, escalate to your next level of support.

5. To continue, access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:

   CMD 500

   The Commit stage executes unconditionally.

6. When the Enter stage completes, access MCC page 1989 and change the UNCONDITIONAL EXECUTION to N by entering command:

   CMD 4XX,N

   Where: XX = the number of the UNCONDITIONAL EXECUTION

7. When the even-numbered MHDs are committed to the new software release, return to the Commit stage in Section 5 and perform the steps that follow the Commit stage.

6.6.29 R-29

1. Retry the command by accessing MCC page 1985,x (resume) (where x = RETRO, LTG, UPDATE) and entering command:

   CMD 500

   OR

   CMD 600 (for Backout)

2. If the error occurs again, dump the APPLLOG file (a 504 command on MCC page 1984).

3. Analyze the error in the APPLLOG file and take corrective action.

4. If the error still occurs, escalate to your next level of support.
6.6.30 R-30

1. If one or more MHDs are already off-line, escalate to your next level of support and perform the referenced Backout Action.
2. If no MHDs are off-line, restore the MHD to an active state.
3. Once all MHDs are ACT, re-execute the Enter command using the UCL option on MCC page 1985,x (where x = RETRO, LTG, UPDATE).
   a. To execute the Enter stage, access MCC page 1989 and change the UNCONDITIONAL EXECUTION to Y by entering command:
      \[ \text{CMD} \, 4XX,Y \]
      Where: \( XX = \) the number of the UNCONDITIONAL EXECUTION
   b. On MCC page 1985,x (where x = RETRO, LTG, UPDATE), enter command:
      \[ \text{CMD} \, 500 \]
      The Enter stage executes unconditionally.
   c. When the Enter stage completes, access MCC page 1989 and change the UNCONDITIONAL EXECUTION option to N by entering command:
      \[ \text{CMD} \, 4XX,N \]
      Where: \( XX = \) the number of the UNCONDITIONAL EXECUTION

6.6.31 R-31

1. Verify that the CMPs are in the proper state (ACTIVE and GEN DIFF DACT).
2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   \[ \text{CMD} \, 500 \]
   OR
   \[ \text{CMD} \, 600 \] (for Backout)
3. If the error still occurs, escalate to your next level of support.

6.6.32 R-32

1. Verify that the CMPs are duplex (ACTIVE and STBY).
2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   \[ \text{CMD} \, 500 \]
   OR
   \[ \text{CMD} \, 600 \] (for Backout)
3. If the error still occurs, escalate to your next level of support.

6.6.33 R-33

1. Enter message:
   \[ \text{MSG} \, \text{OP:STATUS:LISTDIR,FN="/etc/log";} \]
2. Enter message:
   \[ \text{MSG} \, \text{OP:STATUS:FREEDISK,FN="/etc/log";} \]
3. Examine the ROP to find the output from the previous two commands. The /etc/log directory and /etc file system should have the following attributes:
   - The “rwx,” (r)ead, (w)rite, and e(x)ecution permissions should be allowed for both the /etc file system and the /etc/log directory.
   - Verify that both i-nodes or blocks are not equal to zero.

4. Escalate to your next level of support for further error resolution. Inform technical assistance of the checks just made and if “rwx” permissions are not allowed and/or zero i-nodes or blocks exist.

6.6.34 R-34
This recovery action is not currently used.

6.6.35 R-35
1. Verify that off-line partitions are mounted by accessing MCC page 1984 and entering command:
   CMD 510
2. If the off-line partitions are not mounted, access MCC page 1984 and enter command:
   CMD 509
3. Verify that this was successful by entering command:
   CMD 510
4. If mop is running and the proper off-line partitions are mounted, continue with the procedures.
   If mop is not running and no off-line partitions are mounted, re-execute the 509 command.
   If mop is not running and there are off-line partitions mounted, escalate to your next level of support.
   If mop is running and none or only some of the off-line partitions are mounted wait for the mount PRMs, re-execute the 510 command. From this output, if all partitions are still not present, escalate to your next level of support.
5. Access MCC page 1850 and verify that CMP 0-0 is the ACT CMP (under the CMP 0 PRIM STAT box) and CMP 1-0 is the STBY CMP (under the CMP 0 MATE STAT box).
6. If CMP0-0 is not the ACTIVE (primary) CMP, enter message:
   MSG SW:CMP=0-0
7. To off-line pump the CMP, access MCC page 1851 and enter command:
   CMD 930
   Wait until the CMP pump status is GEN DIFF, CMP is successfully pumped.
6.6.36  R-36
If a 500 or 600 command failed proceed with step 1.
If any other command failed, proceed with step 2.

1. Perform the following as necessary:
   a. To continue, access MCC page 1985,x: (where x = RETRO, LTG, UPDATE) and enter command:
      CMD 500 (if forward)
      OR
      CMD 600 (if backout)
   b. If command still fails with the same error code, escalate to your next level of support.

2. Perform the following as necessary:
   a. Re-enter the command.
   b. If the command fails again, refer to Table 9-24 for the Pokes and equivalent Input messages. If the 500 command was used, enter the corresponding input command.
   c. If the command still fails, escalate to your next level of support.

6.6.37  R-37
This recovery action is not currently used.

6.6.38  R-38
1. At this point, call processing is probably down. A few of your SMs may not have switched to the new side. You may attempt to switch them again by continuing with Step 2. Since most of your SMs have probably switched to the new side, you may wish to skip Step 2 and Step 3 and go directly to Step 4 which boots on the new software release.

   If the only SMs which have not switched are RSMs, skip Steps 2 and 3 and go directly to Step 4 since communication to the RSMs cannot be established through the Host SM at this time.

2. If new software release data is only in MCTSI side 1 of some SMs, skip Step 2 and proceed to Step 3. If the new software release data is in MCTSI side 1 of all SMs, perform the following:
   a. To switch RSMs to side 1, enter message:
      MSG UPD:GEN:SMSWITCH,RSM,UCL;
      • If any RSMs fail to switch, enter message:
        MSG UPD:GEN,SMSWITCH,SM=x,UCL;
        Where: x = RSM to be switched to side 1.
      • If any RSMs still fail to switch, enter message:
        MSG ORD:CPI=x,CMD=GRSW-1,UCL;
        Where: x = RSM to be switched to side 1.
b. To switch remaining **SMs** to **side 1**, enter message:

MSG UPD:GEN:SMSWITCH,UCL;

- If any **SMs** fail to switch, enter message:
  
  MSG UPD:GEN,SMSWITCH,SM=x,UCL;

  Where:  \( x \) = SM to be switched to side 1.

- If any **SMs** still fail to switch, enter message:
  
  MSG ORD:CPI=x,CMD=GRSW-1,UCL;

  Where:  \( x \) = SM to be switched to side 1.

3. If the new software release data is in MCTSI side 1 of **some** SMs (and MCTSI side 0 of OTHERS), perform the following steps:

a. To switch some **RSMs** to **side 1**, enter message:

MSG UPD:GEN,SMSWITCH,SM=x,UCL;

Where:  \( x \) = RSM to be switched to side 1.

If any **RSMs** fail to switch to **side 1**, enter message:

MSG ORD:CPI=x,CMD=GRSW-1,UCL;

Where:  \( x \) = RSM to be switched to side 1.

b. To switch some **RSMs** to **side 0**, enter message:

MSG UPD:GEN,SMBKOUT,SM=x,UCL;

Where:  \( x \) = RSM to be switched to side 0.

If any **RSMs** fail to switch to **side 0**, enter message:

MSG ORD:CPI=x,CMD=GRSW-0,UCL;

Where:  \( x \) = RSM to be switched to side 0.

c. To switch some **SMs** to **side 1**, enter message:

MSG UPD:GEN,SMSWITCH,SM=x,UCL;

Where:  \( x \) = SM to be switched to side 1.

If any **SMs** fail to switch to **side 1**, enter message:

MSG ORD:CPI=x,CMD=GRSW-1,UCL;

Where:  \( x \) = SM to be switched to side 1.

d. To switch some **SMs** to **side 0**, enter message:

MSG UPD:GEN,SMBKOUT,SM=x,UCL;

Where:  \( x \) = SM to be switched to side 0.

If any **SMs** fail to switch to **side 0**, enter message:

MSG ORD:CPI=x,CMD=GRSW-0,UCL;

Where:  \( x \) = SM to be switched to side 0.

4. If switching of SMs is still not successful, escalate to your next level of support and/or back out.
Warning: After this recovery action has been completed, immediately continue with the appropriate procedures.

6.6.39 R-39

Note: At any time during the following procedure, to check which MCTSI side is active, enter an OP:SYSSTAT,UCL; command.

1. Enter message to unconditionally SWITCHBACK the SMs:
   MSG UPD:GEN:SWITCHBCK,UCL;

   If the SWITCHBCK fails a second time, perform the following steps in this recovery action to switch SMs to the MCTSI side containing the OLD software release data.

   Note: In the following steps, all RSMs must be switched to the appropriate side before the SMs (LSMs, HSMs, and ORMs).

2. If the old software release data is only in MCTSI side 0 of some SMs, skip Step 2 and proceed to Step 3. If the old software release data is in MCTSI side 0 of all SMs, perform the following:

   a. To switch all RSMs to side 0, enter message:
      MSG UPD:GEN:SMBKOUT,RSM,UCL;

      • If any RSMs fail to switch, enter message:
        MSG UPD:GEN,SMBKOUT,SM=x,UCL;
        Where: x = RSM to be switched to side 0.

      • If any RSMs still fail to switch, enter message:
        MSG ORD:CPI=x,CMD=GRSW-0,UCL;
        Where: x = RSM to be switched to side 0.

      Note: All RSMs must be switched before the SMs (LSMs, HSMs, and ORMs). If switching of RSMs is still not successful, escalate to your next level of support and/or back out.

   b. To switch the remaining SMs to side 0, enter message:
      MSG UPD:GEN:SMBKOUT,UCL;

      • If any SMs fail to switch, enter message:
        MSG UPD:GEN,SMBKOUT,SM=x,UCL;
        Where: x = SM to be switched to side 0.

      • If any SMs still fail to switch, enter message:
        MSG ORD:CPI=x,CMD=GRSW-0,UCL;
        Where: x = SM to be switched to side 0.

      If switching of SMs is still not successful, escalate to your next level of support and/or back out.
3. If the old software release data is in MCTSI side 0 of some SMs (and MCTSI side 1 of others), perform the following steps:
   a. To switch some RSMs to side 0, enter message:
      
      MSG UPD:GEN,SMBKOUT,SM=x,UCL;
      
      Where: \( x \) = RSM to be switched to side 0.
      
      If any RSMs fail to switch to side 0, enter message:
      
      MSG ORD:CPI=x,CMD=GRSW-0,UCL;
      
      Where: \( x \) = RSM to be switched to side 0.
   
   b. To switch some RSMs to side 1, enter message:
      
      MSG UPD:GEN,SMSWITCH,SM=x,UCL;
      
      Where: \( x \) = RSM to be switched to side 1.
      
      If any RSMs fail to switch to side 1, enter message:
      
      MSG ORD:CPI=x,CMD=GRSW-1,UCL;
      
      Where: \( x \) = RSM to be switched to side 1.
      
      **Note:** All RSMs must be switched before the SMs (LSMs, HSMs, and ORM). If switching of RSMs is still not successful, escalate to your next level of support and/or back out.
   
   c. To switch some SMs to side 0, enter message:
      
      MSG UPD:GEN,SMBKOUT,SM=x,UCL;
      
      Where: \( x \) = SM to be switched to side 0.
      
      If any SMs fail to switch to side 0, enter message:
      
      MSG ORD:CPI=x,CMD=GRSW-0,UCL;
      
      Where: \( x \) = SM to be switched to side 0.
   
   d. To switch some SMs to side 1, enter message:
      
      MSG UPD:GEN,SMSWITCH,SM=x,UCL;
      
      Where: \( x \) = SM to be switched to side 1.
      
      If any SMs fail to switch to side 1, enter message:
      
      MSG ORD:CPI=x,CMD=GRSW-1,UCL;
      
      Where: \( x \) = SM to be switched to side 1.

4. If switching of SMs is still not successful, escalate to your next level of support.

   **Warning:** After this recovery action has been completed, immediately continue with the appropriate procedures.

6.6.40 R-40

Not used.

6.6.41 R-41

1. To check the off-normal processor status, enter message:
MSG OP:SYSSTAT,UCL;

Response:

<table>
<thead>
<tr>
<th>OP SYSSTAT</th>
<th>SUMMARY</th>
<th>FIRST RECORD</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYS:</td>
<td>INHIBITS-RC MISC</td>
<td></td>
</tr>
<tr>
<td>AM:</td>
<td>INHIBITS-MTCE</td>
<td></td>
</tr>
<tr>
<td>CM:</td>
<td>NO_REQ_PEND</td>
<td></td>
</tr>
<tr>
<td>CMP x-0 P:</td>
<td>NORMAL</td>
<td></td>
</tr>
<tr>
<td>CMP y-0 M:</td>
<td>NORMAL</td>
<td></td>
</tr>
<tr>
<td>L LSM a,x:</td>
<td>INHIBITS-MTCE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B LSM b,x:</td>
<td>INHIBITS-MTCE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S LSM z,x:</td>
<td>INHIBITS-MTCE</td>
<td></td>
</tr>
</tbody>
</table>

2. Verify that none of the SMs have "MATE_OOD" as a status.
   • If any SMs indicate MATE_OOD, access MCC page 1190,x and restore that SM to duplex.
   • After all SMs are duplex, re-enter OP:SYSSTAT,UCL.

3. Ensure no off-normal status other than INHIBITS-MTCE is indicated for any SM.

4. From the output, verify that both CMP 0-0 and CMP 1-0 indicate NORMAL.

5. To mount off-line file systems, on MCC page 1984 enter command:

   CMD 509

   Response:

   UPD:GEN:APPLPROC,ARG="MOP";
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   CHG:LPS,MSGCLS=INT_MON,PRINT=ON,LOG=ON;
   CHG:LPS,MSGCLS=INT_MON,PRINT=ON,LOG=ON; OK
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   CHG:LPS,MSGCLS=GENRMON,PRINT=ON,LOG=ON;
   CHG:LPS,MSGCLS=GENRMON,PRINT=ON,LOG=ON; OK
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   CHG:LPS,MSGCLS=INT,PRINT=ON,LOG=ON;
   CHG:LPS,MSGCLS=INT,PRINT=ON,LOG=ON; OK
   UPD GEN APPLPROC EXECUTING THE FOLLOWING TRANSITION TOOL:
   /no5text/prc/INoflmop
6. Access MCC page 1209 and ensure ONTCs indicate ACTIVE MAJOR/MINOR before proceeding.

7. Access MCC pages 141, 142, etc., and verify that all SMs are inhibited.

8. To simultaneously switch and force all MCTSI side 0 active, enter message:
   
   MSG ORD:CPI=1&&192,CMD=SW-0;
   
   Response: ORD CPI x CMD SW 0 COMPLETED
   
   Comment: On MCC pages 141, 142, etc., all SMs should go to **FORCED** simultaneously, MCTSI side 0 active. If the switch and force fails, repeat the command. If it still fails, refer to Section 6.5.7.

9. On MCC page 1800,x all MCTSI side 1s should indicate an unavailable (**UNV**) condition. All MCTSI side 0s should indicate an active forced (**ACTF**) condition.

10. To inhibit software and hardware checks in all SMs, access MCC page 1984 and enter command:
    
    CMD 513,sm
    
    Response:
    
    UPD:GEN:APPLPROC,ARG="INHSMCHKS";
    
    UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
    
    INH:HDWCHK,SM=1&&192;
    
    INH:HDWCHK,SM=1&&192; IP
    
    UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
    
    INH:SFTCHK,SM=1&&192;
    
    INH:SFTCHK,SM=1&&192; OK
    
    UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
    
    INH:CLNORM;
    
    INH:CLNORM; PF
    
    UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
    
    INH CLNORM COMPLETED
    
    INH HDWCHK SM=x COMPLETED (*once for each SM*)
    
    Comment: Do not proceed until an **INH HDWCHK SM=x COMPLETED** has been received for each SM.

11. Enter message:

    MSG OP:SYSSTAT,UCL;
    
    Response:
If any SMs do not indicate **FORCED INHIBITS-MTCE-HW-SW MATE_ODD CKT_OOS**, access MCC page 1800,x (where x = SM number not indicating INHIBITS-MTCE-HW-SW). Both box "04 SFTCHK" and box "08 ALL HDWCHK" should be backlit and indicate they are inhibited. If they are not inhibited, enter the command 604 to inhibit software checks (box "04 SFTCHK") and command 608 to inhibit hardware checks (box "08 ALL HDWCHK").

12. To switch the pump peripheral controllers (PPCs), on MCC page 1241 enter command:

CMD 450

Response:

SW:PPC; PF

SW PPC COMPLETED

Comment: For the off-line pump to function properly, the preceding PPC switch must be performed. At this point, **either** PPC can be active (with the other PPC standby).

13. To off-line pump the SMs, on MCC page 181 enter command:

CMD 2000

**Caution:** As part of the off-line pump process, one side of the (R)ISLU CCs and IDCU SGs will be removed from service to install the new software release. Do not restore the OOS (R)ISLU CCs or IDCU SGs.

Response: ST:OPUMP,SM=1&192,OFLDISK,VFY,PERF; PF REPT SM=a OFFLINE PUMP COMPLETED (output on ROP as each SM is pumped).

Comment: Use MCC pages 181, 182, etc., to view the off-line pump status for the SMs and peripherals. All of the possible states of the mate memory that can be displayed on MCC page 181 during off-line pump are listed in tables in Chapter 5.

14. On MCC pages 181, 182, etc., ensure that all SMs indicate **MATE PUMP** before proceeding.
15. Access MCC page 1850 and verify that CMP 0-0 is the **ACT** CMP (under the **CMP 0 PRIM STAT** box) and CMP 1-0 is the **STBY** CMP (under the **CMP 0 MATE STAT** box).

16. **If** CMP 0-0 is **not** the ACTIVE (primary) CMP, enter message:

   MSG **SW:CMP=0-0**;

   Response:

   SW:CMP=0-0; PF

   [EXC ODDRCVY=ALL CMP=0-0 STOPPED]

   [REPT CMP=1-0 MATE SWITCH FORWARD TRIGGER=SW-REQUEST]

   [REPT MSKP_ENVIRONMENT:]

   [CMP=1-0 PHASE 1&2 INIT COMPLETION TIME: xxxx TYPE:xxx]

   [EVENT=xxxx]

   EXC ODDRCVY=ALL CMP=1-0 STARTED

   SW CMP=0-0 COMPLETED

   [REPT COMMUNICATION RESTORED: AM TO CMP=1-0 MATE]

   [REPT MSKP_ENVIRONMENT:]

   [CMP=1-0 PHASE 3 INIT COMPLETION TIME: xxxxxx TYPE:xxx]

   [EVENT=xxxx]

Comment: CMP 0-0 becomes **PRIMARY** (active), CMP 1-0 becomes **MATE** (standby).

17. To inhibit AM software and hardware checks, enter command on MCC page 1984:

   **CMD 513,am**

   Response:

   UPD:GEN:APPLPROC,ARG="INHAMCHKS";

   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:

   INH:HDWCHK;

   INH:HDWCHK; PF (on ROP)

   * REPT INHADM MINOR ALARM FROM INHIBIT ADMINISTRATOR (on ROP)

   INH HDWCHK COMPLETED

   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:

   INH:SFTCHK;

   INH:SFTCHK; PF (on ROP)

   * REPT INHADM MINOR ALARM FROM INHIBIT ADMINISTRATOR
(on ROP)

IN H SFTCHK COMPLETED

UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

Comment: On MCC page 110 - SYSTEM INHIBITS, box "18 SOFTWARE CHECKS" and box "24 HARDWARE CHECKS" should be backlit.

18. To off-line pump the CMP, from MCC page 1851, enter command:

CMD 930

Response:

ST:OPUMP,CMP=0,MATE; PF
EXC ODDRCVY=ALL CMP=1-0 STOPPED
REPT CMP=1-0 MATE SWITCH FORWARD TRIGGER={MANUAL|CRAFT} -REQUEST
ST OPUMP CMP=1-0 COMPLETED
[REPT MSKP_ENVIRONMENT:]
[CMP=1-0 PHASE 1&2 INIT COMPLETION TIME: H’xxxx TYPE:H’x]
[EVENT=xxxx]
[CMP=1-0 PHASE 3 INIT COMPLETION TIME: H’xxxx TYPE:H’x]
[EVENT=xxxx]
[REPT COMMUNICATION RESTORED: AM TO CMP=1-0 MATE]

Comment: On MCC page 1851, the status indicator for CMP 1-0 will change from Standby (STBY) to Out-Of-Service (OOS) to white Deactivated (DACT).

Also, on MCC page 1851, the different states of the mate memory will be displayed.

19. To check AM, SM, and CMP status, enter message:

MSG OP:SYSSTAT,UCL;

Response: OP:SYSSTAT,UCL:PF
Comment: On MCC page 1800, where x = any numbered SM) box "04 SFTCHK" and box "08 ALL HDWCHK" should be backlit. Verify that the mate CMP indicates GEN DIFF and all SMs indicate MATE_PUMP.

20. To unmount off-line disk file systems, on MCC page 1984, enter command:

CMD 609

Response:

UPD:GEN:APPLPROC,ARG="STOPMOP";
UPD GEN APPLPROC EXECUTING THE FOLLOWING TRANSITION TOOL:
/no5text/prc/mop
[PRM_0 E800 0002 xx0x xxxx xx xx xx]
(may appear several times)
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

21. To record trunk OOS statuses on the current software release, enter message:

MSG UPD:GEN,TSM,OLD,UCL;

Response: UPD GEN TSM IN PROGRESS xxx TRUNKS LOGGED (Output every 2 minutes)
UPD GEN TSM COMPLETED

Comment: If any TSM errors are encountered, refer to Section 6.5.15.

22. At this time, the operating company should notify all carrier systems connected to this office of the impending system switch forward.

23. Inform the Update Coordinator that the switch will undergo a full system switch forward in approximately 45 to 60 minutes.

24. Access MCC page 1984 and enter the following command to execute the Proceed stage:
CMD 702,ucl

Note: The PROCEED field on MCC page 1984 is already backlit and should not be used as an indication of successful completion of this step (if not using AM OFF-LINE BOOT then enter 702,notflboot,ucl. The response given below is for AM OFF-LINE BOOT, see the Proceed stage in Section 8 for non-OFF-LINE BOOT response).

Response:

THE PROCEED PROCESS IS EXECUTING
UPD:GEN:PROCEED,UCL;
PRM_0 E800 xxxx xx03 xxxx xx xx xx on ROP

UPD GEN PROCEED TRANSFERRING CONTROL TO APPLICATION
UPD GEN PROCEED APPLICATION COMPLETION WITHIN xxxx SECONDS
PRM_0 E800 xxxx xx03 xxxx xx xx xx on ROP - several times
UPD GEN PROCEED APP EXECUTING CORCFLUSH
CORCFLUSH: SM=X COMPLETE (once for each SM)
CORCLUSH: AM COMPLETE
UPD GEN PROCEED APP EXECUTING PRCDHook
PRM_0 E800 xxxx xx03 xxxx xx xx xx on ROP
UPD GEN PROCEED APP AM OFFLINE BOOT STARTED
EXC OFLBOOT STARTED
EXC OFLBOOT IN PROGRESS
RMV DFC x COMPLETED
RMV IOP 1 COMPLETED
RMV MHD x COMPLETED
(A RMV message appears for each AM/CM hardware unit.)
(A portswitch may occur sometime during this sequence.)
SET FRC MSCU=0 COMPLETED
SET FRC ONTCCOM=0 COMPLETED
SET FRC NCOSC=0 COMPLETED
CU RECOVERY COMPLETE
REPT DEGROWTH TTY x COMPLETED
REPT DEGROWTH TTYC x COMPLETED
REPT DEGROWTH SDL x COMPLETED
(A DEGROWTH message appears for each AM/CM hardware unit.)
(The following will be output every 5 minutes.)

EXC OFLBOOT INFO
BOOT IN PROGRESS

<table>
<thead>
<tr>
<th>OLBSTATE</th>
<th>LASTATE</th>
<th>FUNCTION</th>
<th>LINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SENDBOOT</td>
<td>EXC_AIMECD</td>
<td>MON_BOOT</td>
<td>xxxx</td>
</tr>
</tbody>
</table>

UPD GEN PROCEED APP AM OFFLINE BOOT SUCCESSFUL
EXC OFLBOOT COMPLETED
OFFLINE SIDE BOOT COMPLETE

UPD GEN PROCEED APP AM OFFLINE BOOT SUCCESSFUL
EXC OFLBOOT COMPLETED
OFFLINE SIDE BOOT COMPLETE

Switch forward PRMs are output on the Rop. If any failing PRMs are encountered, consult the PRM document. If only failing PRMs are output, escalate to your next level of support immediately.

UPD GEN PROCEED APP EXECUTING CORCFLUSH

CORCFLUSH: SM=X COMPLETE (once for each SM)
CORCFLUSH: AM COMPLETE

UPD GEN PROCEED APP EXECUTING CORCEVOL
(These messages may take several minutes to complete.)

[CNVT CORCLOG EVOL AM COMPLETE]
[xxxx CORCS EVOLVED]
[xxxx CORCS IN ERROR]
[xxxx RDNT CORCS RMVD]

[CNVT CORCLOG EVOL CMP COMPLETE]
[xxxx CORCS EVOLVED]
[xxxx CORCS IN ERROR]
[xxxx RDNT CORCS RMVD]

[CNVT CORCLOG EVOL SM = x COMPLETE]
[xxxx CORCS EVOLVED]
[xxxx TRNCRCS EVOLVED]
[xxxx CORCS IN ERROR]
[xxxx TRNCRCS IN ERROR]
[xxxx RDNT CORCS RMVD]
[xxxx RDNT TRNCRCS RMVD]
[CNVT CORCLOG EVOL IN PROGRESS]
[CORC NUMBER xxx HAS BEEN READ]

xxx CORCS xxxx TRNCRCS HAVE BEEN LOGGED IN THE CORC EVOLVED LOGFILES

UPD GEN PROCEED COMPLETED

THE PROCEED PROCESS COMPLETED SUCCESSFULLY

Comment: The order of messages (particularly the PRMs) on the ROP may vary from the order of messages shown in the preceding output response.

The cronfile dumped during proceed is the 5E16(2) system cronfile which will be activated during "rmvtools".

Note: Verify that the output shown in this step has been output on the ROP.

25. To dump the VTOC on MHD 1, enter message:

MSG DUMP:MHD=1,VTOC;

Response: VTOC for MHD 1 is dumped at ROP.

Comment: Compare the VTOC with Table 5–16 to verify that the correct VTOC has been loaded on MHD 1.

Warning: Ensure that LBOOT has a valid start address (2). If not, escalate to your next level of support immediately.

6.6.42 R-42

1. Verify the ability to perform an AM port switch. Enter the following command on MCC page 111:

CMD 400

2. If the port switch is successful, continue with the procedures. Enter the following command on MCC page 1985,x (where x = RETRO, LTG, UPDATE):

CMD 500

3. If the port switch in Step 1 fails, correct the problem in accordance with local procedures. Then continue with the procedures. Enter the following command on MCC page 1985,x (where x = RETRO, LTG, UPDATE):

CMD 500

4. If problems continue after the 500 poke command is input, seek technical assistance.
6.6.43  R-43

1. Access MCC page 1984 and enter command to stop the off-line boot process:
   
   CMD 507
   
   This command allows the Automatic Diagnostic Process (ADP) and executes a STOP:OFLBOOT,RST command.

2. The 507 poke command terminates the AM off-line boot process and duplexes the IOP, DFC, and AM hardware. The MHDs containing the new software release text load are returned to OFL.

3. **Seek technical assistance for the correct AM off-line boot command.**

6.6.44  R-44

1. Access MCC page 111. Do not continue until the CU, IOP, and MTTYC hardware are duplex. These units should restore to duplex within 10 minutes. If they are not duplex within 10 minutes, manually restore them.

2. Access MCC page 115. No off-normal indicators should be observed. Use local procedures to correct any off-normal units.

3. For CNI offices, access MCC page 118. No off-normal indicators should be observed. Use local procedures to correct any off-normal units.

4. To resume, access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   
   CMD 500

6.6.45  R-45

1. If AM off-line boot is still in progress, as indicated by **OFFLINE IP-ONLINE** backlit red in the upper left corner on MCC page 111, retry the Switchfwd stage again. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:
   
   CMD 500

   **If it fails again, seek technical assistance.**

2. If the AM off-line boot is not in progress, perform the following steps:
   
   a. Access MCC page 111. Do not continue until the CU, IOP, and MTTYC hardware are duplex. These units should restore to duplex within 10 minutes. If they are not duplex within 10 minutes, manually restore them.

   b. Access MCC page 115. No off-normal indicators should be observed. Use local procedures to correct any off-normal units.

   c. For CNI offices, access MCC page 118. No off-normal indicators should be observed. Use local procedures to correct any off-normal units.

   d. Restart the procedures at Section 5.6.7 and execute the proceed command using the following procedure:
      
      I. To execute the Proceed stage unconditionally, access MCC page 1989.
         Change the UNCONDITIONAL EXECUTION to Y by entering command:
         
         CMD 4XX,Y
Where: XX = the number of the UNCONDITIONAL EXECUTION

II. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:

CMD 500 The Proceed stage executes unconditionally.

III. When the Proceed stage completes, access MCC page 1989. Change the UNCONDITIONAL EXECUTION to N by entering command:

CMD 4XX,N

Where: XX = the number of the UNCONDITIONAL EXECUTION

6.6.46 R-46

1. If AM off-line boot is still in progress, as indicated by OFFLINE IP-ONLINE backlit red in the upper left corner on MCC page 111, retry the Switchback stage again. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:

CMD 600

If it fails again, seek technical assistance.

2. If the AM off-line boot is not in progress, perform the following steps:
   a. Access MCC page 111. Do not continue until the CU, IOP, and MTTYC hardware are duplex. These units should restore to duplex within 10 minutes. If they are not duplex within 10 minutes, manually restore them.
   b. Access MCC page 115. No off-normal indicators should be observed. Use local procedures to correct any off-normal units.
   c. For CNI offices, access MCC page 118. No off-normal indicators should be observed. Use local procedures to correct any off-normal units.
   d. Restart the procedures.

6.6.47 R-47

1. To stop any in-progress transition activity, access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:

CMD 200

2. To continue AM Off-Line boot Backout, access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter command:

CMD 600

6.6.48 R-48

1. Wait 30 seconds for all procedures to terminate after the error message was received.

2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter the command:

CMD 500

6.6.49 R-49

1. Wait 30 seconds for all procedures to terminate after the error message was received.
2. **BACKOUT**: Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter the backout command:

```
CMD 600
```

**6.6.50 R-50**

1. Wait until all RCL processes have stopped.
2. Enter the MML command:

```
CMD EXC:ENVIR,UPROC,FN="/etc/udgnnm",ARGS="MHD"-"X";
```

Where argument "X" is the MHD number reported on the ROP.
3. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter the command:

```
CMD 500
```
4. For the tape drive cleaning and testing procedure, go to the Tape Drive Cleaning section and follow the procedure for the tape drive that is in the office.
5. If the problem persists, seek technical assistance.

**6.6.51 R-51**

1. Wait until all RCL processes have stopped.
2. On a TLWS, go to the 124 page and verify that the DCI link to the ASM is **ACT**. If not, restore the DCI link.
3. Once the DCI link to the ASM is active, access MCC page 1985x, (where x = RETRO, LTG, UPDATE) and enter the command:

```
CMD 500
```

**6.6.52 R-52**

1. Wait until all RCL processes have stopped.
2. On a TLWS, go to the 124 page and verify that the DCI link to the ASM is **ACT**. If not, restore the DCI link.
3. Verify that the OSDE feature is enabled.
4. If the problem persists, seek technical assistance.

**6.6.53 R-53**

1. Wait until all RCL processes have stopped.
2. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter the command:

```
CMD 500
```
3. For the tape drive cleaning and testing procedure, go to the Tape Drive Cleaning section and follow the procedure for the tape drive that is in the office.
4. If the problem persists, seek technical assistance.

**6.6.54 R-54**

1. Wait until all processes have stopped.
2. If you are executing GRmkdisk from within RCL and this error occurs, seek technical assistance.
3. If you are executing GRmkdisk from a UNIX shell, set and export the RCL variables.

4. Mount the first tape of the tape sequence and continue.
   
   **Note:** Executing GRmkdisk from outside of RCL is an unsupported procedure.

6.6.55 R-55

1. Wait until all RCL processes have stopped.

2. Enter the MML command:
   
   ```
   CMD   EXC:ENVIR,UPROC,FN="/etc/udgnm",ARGS="MHD"-"X";
   ```

   Where argument "X" is the MHD number reported on the ROP.

3. On a TLWS, go to the 124 page and verify that the DCI link to the ASM is **ACT**. If not, restore the DCI link.

4. Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter the command:
   
   ```
   CMD   500
   ```

5. If the problem persists, seek technical assistance.

6.6.56 R-56

1. Wait 30 seconds for all procedures to terminate after the error message was received.

2. **FORWARD:** Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter the command:
   
   ```
   CMD   500
   ```

3. **BACKOUT:** Access MCC page 1985,x (where x = RETRO, LTG, UPDATE) and enter the command:
   
   ```
   CMD   600
   ```
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7. BACKOUT PROCEDURES

7.1 OVERVIEW

This section contains backout procedures for returning the office to the old software release during the course of a software release Update. Returning the office to the old software release may be necessary for several reasons which include the following:

- Unsatisfactory performance of the switch on the new software release.
- Impact to customer service will be too long or great to recover from or fix problems and continue the Update
- Major system problems arise
- Other valid reasons.

It should be noted that the Backout Procedures are needed only in a small percentage of offices attempting to Update. Most problems, if they arise, can be resolved and the Update continued forward. Problems can be resolved by following the Recovery Procedures in this document or by escalating to your next level of support.

If the office needs to return to the old software release for whatever reason, the procedures in this section are provided to accomplish the task.

Backout procedures are used to return to the old software release from the "Update Implementation" stages starting with the "SETUP stage" and ending with the "COMMIT stage." It should be noted that the possibility to back out to the old software release exists until the even-numbered disks are committed to the new software release (that is, until disk restoral begins in the "Commit stage." After the the even-numbered disks are updated with the new software release, the backout possibility disappears.

