# Critical Release Notice

**Publication number: 297-8021-545**
**Publication release: Standard 14.03**

The content of this customer NTP supports the SN09 software release.

Bookmarks used in this NTP highlight the changes between the NA015 baseline and the current release. The bookmarks provided are color-coded to identify release-specific content changes. NTP volumes that do not contain bookmarks indicate that the NA015 baseline remains unchanged and is valid for the current release.

**Bookmark Color Legend**

**Orange: Applies to new or modified content for SN09 that is valid through the current release.**

***Attention!***
*Adobe® Acrobat® Reader™ 5.0 or higher is required to view bookmarks in color.*

# Publication History

**January 2006**

Standard release 14.03 for software release SN09. Updates made for this release are shown below:

Changed procedure: Emergency power conservation Shutdown – Showing that the XPM unit to be powered down must match the ENET/JNET plane number that is to be powered down.

297-8021-545

DMS-100 Family

# North American DMS-100

Recovery Procedures

LET0015 and up Standard 14.02 May 2001

NORTEL NETWORKS™

DMS-100 Family

# North American DMS-100

Recovery Procedures

Publication number: 297-8021-545
Product release: LET0015 and up
Document release: Standard 14.02
Date: May 2001

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## Recovery Procedures

# About this document

## How to check the version and issue of this document

The version and issue of the document are indicated by numbers, for example, 01.01.

The first two digits indicate the version. The version number increases each time the document is updated to support a new software release. For example, the first release of a document is 01.01. In the next software release cycle, the first release of the same document is 02.01.

The second two digits indicate the issue. The issue number increases each time the document is revised but rereleased in the same software release cycle. For example, the second release of a document in the same software release cycle is 01.02.

To determine which version of this document applies to the software in your office and how documentation for your product is organized, check the release information in *Product Documentation Directory,* 297-8991-001.

## References in this document

The following documents are referred to in this document:

- *Alarm Clearing and Performance Monitoring Procedures*
- *Bellcore Format Automatic Message Accounting Reference Guide*, 297-1001-830
- *Card Replacement Procedures*
- *DMS-100 Family Commands Reference Manual*, 297-1001-822
- *Log Report Reference Manual*
- *Magentic Tape Reference Manual*, 297-1001-118
- *Operational Measurements Reference Manual*
- *Routine Maintenance Procedures*

As of NA0011 (LEC and LET) and EUR010 (EUR) releases, any references to the data schema section of the Translations Guide will be mapped to the Customer Data Schema Reference Manual.

## What precautionary messages mean

The types of precautionary messages used in Nortel Networks documents include attention boxes and danger, warning, and caution messages.

An attention box identifies information that is necessary for the proper performance of a procedure or task or the correct interpretation of information or data. Danger, warning, and caution messages indicate possible risks.

Examples of the precautionary messages follow.

ATTENTION - Information needed to perform a task

**ATTENTION**

If the unused DS-3 ports are not deprovisioned before a DS-1/VT Mapper is installed, the DS-1 traffic will not be carried through the DS-1/VT Mapper, even though the DS-1/VT Mapper is properly provisioned.

DANGER - Possibility of personal injury

**DANGER**

**Risk of electrocution**

Do not open the front panel of the inverter unless fuses F1, F2, and F3 have been removed. The inverter contains high-voltage lines. Until the fuses are removed, the high-voltage lines are active, and you risk being electrocuted.

WARNING - Possibility of equipment damage

**WARNING**

**Damage to the backplane connector pins**

Align the card before seating it, to avoid bending the backplane connector pins. Use light thumb pressure to align the card with the connectors. Next, use the levers on the card to seat the card into the connectors.

CAUTION - Possibility of service interruption or degradation

**CAUTION**
**Possible loss of service**
Before continuing, confirm that you are removing the card from the inactive unit of the peripheral module. Subscriber service will be lost if you remove a card from the active unit.

## How commands, parameters, and responses are represented

Commands, parameters, and responses in this document conform to the following conventions.

### Input prompt (>)

An input prompt (>) indicates that the information that follows is a command:

```
>BSY
```

### Commands and fixed parameters

Commands and fixed parameters that are entered at a MAP terminal are shown in uppercase letters:

```
>BSY CTRL
```

### Variables

Variables are shown in lowercase letters:

```
>BSY  CTRL  ctrl_no
```

The letters or numbers that the variable represents must be entered. Each variable is explained in a list that follows the command string.