Backout procedures to return the office to the old software release exist, even after the switch has been booted on the new software release, but the even-numbered disks have not been committed to the new release.

*This section does not provide information for situations and troubles not related to the Update.* For non-Update-related recovery information, refer to 235-105-250, *System Recovery Procedures*.

It is highly recommended that, in addition to the following "How to Use" paragraph, the entire section be reviewed before the Update. This should be done in order to understand the methods used to back out of a Update. A review will also familiarize users with the layouts and location of information.

*Before using a Backout Action, you should always escalate to your next level of support first.*

7.2 HOW TO USE THE BACKOUT ACTIONS

7.2.1 GENERAL

This section provides some basics for utilizing the information provided. The Backout Actions are labeled B-1 through B-11 followed by a general cleanup section. Offices wanting to return to the old software release will be required to execute some or all Backout Actions (B-1 through B-11), depending on which transition implementation stage was being executed when the decision was made to return to the old software release. Each Backout Action will back the update to the beginning of current Stage.
7.2.2 DETERMINE IF OFF-LINE BOOT IS RUNNING

If you are in the PROCEED stage when the determination to backout is made, it may be necessary to find out if off-line boot is running. To determine if AM off-line boot is still running, access MCC page 111. If AM units on side 0 display their status as UNEQ, then AM off-line boot is still running. The message “OFLBOOT IP - ONLINE” will also appear backlit in red.

7.2.3 SUPR OR APPLHOOK ERROR RECEIVED

The office may want to back out to the old software release as a result of an APPLHOOK or SUPR replacement error that was output on the MCC or ROP during the Update. All APPLHOOK and SUPR errors that could be received during the course of a Update are listed in Section 6. The SUPR replacement and APPLHOOK errors are listed as they are output on the ROP and MCC. If a SUPR replacement and/or APPLHOOK error was received, find the error in the Table of Contents of Section 6 and go to that page. Find the error in Section 6.4.1 or 6.4.2. The table under the error listing has columns labeled “Stage,” “Error,” “Recovery,” and “Backout.” The rows of the table list the current Update Implementation stage that is being executed. From the rows of Update stage, find the current stage the office is currently executing and read across to the Backout column to find the appropriate Backout Action. The Backout Actions are labeled B-1 through B-11 and are located in this section of the document.

Some of the SUPR and APPLHOOK errors may not have a referenced Backout Action. If this is the case, try the Recovery Action listed or escalate to your next level of support.

7.2.4 BACKING OUT WITH NO ERRORS

A decision can be made to back out of the Update even if no errors are received. It should be noted that before using a Backout Action you should always escalate to your next level of support first.

In Table 7-1, the backout starting point is given for each Update implementation stage up to the End stage (at this point, a backout with these procedures is not possible — escalate to your next level of support). Before attempting any Backout Action, escalate to your next level of support first.
### Table 7-1 — Backout Actions

<table>
<thead>
<tr>
<th>ACTIVE STAGE</th>
<th>OFFICE CONDITIONS</th>
<th>BACKOUT ACTION (BACKOUT STARTING POINT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SETUP</td>
<td>All Conditions</td>
<td>B-11 (7.13)</td>
</tr>
<tr>
<td>BEGIN</td>
<td>All Conditions</td>
<td>B-10 (7.12)</td>
</tr>
<tr>
<td>ENTER</td>
<td>All Conditions</td>
<td>B-9 (7.11)</td>
</tr>
<tr>
<td>PROCEED</td>
<td>All Conditions</td>
<td>B-8 (7.10)</td>
</tr>
<tr>
<td>SWITCHFWD</td>
<td>All Conditions</td>
<td>B-7 (7.9)</td>
</tr>
<tr>
<td>RCVYPREP</td>
<td>AM, CMP, and SMs Simplex on NEW Software Release, Offboot is Running&lt;sup&gt;a&lt;/sup&gt;</td>
<td>B-6 (7.8)</td>
</tr>
<tr>
<td></td>
<td>AM, CMP, and SMs Simplex on NEW Software Release, Offboot is NOT Running&lt;sup&gt;a&lt;/sup&gt;</td>
<td>B-5 (7.7)</td>
</tr>
<tr>
<td>POSTBOOT</td>
<td>All Conditions</td>
<td>B-4 (7.6)</td>
</tr>
<tr>
<td>SOAK</td>
<td>AM Duplex, CMP Duplex, SMs Simplex (MATE PUMP)</td>
<td>B-3 (7.5)</td>
</tr>
<tr>
<td>COMMIT</td>
<td>SMs Simplex (MATE PUMP), MHDs Simplex</td>
<td>B-2 (7.4)</td>
</tr>
<tr>
<td></td>
<td>SMs Duplex, <strong>ALL</strong> MHDs Simplex</td>
<td>B-1 (7.3)</td>
</tr>
<tr>
<td></td>
<td>SMs Duplex, <strong>ANY</strong> MHDs Duplex</td>
<td>Seek Technical Assistance</td>
</tr>
<tr>
<td>END</td>
<td>All Conditions</td>
<td>Seek Technical Assistance</td>
</tr>
<tr>
<td>CLEANUP</td>
<td>All Conditions</td>
<td>Seek Technical Assistance</td>
</tr>
</tbody>
</table>

**Note(s):**

a. To determine if off-line boot is running, see Section 7.2.2. If AM off-line boot is running, go to B-6, Section 7.8. If off-line boot is not running, go to B-5, Section 7.7.

### 7.2.5 BACKOUT ACTIONS EXIT POINTS

An **exit point** is provided at the end of each Backout Action and contains both **restart** and **backout** options.

- **Restart** directs the craft personnel back to the procedures in Section 5, providing that time allows a successful restart and subsequent completion.

- **Backout** directs the craft personnel to the next appropriate Backout Action.

It is left to the discretion of the Site Coordinator which exit pointer to follow.
7.3 BACKOUT ACTION B-1 (PUMP MCTSI SIDE 0 WITH OLD SOFTWARE RELEASE DATA)

B-1 ENTRY POINT: This Backout Action is entered by the following conditions:

- Direction of Table 7-1, of this document.

Note: Your AM, CMP and SMs should be duplex on the new software release. Your even-numbered MHDs should be off-line (i.e. indicate a status of ACT-SPLIT, check output of command 502 on MCC 1984 page).

7.3.1 OVERVIEW

Before executing procedures in Backout Action B-1, it is assumed that:

1. The switch is currently running on the the new software release and SMs are duplexed. If SMs are MATE PUMP go directly to Backout Action B-2, Section 7.4.

2. On MCC page 1985 if stage indicator shows "COMMIT-EXECUTING" or "FAILED", verify SMs are duplexed and if so continue with Backout B1, Section 7.3.

3. The disks are simplex with the odd-numbered disks Active (ACT-SYSTEM) and the even-numbered disks off-line (ACT-SPLIT).

4. Automatic SM Pump must be marked to Yes (Y) on MCC page 1989.

   Caution: If the MHDs have begun duplexing, a backout with these procedures is NOT possible. Escalate to your next level of support immediately.

In the steps that follow, each SM is forced simplex with MCTSI side 1 Active-Forced (ACTF) and MCTSI side 0 Unavailable (UNV). Then, MCTSI side 0 is pumped from the off-line disks (MHD 0, 2, etc.).

MCC page 1985 is shown in Figure 7-1, paused before committing MHDs.
7.3.2 OFF-NORMAL SM STATUS CHECK

1. Enter message:

   MSG OP:SYSSTAT,UCL;

   Response:

   OP SYSSTAT SUMMARY LAST RECORD
   AM: INHIBITS-MTCE
   CM: NO_REQ_PEND
   CMP x-0 P: NORMAL
   CMP x-0 M: NORMAL
   ...
   { B|S|L } _SM a: INHIBITS-MTCE
   ...
   { B|S|L } _SM z: INHIBITS-MTCE

2. Verify that none of the SMs have "MATE_OOD" as a status.
   a. If any SMs indicate MATE_OOD, access MCC page 1190,x and restore that SM to duplex.
   b. After all SMs are duplex, re-enter the previous OP:SYSSTAT,UCL message.
3. Ensure no off-normal status other than INHIBITS-MTCE is indicated for any SM.
7.3.3 OFF-LINE DISK VTOC LAYOUT CHECK

1. Access MCC page 120.

2. To dump VTOCs for off-line MHDs, enter message:

   MSG DUMP:MHD=X,VTOC;

   Where: X = Off-line MHDs 0, 2, etc.

   Response: DUMP MHD X VTOC STARTED
   DUMP MHD X VTOC Completed

3. Verify that the VTOC layout matches the data in the appropriate table (see Table 9-25) for your particular office configuration regarding “start” and “size” for each partition. If the VTOC layout does not match data in the table, escalate to your next level of support immediately.

4. To stop the procedure, enter the following command on MCC page 1985:

   CMD 200

5. To return to the page before you stopped this procedure, enter the following command on MCC page 1985:

   CMD 600

   MCC page 1985 is shown in Figure 7-2, indicating SMs are pumping.

6. To backout of the procedure, enter the following command on MCC page 1985:

   CMD 600
Note: If this Backout Action is not effective, see Section 8.2 for instructions in backing out manually.

Caution 1: The process which mounts off-line partitions (mop.bk) must not be stopped until all SMs and the CMP have successfully completed pumping. If mop.bk is stopped, the pump process is not able to access data on the off-line disks. Extensive recovery procedures may be required. Escalate to your next level of support before continuing the backout procedures.

Caution 2: The file systems that are mounted in this step are necessary to off-line pump the SMs. Continuing before the file systems are mounted on the off-line disks could result in not being able to pump the SMs. Wait for the UPD:GEN APPLPROC COMPLETED SUCCESSFULLY to be output before continuing.

Response:

```
UPD:GEN:APPLPROC,ARG="MOP.BK";
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
CHG:LPS,MSGCLS=INT_MON,PRINT=ON,LOG=ON;
CHG:LPS,MSGCLS=INT_MON,PRINT=ON,LOG=ON; OK
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
CHG:LPS,MSGCLS=GENRMON,PRINT=ON,LOG=ON;
CHG:LPS,MSGCLS=GENRMON,PRINT=ON,LOG=ON; OK
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
CHG:LPS,MSGCLS=INT,PRINT=ON,LOG=ON;
CHG:LPS,MSGCLS=INT,PRINT=ON,LOG=ON; OK
UPD GEN APPLPROC EXECUTING THE FOLLOWING UPDATE TOOL:
/no5text/prc/INoflmop
PRM_0 E800 xxxx xxxx xxxx xx xx xx
(Will appear several times)
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
UPD:GEN:APPLPROC,ARG="INHSMCHKS";
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
INH:HDWCHK,SM=1&&192;
INH:HDWCHK,SM=1&&192; IP (on ROP)
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
INH:SFTCHK,SM=1&&192;
INH:SFTCHK,SM=1&&192; OK (on ROP)
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
INH:CLNORM;
INH:CLNORM; PF
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
INH HDWCHK SM=x COMPLETED
INH CLNORM COMPLETED
```

Comment: Before proceeding, ensure that an INH HDWCHK SM=x COMPLETED output message is received for each SM (it may take several minutes to get the entire response).

On MCC page 1800,x (where x = any numbered SM) box "04 SFTCHK" and box "08 ALL HDWCHK" should be backlit.

Response: SW PPC; PF
SW PPC COMPLETED
Response:  **ST:OPUMP.SM=1&&192,OFLDISK,VFY,PERF; PF REPT SM=a OFFLINE PUMP COMPLETED (on ROP)**

**REPT SM=z OFFLINE PUMP COMPLETED (on ROP)**

Comment:  Use MCC pages 181, 182, etc., to view the off-line pump status for the SMs and peripherals. Tables 9-19 and 9-20 list all the possible states of the mate memory that can be displayed on MCC page 181 during off-line pump.

*Note:*  If any SM fails to off-line pump, refer to Section 6.5.4.

7. On MCC pages 181, 182, etc., ensure that all SMs indicate **MATE PUMP** before proceeding.

8. If the SM Automatic pump failed, change the Automatic SM Pump field to No (N) on MCC page 1989.

**Exit Points:**

**Restart:**  There is no restart pointer for this Backout Action. Continue with Backout Action B-2 (Section 7.4).

**Backout:**  Continue with Backout Action B-2 (Section 7.4).
7.4 BACKOUT ACTION B-2 (COMMIT STAGE)

B-2 ENTRY POINTS: This Backout Action is entered by the following conditions:

- Completion of Backout Action B-1, or
- Direction of Table 7-1, of this document.

**Note:** Your AM and CMP should be duplex on the new software release. Your SMs should be simplex and running on the new software release. Their status, as indicated by the output of `OP:SYSSTAT,UCL` should include MATE PUMP. The status MATE PUMP should also appear on MCC pages 181, 182, 183, and 184.

7.4.1 OVERVIEW

In this Backout Action, the SMs are checked to ensure they are off-line pumped and contain the old software release on one of their sides. On MCC page 1985, a 200 STOP poke command followed by a 600 BACKOUT poke command is entered to backout to the beginning of COMMIT stage.

7.4.2 BACKOUT TO START OF COMMIT STAGE

1. **If you are already at the beginning of COMMIT Stage which means MCC Page 1985 looks like Figure 7-3, or Stage indicator shows "COMMIT-FAILED" and Step indicator shows "COMMIT STAGE STOPPED" and also SMs indicate "MATE_PUMP FORCED" (simplexed), then go directly to Backout B-3, Section 7.5.** Otherwise continue with step 2.

2. **To stop any in-progress transition activity, access MCC page 1985 and enter command:**
   
   `CMD 200`

3. **To backout to the start of COMMIT stage, on MCC page 1985 enter command:**
   
   `CMD 600`

The transition process backs out to start of the COMMIT stage.
Exit Points:

**Restart:** There is no restart pointer for this Backout Action. Continue with Backout Action B-3 (Section 7.5).

**Backout:** Continue with Backout Action B-3 (Section 7.5).
7.5 BACKOUT ACTION B-3 (SOAK STAGE)

B-3 ENTRY POINTS: This Backout Action is entered by the following conditions:

- Completion of Backout Action B-2, or
- Direction of Table 7-1, of this document.

**Note:** Your AM and CMP should be duplex on the new software release. Your SMs should be simplex and running on the new software release. Their status, as indicated by the output of `OP:SYSSTAT,UCL` should include MATE PUMP. The status MATE PUMP should also appear on MCC pages 181, 182, 183, and 184.

7.5.1 OVERVIEW

In this Backout Action, the SMs are checked to ensure they contain the old software release on one of their sides. Finally, on MCC page 1985, a 200 STOP poke command, followed by a 600 BACKOUT poke command is entered to backout to the beginning of SOAK stage.

7.5.2 BACKOUT TO START OF SOAK STAGE (Optional)

1. Change the **AM Off-line Boot** option to **N**, by accessing MCC page 1989 and entering command:
   
   `CMD 404,N`

2. If you are already at the beginning of SOAK Stage which means MCC page 1985 looks like Figure 7-4, or MCC Page 1985 Stage indicator shows "SOAK FAILED" and Step indicator shows "SOAK-STAGE STOPPED", then skip the next 2 steps and go directly to Section 7.5.3, otherwise continue on with step 3.

3. To stop any in-progress transition activity, access MCC page 1985 and enter command:
   
   `CMD 200`

4. To backout to the start of the SOAK stage, on MCC page 1985 enter command:
   
   `CMD 600`

The transition process backs out to the start of the SOAK stage. Continue on the next page.
7.5.3 INHIBITS AND MISCELLANEOUS

If your office is equipped with an ESM, turn off the power at the miscellaneous frame. This causes a major alarm. Access MCC page 116 (Miscellaneous) and verify that power has been removed from ESM. If power is off, the POWER indicator is backlit, and the word OFF is displayed.

7.5.4 FINAL AMA SESSION

This step is optional and may or may not need to be performed depending on how long the switch has been running on the new software release. This step flushes the AMA data to the active disk. If this step is not executed, AMA records in the AMA buffers will be lost.

**Warning:** From this point in the procedures to the Initialization Sequence, all AMA billing information is lost. Therefore, it is critical to proceed to the Initialization of the AM and SMs in a timely manner.

1. To flush AMA data from the AM to the active disk, on MCC page 1984, enter command:

   **CMD 506**

   **Response:** Assert 28334 may be output which indicates that AMA records have been lost. AMA records have not been lost at this point. The assert is output because the buffer in the AM is normally written to disk only when full. If the buffer is written to disk and is not full at the time...
of the write, the assert may be output. The assert occurs when a 506 is entered in a dual stream office, or when the 506 is entered more than once in rapid succession in a single stream office, or when the 506 is entered two or more times in a dual stream office.

UPD:GEN:APPLPROC,ARG="WRTAMA";
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
WRT:AMADATA;
WRT:AMADATA; PF
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
*C REPT AMA (TELEPROCESSING SUMMARY|DISK WRITER)

FOR STREAM STx RECORDING TO DISK SUSPENDED
REPT DKDRV INFO CODE H'26f
WRT AMA DATA HAS BEEN WRITTEN TO DISK
READY TO TRANSFER DATA FROM DISK TO OUTPUT MEDIUM (on ROP)

INIT AM SUMMARY DLVL=x SLVL=x HLVL=x CLVL=x EVENT=x
INIT SCOPE=AM-FPI PROCESS SCOPE=AIM PROCESS
MODE=OPERATIONAL RC-BACKOUT=NO
INIT TRIGGER=AUTO SOFTWARE INIT TIME =x SECONDS
PROCESS CREATED INITIALIZE
AMDW1 SUCCESS SUCCESS
* REPT AMA DISK WRITER FOR STREAM STx TERMINATION CODE 2
REPT AMA DISK WRITER FOR STREAM STx

INITIALIZATION COMPLETE
PRM_x EE00 xxxx 07DD xxxx xx xx xx

(may appear several times)
REPT DKDRV INFO CODE H'26f (may appear several times)
REPT AMA DISK WRITER FOR STREAM STx
RECORDING TO DISK RESUMED

Comment: In the preceding response, the term STx means either ST1 or ST2. If your office does not use dual stream billing (ST1 and ST2), messages will only be received for ST1. If your office does use dual stream billing, a set of messages will be received for each stream (ST1 and ST2).

2. **This step is OPTIONAL.** The initial write of the the AMA billing data to disk may take several minutes to complete. To write the AMA billing data that arrived while the initial write was in progress, repeat step 1. This will reduce the amount of AMA billing data that is lost during the initialization.

3. Initiate final manual AMA tape writing or teleprocessing session per local practice.

   Comment: If teleprocessing session is being run at a nonstandard time, it is necessary to call personnel at the Host Collector (HOC) to request a manual poll.

4. This step may be performed in teleprocessing offices to provide backup AMA data in the event that data from the final teleprocessing session is lost or mutilated at the host collector. In performing this step, the time interval from now to the system initialization is increased by the amount of time required to generate the AMA tape.
Caution: All AMA data recorded between the final AMA teleprocessing session and the initialization will be lost. Although the following step will help ensure the integrity of previously recorded AMA data, the amount of AMA data that will be lost at initialization time may increase by the amount of AMA data recorded during the aforementioned time interval.

For offices that use teleprocessing, an optional manual AMA tape writing session to dump secondary AMA blocks can be performed at this time. Refer to 235-105-210, Routine Operations and Maintenance. This tape should be saved for backup purposes.

Exit Points:

Restart: There is no restart pointer for this Backout Action. Continue with Backout Action B-4, Section 7.6.

Backout: Continue with Backout Action B-4, Section 7.6.
7.6 BACKOUT ACTION B-4 (POSTBOOT STAGE)

B-4 ENTRY POINTS: This Backout Action is entered by the following conditions:
- Completion of Backout Action B-3, or
- Direction of Table 7-1, of this document.

Note: Your AM and CMP may be simplex or duplex on the new software release. Your SMs should be simplex and running on the new software release. Their status, as indicated by the output of OP:SYSSTAT,UCL should include MATE PUMP. The status MATE PUMP should also appear on MCC pages 181, 182, 183, and 184.

7.6.1 OVERVIEW
In this Backout Action, Update is backed out to the beginning of POSTBOOT stage.

7.6.2 BACKOUT TO START OF POSTBOOT STAGE
1. If you are already at the beginning of POSTBOOT Stage which means MCC page 1985 looks like Figure 7-5 or MCC Page 1985 Stage indicator shows "POSTBOOT FAILED" and Step indicator shows "POSTBOOT STAGE STOPPED", continue with Section 7.6.3. Otherwise continue with step 2.

2. To stop any in-progress transition activity, access MCC page 1985 and enter command:
   CMD 200

3. To backout to start of POSTBOOT stage, on MCC page 1985, enter the following command:
   CMD 600

The transition process backs out to the start of the POSTBOOT stage.
7.6.3 VERIFY MOP PROCESS IS RUNNING

1. To ensure that the mop command is running, on MCC page 1984, enter command:

   CMD 510

   Response:

   UPD:GEN:APPLPROC,ARG="ISMOP";
   UPD GEN APPLPROC EXECUTING THE FOLLOWING UPDATE TOOL:
   /prc/supr/ismop
   UPD GEN APPLPROC ISMOP REPORT
   !!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!
   !!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!
   !!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!
   !!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!
   !!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!
   MOP IS RUNNING: MOPPID = xxxxxxxx
   THE FOLLOWING OFFLINE PARTITIONS ARE MOUNTED:
   /tmp/ofl/no5text on /tmp/ofldev1
   /tmp/ofl/no5text/im on /tmp/ofldev2
   /tmp/ofl/no5odd/cpdata on /tmp/ofldev3
   /tmp/ofl/log on /tmp/ofldev4
   /tmp/ofl/smlog on /tmp/ofldev5
   /tmp/ofl/no5odd/imdata1 on /tmp/ofldevx
   /tmp/ofl/no5odd/imdata2 on /tmp/ofldevx
   /tmp/ofl/no5odd/imdata3 on /tmp/ofldevx
   /tmp/ofl/no5odd/imdata4 on /tmp/ofldevx
   /tmp/ofl/no5odd/imdata5 on /tmp/ofldevx
   /tmp/ofl/no5odd/imdata6 on /tmp/ofldevx
   /tmp/ofl/no5odd/cidata on /tmp/ofldevx

Figure 7-5 — MCC Page 1985 Paused at the Post-Boot Stage
If mop is not running, the following response is output in response to the **510** command.

Response:

```
UPD:GEN:APPLPROC,ARG="ISMOP";
UPD GEN APPLPROC EXECUTING THE FOLLOWING UPDATE TOOL:
/prc/supr/ismop
UPD GEN APPLPROC ISMOP REPORT
!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!

: MOP IS NOT RUNNING

: THERE ARE NO OFFLINE PARTITIONS MOUNTED
: ISMOP COMPLETE

!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!

UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
```

2. **If mop is running and the proper off-line partitions are mounted,** continue with Section 7.6.4.

   **Caution:** The process which mounts off-line partitions (mop.bk) must not be stopped until all SMs and the CMP have successfully completed pumping.

3. If mop is **not** running and no off-line partitions are mounted, on MCC page 1984, enter command:

   **CMD 501, mop.bk**

Response:

```
UPD:GEN:APPLPROC,ARG="MOP.BK";
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
CHG:LPS,MSGCLS=INT_MON,PRINT=ON,LOG=ON;
CHG:LPS,MSGCLS=INT_MON,PRINT=ON,LOG=ON; OK
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
CHG:LPS,MSGCLS=GENRMON,PRINT=ON,LOG=ON;
CHG:LPS,MSGCLS=GENRMON,PRINT=ON,LOG=ON; OK
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
CHG:LPS,MSGCLS=INT,PRINT=ON,LOG=ON;
CHG:LPS,MSGCLS=INT,PRINT=ON,LOG=ON; OK
UPD GEN APPLPROC EXECUTING THE FOLLOWING UPDATE TOOL:
/no5text/prc/INoflmop
PRM_0 E800 xxxx xxxx xxxx xx xx
(Will appear several times)
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
```

**7.6.4 ENSURE SMs ARE MATE_PUMP**

In this section, the SMs will be checked to ensure they contain the old software release on one of their sides.

1. Enter message:
MSG OP:SYSSTAT,UCL;
Response: OP:SYSSTAT,UCL;PF

<table>
<thead>
<tr>
<th>OP SYSSTAT</th>
<th>SUMMARY LAST RECORD</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYS:</td>
<td>INHIBITS-RC MISC</td>
</tr>
<tr>
<td>AM:</td>
<td>INHIBITS-MTCE MORE</td>
</tr>
<tr>
<td>CM:</td>
<td>INHIBITS-MTCE</td>
</tr>
<tr>
<td>CMP x-0 P:</td>
<td>NORMAL</td>
</tr>
<tr>
<td>CMP y-0 M:</td>
<td>{GEN DIFF</td>
</tr>
<tr>
<td>LSM a,x:</td>
<td>MATE_PUMP FORCED INHIBITS-MTCE...</td>
</tr>
<tr>
<td>...</td>
<td></td>
</tr>
<tr>
<td>B LSM b,x:</td>
<td>MATE_PUMP FORCED INHIBITS-MTCE...</td>
</tr>
<tr>
<td>S LSM z,x:</td>
<td>MATE_PUMP FORCED INHIBITS-MTCE...</td>
</tr>
</tbody>
</table>

2. From the **OP:SYSSTAT,UCL** output, verify that all SMs indicate MATE_PUMP.

3. For any SMs which are not MATE_PUMP, force and off-line pump the SM. Refer to Section 7.3.3 to force the SM then on MCC pages 181 through 184, enter command:

   CMD 2xxx

   Where:   xxx = SM number.

### 7.6.5 OFF-LINE PUMP CMP

During this section, CMP 0-0 will be off-line pumped with old software release data. On MCC page 1851, the status indicator for CMP 0-0 will change from Standby (STBY) to Out-Of-Service (OOS) to Deactivated (DACT).

**Note:** CMP 0-0 should be off-line pumped with the old software release data even if the status of CMP 0-0 was GEN DIFF in the previous **OP:SYSSTAT,UCL** output (Section 7.7.3). This will ensure that the CMP has clean data for the switch back to the old software release.

The following recovery procedures are given in case of problems while one of the CMPs is marked DACT.

- In the event the ACTIVE CMP fails while the mate CMP is DACT, the AM can escalate (up to an RTR level 3) trying to recover the formally ACTIVE CMP but will not use the DACT unit.

- In the event of CMP duplex failure with a CMP in the DACT state where the AM automatic escalation does not recover the CMP, if input commands are available, do an RST:_CMP=x-0,UCL; to release the DACT state.

1. Access MCC page 1851 and verify that CMP 1-0 is the ACT CMP (under the **CMP 0 PRIM STAT** box) and CMP 0-0 is the STBY or DACT CMP (under the **CMP 0 MATE STAT** box).

2. **If** CMP 1-0 is **not** the PRIMARY (active) CMP, enter message:

   MSG SW:CMP=1-0;
Response: **EXC ODDRCVY=ALL CMP=1-0 STOPPED**

[REPT CMP=0-0 MATE INITIALIZATION TRIGGER=SW-REQUEST]
REPT MSKP_ENVIRONMENT:
CMP=0-0 PHASE 1&2 INIT COMPLETION TIME: xxxx

TYPE:xxx EVENT=xxxx
SW CMP=1-0 COMPLETED
EXC ODDRCVY=ALL CMP=0-0 STARTED
REPT COMMUNICATION RESTORED: AM TO CMP=0-0 MATE
REPT MSKP_ENVIRONMENT:
CMP=0-0 PHASE 3 INIT COMPLETION TIME: xxxxxx

TYPE:xxx EVENT=xxxx
CMP 1-0 becomes **PRIMARY** (active), CMP 0-0 becomes **MATE** (standby).

3. To inhibit AM software and hardware checks, enter command on MCC page 1984:

CMD 511, inh, am

Response:

UPD:GEN:APPLPROC,ARG="INHAMCHKS";
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
INH:HDWCHK;
INH:HDWCHK; PF
* REPT INHADM MINOR ALARM FROM INHIBIT ADMINISTRATOR

(on ROP)INH HDWCHK COMPLETED
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
INH:SFTCHK;
INH:SFTCHK; PF
* REPT INHADM MINOR ALARM FROM INHIBIT ADMINISTRATOR

(on ROP)INH SFTCHK COMPLETED
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

Comment: On MCC page 110 - SYSTEM INHIBITS, box “18 INH SOFTWARE CHECKS” and box “24 INH HARDWARE CHECKS” should be backlit.

4. To off-line pump the CMP, from MCC page 1851, enter command:

**Note:** If the ofl.partition has not been mounted, execute the 501,mop.bk command from the 1984 MCC page.

CMD 930

Response:

ST:OPUMP,CMP=0,MATE; PF
EXC ODDRCVY=ALL CMP=0-0 STOPPED
REPT CMP=0-0 MATE INITIALIZATION TRIGGER={MANUAL|CRAFT}-REQUEST
ST OPUMP CMP=0-0 COMPLETED
[REPT MSKP_ENVIRONMENT:]
[CMP=0-0 PHASE 1&2 INIT COMPLETION TIME: H'xxxx TYPE:H'x]
[event=xxxx]
[CMP=0-0 PHASE 3 INIT COMPLETION TIME: H'xxxx TYPE:H'x]
[event=xxxx]
Comment: On MCC page 1851, the status indicator for CMP 0-0 will change from Standby (STBY) to Out-Of-Service (OOS) to white Deactivated (DACT).

Also, on MCC page 1851, the different states of the mate memory will be displayed. Table 7-2 shows some of the states of CMP 0-0 during the pump and a definition of each. When the CMP is successfully pumped, the state will be GEN DIFF.

<table>
<thead>
<tr>
<th>STATUS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPUMPHLD</td>
<td>Off-line pump, hold</td>
</tr>
<tr>
<td>OPUMPLB</td>
<td>Off-line pump, little boot</td>
</tr>
<tr>
<td>OPUMPBB</td>
<td>Off-line pump, big boot</td>
</tr>
<tr>
<td>COMM</td>
<td>Off-line pump, communication link</td>
</tr>
<tr>
<td>FI BGN</td>
<td>Begin full switch forward</td>
</tr>
<tr>
<td>FISICOM</td>
<td>FI selective Init. common code portion</td>
</tr>
<tr>
<td>DACT GEN DIFF</td>
<td>Software release different</td>
</tr>
</tbody>
</table>

7.6.6 STOP mop.bk PROCESS

To stop the mop process, enter command on MCC page 1984:

CMD 609

Response:

```
UPD:GEN:APPLPROC,ARG="STOPMOP"
UPD GEN APPLPROC EXECUTING THE FOLLOWING UPDATE TOOL:
/prc/supr/ptnmgr -k
 may appear several times
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
```

Exit Points:

Restart: There is no restart pointer for this Backout Action.

Note: if AM off-line boot is NOT running then continue with Backout Action B-5 (Section 7.7). If AM off-line boot is running then continue with Backout Action B-6 (Section 7.8).

To determine if AM off-line boot is still running, access MCC page 111. If all AM units on side 0 display a status of UNEQ, AM off-line boot is running. The report OFLBOOT IP - ONLINE also appears, on MCC page 111, backlit in red.

Backout: If AM off-line boot is NOT running, continue with Backout Action B-5 (Section 7.7).

OR

Backout: If AM off-line boot is running, continue with Backout Action B-6 (Section 7.8).
7.7 BACKOUT ACTION B-5 WITHOUT OFF-LINE BOOT (RCVYPREP STAGE)

B-5 ENTRY POINTS: This Backout Action is entered by the following conditions:

- Completion of Backout Action B-4, or
- Direction of Table 7-1, of this document.

Note: AM Off-line Boot is NOT running. AM can be simplex or duplex on the new software release.

SMs should be simplex and running on the new software release. Their status, as indicated by the output of OP:SYSSTAT,UCL should include MATE PUMP.

MCC 1985 page is either paused at POSTBOOT STAGE BOUNDARY or paused at RCVYPREP STAGE BOUNDARY.

7.7.1 OVERVIEW

In this Backout Action, the SMs and CMP are prepared to be switched from the new to the old side and initialized on the old software release. Call processing is lost from the time the SMs are switched until the AM and CMP come up on the old software release. Since the AM is duplex and AM off-line boot is not running a traditional 42-S-54 will be used. If MCC 1985 page is paused at POSTBOOT STAGE BOUNDARY, CONTINUE WITH THE FOLLOWING SECTION.

7.7.2 INHIBIT AM CHECKS

To inhibit AM software and hardware checks, enter command on MCC page 1984:

CMD 513,am

Response:

```
UPD:GEN:APPLPROC,ARG="INHAMCHKS";
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
INH:HDWCHK;
INH:HDWCHK; PF
* REPT INHADM MINOR ALARM FROM INHIBIT ADMINISTRATOR

(on ROP)INH HDWCHK COMPLETED
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
INH:SFTCHK;
INH:SFTCHK; PF
* REPT INHADM MINOR ALARM FROM INHIBIT ADMINISTRATOR

(on ROP)INH SFTCHK COMPLETED
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
```

Comment: On MCC page 110 - SYSTEM INHIBITS, box "18 SOFTWARE CHECKS" and box "24 HARDWARE CHECKS" should be backlit.

7.7.3 ENSURE SMs ARE MATE_PUMP

In this section, the SMs will be checked to ensure they contain the old software release on one of their sides.

1. Enter message:

```
MSG OP:SYSSTAT,UCL;
```

Response: `OP:SYSSTAT,UCL;PF`
2. From the OP:SYSSTAT, UCL output, verify that all SMs indicate MATE_PUMP. If all SMs indicate MATE_PUMP, skip Steps 3 and 4 and proceed with Section 7.7.4.

3. Mount off-line partitions

   **Caution:** The process which mounts off-line partitions (mop.bk) must not be stopped until all SMs and the CMP have successfully completed pumping. If mop.bk is stopped, the pump process is not able to access data on the off-line disks. Extensive recovery procedures may be required. Escalate to your next level of support before continuing the backout procedures.

   To mount off-line partitions, on MCC page 1984, enter command:

   CMD 501,mop.bk

   **Caution:** The file systems that are mounted in this step are necessary to off-line pump the SMs. Continuing before the file systems are mounted on the off-line disks could result in not being able to pump the SMs. Wait for the UPD:GEN APPLPROC COMPLETED SUCCESSFULLY to be output before continuing.