### Responses

Responses correspond to the MAP display and are shown in a different type:

```
FP 3 Busy CTRL 0: Command request has been submitted.

FP 3 Busy CTRL 0: Command passed.
```

# 1 System recovery controller

This chapter describes the operation of the system recovery controller (SRC). The subsequent sections explain the operation of the SRC as follows:

*About the system recovery controller* on this page describes the SRC functions, triggers, and dependencies.

*SRC recovery methods* in this document describes how the SRC recovers PMs, and lists the PMs that the SRC recovers.

*How to monitor SRC operation* in this document describes the responses on the MAP (maintenance and administration position) display when the SRC is recovering a node. This section also describes the logs generated during node recovery, SRC failure, and how to manually override the SRC.

## About the system recovery controller

The SRC coordinates recovery activities in a DMS switch. The SRC optimizes recovery through the correct use of resources and automatic operation.

The SRC coordinates the recovery of nodes in the DMS switch so that when one node is dependant on another for operation, the node which is depended upon must be inservice before a recovery attempt is made on the dependant node. As it progresses through the dependancy hierarchy, the SRC schedules recovery activities to run at appropriate times, thereby reducing the length of outages.

The SRC makes several attempts to recover a node. During each recovery attempt, the SRC performs a more detailed analysis. If necessary, the SRC reloads a node's software and returns the node to service as part of a full recovery process. When the SRC reloads a node, removal of the node from service occurs for a period of time, so the SRC only reloads nodes when required.

## SRC functions

The SRC coordinates the recovery activities of different subsystems outside the DMS-core, also refered to as the computing module (CM).

The subsystems include the following:

- the message switch (MS)
- network (JNET or ENET)
- series I, II, and III peripheral modules (PM).

Figure Figure 1-1, "System recovery controller" on page 1-3 shows how the SRC interfaces with the DMS-core and with the subsystems.

The SRC performs the following functions:

- The dependency manager of the SRC enforces inter-subsytem dependencies. Before the SRC recovers a node, the subsystems, the subsystems that the node depends on must be operating.
- The group manager groups nodes for broadcast loading in conditions where the process applies. The SRC sends common commands to a group of nodes at the same time, instead of one after another.
- The concurrent activity manager balances the amount of recovery work against other activities that occur on the switch. The SRC attempts to recover as many critical subsystems as the CM allows.
- The SRC initiates recovery applications and monitors each step in the application to make sure that the application ends quickly.

The SRC coordinates two separate activities for series II XMS-based PMs (XPM) and line concentrating modules (LCM):

- system recovery of PM nodes after core restart or core switch of activity through the use of the dependency manager

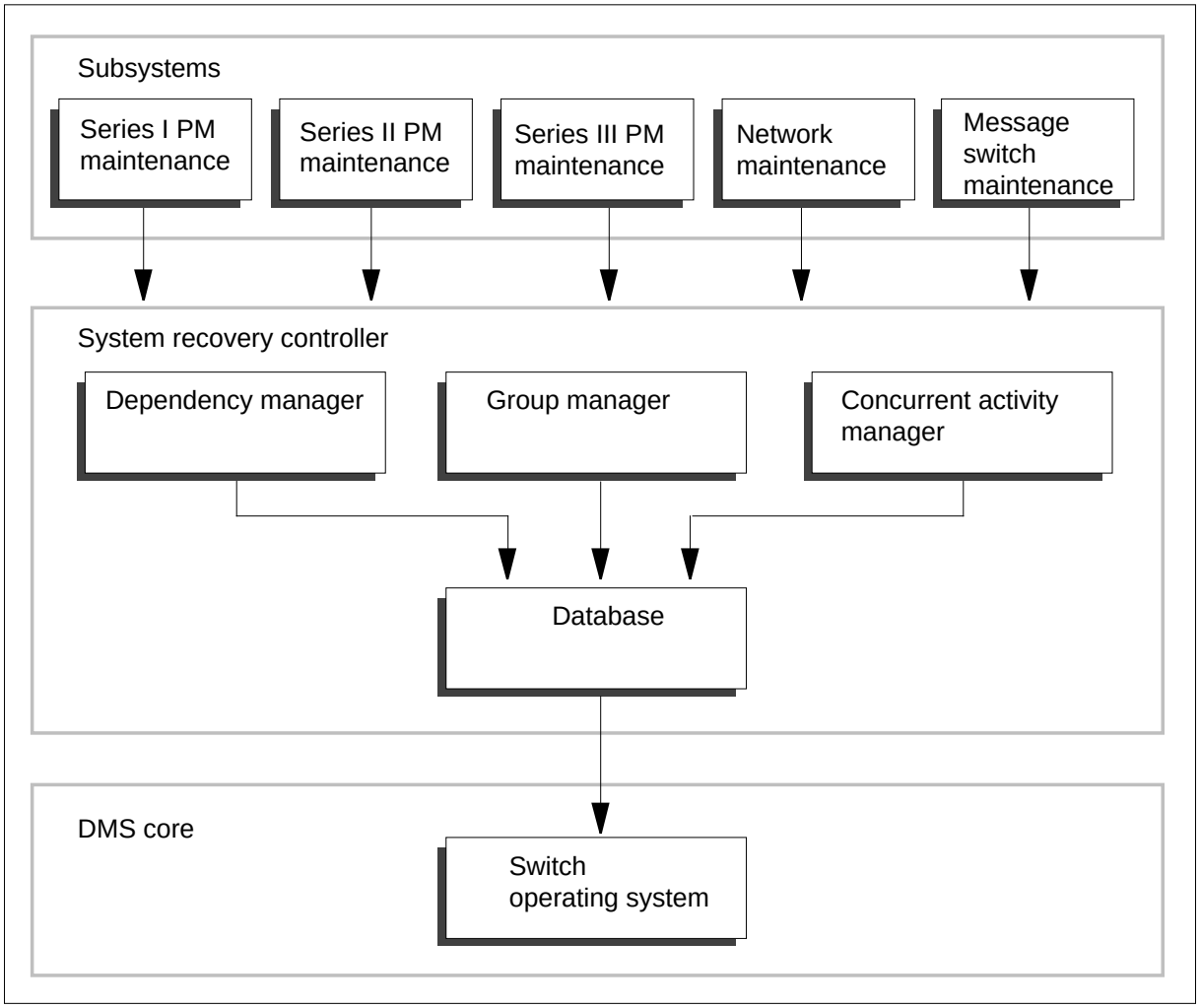
  ***Note:*** System recovery of DLMs and IPEs does not always occur on core switch of activity.