   Response:

   ```
   UPD:GEN:APPLPROC,ARG="MOP.BK";
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   CHG:LPS,MSGCLS=INT_MON,PRINT=ON,LOG=ON;
   CHG:LPS,MSGCLS=INT_MON,PRINT=ON,LOG=ON; OK
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   CHG:LPS,MSGCLS=GENRMON,PRINT=ON,LOG=ON;
   CHG:LPS,MSGCLS=GENRMON,PRINT=ON,LOG=ON; OK
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   CHG:LPS,MSGCLS=INT,PRINT=ON,LOG=ON;
   CHG:LPS,MSGCLS=INT,PRINT=ON,LOG=ON; OK
   UPD GEN APPLPROC EXECUTING THE FOLLOWING UPDATE TOOL:
   /no5text/prc/INoflmop
   PRM_0 E800 xxxx xxxx xxxx xx xx xx (appears several times)
   UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
   ```

4. For any SMs which are not MATE_PUMP, off-line pump the SM. On MCC pages 181 through 184, enter command:

   CMD 2xxx
Where:  

xxx = SM number.

7.7.4 EAI PAGE SETUP

1. Access MCC page 111.

2. Verify that AM 0 is Active (ACT) and AM 1 is STBY, OOS or UNV, before proceeding. If AM 0 is not active go to MCC page 112 and execute 400.

3. Access EAI page.

4. To clear all forces on the EAI page, enter command:

   CMD 14

   Response:  
   
   REPT CU 1 OUT OF SERVICE (on ROP)
   REPT CU 0 NO LONGER FORCED ONLINE (on ROP)

5. Ensure "SET-INH" box is NOT visible after INH-TIMER.

6. Enter the following EAI commands:

   CMD 10 forces CU 0 on-line.
   CMD y forces CU 0 on-line after "y" is entered.
   CMD 20 select primary MHD.
   CMD 31 clear BACKUP-ROOT.
   CMD 33 clear MIN CONFIG.
   CMD 34 set hardware inhibits.
   CMD 36 set software inhibits.
   CMD 39 clear INH ERR INT.
   CMD 41 clear INH CACHE.
   CMD 43 clear APPL PARAM.

   Response:  
   
   REPT CU 1 UNAVAILABLE
   REPT CU 0 FORCED ONLINE

7. Access normal display (NORM DISP).

8. To switch ports, enter command on MCC page 111:

   CMD 401

   Response:

   SW:PORTSW; PF
   REPT ROP x STOPPED
   REPT ROP y STARTED
   SW PORTSW COMPLETED FOR ROP

   Screen blanks while ports are being switched.

   REPT MTTY x STOPPED REPT MTTY y STARTED SW PORTSW COMPLETED FOR MTTY

   EAI page comes up followed by MCC page 111.

   Comment: If the port switch fails, ensure that the switches on the EAI boards are in the auto position.
9. Verify that the values on the other EAI page are set to the same values (as in Step 5).

10. Access normal display (NORM DISP).

### 7.7.5 SM, CM AND AM INITIALIZATION

If either of the following messages are received, escalate to your next level of support:

**UPD GEN BACKOUT STOPPED WITH ERROR CODE xxxxx (SUPR)**
**UPD GEN BACKOUT APP STOPPED WITH ERROR CODE xxxx (APPLHOOK).**

*If the system fails to recover from the initialization, refer to Section 6.3 and escalate to your next level of support.*

At this time, the operating company should notify all carrier systems connected to this office of the impending system initialization.

1. Inform the Site Coordinator that the switch will undergo a full system initialization within 10 minutes.

2. On MCC page 1209, verify that ONTCs are duplex. Stable calls are preserved only if the ONTCs are duplex going into the initialization.

   **Note 1:** If the ONTCs are ACTIVE MAJOR/MINOR (that is, duplex) on MCC page 1209, use S as the application parameter (to preserve stable calls). If ONTCs are not duplex, use R as the application parameter.

   Stable calls will only be preserved if the following backout (708,noflboot,ucl) is performed at least 10 minutes after the initialization to the new software release.

   **Note 2:** The following command will switch all SMs back to the "old" data. After the command is entered, call processing will be down. Therefore, proceed to the AM boot sequence as soon as all SMs have switched back.

3. Change the AM Off-line Boot option to N, by accessing MCC page 1989 and entering command:

   CMD 404,N

4. To stop any in-progress transition activity, access MCC page 1985,ltg and enter command:

   CMD 200

5. To backout the Recovery Preparation stage, access MCC page 1985,ltg and enter command:

   CMD 600

   The Recovery Preparation stage backs out to the beginning and then runs forward to the NEW SIDE SM MGR.
6. To switch SMs back to old side, from MCC page 1985, enter command:
   CMD 600

7. Go to MCC pages 141, 142, 143, 144 to check the SMs to be GEN DIFF.

8. If any SMs fail to switch over, set UCL, on MCC page 1989 enter command:
   CMD 401,Y

   To execute the backout again unconditional, on MCC page 1985, enter command:
   CMD 600

   ******************************************
   CALL PROCESSING IS DOWN
   PROCEED IMMEDIATELY TO
   THE NEXT STEP AND BOOT
   ******************************************

9. To perform the initialization, enter the following commands on the EAI page:

   CMD 42 set application parameter mode
   PARAMETER: S or R
       S saves stable calls (recommended) R does not save stable calls
Warning: Verify that either S or R appears (and is backlit) to the RIGHT of the 42 43 APPL PARAM field on the EAI page before proceeding. If the S or R is not present and backlit, re-enter the 42 and S/R commands again before proceeding to the boot.

CMD 54 boot AM on old software release
Boot? (y/n) y boot begins when "y" is entered.

Warning: Do not attempt to enter pokes or messages until all expected "System status indicators" backlight (that is, SYS INH, AM, AM PERPH, MISC, etc.). After all system status indicators are backlit, pokes and messages should be kept to a minimum until full system recovery has taken place (AM active on MCC page 111). While the system is recovering, DO NOT attempt to access RC, ECD, ODBE, or UNIX system shell.

10. On MCC page 111, AM 0 status should be INIT and then shortly change to active (ACT).

Note: On MCC pages 141, 142, etc., each SM should indicate MATE_PUMP within 10 to 15 minutes of the initialization.

7.7.6 VERIFICATION OF SUCCESSFUL RECOVERY ON OLD SOFTWARE RELEASE

7.7.6.1 AM Recovery
If any failing PRMs are output, consult the PRM document. If only failing PRMs are output, escalate to your next level of support immediately and consult Section 6.3.

7.7.6.2 Call Processing Verification
1. If call processing is not available within a reasonable amount of time, the Site Coordinator should escalate to your next level of support immediately.
2. As the SMs become active, verify that call processing is available from the SM and verify intramodule and intermodule call processing. Keep records on the Call Processing Verification Worksheet (Table 9-8).
3. Using list of local and Direct Distance Dialing (DDD) lines prepared earlier, perform a dial through test of all selected lines.
   Comment: Included in this list should be police, fire, hospital(s), 911 dispatcher, and other emergency numbers as determined by local practices.
4. The next several sections verify that critical 5ESS® switch hardware is configured correctly after the initialization. Since MCC display pages must function to perform these verifications, it could be as long as 30 minutes before these procedures may be performed. Preliminary call processing tests should be performed as soon as possible after the initialization. Call processing should be available in less than 5 minutes. The following sections should be deferred until call processing has been demonstrated.

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7.7.6.3 MCC Displays

1. The MCC should change from the EAI page to MCC page 111 within 5 to 10 minutes. (The full set of MCC pages are available within 15 minutes.)

2. On MCC page 111, AM 0 status may be INIT shortly changing to ACT FRCD.

Exit Points:

Restart: There is no restart pointer for this Backout Action. Continue with Backout Action B-7 (Section 7.9).

Backout: Continue with Backout Action B-7 (Section 7.9). Skip Backout Action B-6 (Section 7.8).

*******************************************************************************
*******************************************************************************
7.8 BACKOUT ACTION B-6 WITH OFF-LINE BOOT (RCVYPREP STAGE)

B-6 ENTRY POINTS: This Backout Action is entered by the following conditions:

- Completion of Backout Action B-4, or
- Direction of Table 7-1, of this document.

**Note:** AM Off-line Boot is running*. AM can be simplex or duplex on the new software release.

SMs should be simplex and running on the new software release. Their status, as indicated by the output of **OP:SYSSTAT,UCL** should include MATE PUMP.

MCC 1985 page is either at paused at POSTBOOT STAGE BOUNDARY or paused at RCVYPREP STAGE BOUNDARY.

**Note(s):**

a. To determine if AM off-line boot is still running, access MCC page 111. If all AM units on side 0 display a status of **UNEQ**, then AM off-line boot is running. The report **OFLBOOT IP - ONLINE** also appears, on MCC page 111, backlit in red.

7.8.1 OVERVIEW

In this Backout Action, the SMs and CMP will be switched from the new to the old side and initialized on the old software release. Call processing is lost from the time the SMs are switched until the AM and CMP come up on the old software release. Since the AM is duplex and AM off-line boot is running, a Backout command "600" from MCC page 1985,ltg will be used.

7.8.2 POSTBOOT STAGE

If MCC 1985 page is paused at POSTBOOT STAGE BOUNDARY, continue with the following section.

1. To stop any in-progress transition activity, access MCC page **1985,ltg** and enter command:
   
   CMD 200

2. To backout to the old release and SWITCHFWD stage, on MCC page 1985 enter command:
   
   CMD 600

3. **If any SMs fail to switch over,** set UCL, on MCC page 1989 enter command:
   
   CMD 401,Y

   To execute the backout again unconditional, on MCC page 1985, enter command:
   
   CMD 600

   ******************************************
   CALL PROCESSING IS DOWN
   PROCEED IMMEDIATELY TO
   THE NEXT STEP
   ******************************************

The transition process backs out to the SWITCHFWD stage.
7.8.3 VERIFICATION OF SUCCESSFUL RECOVERY ON OLD SOFTWARE RELEASE

7.8.3.1 AM Recovery
If any failing PRMs are output, consult the PRM document. If only failing PRMs are output, escalate to your next level of support immediately and consult Section 6.3.

7.8.3.2 Call Processing Verification
1. If call processing is not available within a reasonable amount of time, the Site Coordinator should escalate to your next level of support immediately.
2. As the SMs become active, verify that call processing is available from the SM and verify intramodule and intermodule call processing. Keep records on the Call Processing Verification Worksheet (Table 9-8).
3. On MCC Page 1985, if the SWITCHFORWARD Stage Indicator shows starting and the Step Indicator shows SWITCH-FWD PAUSE then continue.
4. Using list of local and Direct Distance Dialing (DDD) lines prepared earlier, perform a dial through test of all selected lines.
   Comment: Included in this list should be police, fire, hospital(s), 911 dispatcher, and other emergency numbers as determined by local practices.
5. The next several sections verify that critical 5ESS switch hardware is configured correctly after the initialization. Since MCC display pages must function to perform these verifications, it could be as long as 30 minutes before these procedures may be performed. Preliminary call processing tests should be performed as soon as possible after the initialization. Call processing should be available in less than 5 minutes. The following sections should be deferred until call processing has been demonstrated.

7.8.3.3 MCC Displays
1. The MCC should change from the EAI page to MCC page 111 within 5 to 10 minutes. (The full set of MCC pages are available within 15 minutes.)
2. On MCC page 111, AM 0 status may be INIT shortly changing to ACT FRCD.
3. Verify all SMs are in the correct state by executing a OP:SYSSTAT.UCL. If not, go to Recovery Action R-39. If all SMs are in the correct state then continue.

Exit Points:

Restart: There is no restart pointer for this Backout Action. Continue with Backout Action B-7 (Section 7.9).

Backout: Continue with Backout Action B-7 (Section 7.9).
7.9  BACKOUT ACTION B-7 (SWITCHFWD STAGE)

B-7 ENTRY POINTS: This Backout Action is entered by the following conditions:

• Completion of Backout Action B-5, or B-6, or
• Direction of Table 7-1, of this document.

Note: AM and CMP should be on the old software release. SMs should be simplex or may be GEN DIFF and running on the new or old software release. Their status is indicated by the output of OP:SYSSTAT,UCL.

7.9.1  OVERVIEW

In this Backout Action, any GEN DIFF SMs will be switched back. The SMs and CMP are verified and Trunk Status Mapping is run. On MCC page 1985, a 200 STOP poke command followed by a 600 BACKOUT poke command is entered to backout to the beginning of SWITCHFWD stage.

7.9.2  BACKOUT TO START OF SWITCHFWD STAGE

1. If you are already at the beginning of SWITCHFWD Stage which means MCC Page 1985 looks like Figure 7-7, or Stage indicator shows "SWITCHFWD-FAILED" and Step indicator shows "SWITCHFWD STAGE STOPPED", then go directly to Backout Action B-8, Section 7.10. Otherwise continue with step 2.

   Note: If the step indicator shows "SWITCHFWD WAITING", continue with Step 2.

2. If using off-line boot, go to MCC page 111 to verify you are on side 0. If not, go to Backout Action B-6, Section 7.8.

3. To stop any in-progress transition activity, access MCC page 1985,ltg and enter command:

   CMD 200
4. To backout to the start of SWITCHFWD stage, on MCC page 1985 enter command:
   CMD 600
   The transition process backs out to the start of the SWITCHFWD stage.

7.9.3 VERIFICATION OF SUCCESSFUL RECOVERY

7.9.3.1 SM Recovery
1. To allow hardware checks on all CLNKs, enter message:
   MSG ALW:HDWCHK,CLNK,ALL;
   Response: ALW HDWCHK CLNK ALL COMPLETED
2. To simultaneously restore all OOS CLNKs, enter message:
   MSG RST:CLNK,ALL;
   Response: RST:CLNK,ALL; PF
   RST CLNK ALL COMPLETED
   a. If any CLNKs are off normal, access MCC page 1900,x (where x = SM number with off-normal CLNKs).
   b. To restore OOS CLNKs, enter command on MCC page 1900,x:
      CMD 3xxx
4. On MCC pages 141, 142, etc., each SM should indicate **MATE PUMP** within 10 to 15 minutes of the AM initialization.

*Caution: The following step is only for SM initialization problems.*

5. Any SM indicating the status of **GEN DIFF** on MCC pages 141, 142, etc., could indicate one of the following conditions:

- A loss of communications to the SM has occurred
- The SM has failed to switch to the new software release side.
- An other error has occurred in the SM.

To determine if a communications problem has occurred, access MCC page 1900,x (where x is the SM number).

To restore OOS CLNKs, enter command on MCC page 1900,x:

**CMD 3yyy**

Where:      yyy = OOS CLNK

If the CLNKs do not restore, access MCC page 115 to determine the location of other CM problems. Go to the appropriate MCC pages and attempt to restore communications.

If the SM remains **GEN DIFF** on MCC pages 141, 142, etc., attempt to switch the SMs sides. Enter message:

**MSG ORD:CPI=x,CMD=GRSW-0;**

Where:      x = number of the SM that is **GEN DIFF**.

If the SM remains **GEN DIFF** on MCC pages 141, 142, etc., repumping the SM is recommended as follows:

a. To allow auto pump, enter command on MCC page 1800,x (where x = SM number):

**CMD 701**

Response:   **OK**

b. If any SMs still indicate **GEN DIFF**, proceed immediately to Recovery Action R-39, Section 6.6.39 and escalate to your next level of support.

**Note:** Any SMs that indicate GEN DIFF will only respond to the following types of commands:

- Software Release Update switch commands (Switchfwd, Switchbck, Backout, SMswitch, SMbackout, and ORD:CPI=x,CMD=GRSW)
- Reset processor commands (poke 924 on MCC page 1800,x and ORD:CPI=x,CMD=RESET)

Do not attempt to power cycle an SM without support from technical assistance. If an SM that is in a forced simplex condition is power cycled, the SM force will be lost and the SM will attempt to duplex.
c. If the status of the SM remains GEN DIFF on MCC page 1800,x, perform an AM directed reset (to initialize and pump the SM) by entering the following commands:

CMD 924
Response: **FI? Y/N (on MCC)**
CMD **y**
Response: **ORD:CPI=x, CMD=RESET; PF**
Comment: The 924 poke and the **y** confirmation should be poked into the switch a second time to pump the SM.

CMD 924
Response: **FI? Y/N (on MCC)**
CMD **y**
Response: **ORD:CPI=x, CMD=RESET; PF**

6. Verify each SM is active on side 0. Enter message:

**MSG OP:SYSSTAT,UCL;**

Response:

```
OP SYSSTAT SUMMARY {FIRST|NEXT|LAST}
RECORD
SYS: INHIBITS-RC MISC
AM: [BACKOUT-RC] INHIBITS-MTCE-SW MORE
CM: INHIBITS-MTCE
CMP x-0 P: [BACKOUT-RC] INHIBITS-HW
CMP y-0 M: [BACKOUT-RC] GEN DIFF
{B|S|L}SM a,0: MATE_PUMP [BACKOUT-RC] FORCED INHIBITS-MTCE-PUMP-HW-SW
[CKT_OOS][MORE]
...
{B|S|L}SM z,0: MATE_PUMP [BACKOUT-RC] FORCED INHIBITS-MTCE-PUMP-HW-SW
[CKT_OOS][MORE]
```

Comment: At this point, all units (AM, CMP, SMs) may indicate **BACKOUT-RC** as the RC roll-forward completes. Once the roll forward is complete, no units should indicate **BACKOUT-RC**.

7.9.3.2 CMP Recovery

Access MCC page 1850. The primary CMP state should be **ACT**. If trouble was encountered in reconfiguring the CMPs during the switch forward, the primary CMP may show that it is being pumped and initialized. **On MCC page 1850, if the primary CMP shows that it is being pumped and initialized, wait a reasonable amount of time for the process to complete.**
If the primary CMP changes to an ACTIVE state, proceed to the next section.

If the state of the primary CMP still did not change to ACTIVE/POSTINIT, do the following.

**Caution:** The following steps are only for CMP switch forward problems.

1. On MCC page 1850 (logically active CMP), to initialize and pump the CMP, enter commands:
   
   ```
   CMD 923
   FI (Y/N) Y
   ```

2. If the status of the CMP still does not transition to ACTIVE within a reasonable amount of time (10 minutes maximum), escalate to your next level of support.

### 7.9.3.3 Verification of Trunk Status Mapping

1. To verify trunk status mapping, enter the following command on MCC page 1984:
   
   ```
   CMD 514,new
   ```

   **Response:**
   ```
   UPD:GEN:APPLPROC,ARG="TSMNEW";
   UPD GEN APPLPROC EXECUTING THE FOLLOWING UPDATE TOOL:
   /prc/supr/tsm NEW
   [UPD GEN TSM IN PROGRESS xxx TRUNKS LOGGED]
   [UPD GEN TSM OOS SUMMARY xx MISMATCHES DETECTED]
   [UPD GEN TSM CADN SUMMARY xx MISMATCHES DETECTED]
   UPD GEN TSM COMPLETED
   UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
   ```

   **Comment:** If an error is encountered, refer to Section 6.5.15.

2. If OOS and/or CADN mismatches were detected, an OP-LIST-like report containing each listing can be dumped to the ROP or another printer. The location of these files is as follows:
   
   - **CADN Report:** /updtmp/tsm/cadn.report
   - **OOS Report:** /updtmp/tsm/oos.report

3. If CADN mismatches are detected, the report should be dumped to a printer (ROP, etc.) and analyzed now.
   
   This report contains a listing of trunks which were IN SERVICE prior to the boot but are now OOS CADN.

   This state is usually encountered when trunks marked OOS CADN in the final ODD dump are brought into service during the RC double-logging interval.

   For each trunk listed in the CADN report, determine whether it should be brought back into service or left as it is. If the trunk should be brought back into service, use the appropriate RST:TRK message (refer to 235-600-700, *Input Message Manual*) to restore the trunk(s).

4. If the summary message from TSMNEW indicated that OOS mismatches were detected, the following message can be used to automatically remove from service all trunks listed in the `oos.report` file (/updtmp/tsm/oos.report).
   
   ```
   CMD 514,rmv
   ```
Response: **UPD:GEN:APPLPROC,ARG="TSMRMV";**

UPD GEN APPLPROC EXECUTING THE FOLLOWING UPDATE TOOL:
/prc/supr/tsm RMV
UPD GEN TSM xx TRUNKS TO BE REMOVED FROM SERVICE
(A RMV:TRK message appears for each trunk

in the OOS report)
UPD GEN TSM COMPLETED
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

Comment: Do not wait for all of the trunks to be removed from service. Continue with the procedures.

Exit Points

**Restart:** Restart at Switchforward (Section 5.7) for this backout section.

**Backout:** Continue with Backout Action B-8 (Section 7.10).
7.10 BACKOUT ACTION B-8 - DUPLEX AM AND CMP (PROCEED STAGE)

B-8 ENTRY POINTS: This Backout Action is entered by the following conditions:
- Completion of Backout Action B-7, or
- Direction of Table 7-1, of this document.

Note: At this point the AM, CMP, and SMs are simplex on the old software release. AM and CMP will be duplexed and Update will be backedout to the beginning of PROCEED.

7.10.1 BACKOUT TO START OF PROCEED STAGE

1. If you are already at the beginning of PROCEED Stage which means MCC Page 1985 looks like the following Figure 7-8, or Stage indicator shows "PROCEED-FAILED" and Step indicator shows "PROCEED STAGE STOPPED", then go directly to Backout B-9, Section 7.11. Otherwise continue with step 2.

2. To stop any in-progress transition activity, access MCC page 1985,ltg and enter command:
   CMD 200

3. To backout to start of PROCEED stage, on MCC page 1985 enter command:
   CMD 600

The transition process backs out to the start of the PROCEED stage.

---

**Figure 7-8 — MCC Page 1985 Paused at the Proceed Stage**
7.10.2 CMP RESTORAL

1. To allow CMP hardware and software checks, on MCC page 1984, enter command:
   
   **CMD 511,cmp**
   
   Response:
   
   UPD:GEN:APPLPROC,ARG="ALWCMPCHKS";
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   ALW:HDWCHK,CMP=0-0;
   ALW:HDWCHK,CMP=0-0; PF
   ALW HDWCHK CMP=0-0 COMPLETED
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   ALW:HDWCHK,CMP=1-0;
   ALW:HDWCHK,CMP=1-0; PF
   ALW HDWCHK CMP=1-0 COMPLETED
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   ALW:SFTCHK,CMP=0;
   ALW:SFTCHK,CMP=0; OK
   UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
   
   If CMP is not duplex, execute the following 2 commands (steps 2 and 3):
   
   2. To remove CMP 1-0, enter message:
   
   **MSG RMV:CMP=1-0;**
   
   Response: **RMV CMP=1-0 COMPLETED**
   
   3. To unconditionally restore CMP 1-0 to standby, enter message:
   
   **MSG RST:CMP=1-0,STBY,UCL;**
   
   Response:
   
   REPT CMP=1-0 MATE INITIALIZATION TRIGGER={CRAFT\|MANUAL} -REQUEST
   RST CMP=1-0 COMPLETED
   [REPT MSKP_ENVIRONMENT:]
   [CMP=1-0 PHASE 1\&2 INIT COMPLETION TIME: H'xxxxxx
   TYPE: H'x' [EVENT=xxx]
   [CMP=1-0 PHASE 3 INIT COMPLETION TIME: H'xxxxxx
   TYPE: H'x'[EVENT=xxx]
   REPT COMMUNICATION RESTORED: AM TO CMP=1-0 MATE
   
   Comment: Several other types of output messages may be received indicating
   the CMP has been initialized.

7.10.3 ALLOW AUTO PUMP, SOFTWARE, HARDWARE, AND ERROR CHECKS

In this Backout Action, the following conditions are most likely true:

- The switch is running on the old data.
- The SMs are simplex with MCTSI side 0 forced active and MCTSI side 1 is UNV.
- The disks are simplex with the even-numbered disks ACT and the odd-numbered disks OFL. Refer to MCC page 123 for the state of the system MHDs.

In the following steps, auto pump, software, hardware, and error checks are allowed.

1. To allow SM software and hardware checks, on MCC page 1984 enter command:
   
   **CMD 511,sm**
Response:

UPD:GEN:APPLPROC,ARG="ALWSMCHKS";
UPD:GEN:APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:HDWCHK,SM=1&&192;
ALW:HDWCHK,SM=1&&192; IP
UPD:GEN:APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:SFTCHK,SM=1&&192;
ALW:SFTCHK,SM=1&&192; OK
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
ALW:HDWCHK SM=x COMPLETED

Comment: On MCC page 1800,x (where x = any numbered SM), box "04 SFTCHK" and box "08 ALL HDWCHK" should not be backlit or transition from a backlit condition to a normal display in a few minutes.

2. To simultaneously restore all OOS CLNKs, enter message:

MSG RST:CLNK,ALL;
Response: RST CLNK ALL COMPLETED

3. To allow auto pump in all SMs, on MCC page 1984 enter command:

CMD 501,alwpump
Response:

UPD:GEN:APPLPROC,ARG="ALWPUMP";
UPD:GEN:APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:PUMP,SM=1&&192; OK
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

Comment: On MCC page 1800,x (where x = any numbered SM) box "01 AUTO PUMP" should not be backlit or transition from a backlit condition to a normal display in a few minutes.

4. Enter the following command on MCC page 1984:

CMD 511,am
Response:

UPD:GEN:APPLPROC,ARG="ALWAMCHKS";
UPD:GEN:APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:HDWCHK;
ALW:HDWCHK; PF
ALW:HDWCHK COMPLETED
UPD:GEN:APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:SFTCHK;
ALW:SFTCHK; PF
ALW:SFTCHK COMPLETED
UPD:GEN:APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:ERRINT;
ALW:ERRINT; PF
ALW:ERRINT COMPLETED
UPD:GEN:APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:ERRSRC;
ALW:ERRSRC; PF
ALW:ERRSRC COMPLETED
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

5. Enter message:
MSG OP:SYSSTAT,UCL;
Response:

| OP SYSSTAT | SUMMARY {FIRST|NEXT|LAST} RECORD |
|------------|---------------------------------|
| SYS:       | INHIBITS-MSG-RC MISC            |
| AM:        | INHIBITS-MTCE MORE              |
| CM:        | NO_REQ_PEND                     |
| CMP 0-0:   | NORMAL                          |
| CMP 1-0:   | [BACKOUT-RC] {POSTINIT|NORMAL}  |
| {B|S|L}SM a,0: | MATE_PUMP FORCED INHIBITS-MTCE |
|            | CKT_OOS                         |
| ...        |                                 |
| {B|S|L}SM z,0: | MATE_PUMP FORCED INHIBITS-MTCE |
|            | CKT_OOS                         |
| ...        |                                 |

7.10.4 RESTORE AM 1
1. Access the EAI page.
2. To clear all forces on the EAI page, enter command:
   CMD 14
   Response: REPT CU 1 OUT OF SERVICE (on ROP)
   REPT CU 0 NO LONGER FORCED ONLINE (on ROP)
3. Access normal display (NORM DISP).
4. To switch ports, enter command on MCC page 111:
   CMD 401
   Response:
   SW:PORTSW; PF
   REPT ROP x STOPPED
   REPT ROP y STARTED
   SW PORTSW COMPLETED FOR ROP
   Screen blanks while ports are being switched.
   REPT MTTY x STOPPED REPT MTTY y STARTED SW PORTSW COMPLETED FOR MTTY
   EAI page comes up followed by MCC page 111.
   Comment: If the port switch fails, ensure that the switches on the EAI boards are in the auto position.
5. Reaccess the EAI page and verify that the setups for this EAI port are the same as the other port which was set in Step 2. If the hardware and software inhibits are not cleared, clear them. If the force on the CU has not been cleared, clear it. If the force on the secondary disk has not been cleared, clear it. If these items have been cleared, continue with the next step.
6. To unconditionally restore AM 1, on MCC page 111, enter command:
CMD 301,ucl

Response: RST:CU=1,UCL; PF (on ROP)
RST CU=1 TASK x MSG STARTED

RST CU 1 IN PROGRESS (every 2 minutes)

RST CU 1 COMPLETED

Comment: Wait for RST:CU=1,UCL; PF acknowledgment, but do not wait for the AM restoral to complete.

Exit Points

Restart: Restart at PROCEED (Section 5.6) after setting UCL on MCC page 1989.
Backout: Continue with Backout Action B-9 (Section 7.11).
7.11 BACKOUT ACTION B-9 (BACKOUT TO THE START OF THE ENTER STAGE)

B-9: ENTRY POINTS: This Backout Action is entered by the following conditions:
- Completion of Backout Action B-8, or
- Direction of Table 7-1, of this document.

Note: At this point the AM and CMP are duplex on the old software release. The SMs may be simplex on the old software release. MHDs may be simplex.

7.11.1 OVERVIEW
In this Backout Action, the following conditions are most likely true:
- The switch is running on the old text load.
- The SMs may be simplex with MCTSI side 0 forced active and MCTSI side 1 is Unavailable (UNV).
- The SUs (imr11111xx and imr22222xx) may have already been applied or be in the process of being applied.
- The disks may be simplex with the even-numbered disks, Active (ACT-SYSTEM) and the odd-numbered disks, off-line (ACT-SPLIT). Refer to output of 502 on MCC page 1984 for the state of the MHDs.

7.11.2 BACKOUT TO THE START OF THE ENTER STAGE
1. If you are already at the beginning of the ENTER stage (meaning MCC page 1985 matches the figure shown in Figure 7-9), or stage indicator shows "ENTER STAGE STOPPED", go directly to Backout B-10, Section 7.12. Otherwise continue with Step 2.
2. Access the MCC page 1985,ltg and enter stop command to stop any "in progress" translation activities:
   CMD 200
3. Determine whether or not either of the 2 SUs (imr11111xx and imr22222xx) have been applied (see page 1950 for BWM history). If any of the preceding SUs have been applied, follow the procedures outlined in Section 7.11.3 to back out the preceding 2 SUs.
   Note: While back out of the above SUs is taking place, continue with the next step, duplexing of SMs, if they have been simplex at the time. In other words, the activities for backing out of the preceding 2 SUs and the activities for duplexing of the SMs can proceed in parallel in an effort to save time.
4. Determine if the SMs are simplex. If the SMs are simplex, then follow the instructions outlined in Section 7.11.4.1 to duplex the SMs. As noted, this step can take place while the preceding SUs are being backed out.
5. Verify that the SMs are duplex.
6. Verify that imr11111xx and imr22222xx have been backed out.
7. Access the MCC page 1985,ltg and enter backout command to start the translation to the beginning of the ENTER stage:
   CMD 600
8. Upon completion of backout to the beginning of the ENTER stage, ENTER STAGE PAUSE at STAGE BOUNDARY, verify that MHDs are Duplex. If the office has an ASM with eh Proxy Database feature active, verify that the Proxy Database has been successfully regenerated and is back on-line.

MSG ST:DBPROXY:ACTION=STATUS
Response:

PROXY DATABASE IS NORMAL

MSG ST:DBPROXY,ACTION=SIZEREPORALL
Response:

```
<table>
<thead>
<tr>
<th>DB</th>
<th>CURRENT SIZE</th>
<th>MAX SIZE</th>
<th>PCT USED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IN KBYTES</td>
<td>IN KBYTES</td>
<td></td>
</tr>
<tr>
<td>AM</td>
<td>xxxx</td>
<td>xxxx</td>
<td>x</td>
</tr>
<tr>
<td>CMP</td>
<td>yyyy</td>
<td>yyyyy</td>
<td>y</td>
</tr>
</tbody>
</table>
```

Any other ROP indicating failure to access the Proxy DB should be reported to technical support before proceeding with the End Stage.

Exit Points:

**Restart**: The condition which required the office to back out of the transition should be corrected before attempting to restart the procedure.

Restart the LTG procedure at the ENTER stage (Section 5.5).

**Backout**: Continue with Backout Action B-10 (Section 7.12).

---

**Figure 7-9 — MCC Page 1985 Paused at the Enter Stage**
7.11.3 BACKOUT SOFTWARE UPDATES

If you have not yet applied the imr11111xx and imr22222xx Software Updates (SUs), in the Processor Preparation and Pump Stage, it is not necessary to perform the remaining steps in this Backout Action (B-6). If the SUs have not been applied, it is not necessary to back them out.

**Warning 1:** If you are not immediately reattempting the LTG and do not execute the remaining steps in this Backout Action, AND you take an MHD fault that requires recovering the office from tape, the office will come up with all SMs in a GENDIFF state and call processing will be down!

**Warning 2:** The following SUs must be backed out one at a time and in the order given before continuing on to the next. The time to backout the SUs will vary, taking approximately 15 to 45 minutes to complete. Be careful.

2. Verify that the official SU (BWM) history displayed is as follows:

<table>
<thead>
<tr>
<th>Last OFC BWM</th>
<th>imr22222xx</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd from top</td>
<td>imr11111xx</td>
</tr>
<tr>
<td>3rd from top</td>
<td>(will vary between offices)</td>
</tr>
</tbody>
</table>

3. To backout the last official SU, enter the following commands:

CMD 9900

Backout Last OFC? y/n y

Response:

```
CMD 9900
UPD: BOLO; OK
UPD: BKOUT: DATA, UPNM=imr22222xx, OFC; PF
  [UPD WARNING CANNOT DETERMINE FILE GROWTH]
UPD BKOUT UPNM=IMR22222XX
  FN /no5text/im/D.xx/IM.out
  DF /no5text/im/D.xx/IMhs.out FINISHED
  UPD BKOUT CONTINUES
  (For the previous three lines xx = basic, standard, and/or loaded)
  [UPD WARNING CANNOT DETERMINE FILE GROWTH]
  UPD BKOUT UPNM=IMR22222XX
  FN /no5text/cmp/CMP.out
  DF /no5text/cmp/CMPhs.out FINISHED
  UPD BKOUT CONTINUES
  [UPD WARNING CANNOT DETERMINE FILE GROWTH]
  UPD BKOUT UPNM=IMR22222XX
  FN /no5text/prc/Slib FINISHED
  UPD BKOUT COMPLETED
  UPD OFFICIAL BACK OUT SECTION
  UPD EXECUTE ANY MANUAL COMMANDS FOR BWM IMR22222XX
  "BKOUT.-----------------------------"
  "If during the installation of this BWM, or at any time during the SOAK period, you feel that the applied updates should be backed out of the system, enter the following command(s):

```
4. Access MCC page 1950:

5. Verify that the official SU (BWM) history displayed is as follows:

<table>
<thead>
<tr>
<th>Last OFC BWM</th>
<th>imr11111xx</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd from top</td>
<td>(will vary between offices)</td>
</tr>
<tr>
<td>3rd from top</td>
<td>(none)</td>
</tr>
</tbody>
</table>

6. To backout the last official SU, enter the following commands:

CMD 9900
Backout Last OFC? y/n y
Response: **UPD:BOLO; OK**

- **UPD:BKOUT:DATA, UPNM=imr11111xx, OFC; PF**
  
  [UPD WARNING CANNOT DETERMINE FILE GROWTH]

- **UPD BKOUT UPNM=IMR11111XX**
  
  FN /no5text/im/D.xx/IM.out

  DF /no5text/im/D.xx/IMhs.out FINISHED

  UPD BKOUT CONTINUES
  
  (For the previous three lines xx = basic, standard, and/or loaded)

  [UPD WARNING CANNOT DETERMINE FILE GROWTH]

- **UPD BKOUT UPNM=IMR11111XX**
  
  FN /no5text/cmp/CMP.out

  DF /no5text/cmp/CMPhs.out FINISHED

  UPD BKOUT CONTINUES

  [UPD WARNING CANNOT DETERMINE FILE GROWTH]

- **UPD BKOUT UPNM=IMR11111XX**
  
  FN /no5text/prc/SIlib FINISHED

  UPD BKOUT COMPLETED

  UPD OFFICIAL BACK OUT SECTION

  UPD EXECUTE ANY MANUAL COMMANDS FOR BWM IMR11111XX

  "BKOUT.---------------------------------------------------"

  " If during the installation of this BWM, or at any time
  " during the SOAK period, you feel that the applied updates
  " should be backed out of the system, enter the following
  " command(s):

  "

- **UPD:BKOUT:DATA, UPNM=imr11111xx;**

  "

- **UPD END OF BACKOUT SECTION FOR BWM IMR11111XX**

7. Any TMP SUs should be reinstalled at this point. Refer to 235-105-210, Routine Operations and Maintenance for more information.
7.11.4 DUPLEXING SMs

7.11.4.1 STOP OFF-LINE PUMP SMs

To stop any off-line pump activity that is in progress in the SMs, enter the following command on MCC page 181.

CMD 3000

Response: STP:OPUMP,SM=1&&192; OK - PUMPING SMS WILL REPORT

7.11.4.2 CHECK MOP STATUS

1. To ensure that the mop command is no longer running, on MCC page 1984, enter command:

CMD 510

Response:

UPD:GEN:APPLPROC,ARG="ISMOP";
UPD GEN APPLPROC EXECUTING THE FOLLOWING UPDATE TOOL:
/prc/supr/ismop
UPD GEN APPLPROC ISMOP REPORT
!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!
.
MOP/PTNMG IS NOT RUNNING
.
THERE ARE NO OFFLINE PARTITIONS MOUNTED
.
ISMOP COMPLETE

!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

2. If the response from the preceding 510 command indicates that the mop command is running and/or there are off-line partitions mounted, on MCC page 1984, enter command:

CMD 609

Response:

UPD:GEN:APPLPROC,ARG="STOPMOP";
UPD GEN APPLPROC EXECUTING THE FOLLOWING UPDATE TOOL:
/prc/supr/ptnmgr -k
[PRM_0 EB00 0002 xx03 xxxx xx xx xx]
(may appear several times)
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

7.11.4.3 ALLOW AUTO PUMP, SOFTWARE, HARDWARE, AND ERROR CHECKS

In this Backout Action, the following conditions are probably true:

- The switch is running on the old data.
- The SMs are simplex with MCTSI side 0 forced active and MCTSI side 1 is UNV.
- The disks are simplex with the even-numbered disks ACT and the odd-numbered disks OFL. Refer to MCC page 123 for the state of the system MHDs.

In the following steps, auto pump, software, hardware, and error checks are allowed.

1. To allow SM software and hardware checks, on MCC page 1984 enter command:
CMD 511,sm
Response:
   UPD:GEN:APPLPROC,ARG="ALWSMCHKS";
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   ALW:HDWCHK,SM=1&&192;
   ALW:HDWCHK,SM=1&&192; IP
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   ALW:SFTCHK,SM=1&&192;
   ALW:SFTCHK,SM=1&&192; OK
   UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
   ALW HDWCHK SM=x COMPLETED

Comment: On MCC page 1800,x (where x = any numbered SM), box "04 SFTCHK" and box "08 ALL HDWCHK" should not be backlit or transition from a backlit condition to a normal display in a few minutes.

2. To allow auto pump in all SMs, on MCC page 1984 enter command:
   CMD 501,alwpump
Response:
   UPD:GEN:APPLPROC,ARG="ALWPUMP";
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   ALW:PUMP,SM=1&&192; OK
   UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

Comment: On MCC page 1800,x (where x = any numbered SM) box "01 AUTO PUMP" should not be backlit or transition from a backlit condition to a normal display in a few minutes.

3. Enter the following command on MCC page 1984:
   CMD 511,am
Response:
   UPD:GEN:APPLPROC,ARG="ALWAMCHKS";
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   ALW:HDWCHK;
   ALW:HDWCHK; PF
   ALW HDWCHK COMPLETED
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   ALW:SFTCHK;
   ALW:SFTCHK; PF
   ALW SFTCHK COMPLETED
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   ALW:ERRINT;
   ALW:ERRINT; PF
   ALW ERRINT COMPLETED
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   ALW:ERRSRC;
   ALW:ERRSRC; PF
   ALW ERRSRC COMPLETED
   UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

4. To simultaneously restore all OOS CLNKs, enter message:
   MSG RST:CLNK,ALL;
Response: RST CLNK ALL COMPLETED
5. Enter message:

MSG OP:SYSSTAT,UCL;

Response:

| OP SYSSTAT | SUMMARY {FIRST|NEXT|LAST} RECORD |
|------------|----------------------------------|
| SYS:       | INHIBITS-MSG-RC MISC             |
| AM:        | INHIBITS-MTCE MORE               |
| CM:        | NO_REQ_PEND                      |
| CMP 0-0:   | NORMAL                           |
| CMP 1-0:   | [BACKOUT-RC] {POSTINIT|NORMAL}   |
| {B|S|L}SM a,0: | MATE_PUMP FORCED INHIBITS-MTCE  |
|            | CKT_OOS                          |
| {B|S|L}SM z,0: | MATE_PUMP FORCED INHIBITS-MTCE  |
|            | CKT_OOS                          |

7.11.4.4 MISCELLANEOUS ALLOWS

7.11.4.4.1 Allow ACSR Enqueueing/Dequeueing

To allow ACSR enqueueing/dequeueing, enter message:

MSG ALW:ACSR,ALL;

Response:  OK

7.11.4.4.2 Allow CORCs

To allow CORCs, enter message:

MSG ALW:CORC;

Response:  ALW CORC COMPLETED

7.11.4.5 RESTORE SMs, BTSRs, AND PERIPHERALS

1. In this step, the force will be cleared on all MCTSi.
   a. To clear force on all MCTSi, enter message:

      MSG ORD:CPI=1&&192,CMD=CLR;

      Response:  ORD CPI 192 CMD CLR COMPLETED

   b. To check the AM and SM status, enter message:

      MSG OP:SYSSTAT,UCL;

      Response:  OP:SYSSTAT,UCL;PF

| OP SYSSTAT | SUMMARY {FIRST|NEXT|LAST} RECORD |
|------------|----------------------------------|
| SYS:       | INHIBITS-MSG-RC MISC             |
| AM:        | INHIBITS-MTCE MORE               |
| CM:        | NO_REQ_PEND                      |
Comment: No SMs should indicate FORCED.

Note: Re-enter this command to verify that all SM are pumped. This will take several minutes.

c. If Step 'a' failed to clear the force on any SM, enter the following message for the failing SM. For any SM indicating "FORCED," enter message:

MSG ORD:CPI=x,CMD=CLR,UCL;

Where: x = the number of the SM indicating "FORCED"

Response: ORD CPI x CMD CLR COMPLETED

Comment: If force did not clear or problems still exists, go to Section 6.5.6.

2. To restore peripherals, enter command on MCC page 181:

CMD 5000

Response: RST:PERF,SM=1&&192; PF
REPT RST PERF SM=x COMPLETED [Loaded SMs with (R)ISLUs and/or integrated digital carrier units (IDCUs) only.]
Loaded SMs with (R)ISLUs and/or IDCUs will display the ORST stage and then indicate MATE PUMP again.

3. In this step, MCTSI Side 1 for all SMs is restored. Since no new SM hardware was installed as part of these procedures, an unconditional restore is recommended to minimize SM simplex time.

a. To unconditionally restore MCTSI Side 1 for all SMs, enter message:

MSG RST:MCTSI=1&&x-1,RETRO;

Where: x = highest-numbered SM in the office.

Response: DGN MCTSI=Y-1 COMPLETED ATP PH3
RST MCTSI=Y-1 COMPLETED

Where: Y = SM number.

Comment: Both responses are output for each SM in the office. On MCC page 181, 182, etc., SMs will transition from MATE PUMP to MATE OOD to UPDATING to STANDBY.

b. If the input message in Step 'a' fails, perform a conditional restore for the failing SM, enter message:

MSG RST:MCTSI=x-1;
Where: \( x = \text{SM number} \)

Response: \( \text{DGN MCTSI}=X-1 \text{ COMPLETED ATP PH } yy \)

\[ \text{RST MCTSI}=X-1 \text{ COMPLETED} \]

c. Enter message:

\( \text{MSG OP:SYSSTAT, UCL;} \)

Response: \( \text{OP:SYSSTAT, UCL;PF} \)

\[ \begin{align*}
\text{OP SYSSTAT} & : \text{SUMMARY LAST RECORD} \\
\text{SYS} & : \text{INHIBITS-MSG-RC MISC} \\
\text{AM} & : \text{INHIBITS-MTCE MORE} \\
\text{CM} & : \text{NO_REQ_PEND} \\
\text{CMP x-0 P:} & : \text{NORMAL} \\
\text{CMP y-0 M:} & : \text{NORMAL} \\
\text{B LSM a,1:} & : \text{INHIBITS-MTCE} \\
& \ldots \\
\text{L ORM b,1:} & : \text{INHIBITS-MTCE} \\
& \ldots \\
\text{S HSM z,1:} & : \text{INHIBITS-MTCE} \\
\end{align*} \]

Comment: The SMs should indicate \textbf{INHIBITS} on MCC pages 141, 142, etc.
7.12 BACKOUT ACTION B-10 (BEGIN STAGE)
7.12.1 BACKOUT TO START OF BEGIN STAGE

1. If you are already at the beginning of BEGIN Stage which means MCC Page 1985 looks like the following Figure 7-10, or Stage indicator shows "BEGIN-FAILED" and Step indicator shows "BEGIN STAGE STOPPED", then go directly to Backout B-11, Section 7.13. Otherwise continue with step 2.

2. To stop any in-progress transition activity, access MCC page 1985 and enter command:
   CMD 200

3. To backout to start of BEGIN stage, on MCC page 1985 enter command:
   CMD 600

The transition process backs out to the start of the BEGIN stage.

Response: **THE END PROCESS IS EXECUTING**

```
UPD:GEN:END;
UPD GEN END APP RECENT CHANGE ALLOW SENT
ALW:REX,CU; OK
ALW:REX,CM; OK
ALW:REX,SM=1&192; OK
ALW:DMQ:SRC=ADP; PF
ALW DMQ ENABLED ADP
ALW:DMQ:SRC=REX; PF
UPD GEN END APP REX ALLOW SENT
ALW DMQ ENABLED REX
ALW:REORG; OK
UPD GEN END APP ALW:REORG COMMAND SENT
UPD GEN END CRAFT ACSR ENQUEUEING/DEQUEUEING ALLOW SENT
ALW:AUD=SODD,FULL; OK
ALW:AUD=SODD,INCR; OK
UPD GEN END STATIC ODD AUDITS ALLOW SENT
[UPD GEN END AUTO SPARE DISK RESTORED]
UPD GEN END APP EXECUTING ENDDOUC
EXC:LIT:OPT=a,TYP=b,RG=c,TMO=d,TM=e-f;
PF - FOR PARAMETER MODIFICATION
EXC LIT VERIFY TYP=b RG=c TMO=d TM=e-f

UPD GEN END APP ENDDOUC REPORT
Date: Day Month Time Year
Generic: 5E11(1)xx.yy Exit Status: 0
Comments: xxxxxxxx
```

UPD GEN END APP APPLLOG REPORT
APPLHOOK log file output on ROP.
On MCC page 116, GENERIC UPDATE field returns to normal.
UPD GEN END COMPLETED SUCCESSFULLY
THE END PROCESS COMPLETED SUCCESSFULLY

Comment: This backout section allows REX diagnostics, automatic Relation Reorganization (REORG), and RC. The auto spare disk feature status line on MCC page 123 changes to indicate that the feature has been activated. The **SYS INH** (system inhibits status) which was backlit should go to normal as the Backout Action completes.
Exit Points:

**Restart:** The condition which required the office to back out of the transition should be corrected before attempting to restart the procedure.

**Note:** Access MCC page 116 and verify that the ODD EVOL ACT box is backlit. If it is not backlit, RC double-logging is no longer active. To restart double-logging, execute Section 6.5.11.

Restart the procedures at Section BEGIN (Section 5.4).

**Backout:** Continue with Backout Action B-11 (Section 7.13).
7.13 BACKOUT ACTION B-11 (SETUP STAGE)

7.13.1 BACKOUT TO START OF SETUP STAGE

1. To stop any in-progress transition activity, access MCC page 1985,ltg and enter command:

   CMD 200

2. To backout to start of SETUP stage, on MCC page 1985 enter command:

   CMD 600

   The transition process backs out to the start of the SETUP stage.

---

3. To stop any in-progress transition activity, access MCC page 1985,ltg and enter command:

   CMD 200

4. To backout of the Update completely and END, on MCC page 1985 enter command:

   CMD 600

7.14 GENERAL CLEANUP

1. For offices that will resume the Update at a later date:
Warning: Double-logging only occurs when the ODD EVOL ACT box on MCC page 116 is backlit. If a manual 54 initialization OR a craft initialization with application parameters 2 or 3 (42-2-15 or 42-3-15) is taken, the double-logging of recent changes ceases. Double-logging of recent changes is required at this point to resume the Update at a later date. Failure to double-log the recent changes results in the recent changes not being applied on the new software release.

To restart ODD evolution, enter message:

MSG EXC:ENVIR:UPROC,FN="/no5text/rcv/setoddevol";

Response: SETODDEVOL: ODD EVOLUTION BIT HAS BEEN SET
EXC ENV UPROC /no5text/rcv/setoddevol COMPLETED

Comment: Ensure the ODD EVOL ACT box on MCC page 116 is backlit before proceeding.

2. For OSPS and ACD/BRCS offices, to allow OSPS configuration ODD evolution, enter message:

MSG EXC:ENVIR:UPROC,FN="/no5text/prc/ASospon";

Response: ASOSPSON: OSPS UPDATE BIT HAS BEEN SET (on ROP) or
[ASOSPSON: CANNOT SET OSPS UPDATE BIT]
EXC ENV UPROC /no5text/prc/ASospson COMPLETED

Note: This message turns on the evolution process for OSPS or ACD/BRCS recent changes in OSPS and ACD/BRCS offices. This message will have no impact on the 5ESS switch for non-OSPS and non-ACD/BRCS offices.

Comment: Ensure the OSPS EVOL ACT box on MCC page 116 is backlit before proceeding.

3. During the remaining time interval before the LTG is resumed, it is important to check the output from each ODD backup due to the additional recent change/CORC evolution-related messages that are generated. This is especially important if the backups take place while the office is unattended. **Escalate to your next level of support immediately if the evolution-related outputs are not received.**

Warning: **Do not print office records while double-logging is active. The office records process uses the same disk space as the double-logging process. If this disk space is full, recent changes will be lost.**

4. If the system clock does not reflect the correct time, enter message:

MSG SET:CLK,DATE=a-b-c,TIME=d-e-f;

Where:

a = month 01-12
b = day 01-31
c = year 00-99
d = hour 00-23
e = minute 00-59
F = second 00-59

Response: SET CLK ....

Proper time and date are displayed on top line of MCC display.
5. The following AMA session allow may already have been performed in the Backout Actions. If so, the following AMA allow may be bypassed. Use either message ‘a’ or ‘b’, depending on your AMA option.

a. If your office uses the AMATPS option, to allow AMA polling sessions, enter message:

```
MSG ALW:AMA:SESSION[,STx];
```

Where: $x =$ stream number (1 or 2)

Response: AMA Control file dumped at ROP

```
REPT AMA CONTROL FILE FOR STREAM STx
OFFICE ID xxxxxx
DAYS UNTIL EXPIRATION y
PROCESS START TIME XX:XX
PROCESS STOP TIME XX:XX
DEFAULT MT FOR AUTO TAPE START x
AMA OPTION IS xxxxxxxxxxxxx

(additional AMA control information dumped)
```

b. To allow AMA polling sessions for automatic tape writing, enter message:

```
MSG ALW:AMA:AUTOST[:STx];
```

Where: $x =$ stream number (1 or 2)

Response: AMA Control file dumped at ROP

```
REPT AMA CONTROL FILE FOR STREAM STx
OFFICE ID xxxxxx
DAYS UNTIL EXPIRATION y
PROCESS START TIME XX:XX
PROCESS STOP TIME XX:XX
DEFAULT MT FOR AUTO TAPE START x
AMA OPTION IS xxxxxxxxxxxxx

(additional AMA control information dumped)
```

6. In the following steps, the EAI page setups for the Update are returned to normal system operation.

a. Access EAI page.

b. On EAI page, 31 (CLR BACK-ROOT) should be backlit (that is, the "SET" indicator immediately following the word "ROOT" must not be visible). If the "SET" indicator is visible, escalate to your next level of support.

c. Ensure odd-numbered EAI commands 31 through 43 are backlit.

d. Access normal display (NORM DISP).

e. To switch ports, enter command on MCC page 111:

```
CMD 401
```

Response: SW:PORTSW; PF

```
REPT ROP x STOPPED
REPT ROP y STARTED
SW PORTSW COMPLETED FOR ROP
```
Screen blanks while ports are being switched.

REPT MTTY x STOPPED REPT MTTY y STARTED SW PORTSW COMPLETED FOR MTTY

EAI page comes up followed by MCC page 111.

Comment: If the port switch fails, ensure that the switches on the EAI boards are in the auto position.

f. Repeat Steps ‘a’ through ‘d’ for the other EAI page.

7. To reschedule automatic ODD backups, enter message:

   MSG BKUP:ODD:EVERY=x,AT=y;

   Where: x and y = values recorded on the Automatic ODD Backup Schedule Worksheet (Table 9-2) earlier in the Update.

   Response: OK

8. To allow CLNK and FPC reconfiguration, on MCC page 110 enter command:

   CMD 708

   Response: ALW CLNORM COMPLETED

   Box 08 (CLNK NORM) on MCC page 110 is NOT backlit.

9. To allow Automatic Line Evaluation (ALE) operation, enter message:

   MSG ALW:ALE,PRINT;

   Response: OK

10. To allow ALE Protocol Error Record (PER) reporting and generation, enter message:

    MSG ALW:ALE,PER=GEN,SM=1&&192;

    Response:

    ALW ALE STARTED
    ALW ALE SM INHIBITS - SEGMENT x
    SM INHIBITS
    xx xxxALW ALE COMPLETED: TOTAL OF 1 SEGMENTS PRINTED

Backout is complete. Resume normal activity.

Warning: If the AUTO BWM feature was disabled during the BEGIN STAGE of the update, it must be reactivated following the Backout Action. To reactivate this feature, enter the 9927 poke command on MCC page 1941.
## 8. MANUAL PROCEDURES

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8. MANUAL PROCEDURES

8.1 GENERAL

This section contains procedures used in the following manual operations:

- SM Off-Line Pump Check from Active Disk
- SM Off-Line Pump from Off-Line Disk
- Non-Off-Line-Boot Recovery

8.2 MANUAL PROCEDURES FOR SM OFFLINE PUMP CHECK FROM ACTIVE DISK

8.2.1 OVERVIEW

The procedures used to perform an SM Off-Line Pump from Active Disk have been automated. However, if the need should arise to perform this procedure manually, continue with the following steps:

Off-line pump for all SMs should be checked. Even though each SM will be simplexed while it is being checked, call processing should not be affected.

If SM(s) fail to off-line pump after repeated attempts, escalate to your next level of support. Take note of any output responses that may be provided by the switch. Escalate to your next level of support before attempting any actions to accommodate SMs that will not off-line pump. Section 6 list messages and recovery actions for problems of off-line pumping from the active disks.

1. On MCC page 1209, ensure that the Office Network and Timing Complex (ONTC) is shown ACTIVE MAJOR/MINOR before proceeding.

2. Enter message:
   
   MSG INH:REX;
   
   Response: OK

3. Enter message:
   
   MSG OP:SYSSTAT,UCL;
   
   Response: (sample output shown)

   | OP SYSSTAT | SUMMARY {FIRST|NEXT|LAST} RECORD |
   |------------|----------------------------------|
   | SYS:       | MISC                             |
   | AM:        | NORMAL                           |
   | CMP x-0 P: | NORMAL                           |
   | CMP y-0 M: | NORMAL                           |
   | S LSM a,x: | [... ]                           |
   | B LSM b,x: | [... ]                           |
   | L HSM c,x: | [... ]                           |
   | L ORM d,x: | [... ]                           |
   | L TRM e,x: | [... ]                           |
   | L RSM z,x: | [... ]                           |
4. Verify that none of the SMs have "MATE_OOD" as a status.
   a. If any SMs indicate MATE_OOD, access MCC page 1190,x and restore that
      SM to duplex.
   b. After all SMs are duplex, re-enter OP:SYSSTAT,UCL.
5. Ensure no off-normal status is indicated for any SM.
6. The 1&&192 in the following message (Step a) is used to simultaneously
   broadcast an "ORD:CPI" to all SMs (with no delay between each message). If
   any range other than 1&&192 is used, there will be a 15-second delay between
   each message.
   a. To simultaneously switch and force all MCTSIs side 0 active, enter message:
      
      MSG ORD:CPI=1&&192,CMD=SW-0;

      Response: ORD CPI a CMD = SW 0 COMPLETED

      Comment: On MCC pages 141, 142, etc., all SMs should go to FORCED
                  simultaneously, MCTSI side 0 active.
                  If the command fails, repeat Step a. If it fails a second time,
                  proceed to Step b.
                  If the command is successful, proceed to Step 2.

   b. To switch and force MCTSI side 0 active for a range of SMs, enter message:

      MSG ORD:CPI=1&&x,CMD=SW-0;

      Where: x = highest-numbered SM (not 192).

      Response: ORD CPI x CMD = SW 0 COMPLETED

      Comment: On MCC pages 141, 142, etc., all SMs should go to FORCED
                  sequentially. There is a 15-second delay between one SM
                  ORD:CPI request and the next SM ORD:CPI request in
                  sequence.
                  If any SMs fail to force, proceed to Step c.
                  If the command is successful, proceed to Step 2.

   c. To switch and force MCTSI side 0 active for a single SM enter message:

      MSG ORD:CPI=a,CMD=SW-0,UCL;

      Where: a = number of SMs that failed the switch and force.

      Response: ORD CPI x CMD = SW 0 COMPLETED

      Comment: The individual SM should force on MCTSI side 0.
                  If the switch and force fails, proceed to Step d.
                  If the switch and force is successful, proceed to Step 2.

   Note: If the response to the ORD:CPI message is STATUS UNKNOWN for all SMs, do not attempt the following steps. Resolve this problem before attempting the transition.
d. Access MCC page 1800,x. Ensure the MCTSIs are STBY/ACT before proceeding.

To switch and force the MCTSI side 0 active, enter commands:

CMD 420

CMD Y

Response: ORD CPI X CMD = SW 0 COMPLETED

Comment: The individual SM should force on MCTSI side 0. If the switch and force fails, refer to Section 6.5.7.

7. To switch PPCs, on MCC page 1241 enter command:

CMD 450

Response: SW PPC COMPLETED

Comment: For the off-line pump to function properly, the preceding PPC switch must be performed. At this point, either PPC can be active (with the other PPC standby).

8. MCC pages 181 through 184 can be used to monitor the pump status of the SMs only. Do not use any poke command from MCC pages 181 through 184 unless directed to do so by this document or technical support personnel. Poke commands on MCC pages 181 through 184 are intended for off-line SM pump from the off-line disks. The off-line pump in this section is for off-line pump from the active disks.

To pump off-line side of the MCTSIs, enter message:

MSG ST:OPUMP,SM=1&&x,ACTDISK,PERF,VFY;

Where: x = highest-numbered SM.

Response: ST:OPUMP,SM=1&&192,ACTDISK,PERF,VFY; PF REPT SM= a OFFLINE PUMP COMPLETED (output on ROP as each SM is pumped)

Comment: Use MCC pages 181, 182, etc., to view the off-line pump status for the SMs and peripherals. All the possible states of the mate memory that can be displayed on MCC page 181 during off-line pump are listed in Tables 9-19 and 9-20.

Note: If any SMs fail to off-line pump, go to Section 6.5.3. If the recovery action involves repumping the SM and/or its peripherals, it may be attempted immediately (there is no need to wait until all SMs finish pumping).

It will take approximately 10 to 20 minutes to get the first response of MATE PUMP for an SM. Once an SM has been pumped, the other SMs will pump at a rate of one every 2 to 3 minutes.

SMs equipped with several pumpable peripheral units will have longer off-line pumping times.
8.2.2 MANUAL PROCEDURES FOR RESTORING SMs TO DUPLEX AFTER OFFLINE PUMP CHECK

The procedures used to restore an SM to duplex after an SM offline pump check have been automated. However, if the need should arise to perform this procedure manually, continue with the following steps:

1. To clear force on all MCTSI's side 0:
   a. Enter message:
      
      MSG ORD:CPI=1&&192,CMD=CLR;
      
      Response: ORD CPI x CMD CLR COMPLETED
      
      Comment: On MCC pages 141, 142, etc., FORCE should clear simultaneously on all SMs.
      
      If the command fails, repeat Step a. If it fails a second time, proceed to Step b.
      
      If the command is successful, proceed to Step 2.
   
   b. Enter message:
      
      MSG ORD:CPI=1&&x,CMD=CLR,UCL;
      
      Where: x = highest-numbered SM
      
      Response: ORD CPI x CMD CLR COMPLETED
      
      Comment: On MCC pages 141, 142, etc., FORCE on all SMs should clear sequentially.
      
      There is a 15-second delay between one ORD:CPI request and the next SM ORD:CPI request in sequence.
      
      If any SMs fail to clear, proceed to Step c.
      
      If the command is successful, proceed to Step 2.
   
   c. Enter message:
      
      MSG ORD:CPI=a,CMD=CLR,UCL;
      
      Where: a = number of SMs that failed to clear the force.
      
      Response: ORD CPI x CMD CLR COMPLETED
      
      Comment: The force on the MCTSI should clear individually.
      
      If the clear force fails, proceed to Step d.
      
      If the command is successful, proceed to Step 2.
   
   d. Access MCC page 1800,x. To clear the force on the MCTSI, enter commands:
      
      CMD 422
      
      CMD Y
      
      Response: ORD CPI X CMD CLR COMPLETED
      
      Comment: The force should clear on the SM individually.
      
      If the force did not clear, refer to Section 6.5.6, ORD:CPI Clear Force Troubles.
Warning: Whenever a Bootstrapper (BTSR) board is replaced, remove one of the MCTSI controllers from service before removing or inserting the TN878 to prevent the possible internal bus errors. Restore the MCTSI to duplex before attempting diagnostics again. It is not necessary to remove power from the units.

2. To restore any OOS BTSRs, enter message:
   
   MSG RST:BTSR=x;
   
   Where: x = SM number.
   
   Response: RST_BTSR=y COMPLETED (for non-MCTU2 SMs)
   
   Where: y = SM number.
   
   Comment: No response will be received for SMs equipped with MCTU2s. The previous command will run diagnostics on the BTSR before restoring the unit selected.

3. To restore peripherals, enter command on MCC page 181:
   
   CMD 5000
   
   Response: RST:PERF,SM=1&&192; PF REPT RST PERF SM=x COMPLETED
   
   [Loaded SMs with (R)ISLUs and/or integrated digital carrier units (IDCUs) only.]
   
   Loaded SMs equipped with (R)ISLUs and/or IDCUs will display the ORST stage and then indicate MATE PUMP again.

4. In this step, MCTSI Side 1 for all SMs is restored.
   a. To unconditionally restore MCTSI Side 1 for all SMs, enter message:
      
      MSG RST:MCTSI=1&&x-1,UCL;
      
      Where: x = highest-numbered SM in the office.
      
      Response: RST MCTSI x 1 COMPLETED
      
   b. If the input message above fails, perform a conditional restore for the failing SM, enter message:
      
      MSG RST:MCTSI=x-1;
      
      Where: x = SM number
      
      Response: DGN MCTSI x 1 COMPLETED ATP PH yy ... RST MCTSI x 0 COMPLETED

Note: The preceding section tested the off-line pump capability of all MCTSIs side 1. This procedure can be repeated to test the off-line pump capability of MCTSIs side 0 of all SMs. The procedure would be the same (except for the MCTSI side). However, detailed steps are not included/repeated.

When the Manual SM Off-Line Pump from Active Disk procedure is complete, return to the AM OFF-LINE BOOT section in this manual and continue.
8.3 MANUAL SM OFF-LINE PUMP FROM OFLDISK

8.3.1 OVERVIEW
To execute a Manual SM Off-Line Pump from Off-Line Disk rather than the Automatic SM Off-Line Pump from Off-Line Disk shown in the Retrofit Implementation tab of this manual, continue with the following steps.

8.3.2 OFF-NORMAL STATUS CHECK
1. To check AM, CMP, and SM status, enter message:
   MSG OP:SYSSTAT,UCL;
   Response:

   OP SYSSTAT       SUMMARY {FIRST|LAST|NEXT} RECORD
   SYS:             INHIBITS-[MSG][-RC] MISC
   AM:              INHIBITS-MTCE {MORE}
   CM:              INHIBITS-MTCE
   CMP x-0 P:       NORMAL
   CMP y-0 M:       NORMAL
   LSM a,x:          INHIBITS-MTCE
   ...
   B LSM b,x:        INHIBITS-MTCE
   ...
   S LSM z,x:        INHIBITS-MTCE

   Verify that none of the SMs have "MATE_OOD" as a status.
   a. If any SMs indicate MATE_OOD, access MCC page 1190,x and restore that SM to duplex.
   b. After all SMs are duplex, re-enter the OP:SYSSTAT,UCL message.

2. Ensure no off-normal status other than INHIBITS-MTCE is indicated for any SM.
3. Verify that both CMP 0-0 and CMP 1-0 indicate NORMAL.

8.3.3 SWITCH AND FORCE MCTSI-0 ACTF/MCTSI-1 UNV
1. Access MCC page 1209 and ensure the Office Network and Timing Complex (ONTC) indicates ACTIVE MAJOR/MINOR before proceeding.
2. Access MCC pages 141, 142, etc., and verify that all SMs indicate INHIBITS.
3. The 1&&192 in the following message (Step ‘a’) is used to simultaneously broadcast an ORD:CPI to all SMs (with no delay between each message). If any range other than 1&&192 is used, there will be a 15-second delay between each message.
   a. To switch and force MCTSI Side 0 active for all SMs, enter message:
      MSG ORD:CPI=1&&192,CMD=SW-0;
      Response: ORD CPI 192 CMD SW 0 COMPLETED
On MCC pages 141, 142, etc., all SMs should indicate FORCED.

Note: If the response to the ORD:CPI message is STATUS UNKNOWN for all SMs, do not attempt the following steps. Resolve this problem before attempting the transition.

b. If the switch and force fails, repeat Step 'a' (ORD:CPI for SMs 1 through 192). If it fails again, continue with Steps 'c', 'd', and 'e' if, necessary.

If successful, proceed to Step 4.

c. If the switch and force still failed, enter message:

   MSG ORD:CPI=1&&x,CMD=SW-0,UCL;
   
   Where:   x = highest numbered SM (not 192)
   Response: ORD CPI A CMD SW 0 COMPLETED (Output for each SM)
   Where:   A = SM number
   Comment: For this particular message (Step 'c'), the range 1&&192 cannot be used. If your office contains an SM number 192, use the range 1&&191 and then use the following message (Step 'd') for SM 192.

d. For any SM that still fails to switch and force, enter the unconditional message:

   MSG ORD:CPI=x,CMD=SW-0,UCL;
   
   Where:   x = SM number
   Response: ORD CPI x CMD SW 0 COMPLETED

e. If any SM still fails to switch and force, on MCC page 1800,x enter command:

   CMD 420
   (Y or N) Y
   
   Comment: If switch and force failed again, go to Section 6.5.7, ORD:CPI Switch and Force Troubles, in the Recovery Section.

4. To check AM, SM, and CMP status, enter message:

   MSG OP:SYSSTAT,UCL;
   
   Response: OP:SYSSTAT,UCL;PF
OP SYSSTAT SUMMARY {FIRST|NEXT|LAST} RECORD
SYS: INHIBITS[-MSG][-RC] MISC
AM: INHIBITS-MTCE (MORE)
CM: INHIBITS-MTCE
CMP x-0 P: NORMAL
CMP y-0 M: NORMAL
L LSM a,0: FORCED INHIBITS-MTCE MATE_OOD CKT_OOS
...
B LSM b,0: FORCED INHIBITS-MTCE MATE_OOD CKT_OOS
...
S LSM z,0: FORCED INHIBITS-MTCE MATE_OOD CKT_OOS

8.3.4 OFF-LINE PUMP SM MCTSI SIDE 1

1. Before proceeding, ensure that all SMs indicate FORCED on MCC pages 141, 142, etc.

   Caution: Do not attempt to power cycle an SM without support from technical assistance. If an SM that is in a forced simplex condition is power cycled, the SM force will be lost, and the SM will attempt to duplex.