- loading of PM units after system maintenance detects a load loss through the use of the group manager

For LCMs, an audit verifies the node status of each LCM unit before the execution of the recovery activity. If both units are SysB, the audit executes and forces the units into service. If one unit is SysB, an evaluation of the fault occurs and the SRC attempts a recovery. A recovery attempt occurs a maximum of three times in 1-min intervals.

One connection is present between the two activities that the SRC coordinates. The connection is that PM maintenance initiated through the dependency manager can lead to loading of one or more PM units.

**Figure 1-1 System recovery controller**



### Required SRC conditions for PM recovery

The PM recovery that the SRC coordinates requires the following conditions:

- all equipment must have power
- for automatic broadcast loading, series II XPMs must have NT6X45BA or newer processor cards installed

  ***Note:*** Series II XPMs with pre-NT6X45BA control cards are loaded one by one instead of in groups for broadcast loading.

- all PM load names (including series I PM load names) must be entered in table PMLOADS

### SRC triggers

The following events trigger the SRC to query and, if necessary, begin recovery of subsystems:

- warm restart of the core
- cold restart of the core
- reload-restart of the core
- loss of load in a PM
- manual RESTART SWACT, ABORT SWACT, or NORESTART SWACT of the core

#### Additional SRC triggers to load series II XMS-based PMs again

There are four additional triggers for the SRC to reload series II XPMs:

- the XPM reports a memory parity error during a periodic audit by the switch operating system
- the ROM/RAM query step in the series II XPM return-to-service task detects a loss of load
- the initialization of the series II XPM during a return-to-service task fails two consecutive times. This failure indicates a problem with the software load
- the ROM/RAM query step in the series II XPM system busy task detects a load loss

#### Core restarts

During a restart, the switch operating system initializes again. Reinitialization restores the operating system software and the subsystems outside the DMS-core to a known, steady state.

A system restart includes initialization of the modules in the CM, MS, network, and PMs. A system restart also includes the restoration of services.

The period of a restart is the time taken to recover the whole system to the point that all services are available again.

The symbol A1 flashes on the reset terminal interface (RTIF) when initialization of the software in the CM is complete. The recovery for the rest of the system starts after the flashing A1 appears.

The following list describes how each type of restart affects calls in progress and billing data:

- A warm restart of the core is the least severe of restart. Audits of XPMs occur. The XPMs remain in service during a warm restart. Calls in progress that reached the talking state continue. Any calls that did not reach the talking state are disconnected. Any calls that disconnect during the restart are disconnected after the restart is complete and the system records billing data.
- A cold restart of the core is more severe than a warm restart. Audits of XPMs occur. The XPMs remain in service during a cold restart. Calls that reach the talking state retain the connections during the restarts. The calls can disconnect if their connections are used again by new calls after the restart . There is no record made of calls in progress during a cold restart and no billing data is recorded for these calls. A manual cold restart occurs on DTCs while the equipment is in service. This manual cold restart means that all calls are dropped, but the two units are removed from service one at a time. This process minimizes the length of the XPM outage.
- A reload-restart of the core is the most severe restart. During a reload-restart, all PMs initialize again. All calls in progress are dropped. Loss of billing data for the dropped calls occurs.