2. To inhibit hardware and software checks, enter the following command on MCC page 1984:
   
   CMD 513,sm
   
   Response:
   
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   INH:HDWCHK,SM=1&&192;
   UPD:GEN:APPLPROC_ARG="INHSMCHKS"
   INH:HDWCHK,SM=1&&192; IP (on ROP)
   INH HDWCHK SM=x COMPLETED (output for each SM)
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   INH:SFTCHK,SM=1&&192;
   INH:SFTCHK,SM=1&&192; OK (on ROP)
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   INH:CLNORM; INH:CLNORM; PF INH CLNORM COMPLETED
   UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
   
   Comment: Before proceeding, ensure that an INH HDWCHK SM=x COMPLETED output message is received for each SM (it may take several minutes to get the entire response).

3. To check AM and SM status, enter message:
   
   MSG OP:SYSSTAT,UCL;
   
   Response: OP:SYSSTAT,UCL;PF
OP SYSSTAT SUMMARY {FIRST|NEXT|LAST} RECORD
SYS: INHIBITS-MSG-MTCE {MISC|MORE}
AM: INHIBITS-MTCE
CM: INHIBITS-MTCE
CMP x-0 P: NORMAL
CMP y-0 M: NORMAL
L LSM a,0: FORCED INHIBITS-MTCE-HW-SW MATE_OOD CKT_OOS
...
B LSM b,0: FORCED INHIBITS-MTCE-HW-SW MATE_OOD CKT_OOS
...
S LSM z,0: FORCED INHIBITS-MTCE-HW-SW MATE_OOD CKT_OOS

Comment: On MCC page 1800,x (where x = any numbered SM) box 04 SFTCHK and box 08 ALL HDWCHK should be backlit.

4. If any SMs do not indicate FORCED INHIBITS-MTCE-HW-SW MATE_OOD CKT_OOS, access MCC page 1800,x (where x = SM number not indicating INHIBITS-MTCE-HW-SW). Both box 04 SFTCHK and box 08 ALL HDWCHK should be backlit and indicate they are inhibited. If they are not inhibited, enter the command 604 to inhibit software checks (box 04 SFTCHK) and command 608 to inhibit hardware checks (box 08 ALL HDWCHK).

5. To switch Pump Peripheral Controllers (PPCs), on MCC page 1241, enter command:

CMD 450

Response: SW:PPC; PF SW PPC COMPLETED

Comment: For the off-line pump to function properly, the preceding PPC switch must be performed. At this point, either PPC can be active (with the other PPC standby).

6. This step is OPTIONAL. To preserve readings for the monthly index, request a monthly plant measurement report before proceeding to the initialization. Enter message:

MSG OP:PLNTMO;

Response: NG - DATA NOT AVAILABLE AT THIS TIME or Monthly plant measurement report is printed on the ROP.

Comment: After this message is input, continue with the Retrofit procedures.

7. In this step, the SMs are off-line pumped with the 5E16.2 software release.
   a. To off-line pump all SMs, on MCC page 181, enter command:

CMD 2000

Note: Once the 2000 command to start the SM offline pumping has been sent, be sure to execute Sections 5.5.7.2 and 5.5.7.3 to apply SUs imr11111xx and imr22222xx before continuing the LTG with Step 8.
**Caution:** As part of the off-line pump process, one side of the (R)ISLU CCs and IDCUs will be removed from service to install the new software release. Do not restore the OOS (R)ISLU CCs and/or IDCUs.

=> Read: SMs equipped with several pumpable peripheral units may have longer off-line pumping times.

Response: 

```
[ST:OPUMP,SM=1&&192,OFLDISK,VFY,PERF; PF]
[ST:OPUMP,SM=a,OFLDISK,VFY,PERF; PF]
[...] [ST:OPUMP,SM=z,OFLDISK,VFY,PERF; PF]
REPT SM=a OFFLINE PUMP COMPLETED (on ROP)
... 
REPT SM=z OFFLINE PUMP COMPLETED (on ROP)
```

Comment: Use MCC pages 181, 182, etc., to view the off-line pump status for the SMs and peripherals. All the possible states of the mate memory that can be displayed on MCC page 181 during off-line pump are listed in Tables 9-19 and 9-20.

b. If **OPUMPFAIL** or **OVFYFAIL** appear on MCC pages 181 through 184, re-pump the SM. Enter the following command on MCC pages 181 through 184:

CMD 2xxx

Where:  
xxx = SM number.

c. If **OPERFFAIL** or **ORSTFAIL** appear on MCC pages 181 through 184, enter the following command on MCC pages 181 through 184:

CMD 6xxx

Where:  
xxx = SM number.

Analyze the output and take corrective action.

d. If **OPERF_ODD** appears on MCC pages 181 through 184, restore the peripherals. Enter the following command on MCC pages 181 through 184:

CMD 5xxx

Where:  
xxx = SM number.

**Note:** If any SM continues to fail to off-line pump, refer to Section 6.5.4. If the recovery action involves repumping the SM and/or its peripherals, it may be attempted immediately (there is no need to wait until all SMs finish pumping).

Comment: It should take less than 15 minutes to get the first response of "MATE PUMP" for an SM (if the SM does not have peripheral units). If an SM is equipped with pumpable peripheral units, [a Remote Integrated Services Unit (RISLU), Integrated Services Line Unit (ISLU), or IDCU] additional time will be required for the SM to indicate "MATE PUMP" on MCC pages 181, 182, etc. For each RISLU equipped, an additional 10 to 25 minutes will be added to the 9 minutes before the SM is pumped (MATE PUMP). Each ISLU equipped will add 1.5 to 4 minutes of additional time before "MATE PUMP" is displayed.
**Caution:** On MCC pages 181, 182, etc., ensure that all SMs indicate MATE_PUMP before proceeding. See Figure 8-1.

**Figure 8-1 — MCC Page 181**

8. On MCC page 1985, continue the Retrofit by entering the following command:

**CMD 500**

Response:

REPT RETRO ENTER CONTINUING
REPT PROC SCHED PROCEED PAUSED AT STAGE
BOUNDARY - RESUME WHEN READY

Upon successful completion of this procedure, return to Section 5.6 in the Retrofit Implementation tab of this manual.
8.4 NON-OFF-LINE BOOT RECOVERY PROCEDURES

8.4.1 OVERVIEW

Warning: This section is only to be used in the event that the Proceed stage cannot be run due to the inability to perform an off-line boot.

8.4.1.1 BACKOUT OF PROCEED STAGE

To backout of the Proceed stage, perform the following:

1. From MCC page 1985, stop RCL by entering command:
   CMD 200

2. From MCC page 1985, backout of the Proceed stage by entering command:
   CMD 600

Response: REPT PROC SCHED PROCEED PAUSED AT STAGE BOUNDARY - RESUME WHEN READY

Figure 8-2 shows an example of MCC page 1985 paused before the start of the Proceed stage, after the 600 poke command.

![Figure 8-2 — MCC Page 1985 Paused Before the Start of the Proceed Stage](image)
8.4.1.2 MOUNT OFF-LINE PARTITIONS

Caution: The process which mounts off-line disk partitions (mop) must not be stopped until the CMPs and all SMs have successfully completed pumping. If the process which mounts the off-line disk file systems is stopped, the pump process will not be able to access data on the off-line disks. Extensive recovery procedures may be required. If this occurs, escalate to your next level of support before continuing.

Warning: Do not perform a craft initialization while the off-line disk file systems are mounted. Extensive recovery procedures may be required.

To mount off-line file systems, on MCC page 1984 enter command:

CMD 509

Response:

UPD:GEN:APPLPROC,ARG="MOP"
UPD:GEN:APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
CHG:LPS,MSGCLS=INT_MON,PRINT=ON,LOG=ON;
CHG:LPS,MSGCLS=INT_MON,PRINT=ON,LOG=ON; OK
UPD:GEN:APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
CHG:LPS,MSGCLS=GENRMON,PRINT=ON,LOG=ON;
CHG:LPS,MSGCLS=GENRMON,PRINT=ON,LOG=ON; OK
UPD:GEN:APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
CHG:LPS,MSGCLS=INT,PRINT=ON,LOG=ON;
CHG:LPS,MSGCLS=INT,PRINT=ON,LOG=ON; OK
UPD:GEN:APPLPROC EXECUTING THE FOLLOWING RETROFIT TOOL:
/no5text/proc/INoflmop
PRM_O E800 xxxx xxxx xxxx xx xx xx (Will appear several times)
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

To verify that SMs indicate MATE_PUMP, enter message:

MSG OP:SYSSTAT,UCL;

Response:

OP SYSSTAT SUMMARY FIRST RECORD
SYS: INHIBITS-MTCE-RC MORE
AM: INHIBITS-MTCE-SW MORE
CM: NO_REQ_PEND
CMP x-0 P: NORMAL
CMP y-0 M: NORMAL
L LSM a,x: MATE_PUMP FORCED INHIBITS-MTCE-HW-SW CKT_OOS
...
B LSM b,x: MATE_PUMP FORCED INHIBITS-MTCE-HW-SW CKT_OOS
...
S LSM z,x: MATE_PUMP FORCED INHIBITS-MTCE-HW-SW CKT_OOS

8.4.1.3 OFF-LINE PUMP CMP

While performing the following steps, CMP 1-0 will be off-line pumped with new software release data. On MCC page 1851, the status indicator for CMP 1-0 will change from STBY to OOS to DACT when the CMP is pumped.
The following recovery procedures are given in case of problems while one of the CMPs is marked DACT:

- In the event the ACTIVE CMP fails while the mate CMP is DACT, the AM can escalate (up to an RTR level 3) trying to recover the formerly active CMP but will not use the DACT unit.

- In the event of CMP duplex failure with a CMP in the DACT state where the AM automatic escalation does not recover the CMP, if input commands are available, do an "RST:_CMP=x-0,UCL;" to release the DACT state.

1. Access MCC page 1851 and verify that CMP 0-0 is the ACT CMP (under the CMP 0 PRIM STAT box) and CMP 1-0 is the STBY CMP (under the CMP 0 MATE STAT box).

2. **If** CMP 0-0 is not the ACTIVE (primary) CMP, enter message:

   MSG SW:_CMP=0-0;

   Response:
   
   SW:_CMP=0-0; PF
   [EXC ODDRCVY=ALL CMP=0-0 STOPPED]
   [REPT CMP=1-0 MATE INITIALIZATION TRIGGER=SW-REQUEST]
   [REPT MSKP_ENVIRONMENT:]
   [CMP=1-0 PHASE 1&2 INIT COMPLETION TIME:xxxx TYPE:xxx]
   [EVENT=xxxx]
   EXC ODDRCVY=ALL CMP=1-0 STARTED
   SW_CMP=0-0 COMPLETED
   [REPT COMMUNICATION RESTORED: AM TO CMP=1-0 MATE]
   [REPT MSKP_ENVIRONMENT:]
   [CMP=1-0 PHASE 3 INIT COMPLETION TIME: xxxxxx TYPE:xxx]
   [EVENT=xxxx]
   CMP 0-0 becomes PRIMARY (active), CMP 1-0 becomes MATE (standby).

3. To inhibit AM software and hardware checks, enter command on MCC page 1984:

   CMD 513,am

   Response:
   
   UPD:GEN:APPLPROC,ARG="INHAMCHKS";
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   INH:HDWCHK;
   INH:HDWCHK; PF (on ROP)
   * REPT INHADM MINOR ALARM FROM INHIBIT ADMINISTRATOR

   (on ROP) INH HDWCHK COMPLETED
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   INH:SFTCHK;
   INH:SFTCHK; PF

   (on ROP)* REPT INHADM MINOR ALARM FROM INHIBIT ADMINISTRATOR

   (on ROP) INH SFTCHK COMPLETED
   UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

Comment: On MCC page 110 - SYSTEM INHIBITS, box "18 SOFTWARE CHECKS" and box "24 HARDWARE CHECKS" should be backlit.
4. To inhibit CMP software and hardware checks, enter command on MCC page 1984:

**CMD 513,cmp**

Response:

```
UPD:GEN:APPLPROC,ARG="INHCMPCHKS";
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
INH:HDWCHK,CMP=0-0;
INH:HDWCHK,CMP=0-0; PF
INH HDWCHK CMP=0-0 COMPLETED
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
INH:HDWCHK,CMP=1-0;
INH:HDWCHK,CMP=1-0; PF
INH HDWCHK CMP=1-0 COMPLETED
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
INH:SFTCHK,CMP=0;
INH:SFTCHK,CMP=0; OK
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
```

5. To off-line pump the CMP, from MCC page 1851, enter command:

**CMD 930**

Response:

```
ST:OPUMP,CMP=0,MATE; PF
EXC ODDRCVY=ALL CMP=1-0 STOPPED
REPT CMP=1-0 MATE INITIALIZATION TRIGGER={MANUAL|CRAFT}
       REQUEST
ST OPUMP CMP=1-0 COMPLETED
[REPT MSKP_ENVIROMENT:]
[CMP=1-0 PHASE 1&2 INIT COMPLETION TIME: H’xxxx TYPE:H’x]
       [EVENT=xxxx]
[CMP=1-0 PHASE 3 INIT COMPLETION TIME: H’xxxx TYPE:H’x]
       [EVENT=xxxx]
[REPT COMMUNICATION RESTORED: AM TO CMP=1-0 MATE]
```

Comment: On MCC page 1851, the status indicator for CMP 1-0 will change from Standby (STBY) to Out-Of-Service (OOS) to yellow Deactivated (DACT).

Also, on MCC page 1851, the different states of the mate memory will be displayed. Table 8-1 shows some of the states of CMP 1-0 during the pump and a definition of each. When the CMP is successfully pumped, the state will be **GEN DIFF**.
Table 8-1 — CMP Pump Status

<table>
<thead>
<tr>
<th>STATUS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPUMPHLD</td>
<td>Off-line pump, hold</td>
</tr>
<tr>
<td>OPUMPLB</td>
<td>Off-line pump, little boot</td>
</tr>
<tr>
<td>OPUMPBB</td>
<td>Off-line pump, big boot</td>
</tr>
<tr>
<td>COMM</td>
<td>Off-line pump, communication link</td>
</tr>
<tr>
<td>FI BGN</td>
<td>Begin full initialization</td>
</tr>
<tr>
<td>FISICOM</td>
<td>FI selective Init. common code portion</td>
</tr>
<tr>
<td>DACT GEN DIFF</td>
<td>Software release different</td>
</tr>
</tbody>
</table>

6. To check AM, SM, and CMP status, enter message:

   MSG OP:SYSSTAT,UCL;

   Response: OP:SYSSTAT,UCL;PF

   OP SYSSTAT  SUMMARY {FIRST|NEXT|LAST} RECORD
   SYS:  INHIBITS-MTCE[-RC] {MISC|MORE}
   AM:   INHIBITS-MTCE-SW [MORE]
   CM:   NORMAL
   LSM a,0: MATE PUMP FORCED INHIBITS-MTCE-HW-SW
          CKT_OOS [MORE]
   ...
   LSM b,0: MATE PUMP FORCED INHIBITS-MTCE-HW-SW
          CKT_OOS [MORE]
   ...
   LSM z,0: MATE PUMP FORCED INHIBITS-MTCE-HW-SW
          CKT_OOS [MORE]

   Comment: On MCC page 1800,x (where x = any numbered SM) box "04
   SFTCHK" and box "08 ALL HDWCHK" should be backlit.

7. Verify that the mate CMP indicates GEN DIFF and all SMs indicate
   MATE_PUMP.

8.4.1.4 STOP MOP PROCESS

To unmount off-line disk file systems, on MCC page 1984, enter command:

   CMD 609

   Response:

   UPD:GEN:APPLPROC,ARG="STOMPMP"
   UPD GEN APPLPROC EXECUTING THE FOLLOWING RETROFIT TOOL:
   /prc/supr/ptnmgr -k
   [PRM_0 E800 0002 xx0x xxxx xx xx xx] (may appear several times)
   UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY
8.4.2 PROCEED STAGE
8.4.2.1 OVERVIEW

The Proceed Stage consists of the initialization of the SMs, CMP, and AM to the new software release. Call processing for new calls is lost from the time the SMs are switched until the AM comes up on the new software release - about 3 to 4 minutes.

8.4.2.2 FLUSH AND EVOLVE CORCS FROM SMS

Caution: The following command evolves and compresses CORCS. The length of time required to complete this step varies with the number of CORCs logged. Skipping this step may result in a failure or timeout of the Proceed stage.

1. The following message cannot be executed unless ODD evolution is active. This can be verified by accessing MCC page 116 — the ODD EVOL ACT box should be backlit.

2. To flush CORCs from SM buffers and evolve them, enter message:

   MSG CNVT:CORCLOG;

   Response: CORCFLUSH: SM=a COMPLETE (once for each SM)
   [CNVT CORCLOG EVOL AM COMPLETE]
   [xxxx CORCS EVOLVED]
   [xxxx CORCS IN ERROR]
   [xxxx RDNT CORCS RMVD]
   [CNVT CORCLOG EVOL CMP COMPLETE]
   [xxxx CORCS EVOLVED]
   [xxxx CORCS IN ERROR]
   [xxxx RDNT CORCS RMVD]
   [CNVT CORCLOG EVOL SM=x COMPLETE]
   [xxxx CORCS EVOLVED]
   [xxxx TRNCORCS EVOLVED]
   [xxxx CORCS IN ERROR]
   [xxxx TRNCORCS IN ERROR]
   [xxxx RDNT CORCS RMVD]
   [xxxx RDNT TRNCORCS RMVD]
   [CNVT CORCLOG EVOL IN PROGRESS]
   [CORC NUMBER xxxx HAS BEEN READ]
   [CORC EVOLVED LOGFILES]
   CNVT CORCLOG EVOL COMPLETED

   Comment: It may take several minutes to receive the entire response, do not proceed until the CNVT CORCLOG EVOL COMPLETED message is output. If CNVT:CORCLOG fails, rerun the preceding message. If it fails again, see Section 6.5.10 and/or escalate to your next level of support.

3. This step is OPTIONAL. The corcevl.sum (CORC) analysis file may be dumped which provides statistics on CORC evolution activity for each SM and/or the AM in the office.

   To dump CORC analysis file, enter message:

   MSG DUMP:FILE:ALL,FN="/rclog/corcevl.sum",OPL=999;

   Response: DUMP FILE ALL STARTED
   **** {SM = x | AM} ****
CORC EVOLUTION STARTED -- Date is day mon aa bb:cc:dd yr

SUMMARY OF CORC ACTIVITY
x CORCS READ
x TORCS READ
x TRNCRCS READ
x CORCS EVOLVED CORRECTLY
x TRNCRCS EVOLVED CORRECTLY
x CORCS IN ERROR
x TRNCRCS IN ERROR

[RDNT CORC REMOVED FROM CURRENT LOG -

day mon aa bb:cc:dd yr]
[xx yyyyyyy]
[No compression for evlxx.5E16]
[evlxx.5E16 COMPRESSION STARTED -- Date is day mon aa bb:cc:dd yr]
[evlxx.5E16 COMPRESSION IS DONE, SUMMARY AS FOLLOWS:]
[xx CORCS READ FROM OLD evlxx.5E16]
[xx CORCS WRITTEN INTO NEW evlxx.5E16]
[xx TRNCRCS READ FROM OLD evlxx.5E16]
[xx TRNCRCS WRITTEN INTO NEW evlxx.5E16]
[FOLLOWING REDUNDANT CORCS ARE REMOVED]
[x yyyyyyy]

[SUMMARY OF CORCS LOGGED IN CURRENT evlxx.5E16 FILE]
[xx yyyyyyy]
[DUMP FILE ALL IN PROGRESS SEGMENT x]
CORC EVOLUTION COMPLETED --
Date is day mon aa bb:cc:dd yr

(Reports output for each SM/AM with CORC activity)
DUMP FILE ALL COMPLETED SEGMENT x

****************************************************
****************************************************
Total Number Of CORCs Logged in Evolved Logfiles: xxx

Total Number Of TRNCRCs Logged in Evolved Logfiles: xxx

****************************************************
****************************************************

8.4.2.3 EXECUTE PROCEED STAGE

=> Read: Read the following sequences up to Verification of a Successful Recovery on the New Software Release (Section 8.4.3.5) before continuing with the procedures. It is important that the sequences be followed and that you become familiar with the necessary inputs and corresponding outputs.

1. At this time, the operating company should notify all carrier systems connected to this office of the impending system initialization.

2. Inform the Retrofit Coordinator that the switch will undergo a full system initialization in approximately 45 to 60 minutes.

3. On MCC page 1989 (see Figure 8-3), turn off AM off-line boot by entering command:
   CMD 404,N
<table>
<thead>
<tr>
<th>Unconditional Execution</th>
<th>01. N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tape Reset</td>
<td>02. M0</td>
</tr>
<tr>
<td>Load Tools Tape</td>
<td>03. N</td>
</tr>
<tr>
<td>AM Offline Boots</td>
<td>04. N</td>
</tr>
<tr>
<td>Automatic SM Offline Pump</td>
<td>05. Y</td>
</tr>
<tr>
<td>Night of OSIE Retrofit</td>
<td>06. N</td>
</tr>
<tr>
<td></td>
<td>07.</td>
</tr>
<tr>
<td></td>
<td>08.</td>
</tr>
<tr>
<td></td>
<td>09.</td>
</tr>
<tr>
<td></td>
<td>10.</td>
</tr>
<tr>
<td></td>
<td>11.</td>
</tr>
<tr>
<td></td>
<td>12.</td>
</tr>
</tbody>
</table>
4. On MCC page 1985, enter command:
   CMD 500
   Response:
   REPT RETRO PROCEED PERFORM EAI SETUP AS DIRECTED BY
   THE TRANSITION MANUAL
   REPT RETRO PROCEED RESUME WHEN COMPLETE

8.4.2.3.1 EAI Page Setup

1. On MCC page 111, ensure AMs are duplex with AM 0 ACT, AM 1 STBY.
   a. If AMs are not duplex, restore OOS AM.
   b. If AM 1 is ACT, AM 0 STBY, on MCC page 111 enter command:
      CMD 400
      Comment: Verify AM 0 ACT, AM 1 STBY before proceeding.

2. Access EAI page.

3. Ensure odd-numbered EAI commands 31 through 43 are backlit before
   proceeding.

4. Ensure "SET-INH" box is **not** visible after "INH-TIMER".

5. Enter the following EAI commands:
CMD 34 Set hardware inhibits
CMD 36 Set software inhibits
CMD 10 Force AM 0 (simplexes AM) Response: (y/n)
CMD Y Forces AM 0 on-line
CMD 22 Select secondary MHD
CMD 31 Clear BACK-ROOT
CMD 33 Clear min config.

Response:  
REPT CU 1 UNAVAILABLE  
[REPT CU 1 UNAVAILABLE]  
REPT CU 0 FORCED ONLINE

6. Access normal display (NORM DISP).
7. To switch ports, enter command on MCC page 111:
   CMD 401
   Response:  
   SW:PORTSW; PF  
   REPT ROP x STOPPED  
   REPT ROP y STARTED  
   SW PORTSW COMPLETED FOR ROP  
   Screen blanks while ports are being switched.  
   REPT MTTY x STOPPED  
   REPT MTTY y STARTED  
   SW PORTSW COMPLETED FOR MTTY  
   EAI page comes up followed by MCC page 111.

Comment: If the port switch fails, ensure that the switches on the port switch (located at the bottom of the AM frame) are in the auto position.
8. Access the EAI page and verify that the inhibits and setups shown in Step 5 are the same for this EAI port.
   If inhibits and setups are not the same, repeat Steps 3, 4 and 5 for this EAI port.
10. Turn off External Sanity Monitor (ESM) at miscellaneous frame. This causes a major alarm. Access MCC page 116 (Miscellaneous) and verify that power has been removed from ESM. If power is off, the POWER indicator is backlit, and the word OFF is displayed.
11. Execute the following command on MCC page 1985 to resume:
   CMD 500
   Response:  
   REPT RETRO PROCEED CONTINUING  
   REPT PREP ECD PROCEED USING '/usr/bin/rcvecd' FOR  
   ULARP FORM PROCESSING  
   REPT PREP ECD PROCEED WARNING: NO SPECIAL RCVECD TOOL FOUND USING /usr/bin/rcvecd  
   REPT PREP ECD PROCEED USING '/usr/bin/rcvecd' FOR  
   ULARP FORM PROCESSING
UPD GEN PROCEED BEFORE GENERIC RETROFIT INITIALIZATION
SELECT PRIMARY ROOT
UPD GEN PROCEED BEFORE GENERIC RETROFIT INITIALIZATION
SELECT MHD 1
UPD GEN PROCEED COMPLETED
DUMP:FILE:ALL,FN="/tmp/ofl/updtmp/retrofit/cronfile"; PF
DUMP FILE ALL STARTED
REPT PRCD HOOK COMPLETED SUCCESSFULLY
WRT:AMADATA; PF
WRT AMA DATA HAS BEEN WRITTEN TO DISK
REPT AMA DISK WRITER FOR STREAM ST1
RECORDING TO DISK SUSPENDED
REPT AMA DISK WRITER FOR STREAM ST1 TERMINATION CODE 2
REPT AMA DISK WRITER FOR STREAM ST1 INITIALIZATION COMPLETE
REPT AMA DISK WRITER FOR STREAM ST1
RECORDING TO DISK RESUMED
REPT RETRO PROCEED INITIATE MANUAL AMA TELEPROCESSING OR TAPE SESSION NOW
REPT RETRO PROCEED RESUME WHEN SESSION HAS STARTED

8.4.2.3.2 Final AMA Session

A feature in 5E16.2 is the ability to access AMA partitions on the off-line disks. This final AMA session will be the last time you will teleprocess AMA data while on the OLD side. When your switch is on the NEW side, your first AMA session will automatically access the completed AMA records residing on the OLD side off-line disks.

1. This will flush (write) AMA billing data from the AM to the active disk, and is done automatically prior to final AMA session. See ROP for output.

Response: Assert 28334 may be output which indicates that AMA records have been lost. AMA records have not been lost at this point. The assert is output because the buffer in the AM is normally written to disk only when full. If the buffer is written to disk and is not full at the time of the write, the assert may be output. The assert occurs when a WRT:AMADATA is entered in a dual stream office, or when the WRT:AMADATA is entered more than once in rapid succession in a single stream office, or when the WRT:AMADATA is entered two or more times in a dual stream office.

Comment: In the preceding response, the term STx means either ST1 or ST2. If your office does not use dual stream billing (ST1 and ST2), messages will only be received for ST1. If your office does use dual stream billing, a set of messages will be received for each stream (ST1 and ST2).
2. Initiate final manual AMA tape writing or teleprocessing session per local practice.

Comment: If the teleprocessing session is being run at a non-standard time, it may be necessary to call personnel at the HOC to request a manual poll.

3. This step may be performed in teleprocessing offices to provide backup AMA data in the event that data from the final teleprocessing session is lost or mutilated at the host collector. In performing this step, the time interval from now to the system switch forward is increased by the amount of time required to generate the AMA tape.

For offices that use teleprocessing, an optional manual AMA tape writing session to dump secondary AMA blocks can be performed at this time (see 235-105-210, Routine Operations and Maintenance). This tape should be saved for backup purposes.

4. To verify a successful manual AMA session, use Step ‘a’ (single-stream office) or Step ‘b’ (dual-stream office):

   a. Single-stream office - enter message:

      MSG OP:AMA:SESSION;

      Response: Response for offices with AMA teleprocessing:

      REPT AMA TELEPROCESSING SESSION FOR STREAM STx
      PREVIOUS AMA TELEPROCESSING SESSION STATUS
      START TIME xxxx x xx:xx:xx
STOP TIME xxx x xx:xx:xx
BLOCKS TRANSMITTED xxx
PRIMARY POLLS REJECTED x
SECONDARY POLLS REJECTED x
NORMAL TERMINATION

or

Response for offices with AMA tape writing:
REPT AMA TAPE SESSION FOR STREAM STx
PREVIOUS AMA TAPE SESSION STATUS
VOL SER NUMBER
START TIME xxx x xx:xx:xx
PRIMARY DATA
FIRST BLOCK x xxx x xx:xx
LAST BLOCK x xxx x xx:xx
TAPE IS xxx% FULL
RECORDS WRITTEN x
NORMAL TERMINATION - NO MORE DATA

Comment: From the output, verify that the message NORMAL TERMINATION is received. If this output is not received, one of the following is true:
- There is an AMA session still in progress.
- The last AMA session was unsuccessful.

b. Dual-stream office - enter message:

MSG OP:AMA:SESSION,a;

Where: a = ST1 or ST2. Enter message once for ST1, and once for ST2.

Comment: See the Response and Comment for Step 'a'.

5. To verify the percentage of disk space occupied by AMA data, use Step 'a' (single-stream office) or Step 'b' (dual-stream office):

a. Single-stream office - enter message:

MSG OP:AMA:DISK;

Response:

REPT AMA DISK SUMMARY FOR STREAM ST x
DISK IS CURRENTLY xx% FULL
NUMBER OF PRIMARY AMA BLOCKS IN USE IS APPROXIMATELY: xx

b. Dual-stream office - enter message:

MSG OP:AMA:DISK,a;

Where: a = ST1 or ST2. Enter message once for ST1, and once for ST2.

Comment: See the Response and Comment for Step '4a'.

6. AMA will continue to accumulate on the OLD side until the switch is on the NEW side. Once on the NEW side, the first AMA session will automatically access the AMA records on the OLD side off-line disks.

7. On MCC page 1985, enter command:

CMD 500

Response:
REPT RETRO PROCEED CONTINUING
PRM_0 E800 xxxx xxxx xxxx xx xx xx on ROP
UPD GEN TSM IN PROGRESS 60 TRUNKS LOGGED
UPD GEN TSM COMPLETED
UPD GEN PROCEED APP EXECUTING THE FOLLOWING INPUT COMMAND
OP:AMA:CONTROLFILE
OP:AMA:CONTROLFILE; PF
(The AMA control file is dumped to the ROP.)
REPT AMA CONTROL FILE FOR STREAM ST1
UPD GEN RETRCV WARNING: NO SPECIAL RCVECD TOOL FOUND
USING /usr/bin/rcvecd
UPD GEN PROCEED APP EXECUTING CORCFLUSH
CORCFLUSH: SM=X COMPLETE (once for each SM)
CORCFLUSH: AM COMPLETE
Initialization PRMs are output on the ROP.
If any failing PRMs are encountered,

consult the PRM document.

If only failing PRMs are output,
escalate to your next level of support immediately.

UPD GEN PROCEED APP EXECUTING CORCFLUSH
CORCFLUSH: SM=X COMPLETE (once for each SM)
CORCFLUSH: AM COMPLETE
UPD GEN PROCEED APP EXECUTING CORCEVOL
(The following may take several minutes to complete.)
[CNVT CORCLOG EVOL AM COMPLETE]
[xxxx CORCS EVOLVED]
[xxxx CORCS IN ERROR]
[xxxx RDNT CORCS RMVD]
[CNVT CORCLOG EVOL CMP COMPLETE]
[xxxx CORCS EVOLVED]
[xxxx CORCS IN ERROR]
[xxxx RDNT CORCS RMVD]
[CNVT CORCLOG EVOL SM = x COMPLETE]
[xxxx CORCS EVOLVED]
[xxxx TRNCORCS EVOLVED]
[xxxx CORCS IN ERROR]
[xxxx TRNCORCS IN ERROR]
[xxxx RDNT CORCS RMVD]
[xxxx RDNT TRNCORCS RMVD]
[CNVT CORCLOG EVOL IN PROGRESS]
[CORC NUMBER xxx HAS BEEN READ]
xxx CORCS xxxx TRNCORCS HAVE BEEN LOGGED IN THE CORC
EVOLVED LOGFILES
WRT:AMADATA; PF
WRT AMA DATA HAS BEEN WRITTEN TO DISK
READY TO TRANSFER DATA FROM DISK TO OUTPUT MEDIUM
*C REPT AMA DISK WRITER FOR STREAM ST1
RECORDING TO DISK SUSPENDED
* REPT AMA DISK WRITER FOR STREAM ST1 TERMINATION CODE 2
REPT AMA DISK WRITER FOR STREAM ST1 INITIALIZATION COMPLETE
REPT AMA DISK WRITER FOR STREAM ST1
RECORDING TO DISK RESUMED
REPT PROC SCHED SWITCHFWD PAUSED AT STAGE
BOUNDARY - RESUME WHEN READY
Comment: The PRMs in the preceding output may come out in any order. All of these PRMs may not appear at the ROP. Some may appear more than once. PRMs other than those listed may be output as part of the preceding command. However, if any failing PRMs are output, escalate to your next level of support if necessary.

The cronfile dumped during proceed is the 5E16.2 system cronfile which will be activated during "rmvtools".

Also, it may take up to 30 minutes to get the entire response.

8.4.3 SWITCH FORWARD STAGE

8.4.3.1 FINAL CHECKS BEFORE INITIALIZATION ON NEW SOFTWARE RELEASE

8.4.3.1.1 Checks Before Initialization On New Software Release

1. To dump the VTOC on MHD 1, enter message:

   MSG DUMP:MHD=1,VTOC;

   Response:

   DUMP MHD 1 VTOC STARTED
   DUMP MHD 1 VTOC SEGMENT x of y
   VTOC for MHD 1 is dumped at ROP.
   DUMP MHD 1 VTOC IN PROGRESS
   DUMP MHD 1 VTOC COMPLETED

   Comment: Compare the VTOC with the appropriate table in section 5 of this manual to verify that the correct VTOC has been loaded on MHD 1.

   Warning: Ensure that LBOOT has a valid start address (2). If not, escalate to your next level of support immediately.

2. On MCC page 111, verify that AM 0 is ACT before proceeding.

3. On MCC page 1209, verify that ONTCs are duplex (ACTIVE MAJOR/MINOR). Stable calls will be preserved only if the ONTCs are duplex going into the initialization.

   Comment: Automatic C-link switching (that is, reconfiguration) is permissible at this time.

4. To check the AM, CMP, and SM status, enter message:

   MSG OP:SYSSTAT,UCL;

   Response:

   OP SYSSTAT SUMMARY {FIRST|NEXT|LAST} RECORD
   SYS: INHIBITS-MTCE[-RC] [MISC|MORE]
   AM: INHIBITS-MTCE-SW [MORE]
   x HSM 1,0: MATE_PUMP FORCED INHIBITS-MTCE-HW-SW
   CKT_OOS [MORE]
   ...
   x LSM n,0: MATE_PUMP FORCED INHIBITS-MTCE-HW-SW
   CKT_OOS [MORE]

   (where n = highest-number SM)
Comment: All SMs must indicate MATE_PUMP FORCED,...

5. On MCC page 1850, verify that CMP 0-0 is ACT, and that CMP 1-0 is DACT GEN DIFF.

6. Offices with the common network interface (CNI), using local procedures, notify your signal transfer points (STPs) of the upcoming initialization.

7. Wait for approval from Site Coordinator before proceeding beyond this step.

Comment: Call processing is affected for 3 to 4 minutes between the time the SMs are switched to Side 1 and the AM and CMP recover from the system initialization.

Caution: The following set of conditions must be met before proceeding.

Verify that:

- The Proceed Stage has successfully completed. On MCC page 1985, SWITCHFWD-STAGE PAUSE should be indicated (see Figure 8-6).

![Figure 8-6 — MCC Page 1985 Paused at the Switchforward Stage](image)

8.4.3.2 VERIFY NO EMERGENCY CALLS ARE IN PROGRESS

Using local procedures, verify that no emergency calls are in progress.

Comment: Wait for any such calls to end before continuing. If any 911 calls are in...
progress during the initialization, the ability to recall the originator will be lost after the initialization.

8.4.3.3 SM, CM, AND AM INITIALIZATIONS OVERVIEW

8.4.3.3.1 General

Note: The following overview includes the procedures used to initialize the switch on the new software release. Review the following pages (through the AM initialization) to become familiar with the sequence of events before continuing.

Before the switch can be initialized on the new software release, the following conditions must be met.

1. The ONTCs are ACTIVE MAJOR and ACTIVE MINOR (that is, duplex) on MCC page 1209.
2. On MCC pages 141, 142, ..., all SMs must indicate MATE_PUMP FORCED...
3. On MCC page 1850, verify that CMP 0-0 is ACT and CMP 1-0 is GEN DIFF.

Warning: If these conditions are not met, correct the problem or escalate to your next level of support.

8.4.3.3.2 SM Switch Forward Command

In Section 8.4.3.4.1, the technician will be instructed to enter commands to switch the SMs. The SMs will transition from MATE_PUMP to GEN DIFF and may transition through COMM LOST before indicating GEN DIFF. This transition can be monitored on MCC pages 141, 142, etc. Call processing is lost in each SM as it transitions to GEN DIFF, however two-port analog and circuit-switched ISDN stable calls with talking paths are preserved.

8.4.3.3.3 Successful SM Switch

After the technician enters the switch forward command in Section 8.4.3.4.1, a successful SM switch forward is reported by the following ROP output.

UPD GEN SWITCHFWD COMPLETED SUCCESSFULLY
**** PERFORM GENERIC RETROFIT INITIALIZATION OF AM ****
THE SWITCHFWD PROCESS COMPLETED SUCCESSFULLY, ALL SM(S) SWITCHED

After receiving these messages, proceed immediately to the AM boot.

Note: Do not wait for all SMs to indicate GEN DIFF before proceeding to the AM boot. Use the success message described in the previous paragraph as an indication to proceed to the AM boot.

8.4.3.3.4 Failed SM Switch

8.4.3.3.4.1 SM Switch Failure (No SMs Switched)

If the following messages are output after the technician enters the switch forward command in Section 8.4.3.4.1, no SMs have switched to the new software release and call processing has not been affected by the SWITCHFWD command.

THE SWITCHFWD PROCESS ABORTED
UPD GEN SWITCHFWD COMPLETED UNSUCCESSFULLY
THE SWITCHFWD PROCESS TERMINATED

Office personnel should review the error messages and resolve the problem before attempting another SM switch. If necessary, escalate to your next level of support.
8.4.3.3.2 Partial SM Switch Failure

If the following messages are output after the technician enters the switch forward command in Section 8.4.3.4.1, the SWITCHFWD command has terminated with some of the SMs GEN DIFF.

UPD GEN SWITCHFWD COMPLETED SMS IN TRANSIENT STATE

**** PERFORM GENERIC RETROFIT INITIALIZATION OF AM ****

WARNING 732: THE SWITCHFWD PROCESS TERMINATED WITH SOME SM(S)

SWITCHED

Call processing is down in the SMs that have switched to the 5E16.2 software release (two-port analog and circuit-switched ISDN stable calls with talking paths are preserved). Proceed immediately to Recovery Action R-38 (Section 6.6.38).

After Recovery Action R-38 has been successfully completed, proceed immediately to the system initialization. If R-38 does not successfully complete, (the SMs failed to switch within a reasonable amount of time), the Site Coordinator should make a decision on whether to continue with the procedures, back out of the procedures, or escalate to your next level of support. If a decision is made to back out, go to Backout Action B-5A.

If the SMs are backed out to the old software release, the cause of the delay should be resolved and the SWITCHFWD command repeated before initializing the AM.

8.4.3.3.5 AM Initialization on the New Software Release

When the message is output (in Section 8.4.3.4.1) indicating that all SMs have successfully switched to the new software release, initialize the AM using the procedures described in Section 8.4.3.4.2.

8.4.3.4 INITIALIZE THE 5ESS® SWITCH ON THE NEW SOFTWARE RELEASE

8.4.3.4.1 Switch the SMs to the New Software Release

1. To continue for confirmation, enter command on MCC page 1985:

   CMD 500

   Response:

   REPT RETRO SWITCHFWD WARNING - THE NEXT STEP IS SERVICE AFFECTING
   REPT RETRO SWITCHFWD NOTIFY EMERGENCY OPERATORS

   The 1985 MCC page appears as shown in Figure 8-7:
2. To continue to the Old Side SM Manager, enter command on MCC Page 1985:
   CMD 500

   Response:
   
   LTG SWITCHFORWARD CONTINUING
   WAITING TO SWITCH SMS AND AM.
   ENTER 500 TO SWITCH FORWARD.
   ENTER 600 TO SWITCH BACK.

   The MCC Page 1985 appears as shown in Figure 8-8.
3. To switch the SMs to the new data, enter command on MCC page 1985:

CMD 500

Response:

REPT RETRO SWITCHFWD CONTINUING
UPD GEN SWITCHFWD COMPLETED SUCCESSFULLY
*** PERFORM GENERIC RETROFIT INITIALIZATION OF AM **
SMs SWITCHED TO NEW SIDE.
BOOT AM TO NEW SIDE NOW WITH 42-S-54
IF REQUIRED, USE 600 POKE TO SWITCH SMS BACK TO OLD SIDE

(When this message is received, proceed immediately to Section 8.4.3.4.2 and initialize the AM.

CALL PROCESSING IS DOWN!!!!)
REPT RETRO SWITCHFWD SWITCH TO NEW SIDE COMPLETE
REPT RETRO SWITCHFWD IF REQUIRED USE BACKOUT TO SWITCH
SMS BACK TO SIDE 0

8.4.3.4.2 Initialize the AM on the Software Release

1. Enter the following commands on the EAI page to set up the application parameter:

CMD 42
PARAMETER: S (Sets application parameter mode)
(S saves stable calls)
2. Enter the following commands on the EAI page to perform the system initialization:

```
CMD 54 (Full AM boot on new software release)
Boot? (y/n) y (Boot begins after "y" is entered).
```

3. Log time of boot on Call Processing Verifications Worksheet (Table 9-8).

### 8.4.3.5 VERIFICATION OF SUCCESSFUL RECOVERY ON NEW SOFTWARE RELEASE

#### 8.4.3.5.1 General

After the initialization, expect the following units to be simplex:

- CU
- CMP
- MHD
- MCTSI
- Integrated Services Line Unit Common Control (ISLUCC)
- Integrated Digital Carrier Unit (IDCU) Service Group (SG).

*Do NOT* manually duplex these units until directed to do so by this document.

### 8.4.4 RECOVERY PREPARATION STAGE

#### 8.4.4.1 AM RECOVERY

On MCC page 111, AM 0 should become **ACT** within 15 minutes. AM 1 will be **UNAV**.

#### 8.4.4.2 CALL PROCESSING VERIFICATION

1. *If call processing is not available within a reasonable amount of time, the Site Coordinator should escalate to your next level of support in order to make a decision on whether to back out or continue with the procedures.*

2. As the SMs become active, verify that call processing is available from the SM and verify intramodule and intermodule call processing. Keep records on the Call Processing Verification Worksheet (Table 9-8).

3. Using list of local and Direct Distance Dialing (DDD) lines prepared earlier, perform a dial-through test of all selected lines.

   **Comment:** Included in this list should be police, fire, hospital(s), 911 dispatcher, and other emergency numbers as determined by local practices.

4. The next several sections verify that critical 5ESS switch hardware is configured correctly after the switch forward. Preliminary call processing tests should be performed as soon as possible after the switch forward. The following sections should be deferred until call processing has been demonstrated.

#### 8.4.4.3 MCC DISPLAYS

On MCC page 111, AM 0 status will be **ACT** and AM 1 status will be **UNAV**.
8.4.4.4 VERIFY SM RECOVERY

1. On MCC pages 141, 142, etc., each SM should indicate MATE PUMP.
   
   **Caution:** The following step is only for SM switch forward problems.

2. Any SM indicating the status of GEN DIFF on MCC pages 141, 142, etc., could indicate one of the following conditions:
   
   • A loss of communications to the SM has occurred.
   • The SM has failed to switch to the new software release side.
   • Another error has occurred in the SM.
   
   To determine if a communications problem has occurred, access MCC page 1900,x (where x is the SM number).
   
   To restore OOS CLNKs, enter command on MCC page 1900,x:
   
   **CMD 3yyy**
   
   Where: yyy = OOS CLNK
   
   If the CLNKs do not restore, access MCC page 115 to determine the location of other CM problems. Go to the appropriate MCC pages and attempt to restore communications.
   
   If the SM remains GEN DIFF on MCC pages 141, 142, etc., attempt to switch the SM’s sides. Enter message:
   
   **MSG ORD:CPI=x,CMD=GRSW-y;**
   
   Where: x = number of the SM that is GEN DIFF.
   
   y = the SM side which was off-line pumped and contains the new software release.
   
   If the SM remains GEN DIFF on MCC pages 141, 142, etc., repumping the SM is recommended as follows:
   
   a. To allow auto pump, enter command on MCC page 1800,x (where x = SM number):
      
      **CMD 701**
      
      Response: OK
   
   b. If the status of the SM remains GEN DIFF on MCC page 1800,x, perform an AM directed reset (to initialize and pump the SM) by entering the following commands:
      
      **CMD 924**
      
      Response: FI? Y/N (on MCC)
      
      **CMD y**
      
      Response: ORD:CPI=x,CMD=RESET; PF
      
      **=> Read:** The 924 poke and the y confirmation should be poked into the switch a second time to pump the SM.
      
      **CMD 924**
      
      Response: FI? Y/N (on MCC)
CMD y
Response: ORD:CPI=x,CMD=RESET; PF

c. If any SMs still indicate GEN DIFF, proceed immediately to Recovery Action R-38 (Section 6.6.38) in this document and escalate to your next level of support.

Note: Any SMs that indicate GEN DIFF will only respond to the following types of commands:

- Software Release Retrofit switch commands (Switchfwd, Switchbck, Backout, SMswitch, SMbackout, and ORD:CPI=x,CMD=GRSW).
- Reset processor commands (poke 924 on MCC page 1800, x and ORD:CPI=x,CMD=RESET).

Do not attempt to power cycle an SM without escalating to your next level of support. If an SM that is in a forced simplex condition is power cycled, the SM force will be lost and the SM will attempt to duplex.

3. To verify that all SMs are active on side 1, enter message:

   MSG OP:SYSSTAT,UCL;

   Response:

   OP SYSSTAT SUMMARY {FIRST|NEXT|LAST} RECORD
   SYS: INHIBITS[-MTCE][-RC] MISC
   AM: [BACKOUT-RC]INHIBITS[-MTCE]-SW MORE
   CM: NO REQ PEND
   CMP 1-0 P [BACKOUT-RC]INHIBITS-HW[-SW]
   CMP 0-0 M: [BACKOUT-RC]GEN DIF
             [INHIBITS-SW][-HW][POSTINIT]
   B LSMa,1 MATE_PUMP [BACOUT-RC]FORCED
          INHIBITS-MTCE-PUMP-HW-SW
          [CKT_OOS][MORE]
   S LSMb,1 MATE_PUMP [BACOUT-RC]FORCED
          INHIBITS-MTCE-PUMP-HW-SW
          [CKT_OOS][MOORE]
   L LSMz,1 MATE_PUMP [BACOUT-RC]FORCED
          INHIBITS-MTCE-PUMP-HW-SW
          [CKT_OOS][MOORE]

   Comment: At this point, all units (AM, CMP, SMs) may indicate BACKOUT-RC as the RC roll-forward completes.

8.4.4.5 CMP RECOVERY

Access MCC page 1850. The primary CMP state should be ACT. The mate CMP will be DACT GEN DIFF. If trouble was encountered in reconfiguring the CMPs during the switch forward, the primary CMP may show that it is being pumped and initialized. On MCC page 1850, if the primary CMP shows that it is being pumped and initialized, wait a reasonable amount of time for the process to complete.
If the primary CMP changes to an ACTIVE state, proceed to the next section.

If the state of the primary CMP still did not change to ACTIVE/POSTINIT, do the following.

**Caution:** *The following steps are only for CMP switch forward problems.*

1. On MCC page 1850 (logically active CMP), to initialize and pump the CMP, enter commands:
   
   CMD 923
   
   FI (Y/N) Y

2. If the status of the CMP still does not transition to ACTIVE within a reasonable amount of time (10 minutes maximum), escalate to your next level of support.

8.4.4.6 CNI RECOVERY (CNI OFFICES ONLY)

After the initialization on the new ODD data, MCC pages 118 and 1523 may show a value of DGR for the TCAP signaling status boxes. This indicator is **only** reporting conditions which existed in the previous software release. Verify CNI functionality and continue with the transition. The DGR status condition may be resolved during normal maintenance periods after the transition. Refer to 235-190-120, *Common Channel Signaling Service Features* for information on resolving this condition.

With the 5E9(2) and later software releases, CNI employs a CCS Network Critical Event (CNCE) output message, **REPT CNCE C7RTERR**. This message reports that CNI received an outgoing signaling message with an invalid destination point code or a destination point code that does not have any routing data in CNI. This output message is accompanied by a minor alarm and is printed with the destination point code and the service indicator from the Service Information Octet (SIO).

8.4.4.7 VERIFY SDFI STATUS

During the SM recovery, equipped Subscriber Digital Facility Interfaces (SDFIs) may go OOS and restore automatically to the in-service state after running full diagnostics. If a large number of SDFIs are affected, customers will experience an unnecessary time with no call processing.

1. Enter message:
   
   MSG OP:RT,ALM;
   
   Response: **PF**

   *The Remote Terminals (RTs) with an alarm condition will be output. The RTs with an alarm location of NEAR END will be likely to have SDFIs OOS and those with an alarm level of MAJOR indicate customers down as a result.*

   or

   **NG — NO RT’S FOUND**

   **Note:** If there are no MAJOR alarms, Steps 2 through 4 may be skipped.

2. Using the information from the alarm summary, to view the status of the associated SDFIs, access the following MCC page:
   
   MCC 1150,y,x
Where:  
x = SM number  
y = DCLU  

Comment:  The LRT which is output in the alarm summary has the format of  
X-Y-Z with SM X, DCLU Y, RT Z.

3.  In order to minimize customer downtime, for each SDFI Z that is undergoing an  
automatic restoral (OOS or OOST on MCC page 1150,Y,X), enter message:  

MSG STP:RST:SDFI=x-y-z;  

4.  To perform an unconditional restoral on the SDFIs from Step 3, enter the  
following command on MCC page 1150,Y,X:  

CMD 3xx,UCL  

Where:  
xx = SDFI number  

8.4.4.8 VERIFY AMA BILLING  

At this point, AMA billing is already allowed (AMA billing is automatically allowed by  
the 5ESS switch after the AM switch forward).

Warning:  Do not attempt to teleprocess or write AMA data to tape at this  
point. The first time you do this you will access AMA records from the OLD  
side off-line disks. This may not be done until the DFCs have been restored  
later in this document.

1.  To verify that AMA is recording properly, enter message:  

MSG OP:AMA:STATUS;  

Response:  REPT AMA STATUS FOR STREAM STx  

<table>
<thead>
<tr>
<th>SEGMENT</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>xxxxx</td>
</tr>
<tr>
<td>2</td>
<td>xxxxx</td>
</tr>
<tr>
<td>3</td>
<td>xxxxx</td>
</tr>
</tbody>
</table>

LAST TIME DISK WRITER WROTE TO DISK hh:mm MM/DD  

Comment:  Save the ROP output for use in the next step.  

Note:  The percent full (number records) of each of the three SEGMENTS will  
demonstrate the loading of AMA records in the SDS. Each time the SEGMENT  
gets full, the disk writer writes that particular SEGMENT to disk. The value of  
the LAST TIME DISK WRITER WROTE TO DISK will be 00:00 00/00 until the  
first segment has been written to disk after the boot.

2.  Enter message:  

MSG OP:AMA:MAPS;  

Response:  REPT AMA DISK MAPS FOR STREAM ST1   

<table>
<thead>
<tr>
<th>WRITE PARTITION</th>
<th>READ PARTITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARTITION x DISK MAP:</td>
<td></td>
</tr>
<tr>
<td>FPO: xx LPO: xx FPS: xx LPS: xx</td>
<td></td>
</tr>
<tr>
<td>FSO: xx LSO: xx FSS: xx LSS: xx</td>
<td></td>
</tr>
<tr>
<td>FBO: xx LBO: xx FBS: xx LBS: xx</td>
<td></td>
</tr>
</tbody>
</table>
3. Re-enter message:

**MSG OP:AMA:STATUS;**

Response: **REPT AMA STATUS FOR STREAM STx**

<table>
<thead>
<tr>
<th>SEGMENT</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>xxxxx</td>
</tr>
<tr>
<td>2</td>
<td>xxxxx</td>
</tr>
<tr>
<td>3</td>
<td>xxxxx</td>
</tr>
</tbody>
</table>

**LAST TIME DISK WRITER WROTE TO DISK** *hh:mm MM/DD*

4. Enter message:

**MSG OP:AMA:MAPS;**

Response: **REPT AMA DISK MAPS FOR STREAM ST1**

**WRITE PARTITION x READ PARTITION x**

**PARTITION x DISK MAP:**

- **FPO:** xx  **LPO:** xx  **FPS:** xx  **LPS:** xx
- **FSO:** xx  **LSO:** xx  **FSS:** xx  **LSS:** xx
- **FBO:** xx  **LBO:** xx  **FBS:** xx  **LBS:** xx

5. The amount of time it will take to verify AMA recording depends on the amount of traffic on the switch. If your office has light traffic, you should continue with the steps in this document and return to Step 3 every 10 minutes until you are satisfied that AMA is recording properly.

a. Compare the **OP:AMA:STATUS** output from Step 1 with the **OP:AMA:STATUS** output from Step 3.

   The amount of AMA recorded depends on the amount of traffic on the switch.

   To verify that AMA is writing to a segment, compare the percent full (number records) of the segments from Steps 1 and 3. These should *increase* with traffic on the switch.

b. When one segment fills, it should be written to disk and a new segment will begin to fill. To verify that AMA has written to disk, check the **LAST TIME DISK WRITER WROTE TO DISK** - this value should not be 00:00 00/00.

c. You can also verify the AMA has been written to disk by comparing the output of the **OP:AMA:MAPS** commands issued in Steps 2 and 4. The second line of the output from the **OP:AMA:MAPS** gives a number after **WRITE PARTITION**. Below this are listed the various partitions available.
Locate the partition corresponding to the write partition number. Within this report are values for LPO and LPS. These values should increase when AMA is written to disk.

6. If AMA has successfully written to disk and is writing into a new segment, AMA is recording properly. If AMA is recording properly, proceed to Section 8.4.5.1.

7. If AMA is being recorded in one SEGMENT, but has not written to disk, proceed to Section 8.4.5.1 but continue to monitor AMA. To continue the monitoring, re-enter the OP:AMA:STATUS message every 10 minutes until the AMA successfully writes to disk.

8. If it appears that AMA is not recording properly, enter the following command on MCC page 1984:

CMD 506

After the 506 successfully completes, repeat the Verify AMA Billing Section until AMA is satisfactorily writing to disk.

If there is call processing through the switch and if all SEGMENTS indicate EMPTY, seek technical assistance.

Caution: If at any time you are unsure that AMA is recording properly, do not hesitate to seek technical assistance.

8.4.4.9 VERIFY MHD CONFIGURATION

To verify MHD configuration complete the following steps:

1. Access MCC page 1984 (and MCC page 125 if more than 2 DFCs are equipped).

2. Ensure that all MHDs are ACT with the exception of MHD 15. If equipped, MHD 15 is used for software backup. This disk is not affected by these procedures and should remain in an OOS state.
The RCVYPREP stage automatically started running on the new side and continued to the point shown in Figure 8-9.

Note: If the procedure is running and has not yet reached the point shown in Figure 8-9 do not proceed until it reaches that state.

The following list describes each activity that will occur during the procedure.

- **RCVY/PREP STG** - Setup for new side.
- **PREP ENV** - Restores options page settings used in the transition.
- **APPLHOOK** - No action on Retrofit going to Commit.

1. To continue with the procedure, on MCC page 1985, enter command:

   CMD 500

Response: REPT NEW SIDE SM MGR COMPLETED SUCCESSFULLY
REPT PROC SCHED POST BOOT PAUSED AT STAGE BOUNDRY - RESUME WHEN READY
8.4.5 POST-BOOT STAGE

Figure 8-10 shows an example of MCC page 1985 paused before the start of the Post-Boot stage. The following list describes each activity that will occur during the Post-Boot stage:

- **POSTBOOT STG** - Setup for post-boot activities.
- **TSM NEW** - Instructs the technician to manually run the TSMNEW and TSMRMV commands.
- **BOOTHOOK** - Prepares evolved RCs for reapplication, minor CNI setup, restores AMALOST feature setting.

The Recovery Preparation stage has completed and is at a pause boundary. Continue with the following manual steps.

8.4.5.1 MISCELLANEOUS ALLOWS

8.4.5.1.1 Allow Hardware Checks, Software Checks, and SM Pump

As the software and hardware inhibits are removed, any equipped Digital Facility Interfaces (DFIs) go to an OOS state but should be automatically restored to service.

1. To allow hardware and software checks, enter command on MCC page 1984:
   
   **CMD 511,sm**

   **Response:**
   
   UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
   
   ALW:HDWCHK,SM=1&&192;
UPD:GEN:APPLPROC,ARG="ALWSMCHKS"; ALW:HDWCHK,SM=1&192; IP
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:SFTCHK,SM=1&192;
ALW:SFTCHK,SM=1&192; OK
UPD GEN APPLPROC COMPLETED SUCCESSFULLY
ALW HDWCHK SM=x COMPLETED (once for each SM)

Comment: On MCC page 1800,x (where x = any numbered SM), box 04 SFTCHK and box 08 ALL HDWCHK should not be backlit or transition from a backlit condition to a normal display in a few minutes.

2. To allow CMP hardware and software checks, on MCC page 1984, enter command:

CMD 511,cmp

Response:

UPD:GEN:APPLPROC,ARG="ALWCMPCHKS";
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:HDWCHK,CMP=0-0;
ALW:HDWCHK,CMP=0-0; PF
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:HDWCHK,CMP=1-0;
ALW:HDWCHK,CMP=1-0; PF
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:SFTCHK,CMP=0;
ALW:SFTCHK,CMP=0; OK
UPD GEN APPLPROC COMPLETED SUCCESSFULLY
ALW HDWCHK CMP=0-0 COMPLETED
ALW HDWCHK CMP=1-0 COMPLETED

3. On MCC page 1984, enter command to allow AM hardware and software checks:

CMD 511,am

Response:

UPD:GEN:APPLPROC,ARG="ALWAMCHKS";
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:HDWCHK;
ALW:HDWCHK; PF
ALW HDWCHK COMPLETED
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:SFTCHK;
ALW:SFTCHK; PF
ALW SFTCHK COMPLETED
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:ERRINT;
ALW:ERRINT; PF
ALW ERRINT COMPLETED
UPD GEN APPLPROC EXECUTING THE FOLLOWING INPUT MESSAGE:
ALW:ERRSRC;
ALW:ERRSRC; PF
ALW ERRSRC COMPLETED
UPD GEN APPLPROC COMPLETED SUCCESSFULLY

4. To verify that the preceding hardware and software allows are complete, enter message:

MSG OP:SYSSTAT,UCL;

Response: OP:SYSSTAT,UCL; PF
5. From the OP:SYSSTAT output, verify the following:
   a. The primary CMP indicates **NORMAL** and the mate CMP indicates **GEN_DIFF**.
   b. No SM contains inhibits for hardware and software [the SMs should contain maintenance (MTCE) inhibits only].
      If any SM contains software or hardware inhibits, access MCC page 1800,x (where x = SM number) and enter commands:
      
      | CMD 704 |
      | CMD 708 |

6. On MCC page 1985, continue with the **Post-Boot** stage by entering the following command:

CMD 500

Response:

REPT RETRO POSTBOOT PERFORM TRUNK STATUS MAPPING SECTION OF THE TRANSITION MANUAL
REPT RETRO POSTBOOT RESUME WHEN COMPLETE

Response:

UPD:GEN:APPLPROC,ARG="TSMNEW";
UPD GEN APPLPROC EXECUTING THE FOLLOWING RETROFIT TOOL:
/prc/supr/tsm NEW
[UPD GEN TSM IN PROGRESS xxx TRUNKS LOGGED]
[UPD GEN TSM OOS SUMMARY xx MISMATCHES DETECTED]
[UPD GEN TSM CADN SUMMARY xx MISMATCHES DETECTED]
UPD GEN TSM COMPLETED
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

Comment: If an error is encountered, refer to Section 6.5.15.
8.4.5.2 VERIFICATION OF TRUNK STATUS MAPPING

Note: Verify that the TSMRMV needs to be executed.

1. If OOS and/or CADN mismatches were detected, an OP-LIST-like report containing each listing can be dumped to the ROP or another printer. The location of these files is as follows:

2. If CADN mismatches are detected, the report should be dumped to a printer (ROP, etc.) and analyzed now.

   This report contains a listing of trunks which were IN SERVICE prior to the boot but are now OOS CADN.

   This state is usually encountered when trunks marked OOS CADN in the ODD dump are brought into service during the RC double-logging interval.

   For each trunk listed in the CADN report, determine whether the trunk should be brought back into service or left as it is. If the trunk should be brought back into service, use the appropriate RST:TRK message (refer to 235-600-700, Input Messages Manual) to restore the trunk(s).

3. If the summary message from TSMNEW indicated that OOS mismatches were detected, the following message can be used to automatically remove from service all trunks listed in the oos.report file (/updtmp/tsm/oos.report).
CMD 514,rmv

Response:

UPD:GEN:APPLPROC,ARG="TSMRMV";
UPD GEN APPLPROC EXECUTING THE FOLLOWING RETROFIT TOOL:
/prc/supr/tsm RMVUPD GEN TSM xx TRUNKS TO BE
REMOVED FROM SERVICE
(A RMV:TRK message appears for each trunk
in the OOS report)
UPD GEN TSM COMPLETED
UPD:GEN:APPLPROC COMPLETED SUCCESSFULLY

Comment: Do not wait for all of the trunks to be removed from service.
Continue with the procedures.

8.4.5.2.1 Verify Recent Change Roll Forward

During the Retrofit initialization, the AM, the CMPs, and the SMs are automatically placed in RC backout as the roll forward is activated. The roll forward should take no more than 30 minutes after the initialization to complete. Therefore, no units should indicate BACKOUT-RC in the preceding output. From the OP:SYSSTAT just performed, verify the AM, CMPs, and SMs are not in BACKOUT-RC.

8.4.5.3 POST-BOOT MODIFICATIONS AND CLEANUP

The "boothook" tool executes the "OFFRCR" script which resides in /no5text/rcr. The OFFRCR script determines if the OFFRCR process was run on the evolved ODDs. If OFFRCR was run, the script performs a series of file manipulations to prepare for RC reapplication (which occurs later in the Retrofit).

For the OFFRCR script, the "success" output is also provided in the response for "boothook". If the OFFRCR script fails, "boothook" will also fail. The failure-related output from the OFFRCR script provides information regarding potential sources of the error. Do not proceed with the Retrofit unless boothook is successfully completed; escalate to your next level of support if necessary.

The "boothook" step rebuilds user logins under /unixa/users. An archive file containing the directory structure for all logins in /unixa/users was copied to 5E16.2 earlier in the Retrofit process. This archive file is now used to rebuild user home directories.

The "boothook" step also executes the CNI related processes, ssauto, (which automatically populates recent change view 15.10 for the CNI Subsystem 3 feature).

For the ssauto script, the various "success" outputs are provided in the response for "boothook". If the process fails, escalate to your next level of support before continuing the Retrofit.

8.4.5.3.1 Set Clock

If the system clock does not reflect the proper time, enter message:

MSG SET:CLK,DATE=a-b-c,TIME=d-e-f;

Where: 
  a = month 01-12
  b = day 01-31
  c = year 00-99
  d = hour 00-23
  e = minute 00-59
  F = second 00-59.
Response: **SET CLK ...**

The proper time and date are displayed on top line of MCC display.

This modification process is executed after a successful initialization and recovery on the new software release.

**Warning: Before continuing make sure all AM related hardware is in the ACT/STBY state (MCC page 111/112).**

Boothook will automatically populate RC view 15.10 for offices with CNI. Therefore, boothook will automatically allow recent change permission for the MCC in all offices.

8.4.5.3.1.1 Complete BootHook Process and Duplex AM and CM Hardware

To complete the AM BootHook process and restore the AM and CM hardware to duplex, verify the following output on the ROP:

1. On MCC page 1985, continue by executing a resume command:

   **CMD 500**

   Response:

   ```
   REPT RETRO POSTBOOT CONTINUING
   ALW:PUMP,SM=1&192; OK
   DUMP:FILE:ALL,FN="/tmp/offrcr.out",OPL=999; PF
   DUMP FILE ALL COMPLETED
   ```

   One of the following appears:

   a) **.NO OFFRCR LOG DUMP WAS DONE**
   b) **.OFFRCR PROCESSING COMPLETED**
   c) **.ALW:RC; PF**
   d) **.ALW RC COMPLETED**

   ```
   DUMP:FILE:ALL,FN="/tmp/ssauto.out",OPL=999; PF
   DUMP FILE ALL COMPLETED
   ```

   One of the four following responses appears:

   a) **!!!!!!!!!!!!!!!!!!!!!! NOTICE !!!!!!!!!!!!!!!!!!!!!!!**

   ```
   .SSAUTO: CNI IS NOT EQUIPPED IN THIS OFFICE
   .NO ADDITIONAL CHECKS ARE REQUIRED
   .
   .SSAUTO: COMPLETED SUCCESS
   .
   ```

   b) **.SSAUTO: MAKING SURE YOU HAVE FORM 15.10 SSN 3 POPULATED FOR ISUP CALL PROCESSING.**

   ```
   .SEARCH FOR FORM WAS SUCCESSFUL.
   .
   .SSAUTO: COMPLETED SUCCESS
   ```

   c) **!!!!!!!!!!!!!!!!!!!!!! WARNING !!!!!!!!!!!!!!!!!!!!!!!**

   ```
   !!!!!!!!!!!!!!!!!!!!!!! WARNING !!!!!!!!!!!!!!!!!!!!!!!
   ```
WARNING

SSAUTO: FAILED TO INSERT VIEW 15.10 SSN 3 FOR ISUP CALL PROCESSING.
SEEK TECHNICAL ASSISTANCE

WARNING

SSAUTO: FAILED

d)

NOTICE

SSAUTO: ISUP FORM 15.10 SSN 3 WAS MISSING.
The form has been inserted for you.

NOTICE

SSAUTO: COMPLETED SUCCESS

DUMP: FILE: ALL, FN="/updtmp/site/info.out", OPL=999; PF
DUMP FILE ALL COMPLETED

AMALOST feature status

One of the following responses appears.
OP AMALOST OFF
OP AMALOST ON TRC=OFF
OP AMALOST ON TRC=ON

ALIT parameters

EXC LIT VERIFY TYP=a RG=b TMO=c TM=d-e

CLID - Call Trace DNs

A sorted list of DNs is output;
or if no DNs are on the list,
the following message is output.

CLID LIST CONTAINS 0 NUMBERS

CGAP - Call Gapping Code Control
2. If any other output is produced by the SSAUTO process than that listed in the preceding response, refer to the Section 6.4.8.5.

3. Verify that AMA is recording properly. Refer to Section 8.4.4.8.

8.4.5.3.2 Duplex AM

1. Access the EAI page.

2. Enter the following command to clear AM force:

   CMD 13

   Response: REPT CU 1 OUT OF SERVICE (on ROP)
   REPT CU 0 NO LONGER FORCED ONLINE (on ROP)

3. Access normal display (NORM DISP).

4. To unconditionally restore AM 1, on MCC page 111, enter command:

   CMD 301, UCL

   Response: RST: CU=1, ucl; PF
   RST CU 1 TASK x MESSAGE STARTED
   ...
   RST CU 1 IN PROGRESS (every 2 minutes)
   ...
   RST CU 1 COMPLETED

   Comment: Wait for RST: CU=1, ucl; PF acknowledgment, but do not wait for the AM restoral to complete.

8.4.5.3.3 Duplex CMP

1. Access MCC page 1850.

2. To remove CMP 0-0, enter message:

   MSG RMV:CMP=0-0;

   Response: RMV CMP=0-0 COMPLETED

3. To unconditionally restore CMP 0-0 to standby, enter message:

   MSG RST:CMP=0-0,STBY,UCL;

   Response: REPT CMP=0-0 MATE INITIALIZATION TRIGGER = {CRAFT|MANUAL} - REQUEST
RST CMP=0-0 COMPLETED

[REPT MSKP ENVIRONMENT:

[CMP=0-0 PHASE 1&2 INIT COMPLETION TIME: xxxx TYPE:xxx
[EVENT=xxxx]

[CMP=0-0 PHASE 3 INIT COMPLETION TIME: xxxxxx TYPE:xxx
[EVENT=xxxx]

[REPT CMP=0-0 MATE DATA=ESCAL-CNTS,x ENV=CMP-AP SRC=SI
[EVENT=xxx]

[ADDR=H'x']

[...] REPT COMMUNICATION RESTORED: AM TO CMP=0-0 MATE

Comment: Several other types of output messages may be received indicating the CMP has been initialized.

On MCC page 1850, CMP 0-0 will come up STBY and in BACKOUT. The BACKOUT indicator will clear when the RCs are rolled forward.

8.4.5.3.4 OOS Listings and ESM

1. Using OOS listings from the old software release, remove all bad units, lines, and trunks from service in descending order based upon service impact.

Comment: Removing the OOS units manually is an operating company option. The system automatically removes OOS units as time progresses.

2. Turn on the External Sanity Monitor (ESM) at miscellaneous frame. Access MCC page 116 (Miscellaneous) and verify that power has been restored to the ESM.

Figure 8-12 — MCC Page 1985 at Completion of the Post-Boot Stage
Figure 8-12 shows an example of MCC page 1985 with everything completed at the Post-Boot stage. The Post-Boot stage has completed and is at a pause boundary. Continue with the following manual steps.

8.4.5.4 AMA ALLOWS

8.4.5.4.1 Overview

One of the following ALW:AMA messages must be entered to allow AMA polling sessions (collection of AMA data).

Use either message 'a' or 'b', depending on your AMA option.

a. If your office uses the AMATPS option, to allow AMA polling sessions, enter message:

   MSG ALW:AMA:SESSION[,STx];
   Where: x = stream number (1 or 2)
   Response: AMA Control file dumped at ROP
   REPT AMA CONTROL FILE FOR STREAM STx
   OFFICE ID xxxxxxx
   DAYS UNTIL EXPIRATION y
   PROCESS START TIME xx:xx
   PROCESS STOP TIME xx:xx
   DEFAULT MT FOR AUTO TAPE START x
   AMA OPTION IS xxxxxxxxxxx
   (additional AMA control information dumped)
   . . .

b. To allow AMA polling sessions for automatic tape writing, enter message:

   MSG ALW:AMA:AUTOST[:STx];
   Where: x = stream number (1 or 2)
   Response: AMA Control file dumped at ROP
   REPT AMA CONTROL FILE FOR STREAM STx
   OFFICE ID xxxxxxx
   DAYS UNTIL EXPIRATION y
   PROCESS START TIME xx:xx
   PROCESS STOP TIME xx:xx
   DEFAULT MT FOR AUTO TAPE START x
   AMA OPTION IS xxxxxxxxxxx
   (additional AMA control information dumped)
   . . .

8.4.5.5 OFF-LINE AMA SESSION

The AMA session processes the AMA records that are on the 5E16.2 off-line disks. The AMA software is able to determine whether or not the 5E16.2 off-line AMA data has been processed. For this reason perform this session as you would any manual AMA session. This session must be done before the Commit stage of the transition is executed.
Warning: If this is a dual stream office, you cannot process both streams at the same time during this stage of transition. For offices which teleprocess AMA this means the HOC must not initiate collection on the second stream until collection on the first stream is complete. For offices which use AMA tape the CPY command must not be run for the second stream until collection teleprocessing session per local practice.

1. Initiate AMA tape writing or teleprocessing session per local practice. This session will automatically process data on the 5E16.2 off-line disks.
   Comment: If the teleprocessing session is being run at a non-standard time, it is necessary to call personnel at the HOC to request a manual poll.

2. To verify a successful manual AMA session, use Step ‘a’ (single-stream office) or Step ‘b’ (dual-stream office):
   a. Single-stream office - enter message:

      MSG OP:AMA:SESSION;

      Response: Response for offices with AMA teleprocessing:
      REPT AMA TELEPROCESSING SESSION FOR STREAM STx
      PREVIOUS AMA TELEPROCESSING SESSION STATUS
      START TIME xxx x xx:xx:xx
      STOP TIME xxx x xx:xx:xx
      BLOCKS TRANSMITTED xxx
      PRIMARY POLLS REJECTED x
      SECONDARY POLLS REJECTED x
      NORMAL TERMINATION
      or
      Response for offices with AMA tape writing:
      REPT AMA TAPE SESSION FOR STREAM STx
      PREVIOUSAMA TAPE SESSION STATUS
      VOL SER NUMBER
      START TIME xxx x xx:xx:xx
      PRIMARY DATA
      FIRST BLOCK x xxx x xx:xx
      LAST BLOCK x xxx x xx:xx
      TAPE IS xxx% FULL
      RECORDS WRITTEN x

      NORMAL TERMINATION - NO MORE DATA
      Comment: From the output, verify that the message NORMAL TERMINATION is received. If this output is not received, one of the following is true:
      • There is an AMA session still in progress.
      • The last AMA session was unsuccessful.

   b. Dual-stream office - enter message:

      MSG OP:AMA:SESSION,a

      Where: a = ST1 or ST2. Enter message once for ST1, and once for ST2.
      Comment: See the Response and Comment for Step ‘a’.

3. To verify the percentage of disk space occupied by AMA data, use Step ‘a’ (single-stream office) or Step ‘b’ (dual-stream office):
Warning: The following OP:AMA:DISK message must not be skipped. In addition to reporting on AMA disk space used, it sets control flags which determine whether to process AMA data on the off-line or the active disks.

a. Single-stream office - enter message:
MSG OP:AMA:DISK;
Response: REPT AMA DISK SUMMARY FOR STREAM STx
DISK IS CURRENTLY xx% FULL
NUMBER OF PRIMARY AMA BLOCKS IN USE IS APPROXIMATELY: xx
ALL THE DATA ON THE OFFLINE SIDE HAS BEEN READ. THEAMA PROCESS HAS BEEN TRANSITIONED TO THE ACTIVE SIDE.

Comment: If errors are received as a response try the procedure again. If errors are received again, escalate to your next level of support.

b. Dual-stream office - enter message:
MSG OP:AMA:DISK,a;
Where: a = ST1 or ST2. Enter message once for ST1, and once for ST2.

8.4.5.6 AMA ALLOWS ON THE ACTIVE SIDE

8.4.5.6.1 Overview
One of the following ALW:AMA messages must be entered to allow AMA polling sessions (collection of AMA data) on the active side.

Use either message 'a' or 'b', depending on your AMA option.

a. If your office uses the AMATPS option, to allow AMA polling sessions, enter message:
MSG ALW:AMA:SESSION[,STx];
Where: x = stream number (1 or 2)
Response: AMA Control file dumped at ROP
REPT AMA CONTROL FILE FOR STREAM STx
OFFICE ID XXXXXXX
DAYS UNTIL EXPIRATION y
PROCESS START TIME XX:XX
PROCESS STOP TIME XX:XX
DEFAULT MT FOR AUTO TAPE START x
AMA OPTION IS XXXXXXXXXXX

(additional AMA control information dumped)

b. To allow AMA polling sessions for automatic tape writing, enter message:
MSG ALW:AMA:AUTOST[:STx];
Where: x = stream number (1 or 2)
Response: AMA Control file dumped at ROP
REPT AMA CONTROL FILE FOR STREAM STx
8.4.5.7 SYSTEM CONFIGURATION

Figure 8-13 shows the system configuration at the completion of the Post-Boot stage.

- SMs and MHDs Simplex
- All SMs active on side 1 [5E15 new text load]
- CMP duplex (either side ACTIVE, other side STANDBY)
- All SMs on side 0 are UNV (5E15 old text load)

MCC Page 1985:

SOAK EXECUTING

SOAK - STAGE PAUSE

LEGEND:
UNV=UNAVAILABLE
ACTF=ACTIVE FORCED

Figure 8-13 — Typical System Configuration at Completion of the Post-Boot Stage
8.4.5.8 Soak Stage
Continue with the procedures in Section 5.10.
5E16.2 Large Terminal Growth Procedures

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9. WORKSHEETS AND TABLES

9.1 GENERAL

This section contains worksheet tables and reference tables. The worksheet tables are to be used in recording various pieces of essential information during the 10-week LTG interval. The reference tables will need to be checked as directed from other sections of this manual.

9.1.1 WORKSHEET TABLE LISTING

The worksheet tables are as follows:

1. Worksheet Table 9-1 - General Information Worksheet
2. Worksheet Table 9-2 - Automatic Office Dependent Data (ODD) Backup Schedule Worksheet
3. Worksheet Table 9-3 - Office Backups Worksheet
4. Worksheet Table 9-4 - Tape Drive Testing Worksheet
5. Worksheet Table 9-5 - Database Dumps Worksheet
6. Worksheet Table 9-6 - Trunk Status Worksheet
7. Worksheet Table 9-7 - Switching Module (SM) Diagnostics Worksheet
8. Worksheet Table 9-8 - Call Processing Verification Worksheet
9. Worksheet Table 9-9 - Recent Change Evolution Worksheet
10. Worksheet Table 9-10 - CORC Evolution Worksheet

9.1.2 REFERENCE TABLE LISTING

The reference tables are as follows:

1. Reference Table 9-11 - Trunk Status Mapping
2. Reference Table 9-12 - OOS-CADN Trunk Status
3. Reference Table 9-13 - RC Views Supported for the 5E16.2 Evolution
4. Reference Table 9-14 - RC Views Not Supported for the 5E16.2 Evolution
5. Reference Table 9-15 - MCC Page 1980 Pokes and Equivalent Input Messages
6. Reference Table 9-16 - MCC Page 1985 Pokes and Equivalent Input Messages
7. Reference Table 9-17 - MCC Page 1989 Pokes and Equivalent Input Messages
8. Reference Table 9-18 - MCC Page 1984 Pokes and Equivalent Input Messages
9. Reference Table 9-19 - Off-Line Pump Normal Output Responses
10. Reference Table 9-20 - Off-Line Pump Error Responses
11. Reference Table 9-21 - Tools With Resume Actions
12. Reference Table 9-22 - Tools With No Backout Actions
13. Reference Table 9-23 - Tools With Backout Actions
WORKSHEET TABLES

Table 9-1 — General Information Worksheet

<table>
<thead>
<tr>
<th>Date</th>
<th>Office Name</th>
<th>Total Number of SMs</th>
<th>Highest Numbered SM</th>
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</thead>
</table>

Table 9-2 — Automatic ODD Backup Schedule Worksheet

<table>
<thead>
<tr>
<th>EVERY</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 9-3 — Office Backups Worksheet

<table>
<thead>
<tr>
<th>STAGE</th>
<th>TAPES MADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advance Prep</td>
<td></td>
</tr>
<tr>
<td>System Prep</td>
<td></td>
</tr>
<tr>
<td>End</td>
<td></td>
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</table>
Table 9-4 — Tape Drive Testing Worksheet

<table>
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<tr>
<th>STAGE</th>
<th>CLEANED</th>
<th>DIAGNOSTICS</th>
<th>VERIFY</th>
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</thead>
<tbody>
<tr>
<td>Advance Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System Prep</td>
<td></td>
<td></td>
<td>xxxxx</td>
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Table 9-5 — Database Dumps Worksheet

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<th>DATE</th>
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</thead>
<tbody>
<tr>
<td>Preliminary Database Dump (ODD/ECD)</td>
<td></td>
</tr>
<tr>
<td>Database Dump (ODD/ECD)</td>
<td></td>
</tr>
</tbody>
</table>
| OFFRCA
| Note(s):                      |
| a. 4 days before LTG          |      |
Table 9-6 — Trunk Status Worksheet

<table>
<thead>
<tr>
<th>OOS-CADN TRUNKS</th>
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<tbody>
<tr>
<td>TKGMN</td>
</tr>
<tr>
<td>TEN</td>
</tr>
<tr>
<td>TKGMN</td>
</tr>
<tr>
<td>TEN</td>
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</tr>
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</table>
Table 9-7 — SM Diagnostics Worksheet

<table>
<thead>
<tr>
<th>SM NO.</th>
<th>SYSTEM EVALUATION DIAGNOSTICS&lt;sup&gt;a&lt;/sup&gt;</th>
<th>RETROFIT IMPLEMENTATION DIAGNOSTICS&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MCTSI 0</td>
<td>BTSR 0&lt;sup&gt;c&lt;/sup&gt;</td>
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<td></td>
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</table>

Note(s):

a. 10 days before the LTG.
b. Day of the LTG.
c. There is only one BTSR, but it must be checked with both MCTSI 0 and 1. Some SMs do not have a BTSR circuit pack.
<table>
<thead>
<tr>
<th>SM NO.</th>
<th>CALL PROCESSING</th>
<th>INTER-SM</th>
<th>911</th>
<th>OUTGOING</th>
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</tbody>
</table>
Table 9-9 — Recent Change Evolution Worksheet

<table>
<thead>
<tr>
<th>DATE &amp; TIME</th>
<th>NUMBER OF VIEWS READ</th>
<th>NUMBER OF VIEWS CREATED</th>
<th>NUMBER OF VIEWS IN ERROR</th>
<th>ERROR FILE(S) CREATED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>/rclog/RCLTGERR—</td>
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<td>/rclog/RCLTGERR—</td>
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<td>/rclog/RCLTGERR—</td>
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</tbody>
</table>
Table 9-10 — CORC Evolution Worksheet

<table>
<thead>
<tr>
<th>DATE &amp; TIME</th>
<th>SM NUMBER</th>
<th>NUMBER OF CORCS EVOLVED</th>
<th>NUMBER OF CORCS IN ERROR</th>
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</thead>
<tbody>
<tr>
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</tbody>
</table>

9.3 REFERENCE TABLES
Table 9-11 — Trunk Status Mapping

<table>
<thead>
<tr>
<th>TRUNK(^a) STATUS BEFORE SWITCH FORWARD</th>
<th>TRUNK STATUS AFTERSWITCH FORWARD(^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OOS BLKD - - MAN</td>
<td>Same</td>
</tr>
<tr>
<td>OOS BLKD - DM_RECD AUTO</td>
<td>Same</td>
</tr>
<tr>
<td>OOS BLKD - IDLE AUTO</td>
<td>Same</td>
</tr>
<tr>
<td>OOS CADN DSBLD - AUTO</td>
<td>Same</td>
</tr>
<tr>
<td>OOS CADN DSBLD - MAN</td>
<td>Same</td>
</tr>
<tr>
<td>OOS CADN LKDO - AUTO</td>
<td>Same</td>
</tr>
<tr>
<td>OOS CADN LKDO - MAN</td>
<td>Same</td>
</tr>
<tr>
<td>OOS MTCE DSBLD - MAN</td>
<td>Same</td>
</tr>
<tr>
<td>OOS MTCE DSBLD CAMA AUTO</td>
<td>Same</td>
</tr>
<tr>
<td>OOS MTCE DSBLD CAMA MAN</td>
<td>Same</td>
</tr>
<tr>
<td>OOS MTCE DSBLD ERATC AUTO</td>
<td>Same</td>
</tr>
<tr>
<td>OOS MTCE DSBLD ERATP AUTO</td>
<td>Same</td>
</tr>
<tr>
<td>OOS MTCE DSBLD SCC MAN</td>
<td>Same</td>
</tr>
<tr>
<td>OOS MTCE LKDO - MAN</td>
<td>Same</td>
</tr>
<tr>
<td>OOS MTCE LKDO ERATP AUTO</td>
<td>Same</td>
</tr>
<tr>
<td>OOS MTCE LKDO TRBL MAN</td>
<td>Same</td>
</tr>
<tr>
<td>OOS MTCE LKDO RO MAN</td>
<td>Same</td>
</tr>
<tr>
<td>OOS MTCE RAP - MAN</td>
<td>Same</td>
</tr>
<tr>
<td>OOS BLKD - NO_RSP AUTO</td>
<td>Same</td>
</tr>
<tr>
<td>OOS BLKD - - AUTO</td>
<td>Same</td>
</tr>
<tr>
<td>OOS MTCE CCSINIT - AUTO</td>
<td>Same</td>
</tr>
<tr>
<td>OOS MTCE COT ORIG AUTO</td>
<td>Same</td>
</tr>
<tr>
<td>OOS MTCE COT TERM AUTO</td>
<td>Same</td>
</tr>
<tr>
<td>OOS TMT - - MAN</td>
<td>Same</td>
</tr>
<tr>
<td>OOS MTCE CCSINIT STARTUP AUTO</td>
<td>Same</td>
</tr>
<tr>
<td>OOS BLKD (X\ X)</td>
<td>MAN OOS BLKD - - MAN</td>
</tr>
<tr>
<td>OOS CADN (X\ X) MAN</td>
<td>OOS CADN DSBLD - MAN</td>
</tr>
<tr>
<td>OOS MTCE DSBLD (X) MAN</td>
<td>OOS MTCE DSBLD - MAN</td>
</tr>
<tr>
<td>OOS MTCE LKDO (X) MAN</td>
<td>OOS MTCE LKDO - MAN</td>
</tr>
<tr>
<td>OOS MTCE RAP (X) MAN</td>
<td>OOS MTCE RAP - MAN</td>
</tr>
</tbody>
</table>

Note(s):

a. The dash (-) indicates a "null" field; \(X\) indicates a field of any value.
b. If a trunk status is shown in this column, the trunk status shown in the "before switch forward" column will be mapped to this default value. The only exception being if the trunk status exactly matches another status shown.

*Same* indicates that the trunk status is directly mapped across the switch forward and the status of the trunk will be saved.

*Not mapped* indicates that the trunk status will not be saved across the switch forward and will therefore come up **ACTIVE**.
### Table 9-12 — OOS-CADN Trunk Status

<table>
<thead>
<tr>
<th>AT TIME OF DATABASE TAPE DUMP</th>
<th>DURING -2 WK INTERVAL</th>
<th>AFTER INITIALIZATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-service</td>
<td>OOS-CADN</td>
<td>OOS-CADN a</td>
</tr>
<tr>
<td></td>
<td>OOS (non-CADN)</td>
<td>OOS (non-CADN) a</td>
</tr>
<tr>
<td>OOS (non-CADN)</td>
<td>OOS-CADN</td>
<td>OOS-CADN a</td>
</tr>
<tr>
<td></td>
<td>OOS (non-CADN)</td>
<td>OOS (non-CADN) a</td>
</tr>
<tr>
<td>OOS-CADN</td>
<td>OOS-CADN</td>
<td>OOS-CADN a</td>
</tr>
<tr>
<td>OOS-CADN</td>
<td>In-service</td>
<td>OOS-CADN</td>
</tr>
</tbody>
</table>

Note(s):

a. Mapped by TSM.

### Table 9-13 — RC Views Supported for the 5E16.2 Evolution

<table>
<thead>
<tr>
<th>VIEW NO.</th>
<th>VIEW NAME</th>
<th>TITLE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.1</td>
<td>RCALEAPRM</td>
<td>CALEA PARAMETERS</td>
<td>Supported</td>
</tr>
<tr>
<td>C.2</td>
<td>RLAESPROF</td>
<td>LAES PROFILE VIEW</td>
<td>Supported</td>
</tr>
<tr>
<td>C.4</td>
<td>RLAESCASE</td>
<td>LAES CASE ASSIGNMENT</td>
<td>Supported</td>
</tr>
<tr>
<td>1.0</td>
<td>MENU 1</td>
<td>LINES</td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>RC_LINE8</td>
<td>PBX-DID LINE</td>
<td>Supported</td>
</tr>
<tr>
<td>1.6</td>
<td>RC_LINE0</td>
<td>ANALOG LINE ASSIGNMENT</td>
<td>Supported</td>
</tr>
<tr>
<td>1.7</td>
<td>RC_NPOOL</td>
<td>NUMBER POOLING FOR INDIVIDUAL TN</td>
<td>Supported</td>
</tr>
<tr>
<td>1.8</td>
<td>RBRASG_TN</td>
<td>ANALOG LINE/BRICS ASSIGN</td>
<td>Supported</td>
</tr>
<tr>
<td>1.9</td>
<td>RMDNL</td>
<td>MULTIPLE DN - MDN DRING</td>
<td>Supported</td>
</tr>
<tr>
<td>1.10</td>
<td>RLENCP2</td>
<td>ANALOG LINE COPY</td>
<td>Supported</td>
</tr>
<tr>
<td>1.11</td>
<td>RFA_TN</td>
<td>BRCS FEATURE ASSIGNMENT</td>
<td>Supported</td>
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<tr>
<td>1.12</td>
<td>RACT_TN</td>
<td>BRCS FEATURE ACTIVATION</td>
<td>Supported</td>
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<td>1.20</td>
<td>RACBLNTN</td>
<td>AUTO CALL BACK</td>
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<td>1.21</td>
<td>RARSNTN</td>
<td>AUTO ROUTE SELECTION</td>
<td>Supported</td>
</tr>
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<td>1.22</td>
<td>RCFLNTN</td>
<td>CALL FORWARDING</td>
<td>Supported</td>
</tr>
<tr>
<td>1.23</td>
<td>RPULNTN</td>
<td>CALL PICKUP</td>
<td>Supported</td>
</tr>
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<td>1.24</td>
<td>RCWLNTN</td>
<td>CALL WAITING</td>
<td>Supported</td>
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<td>1.25</td>
<td>RDRLNOR</td>
<td>DISTINCTIVE RINGING</td>
<td>Supported</td>
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<td>1.26</td>
<td>RIDLNTN</td>
<td>INDIVIDUAL DIALING</td>
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<td>1.27</td>
<td>RMWLNTN</td>
<td>MULTI-WAY CALLING</td>
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<td>1.28</td>
<td>RPFLNTN</td>
<td>PRIVATE FACILITIES</td>
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<td>RTGLNTN</td>
<td>TERMINAL GROUP</td>
<td>Supported</td>
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<td>1.30</td>
<td>RTDLNOR</td>
<td>TIME OF DAY</td>
<td>Supported</td>
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<td>1.31</td>
<td>RPPLNTN</td>
<td>PREC AND PREEMPT</td>
<td>Supported</td>
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<td>1.32</td>
<td>RSWAP</td>
<td>TWO TN SWAP (INSERT ONLY)</td>
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<td>1.33</td>
<td>RMDRTN</td>
<td>MSG DETAIL RECORDING</td>
<td>Supported</td>
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<td>1.37</td>
<td>RMDSTN</td>
<td>MESSAGE SERVICE</td>
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<tr>
<td>VIEW NO.</td>
<td>VIEW NAME</td>
<td>TITLE</td>
<td>COMMENTS</td>
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<td>1.38</td>
<td>REDSTN</td>
<td>ELECTRONIC DIRECTORY SVC</td>
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<td>RATHTN</td>
<td>AUTHORIZATION CODES</td>
<td>Supported</td>
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<td>RACCTTN</td>
<td>ACCOUNT CODE</td>
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<td>ISDN INTERCOM</td>
<td>Supported</td>
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<td>ATT CNTL VOICE TRMS</td>
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<td>1.47</td>
<td>RLSACLPA</td>
<td>LASS AUTO CALLBACK</td>
<td>Supported</td>
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<td>RLSARLPA</td>
<td>LASS AUTO RECALL</td>
<td>Supported</td>
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<td>RACSRSLPA</td>
<td>ISDN ACSR LINE PARAMETERS</td>
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<td>RACSRLNM</td>
<td>ISDN ACSR LINE MOVE</td>
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<td>RSCLPA</td>
<td>SPEED CALLING</td>
<td>Supported</td>
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<td>SCD SCREENING</td>
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<td>1.62</td>
<td>RLSBCLLN</td>
<td>BULK CALLING LINE ID</td>
<td>Supported</td>
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Table 9-13 — RC Views Supported for the 5E16.2 Evolution (Contd)

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EQUIP AGE (SM 2000)

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October 2005

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## Table 9-14 — RC Views Not Supported for the 5E16.2 Evolution (Contd)

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<td>ISDN — EQUIPMENT</td>
<td></td>
</tr>
<tr>
<td>22.1</td>
<td>RC_PSUPI</td>
<td>PACKET INTERFACE</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.2</td>
<td>RC_PSU</td>
<td>PSU COM &amp; SHELF 0</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.2</td>
<td>VER_PSU</td>
<td>PSU COM &amp; SHELF 0</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.3</td>
<td>RC_PSH</td>
<td>PSU SHELF (1-4)</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.4</td>
<td>RC_PSUPH</td>
<td>PROTOCOL HANDLER</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.5</td>
<td>RC_EQISLU</td>
<td>ISLU COM</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.6</td>
<td>VER_EQILGC</td>
<td>ISLU LGC</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.8</td>
<td>RC_EQISP</td>
<td>ISLU PACKS</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.8</td>
<td>VER_EQISP</td>
<td>ISLU PACKS</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.9</td>
<td>RC_RISCC</td>
<td>RISLU COMMON EQUIPMENT</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.10</td>
<td>RC_RISH2</td>
<td>RISLU DFI-H2/R2 PAIR</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.11</td>
<td>RC_RISITE</td>
<td>RISLU SITE ALARMS</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.12</td>
<td>VER_DPIDB</td>
<td>ISLU DPIDB</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.13</td>
<td>RC_PSISM</td>
<td>INTER SM NAIL UP</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.14</td>
<td>VER_PH</td>
<td>CHANNEL GROUP CHANNEL</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.15</td>
<td>RPMTG</td>
<td>PM THRESHOLD GROUP</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.17</td>
<td>RDTAPORT</td>
<td>RDTA PORT/TN ASGN</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.18</td>
<td>RDTATN</td>
<td>RDTA TN/REMARKS ASGN</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.19</td>
<td>VPSURISLU</td>
<td>STATUS OF PSU PIDBs</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.20</td>
<td>VRISLUPSU</td>
<td>LCEN TO DSL GRP</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.21</td>
<td>RISLU2</td>
<td>ISLU2 LINE BOARD</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.22</td>
<td>RPSULINK</td>
<td>PSU LINK ASSIGNMENT</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.23</td>
<td>VISLU2_TS</td>
<td>ISLU2 DPIDB</td>
<td>Unsupported</td>
</tr>
<tr>
<td>22.24</td>
<td>RC_RPMA</td>
<td>REMOTE PERIPHERAL ALARMS</td>
<td>Unsupported</td>
</tr>
<tr>
<td>23.0</td>
<td>MENU 23</td>
<td>ISDN</td>
<td></td>
</tr>
<tr>
<td>23.1</td>
<td>RBRI</td>
<td>DSL USERS</td>
<td>Unsupported</td>
</tr>
<tr>
<td>23.8</td>
<td>VBRITN</td>
<td>DSL/BRCs VERIFY</td>
<td>Unsupported</td>
</tr>
<tr>
<td>23.9</td>
<td>RC_CUGV</td>
<td>CUG ASSIGNMENT VERIFY</td>
<td>Unsupported</td>
</tr>
<tr>
<td>23.18</td>
<td>VRC_MTN</td>
<td>PTK TN TO MODEM TN VER</td>
<td>Unsupported</td>
</tr>
<tr>
<td>23.20</td>
<td>VER_PSOKS</td>
<td>PRIMARY/SECONDARY ONLY</td>
<td>Unsupported</td>
</tr>
<tr>
<td>23.21</td>
<td>VER_TKS</td>
<td>TERMINAL TYPE C/D</td>
<td>Unsupported</td>
</tr>
<tr>
<td>23.22</td>
<td>VER_CAFB</td>
<td>CALL APPEAR &amp; FEAT BUTTON</td>
<td>Unsupported</td>
</tr>
</tbody>
</table>
Table 9-14 — RC Views Not Supported for the 5E16.2 Evolution (Contd)

<table>
<thead>
<tr>
<th>VIEW NO.</th>
<th>VIEW NAME</th>
<th>TITLE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.25</td>
<td>VTELMON</td>
<td>TSM MONITORED TO MONITORING</td>
<td>Unsupported</td>
</tr>
<tr>
<td>23.41</td>
<td>VT1USE</td>
<td>T1 CHANNEL USAGE</td>
<td>Unsupported</td>
</tr>
<tr>
<td>23.42</td>
<td>VDS1USE</td>
<td>DS1 CHANNEL USAGE</td>
<td>Unsupported</td>
</tr>
<tr>
<td>24.0</td>
<td>MENU 24</td>
<td>APPLICATIONS PROCESSOR</td>
<td>Unsupported</td>
</tr>
<tr>
<td>25.0</td>
<td>MENU 25</td>
<td>LARGE DATA MOVEMENT</td>
<td>Unsupported</td>
</tr>
<tr>
<td>25.1</td>
<td>VMOVE</td>
<td>GROUP DATA VERIFY</td>
<td>Unsupported</td>
</tr>
<tr>
<td>26.0</td>
<td>MENU 26</td>
<td>OSPS TOLL &amp; ASSIST/ISP</td>
<td>Unsupported</td>
</tr>
<tr>
<td>26.2</td>
<td>VLNSCR</td>
<td>VER LINE SCREENING</td>
<td>Unsupported</td>
</tr>
<tr>
<td>26.5</td>
<td>VSCROAR</td>
<td>VER ALTERNATE ROUTING</td>
<td>Unsupported</td>
</tr>
<tr>
<td>26.8</td>
<td>VFLEXACD</td>
<td>VER OSPS FLEXIBLE ACD</td>
<td>Unsupported</td>
</tr>
<tr>
<td>26.10</td>
<td>VACDPOH</td>
<td>VER ACD CALL TYPE POOL</td>
<td>Unsupported</td>
</tr>
<tr>
<td>26.11</td>
<td>VHOTEL</td>
<td>VER AUTO CHARGE QUOTE</td>
<td>Unsupported</td>
</tr>
<tr>
<td>27.0</td>
<td>MENU 27</td>
<td>OSPS TOLL &amp; ASSIST</td>
<td>Unsupported</td>
</tr>
<tr>
<td>27.11</td>
<td>VER_BLVEX</td>
<td>VERIFY LINE EXCLUSIONS</td>
<td>Unsupported</td>
</tr>
<tr>
<td>27.12</td>
<td>RCVENHBLV</td>
<td>VERIFY NPA NXX</td>
<td>Unsupported</td>
</tr>
<tr>
<td>27.22</td>
<td>VER_TGMSG</td>
<td>TGN TO LEC TEXT</td>
<td>Unsupported</td>
</tr>
<tr>
<td>27.30</td>
<td>RC_OPDBPR</td>
<td>DATABASE PARAMETERS</td>
<td>Unsupported</td>
</tr>
<tr>
<td>27.57</td>
<td>VTCCATTR</td>
<td>TCR IDDIGS/CARD ATTR</td>
<td>Unsupported</td>
</tr>
<tr>
<td>27.72</td>
<td>VINWNPA</td>
<td>INWATTS NPA DEFINITION</td>
<td>Unsupported</td>
</tr>
<tr>
<td>27.83</td>
<td>VDIORSD</td>
<td>DIOR SPEED DIALING</td>
<td>Unsupported</td>
</tr>
<tr>
<td>28.0</td>
<td>MENU 28</td>
<td>GLOBAL RC - LINES</td>
<td>Unsupported</td>
</tr>
<tr>
<td>28.1</td>
<td>RCGRCSCH</td>
<td>SCHEDULE VIEW</td>
<td>Unsupported</td>
</tr>
<tr>
<td>28.2</td>
<td>RCGRC16</td>
<td>UPDATE VIEW FOR 1.6</td>
<td>Unsupported</td>
</tr>
<tr>
<td>28.3</td>
<td>RCGRC18</td>
<td>UPDATE VIEW FOR 1.8</td>
<td>Unsupported</td>
</tr>
<tr>
<td>28.4</td>
<td>RCGRC232</td>
<td>UPDATE VIEW FOR 23.2</td>
<td>Unsupported</td>
</tr>
<tr>
<td>28.5</td>
<td>RCGRC238</td>
<td>UPDATE VIEW FOR 23.8</td>
<td>Unsupported</td>
</tr>
</tbody>
</table>
Table 9-15 — MCC Page 1980 Pokes and Equivalent Input Messages

<table>
<thead>
<tr>
<th>POKE</th>
<th>INPUT MESSAGE</th>
<th>OPERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2XX</td>
<td>NONE</td>
<td>Stop Procedure XX</td>
</tr>
<tr>
<td>3XX</td>
<td>NONE</td>
<td>Start Procedure XX</td>
</tr>
<tr>
<td>4XX</td>
<td>NONE</td>
<td>Show Procedure XX</td>
</tr>
<tr>
<td>5XX</td>
<td>NONE</td>
<td>Resume Procedure XX</td>
</tr>
<tr>
<td>8XX</td>
<td>NONE</td>
<td>Start Procedure XX</td>
</tr>
</tbody>
</table>

Tools Page

Table 9-16 — MCC Page 1985 Pokes and Equivalent Input Messages

<table>
<thead>
<tr>
<th>POKE</th>
<th>INPUT MESSAGE</th>
<th>OPERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>NONE</td>
<td>Stop Stage/Step</td>
</tr>
<tr>
<td>300</td>
<td>NONE</td>
<td>Start Stage/Step</td>
</tr>
<tr>
<td>400</td>
<td>NONE</td>
<td>Hold Stage/Step</td>
</tr>
<tr>
<td>500</td>
<td>NONE</td>
<td>Resume Stage/Step</td>
</tr>
<tr>
<td>600</td>
<td>NONE</td>
<td>Backout From Stage/Step</td>
</tr>
</tbody>
</table>
### Table 9-17 — MCC Page 1989 Pokes and Equivalent Input Messages

<table>
<thead>
<tr>
<th>POKE</th>
<th>INPUT MESSAGE</th>
<th>OPERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>3XX</td>
<td>NONE</td>
<td>Clear Option XX</td>
</tr>
<tr>
<td>4XX</td>
<td>NONE</td>
<td>Set Option XX to arg</td>
</tr>
<tr>
<td>500</td>
<td>NONE</td>
<td>Resume Procedure</td>
</tr>
</tbody>
</table>

### Table 9-18 — MCC Page 1984 Pokes and Equivalent Input Messages

<table>
<thead>
<tr>
<th>POKE</th>
<th>INPUT MESSAGE</th>
<th>OPERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2XX</td>
<td>NONE</td>
<td>Stop Tool</td>
</tr>
<tr>
<td>5XX</td>
<td>NONE</td>
<td>Start/Resume Tool</td>
</tr>
<tr>
<td>6XX</td>
<td>NONE</td>
<td>Backout Tool</td>
</tr>
</tbody>
</table>
### Table 9-19 — Off-Line Pump Normal Output Responses

<table>
<thead>
<tr>
<th>STATUS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPUMPHLD_{n}</td>
<td>Off-line pumping, attempt n</td>
</tr>
<tr>
<td>OPUMP_{n}</td>
<td>Off-line pump hashnum check, attempt n</td>
</tr>
<tr>
<td>OHASHCK_{n}</td>
<td>Off-line pump hashsum check, attempt n</td>
</tr>
<tr>
<td>OVRFY_{m}</td>
<td>Off-line verification, minute m</td>
</tr>
<tr>
<td>OVRFIED</td>
<td>Off-line verification complete</td>
</tr>
<tr>
<td>MATE_PUMP</td>
<td>Off-line pump is complete</td>
</tr>
<tr>
<td>OPBCPHLD_{s}</td>
<td>Off-line broadcast pump hold, stages (1 or 2)</td>
</tr>
<tr>
<td>OPBCPODD</td>
<td>Off-line broadcast pump, ODD stage</td>
</tr>
<tr>
<td>OPBCPRELO</td>
<td>Off-line broadcast pump relocation images stage</td>
</tr>
<tr>
<td>OPORELLOC</td>
<td>Off-line image relocation</td>
</tr>
<tr>
<td>OPBCPTEXT</td>
<td>Off-line broadcast pump text stage</td>
</tr>
<tr>
<td>OPPERF_{pp}</td>
<td>Off-line pumping peripherals, peripheral pp</td>
</tr>
<tr>
<td>ORST</td>
<td>Duplex peripherals restoring</td>
</tr>
<tr>
<td>OPRMV</td>
<td>Peripheral Remove OOS stage</td>
</tr>
<tr>
<td>PPRISLU</td>
<td>Parallel pump of RISLU units</td>
</tr>
<tr>
<td>PPRISLU2</td>
<td>Parallel pump of RISLU2 units</td>
</tr>
<tr>
<td>PPMPISLU</td>
<td>Parallel Pump of ISLU units</td>
</tr>
<tr>
<td>PPMPISLU2</td>
<td>Parallel pump of ISLU2 units</td>
</tr>
<tr>
<td>PPMPIDCU</td>
<td>Parallel pump of IDCU units</td>
</tr>
</tbody>
</table>

**Note(s):**

a. The maximum value of m is 10. The maximum value of n is 4. The maximum value of pp is 64.

### Table 9-20 — Off-Line Pump Error Responses

<table>
<thead>
<tr>
<th>STATUS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPUMPFAIL</td>
<td>Off-line SM pump failed</td>
</tr>
<tr>
<td>OVFYFAIL</td>
<td>Off-line verification failed</td>
</tr>
<tr>
<td>OPERFFAIL</td>
<td>Off-line peripheral pump failed</td>
</tr>
<tr>
<td>OPERF_OOD</td>
<td>Off-line peripheral out of date</td>
</tr>
<tr>
<td>ORSTFAIL</td>
<td>Failure to restore a peripheral</td>
</tr>
</tbody>
</table>
Table 9-21 — Tools With Resume Actions

<table>
<thead>
<tr>
<th>TOOLID</th>
<th>NUMBER OF REQUIRED ARGUMENTS</th>
<th>MAX NUMBER OF OPTIONAL ARGUMENTS</th>
<th>DEFAULT ARGUMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPLPROC</td>
<td>1 (See Table 9-24)</td>
<td>NONE</td>
<td>NONE</td>
</tr>
<tr>
<td>DUMP MHSTAT</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
</tr>
<tr>
<td>DUMP SUPR LOG</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
</tr>
<tr>
<td>DUMP APPL LOG</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
</tr>
<tr>
<td>READHDR</td>
<td>NONE</td>
<td>1 (MT0, MT1)</td>
<td>MT0</td>
</tr>
<tr>
<td>WRT AMA DATA</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
</tr>
<tr>
<td>STOP OFLBOOT</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
</tr>
<tr>
<td>DUMP SEQOPT</td>
<td>NONE</td>
<td>NONE</td>
<td>VERIFY</td>
</tr>
<tr>
<td>MOP</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
</tr>
<tr>
<td>ISMOP</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
</tr>
<tr>
<td>ALWCHKS</td>
<td>1 (AM, CMP, SM, ALL)</td>
<td>NONE</td>
<td>NONE</td>
</tr>
<tr>
<td>SM OFL PUMP</td>
<td>1 (ACT, OFL)</td>
<td>3, ([VFY, NVFY], (PERF, NPERF), (MCTSI0, MCTSI1))</td>
<td>(VFY, PERF, OFLPUMP MCTSI1)</td>
</tr>
<tr>
<td>INHCHKS</td>
<td>1 (AM, CMP, SM, ALL)</td>
<td>NONE</td>
<td>NONE</td>
</tr>
<tr>
<td>TSM</td>
<td>(OLD, NEW, RMV)</td>
<td>NONE</td>
<td>NONE</td>
</tr>
<tr>
<td>CNI AUDIT</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
</tr>
</tbody>
</table>

Note(s):
- For SM OFL PUMP, the following definitions apply:
  a. ACT - Specifies to offline pump SMs from active disk images.
  b. OFL - Specifies to offline pump SMs from offline disk images.
  c. VFY - Specifies to run offline verify of SMs.
  d. NVFY - Specifies NOT to run offline verify of SMs.
  e. PERF - Specifies to run peripheral offline pumps.
  f. NPERF - Specifies NOT to run peripheral offline pumps.
  g. MCTSI0 - Specifies to offline pump MCTSI, side 0.
  h. MCTSI1 - Specifies to offline pump MCTSI, side 1.
Table 9-22 — Tools With No Backout Actions

<table>
<thead>
<tr>
<th>TOOLID</th>
<th>BACKOUT ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPLPROC</td>
<td>NOT SUPPORTED</td>
</tr>
<tr>
<td>DUMP MHDSTAT</td>
<td>NOT SUPPORTED</td>
</tr>
<tr>
<td>DUMP SUPR LOG</td>
<td>NOT SUPPORTED</td>
</tr>
<tr>
<td>DUMP APPL LOG</td>
<td>NOT SUPPORTED</td>
</tr>
<tr>
<td>WRT AMA DATA</td>
<td>NOT SUPPORTED</td>
</tr>
<tr>
<td>STOP OFLBOOT</td>
<td>NOT SUPPORTED</td>
</tr>
<tr>
<td>DUMP SEQOPT</td>
<td>NOT SUPPORTED</td>
</tr>
<tr>
<td>ISMOP</td>
<td>NOT SUPPORTED</td>
</tr>
<tr>
<td>TSM</td>
<td>NOT SUPPORTED</td>
</tr>
<tr>
<td>CNI AUDIT</td>
<td>NOT SUPPORTED</td>
</tr>
</tbody>
</table>
### Table 9-23 — Tools With Backout Actions

<table>
<thead>
<tr>
<th>TOOLID</th>
<th>NUMBER OF REQUIRED ARGUMENTS</th>
<th>MAX NUMBER OF OPTIONAL ARGUMENTS</th>
<th>DEFAULT BACKOUT ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>READHDR</td>
<td>NONE</td>
<td>NONE</td>
<td>RESET OF TAPE LOG FILE</td>
</tr>
<tr>
<td>MOP</td>
<td>NONE</td>
<td>NONE</td>
<td>STOP MOP</td>
</tr>
<tr>
<td>ALWCHKS</td>
<td>1 (AM, CMP, SM, ALL)</td>
<td>NONE</td>
<td>INHIBIT CHECKS OF REQUEST MODULE</td>
</tr>
<tr>
<td>INHCHKS</td>
<td>1 (AM, CMP, SM, ALL)</td>
<td>NONE</td>
<td>ALLOW CHECKS OF REQUESTED MODULE</td>
</tr>
<tr>
<td>SM OFL PUMP</td>
<td>NONE</td>
<td>NONE</td>
<td>DUPLEX SMS</td>
</tr>
</tbody>
</table>
# Table 9-24 — MCC Page 1984 APPLPROC Pokes and Equivalent Input Messages

<table>
<thead>
<tr>
<th>POKE</th>
<th>INPUT MESSAGE</th>
<th>OPERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>501,toolname</td>
<td>UPD:GEN:APPLPROC,ARG...;</td>
<td>Used to execute software tools</td>
</tr>
<tr>
<td>501,alwama1</td>
<td>ALW:AMA:SESSION,ST1;</td>
<td>Allows AMA sessions for stream 1 or stream 2</td>
</tr>
<tr>
<td>501,alwama2</td>
<td>ALW:AMA:SESSION,ST2;</td>
<td></td>
</tr>
<tr>
<td>501,alwamchks</td>
<td>ALW:HDWCHK;</td>
<td>Allows AM hardware, software, and error checks</td>
</tr>
<tr>
<td></td>
<td>ALW:SFTCHK;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ALW:ERRSRC;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ALW:ERRINT;</td>
<td></td>
</tr>
<tr>
<td>501,alwcmpchks</td>
<td>ALW:HDWCHK,CMP=0-0;</td>
<td>Allows CMP hardware and software checks</td>
</tr>
<tr>
<td></td>
<td>ALW:HDWCHK,CMP=1-0;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ALW:SFTCHK,CMP=0;</td>
<td></td>
</tr>
<tr>
<td>501,alwpump</td>
<td>ALW:PUMP,SM=1&amp;&amp;192;</td>
<td>Allows pump in all SMs</td>
</tr>
<tr>
<td>501,alwrex</td>
<td>ALW:REX,CU;</td>
<td>Allows REX in the AM, CM, and SMs</td>
</tr>
<tr>
<td></td>
<td>ALW:REX,CM;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ALW:REX,SM=1&amp;&amp;192;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ALW:DMQ:SRC=ALL;</td>
<td></td>
</tr>
<tr>
<td>501,alwsmchks</td>
<td>ALW:HDWCHK,SM=1&amp;&amp;192;</td>
<td>Allows SM hardware and software checks</td>
</tr>
<tr>
<td></td>
<td>ALW:SFTCHK,SM=1&amp;&amp;192;</td>
<td></td>
</tr>
<tr>
<td>501,bgnhook</td>
<td>UPD:GEN:APPLPROC,ARG=&quot;BGNHOOK&quot;;</td>
<td>Runs BEGIN stage shell processing</td>
</tr>
<tr>
<td>501,clrsipo</td>
<td>EXC:ENVIR:UPROC,FN=&quot;/no5text/prc/setoddbk -w 197 0 193 193&quot;</td>
<td>Clears DDFRCSIPO key 197 to normal (0)</td>
</tr>
<tr>
<td>501,clrpstrcr</td>
<td>EXC:ENVIR:UPROC,FN=&quot;/no5text/prc/setoddbk -w 478 0 193 193&quot;</td>
<td>Clears DDPOSTRCR key 478 to normal (0)</td>
</tr>
<tr>
<td>501,cloflfs</td>
<td>UPD:GEN:APPLPROC,ARG=&quot;CLOFLFS&quot;;</td>
<td>Clears off-line filesystems</td>
</tr>
<tr>
<td>501,cmthook</td>
<td>UPD:GEN:APPLPROC,ARG=&quot;CMTHOOK&quot;;</td>
<td>Runs COMMIT stage shell processing</td>
</tr>
<tr>
<td>501,cniaud</td>
<td>UPD:GEN:APPLPROC,ARG=&quot;CNIAUD&quot;;</td>
<td>Runs NIDATA audits on the CNI database</td>
</tr>
<tr>
<td>501,dgnretro</td>
<td>UPD:GEN:APPLPROC,ARG=&quot;DGNRETRO&quot;;</td>
<td>Runs retro phase 3 diagnostics on all SMs</td>
</tr>
<tr>
<td>POKE</td>
<td>INPUT MESSAGE</td>
<td>OPERATION</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------------------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>501,endhook</td>
<td>UPD:GEN:APPLPROC,ARG= &quot;ENDHOOK&quot;;</td>
<td>Performs post-transition cleanup tasks</td>
</tr>
<tr>
<td>501,entrhook</td>
<td>UPD:GEN:APPLPROC,ARG= &quot;ENTRHOOK&quot;;</td>
<td>Runs ENTER stage shell processing</td>
</tr>
<tr>
<td>501,inhamchks</td>
<td>INH:HDWCHK; INH:SFTCHK; ALW:HDWCHK,CLNK,ALL;</td>
<td>Inhibits AM hardware and software checks and allows CLNK hardware checks</td>
</tr>
<tr>
<td>501,inhcmpchks</td>
<td>INH:HDWCHK,CMP=0-0; INH:HDWCHK,CMP=1-0; INH:SFTCHK,CMP=0;</td>
<td>Inhibits CMP hardware and software checks</td>
</tr>
<tr>
<td>501,inhrex</td>
<td>INH:REX; INH:DMQ,SRC=REX; INH:DMQ,SRC=ADP; OP:DMQ; OP:DMQ,SM=1&amp;&amp;192;</td>
<td>Inhibits REX and DMQ requests</td>
</tr>
<tr>
<td>501,inhsmchks</td>
<td>UPD:GEN:APPLPROC,ARG= &quot;INHSMCHKS&quot;; INH:HDWCHK,SM=1&amp;&amp;192; INH:SFTCHK,SM=1&amp;&amp;192; INH:CLNORM;</td>
<td>Inhibits hardware and software checks in all SMs. CLINKS are checked to ensure they are normal and in-service</td>
</tr>
<tr>
<td>501,installtools</td>
<td>UPD:GEN:APPLPROC,ARG= &quot;INSTALLTOOLS&quot;;</td>
<td>Installs the software tools into the appropriate system directories</td>
</tr>
<tr>
<td>501,ismop</td>
<td>UPD:GEN:APPLPROC,ARG= &quot;ISMOP&quot;;</td>
<td>Provides information on mounted off-line partitions.</td>
</tr>
<tr>
<td>501,logwriter</td>
<td>UPD:GEN:APPLPROC,ARG= &quot;LOGWRITER&quot;;</td>
<td>Creates entry in tool log</td>
</tr>
<tr>
<td>501,lookodd</td>
<td>UPD:GEN:APPLPROC,ARG= &quot;LOOKODD&quot;;</td>
<td>Prints a list of the ODD files on the off-line disks</td>
</tr>
<tr>
<td>501,mhdstat</td>
<td>UPD:GEN:APPLPROC,ARG= &quot;MHDSTAT&quot;;</td>
<td>Prints status of disks</td>
</tr>
<tr>
<td>POKE</td>
<td>INPUT MESSAGE</td>
<td>OPERATION</td>
</tr>
<tr>
<td>---------</td>
<td>------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>501,modecd</td>
<td>UPD:GEN:APPLPROC, ARG=&quot;MODECD&quot;;</td>
<td>UPDATE ONLY: Apply any skipped ECD changes to off-line side</td>
</tr>
<tr>
<td></td>
<td>CHG:LPS, MSGCLS=INT_MON, PRINT=ON, LOG=ON;</td>
<td>Turns on the printing of message classes INT_MON, GENRMON, INT</td>
</tr>
<tr>
<td></td>
<td>CHG:LPS, MSGCLS=GENRMON, PRINT=ON, LOG=ON;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHG:LPS, MSGCLS=INT, PRINT=ON, LOG=ON;</td>
<td></td>
</tr>
<tr>
<td>501,mop.bk</td>
<td>UPD:GEN:APPLPROC, ARG=&quot;MOP.BK&quot;;</td>
<td>Mounts off-line partitions on even-numbered MHDs.</td>
</tr>
<tr>
<td></td>
<td>CHG:LPS, MSGCLS=INT_MON, PRINT=ON, LOG=ON;</td>
<td>Turns on the printing of message classes INT_MON, GENRMON, INT</td>
</tr>
<tr>
<td></td>
<td>CHG:LPS, MSGCLS=INT_MON, PRINT=ON, LOG=ON;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHG:LPS, MSGCLS=INT_MON, PRINT=OFF, LOG=ON;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHG:LPS, MSGCLS=GENRMON, PRINT=OFF, LOG=ON;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHG:LPS, MSGCLS=INT, PRINT=OFF, LOG=ON;</td>
<td></td>
</tr>
<tr>
<td>501,msgoff</td>
<td>CHG:LPS, MSGCLS=INT_MON, PRINT=OFF, LOG=ON;</td>
<td>Turns off the printing of message classes INT_MON, GENRMON, INT</td>
</tr>
<tr>
<td></td>
<td>CHG:LPS, MSGCLS=GENRMON, PRINT=OFF, LOG=ON;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHG:LPS, MSGCLS=INT, PRINT=OFF, LOG=ON;</td>
<td></td>
</tr>
<tr>
<td>501,msgon</td>
<td>CHG:LPS, MSGCLS=INT_MON, PRINT=ON, LOG=ON;</td>
<td>Turns on the printing of message classes INT_MON, GENRMON, INT</td>
</tr>
<tr>
<td></td>
<td>CHG:LPS, MSGCLS=GENRMON, PRINT=ON, LOG=ON;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHG:LPS, MSGCLS=INT, PRINT=ON, LOG=ON;</td>
<td></td>
</tr>
<tr>
<td>501,prcdhook</td>
<td>UPD:GEN:APPLPROC, ARG=&quot;PRCDHOOK&quot;;</td>
<td>Performs post-proceed stage modification hooks</td>
</tr>
<tr>
<td>501,rmvtools</td>
<td>UPD:GEN:APPLPROC, ARG=&quot;RMVTOOLS&quot;;</td>
<td>Removes software tools</td>
</tr>
<tr>
<td>501,rstcu</td>
<td>RST:CU=1,UCL;</td>
<td>Restores CU 1 unconditionally</td>
</tr>
<tr>
<td>501,rsthook</td>
<td>UPD:GEN:APPLPROC, ARG=&quot;RSTHOOK&quot;;</td>
<td>Run restore stage shell processing</td>
</tr>
</tbody>
</table>
Table 9-24 — MCC Page 1984 APPLPROC Pokes and Equivalent Input Messages  
(Contd)

<table>
<thead>
<tr>
<th>POKE</th>
<th>INPUT MESSAGE</th>
<th>OPERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>501,seqopt</td>
<td>UPD:GEN:APPLPROC,ARG= &quot;SEQOPT&quot;;</td>
<td>Verifies tape sequence from read header</td>
</tr>
<tr>
<td>501,setoddbk</td>
<td>EXC:ENVIR:UPROC,FN= &quot;/no5text/prc/setoddbk&quot;</td>
<td>Sets RC status in all SMs after init</td>
</tr>
<tr>
<td>501,smdump</td>
<td>UPD:GEN:APPLPROC,ARG= &quot;SMDUMP&quot;;</td>
<td>Dumps data from the SMs for postmortem analysis</td>
</tr>
<tr>
<td>501,stopmop</td>
<td>UPD:GEN:APPLPROC,ARG= &quot;STOPMOP&quot;;</td>
<td>Stops any active mop process</td>
</tr>
<tr>
<td>501,stopolb</td>
<td>UPD:GEN:APPLPROC,ARG= &quot;STOPOLB&quot;;</td>
<td>Allows DMQ. Stops off-line boot</td>
</tr>
<tr>
<td>501,summ</td>
<td>UPD:GEN:APPLPROC,ARG= &quot;SUMM&quot;;</td>
<td>Prints a summary of this table</td>
</tr>
<tr>
<td>501,sysstat</td>
<td>OP:SYSSTAT,UCL;</td>
<td>Prints system status</td>
</tr>
<tr>
<td>501,tsmold</td>
<td>UPD:GEN:APPLPROC,ARG= &quot;TSMOLD&quot;;</td>
<td>Records trunks in OOS state before init</td>
</tr>
<tr>
<td>501,tsmnew</td>
<td>UPD:GEN:APPLPROC,ARG= &quot;TSMNEW&quot;;</td>
<td>Dumps a list of trunks in OOS state</td>
</tr>
<tr>
<td>501,tsmrnv</td>
<td>UPD:GEN:APPLPROC,ARG= &quot;TSMRNV&quot;;</td>
<td>Removes all trunks listed in output from 501,tsmnew</td>
</tr>
<tr>
<td>501,wrtama</td>
<td>WRT:AMADATA;</td>
<td>Writes AMA data to the active disks</td>
</tr>
</tbody>
</table>

Table 9-25 — 5E16.2 VTOC Table Index

<table>
<thead>
<tr>
<th>MHD</th>
<th>OFFICE DISK CONFIGURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,1</td>
<td>Table 9-26</td>
</tr>
<tr>
<td>2,3</td>
<td>Table 9-27</td>
</tr>
<tr>
<td>4-31</td>
<td>a</td>
</tr>
</tbody>
</table>

Note: If your outboard disks (MHDs 4 and higher) are 1 GB SCSI MHDs, refer to the appropriate part of Table 9-30 for your particular AMA/SM ODD disk options. If your outboard disks (MHDs 4 and higher) are 2 GB SCSI MHDs, refer to the appropriate part of Table 9-31 for your particular AMA/SM ODD disk options.
Table 9-26 — 5E16.2 VTOC Layouts for MHDs 0 and 1 (2G Disk Configuration)

<table>
<thead>
<tr>
<th>PTN</th>
<th>START</th>
<th>END</th>
<th>SIZE</th>
<th>DESCRIPTION (NOTE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>VTOC fp (vtoc0)</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td>601</td>
<td>600</td>
<td>PLBOOT21 fp (lboot21)</td>
</tr>
<tr>
<td>2</td>
<td>602</td>
<td>683</td>
<td>82</td>
<td>BBOOT fp (boot)</td>
</tr>
<tr>
<td>3</td>
<td>684</td>
<td>765</td>
<td>82</td>
<td>BBOOT fp (bboot)</td>
</tr>
<tr>
<td>6</td>
<td>766</td>
<td>25076</td>
<td>25000</td>
<td>SWAP fp (swap)</td>
</tr>
<tr>
<td>4</td>
<td>25076</td>
<td>40196</td>
<td>151200</td>
<td>ROOT fs (root)</td>
</tr>
<tr>
<td>5</td>
<td>40196</td>
<td>55316</td>
<td>151200</td>
<td>ROOT fs (broot)</td>
</tr>
<tr>
<td>7</td>
<td>55316</td>
<td>56316</td>
<td>10000</td>
<td>ORDINARY fs (tmp)</td>
</tr>
<tr>
<td>9</td>
<td>56316</td>
<td>12541</td>
<td>691000</td>
<td>ORDINARY fs (update)</td>
</tr>
<tr>
<td>10</td>
<td>12541</td>
<td>12941</td>
<td>40000</td>
<td>ORDINARY fs (updtmp)</td>
</tr>
<tr>
<td>11</td>
<td>12941</td>
<td>12951</td>
<td>1000</td>
<td>PDUMP fp (panic)</td>
</tr>
<tr>
<td>12</td>
<td>12951</td>
<td>13031</td>
<td>8000</td>
<td>ORDINARY fs (cdmp)</td>
</tr>
<tr>
<td>13</td>
<td>13031</td>
<td>13211</td>
<td>18000</td>
<td>ETC fs (etc)</td>
</tr>
<tr>
<td>14</td>
<td>13211</td>
<td>13391</td>
<td>18000</td>
<td>ETC fs (betc)</td>
</tr>
<tr>
<td>15</td>
<td>13391</td>
<td>17491</td>
<td>410000</td>
<td>BMW fs (bwm)</td>
</tr>
<tr>
<td>16</td>
<td>17491</td>
<td>17731</td>
<td>24000</td>
<td>ECD fs (db)</td>
</tr>
<tr>
<td>17</td>
<td>17731</td>
<td>17971</td>
<td>24000</td>
<td>ECD fs (bdb)</td>
</tr>
<tr>
<td>18</td>
<td>17971</td>
<td>23171</td>
<td>520000</td>
<td>ORDINARY fs (soddaud)</td>
</tr>
<tr>
<td>19</td>
<td>23171</td>
<td>27771</td>
<td>460000</td>
<td>ORDINARY fs (no5text)</td>
</tr>
<tr>
<td>20</td>
<td>27771</td>
<td>27966</td>
<td>19500</td>
<td>ORDINARY fs (unixa)</td>
</tr>
<tr>
<td>22</td>
<td>27966</td>
<td>28126</td>
<td>16000</td>
<td>ORDINARY fs (dg)</td>
</tr>
<tr>
<td>24</td>
<td>28126</td>
<td>29376</td>
<td>125000</td>
<td>ORDINARY fs (var)</td>
</tr>
<tr>
<td>28</td>
<td>29376</td>
<td>29386</td>
<td>1000</td>
<td>ORDINARY fs (lim)</td>
</tr>
<tr>
<td>32</td>
<td>29386</td>
<td>29618</td>
<td>23200</td>
<td>ECD fp (no5dodd)</td>
</tr>
<tr>
<td>33</td>
<td>29618</td>
<td>29850</td>
<td>23200</td>
<td>ECD fp (no5dodd1)</td>
</tr>
<tr>
<td>35</td>
<td>29850</td>
<td>31650</td>
<td>180000</td>
<td>ECD fs (rclog)</td>
</tr>
<tr>
<td>36</td>
<td>31650</td>
<td>32550</td>
<td>90000</td>
<td>ECD fs (log)</td>
</tr>
<tr>
<td>37</td>
<td>32550</td>
<td>34519</td>
<td>196900</td>
<td>ECD fs (no5aodd1)</td>
</tr>
<tr>
<td>41</td>
<td>34519</td>
<td>36791</td>
<td>227141</td>
<td>APPLSTART fp (ama)</td>
</tr>
<tr>
<td>42</td>
<td>36791</td>
<td>39062</td>
<td>227141</td>
<td>APPLSTART fp (ama1)</td>
</tr>
<tr>
<td>63</td>
<td>39062</td>
<td>39063</td>
<td>2</td>
<td>BANK fp (bank)</td>
</tr>
</tbody>
</table>

**Note:**
- fs = file system (+ FILSYS)
- fp = file partition
Table 9-27 — 5E16.2 VTOC Layouts for MHDs 2 and 3 (2G Disk Configuration)

<table>
<thead>
<tr>
<th>PTN</th>
<th>START</th>
<th>END</th>
<th>SIZE</th>
<th>DESCRIPTION (NOTE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>VTOC fp (vtoc1)</td>
</tr>
<tr>
<td>7</td>
<td>2</td>
<td>5501</td>
<td>5500</td>
<td>ORDINARY fs (usrtmp)</td>
</tr>
<tr>
<td>21</td>
<td>5502</td>
<td>1305501</td>
<td>1300000</td>
<td>ORDINARY fs (smtext)</td>
</tr>
<tr>
<td>34</td>
<td>1305502</td>
<td>1328701</td>
<td>23200</td>
<td>ECD fp (no5dodd2)</td>
</tr>
<tr>
<td>38</td>
<td>1328702</td>
<td>1493201</td>
<td>164500</td>
<td>ECD fs (no5oddscr)</td>
</tr>
<tr>
<td>39</td>
<td>1493202</td>
<td>2293201</td>
<td>800000</td>
<td>ECD fs (no5sodd1)</td>
</tr>
<tr>
<td>40</td>
<td>2293202</td>
<td>2433201</td>
<td>140000</td>
<td>ECD fs (no5codd1)</td>
</tr>
<tr>
<td>41</td>
<td>2433202</td>
<td>3086374</td>
<td>653173</td>
<td>APPLSTART fp (ama2)</td>
</tr>
<tr>
<td>42</td>
<td>3086375</td>
<td>3739547</td>
<td>653173</td>
<td>APPLSTART fp (ama3)</td>
</tr>
<tr>
<td>43</td>
<td>3739548</td>
<td>3769547</td>
<td>30000</td>
<td>ORDINARY fs (unixabf)</td>
</tr>
<tr>
<td>44</td>
<td>3769548</td>
<td>3877547</td>
<td>108000</td>
<td>ECD fs (smlog)</td>
</tr>
<tr>
<td>57</td>
<td>3877548</td>
<td>3906247</td>
<td>28700</td>
<td>ORDINARY fs (atts)</td>
</tr>
<tr>
<td>63</td>
<td>3906248</td>
<td>3906249</td>
<td>2</td>
<td>BANK fp (bank1)</td>
</tr>
</tbody>
</table>

*Note:* fs = file system (+ FILSYS)  
fp = file partition
Table 9-28 — 5E16.2 VTOC Layouts for MHDs 4 and Higher (322 Mb SCSI MHDs)

<table>
<thead>
<tr>
<th>PTN</th>
<th>START</th>
<th>END</th>
<th>SIZE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISKOPTION 0300 (100%AMA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>VTOC fp (vtoc[n])</td>
</tr>
<tr>
<td>41</td>
<td>2</td>
<td>270719</td>
<td>270718</td>
<td>80 fp (ama[2n])</td>
</tr>
<tr>
<td>42</td>
<td>270720</td>
<td>541437</td>
<td>270718</td>
<td>80 fp (ama[2n+1])</td>
</tr>
<tr>
<td>63</td>
<td>541438</td>
<td>541439</td>
<td>2</td>
<td>0D fp (bank[n])</td>
</tr>
<tr>
<td>DISKOPTION 0325 (75%AMA,25% SMODD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>VTOC fp (vtoc[n])</td>
</tr>
<tr>
<td>39</td>
<td>2</td>
<td>148001</td>
<td>148000</td>
<td>ECD fs (no5sodd[n])</td>
</tr>
<tr>
<td>41</td>
<td>148002</td>
<td>344719</td>
<td>196718</td>
<td>80 fp (ama[2n])</td>
</tr>
<tr>
<td>42</td>
<td>344720</td>
<td>541437</td>
<td>196718</td>
<td>80 fp (ama[2n+1])</td>
</tr>
<tr>
<td>63</td>
<td>541438</td>
<td>541439</td>
<td>2</td>
<td>0D fp (bank[n])</td>
</tr>
<tr>
<td>DISKOPTION 0350 (50%AMA,50% SMODD)</td>
<td></td>
<td></td>
<td></td>
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Note(s):  
a. fs - file system (+ FILSYS) fp - file partition n = rt number 2 - 13
Table 9-29 — 5E16.2 VTOC Layouts for MHDs 4 and Higher (600 Mb SCSI MHDs)

<table>
<thead>
<tr>
<th>PTN</th>
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<tbody>
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<td>1179999</td>
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Note(s):
- a. fs = file system (+ FILSYS) fp = file partition n = rt number 2-13
Table 9-30 — 5E16.2 VTOC Layouts for MHDs 4 and Higher (1 Gb SCSI MHDs)

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<table>
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<table>
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<table>
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<tbody>
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<table>
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**Note:**
- fs = file system (+ FILSYS)
- fp = file partition
- n = rt number 2 - 6
### Table 9-31 — 5E16.2 VTOC Layouts for MHDs 4 and Higher (2 Gb SCSI MHDs)

**DISK OPTION 2025 (75% AMA, 25% SM ODD)**

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**DISK OPTION 2075 (25% AMA, 75% SM ODD)**

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**DISK OPTION 2100 (100% SM ODD)**

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**Note:**
- fs = file system (+ FILSYS)
- fp = file partition
- n = rt number 2 - 6
5E16.2 Large Terminal Growth Procedures

<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>PAGE</th>
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<tbody>
<tr>
<td>10. REFERENCE DOCUMENTS</td>
<td>10-1</td>
</tr>
<tr>
<td>10.1 INTRODUCTION</td>
<td>10-1</td>
</tr>
<tr>
<td>10.2 REFERENCE DOCUMENTS</td>
<td>10-1</td>
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</table>
10. REFERENCE DOCUMENTS
10.1 INTRODUCTION
This section is to be used as a "quick reference" to assist office personnel in the planning of an LTG. Included in this job aid is a list of the documentation that will be helpful prior to and during an LTG. Also included are lists of required materials and time intervals for each.

10.2 REFERENCE DOCUMENTS
The recommended documents are:
- 235-070-100, Administration and Engineering Guidelines
- 235-105-210, Routine Operations and Maintenance
- 235-105-220, Corrective Maintenance Procedures
- 235-105-231, Hardware Change Procedures - Growth
- 235-105-250, System Recovery Procedures
- 235-105-331, Hardware Change Procedures - Degrowth
- 235-118-251, Recent Change Procedures
- 235-118-253, Recent Change References
- 235-600-111, Translations Data
- 235-600-243, Translation/Dynamic Data Domain Descriptions
- 235-600-223, Translations/Dynamic Data Reference
- 235-600-312, ECD/SG Data Base Manual

For more information regarding these documents, refer to 235-001-001, Documentation Description and Ordering Guide.

Please order these documents through your normal channels.
The following acronyms, abbreviations, and terms are used in this manual.

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<th>Acronym</th>
<th>Description</th>
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<td>Automatic Call Distributor</td>
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<tr>
<td>ACP</td>
<td>Advanced Communications Package</td>
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<tr>
<td>ACSR</td>
<td>Automatic Customer Station Rearrangement</td>
</tr>
<tr>
<td>ACT</td>
<td>Active</td>
</tr>
<tr>
<td>ACTF</td>
<td>Active Forced</td>
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<td>Automatic Diagnostic Process</td>
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<tr>
<td>AIM</td>
<td>Application Integrity Monitor</td>
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<td>AIRS</td>
<td>Automated Inventory Record System</td>
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<td>Application Interface Unit</td>
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<td>Audio Interface Unit</td>
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<td>Automatic Line Insulation Test</td>
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<td>Basic Services Terminal</td>
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<td>Broadcast Warning Message (now called Software Update)</td>
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<td>Small Computer System Interface</td>
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<td>SDFI</td>
<td>Subscriber Digital Facility Interface</td>
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SDLC  Synchronous Data Line Controller
SDS   Shared Data Segment
SEE   Systems Equipment Engineer
SES   Service Evaluation System
SG    System Generation
SLE   Screen List Editing
SIM   System Integrity Monitor
SIO   Service Information Octet
SM    Switching Module
SMARS Switch Maintenance Analysis and Recovery Strategies
SMD   Storage Module Device
SMKP  Switch Maintenance Kernel Process
SMP   Switching Module Processor
SMPU  Switching Module Processor Unit
SODD  Static Office Dependent Data
SPP   Single-Process Purge
SSR   System Status Register
STA   Synchronous Terminal Adapter
STBY  Standby
STP   Signal Transfer Point
STLWS Supplemental Trunk and Line Workstation
SU    Software Update
SUMS  Software Update Management Service
SUPR  System Update Procedure(s)
SYS   System
TA    Toll and Assistance
TCC   Technical Control Center
TEO   Telephone Equipment Order
THCOSTAT Thousands Group Cutover Status
TLC   T Line Card
TLWS  Trunk and Line Work Station
TMP   Temporary
TMS   Time Multiplexed Switch
TNS   Total Network Surveillance System
TOP   Tape Operating Procedure
TOPAS Testing Operations, Provisioning and Administration System
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