### Loss of load in a PM

The removal of a card loaded with software causes a loss of load in a PM. The interruption of power to a card loaded with software also causes a loss of load in a PM. A PM becomes system busy when a loss of load occurs. The SRC begins recovery when system maintenance detects a loss of load.

### Manual commands

The SRC initializes PMs again after the use of one of the following manual commands during an upgrade of BCS software:

- RESTART SWACT
- ABORT SWACT
- NORESTART SWACT

## SRC dependency manager

For some recovery actions on objects to occur, other objects must be in a given state to support the action. The dependency manager of the SRC uses the set

of dependencies that applies to the type of restart to manage object dependencies . The SRC dependency manager prevents failure caused by early starts. The SRC dependency manager also reduces recovery times.

An object is any entity in the DMS switch. An object can be:

- physical (for example, an ENET plane, an XPM, an IPML, or a set of lines)
- a service (for example, line trunk server [LTS] call processing)
- software (for example, an entry code)
- an event, (for example, the initialization of core software)

### Management of dependencies

The action on the dependent object must not proceed until the object depended on is in the required state. The dependency manager makes sure that the object satisfies the requirements for an action on an object, before the action proceeds.

Dependencies are specified for each action for each object. Examples of dependencies in DMS include

- one part of the software that must initialize before another
- ordered initialization of nodes to make sure that paths to the nodes are in service before a recovery attempt of a node occurs
- data that must download to a node after other nodes return to service
- the recovery of a service in one node after the recovery of other parts of the service in other nodes

A dependency can change when for one type of recovery needs it but not another. For example, an action can have different dependencies in different restart types. The SRC provides the applications with the means of indicating which dependencies are applicable.

## SRC group manager

PMs can be grouped for bulk maintenance action. The group manager coordinates the PM groups. The group manager designates one PM as the “seed" PM in a group. The CM sends messages to the seed PM. The seed PM forwards the messages to the other PMs in the group.

***Note:*** Series I PMs do not support broadcast loading. The group manager does not group the series I PMs.

The group manager uses several standards when it groups PMs for a bulk action. For example, when the SRC broadcast loads to nodes, the group manager can use the following:

- a group of PMs with the same node type
- a group of PMs with the same load file name
- a group of PMs with the same loading method

### How to group series II XMS-based PMs

The group manager uses the following standards when it groups series II XPMs together for broadcast loading:

- the load file name
- the CMR (class modem resource) file name
- the presence of 6X45BA or higher controller cards

For example, two XPMs can have the same load file name and have NT6X45BA controller cards, but have different CMR file names. The group manager puts these two XPMs in different groups.

The XPMs that cannot be in the same group with other XPM units for broadcast loading are single-loaded. The XPMs are single-loaded when the XPM units do not have the hardware to support broadcast loading. The XPMs are also single-loaded when the XPMs cannot be in a group with other units during dynamic grouping. The group manager only groups the XPMs that have NT6X45BA or higher controller cards. The XPMs that do not have NT6X45BA or higher controller cards are not in the same group as other XPMs. This condition occur even if the other XPMs have the same load files. The SRC continues to coordinate single loading for purposes of concurrency management.

### Static and dynamic groups

You can identify PMs in the same group from datafill. The datafill specifies the load file names and hardware configurations of the PMs. The system maintains these static groups automatically over time as the datafill changes. During recovery, the SRC forms dynamic groups from the subgroups based on which elements require recovery and availability of resources to perform the recovery.

### Broadcast loading

Broadcast loading is a bulk action. Broadcast loading can operate on more than one PM at the same time. To save time, the SRC performs an action on a group of PMs instead of many separate PMs.

Automatic broadcast loading sends a request to load software to several PMs at the same time.

After the SRC receives a request to load a static group member, the SRC builds a dynamic group. The SRC uses the combination of the following two methods to form the group:

- The SRC queries the group members for loss of load with the ROM/RAM query message. The SRC only queries XPMs with NT6X45BA or higher controller cards
- The SRC waits for autoload requests from the group members over a short period of time. The SRC submits the autoload requests after the equipment fails to return to service. The SRC identifies the cause of the failure as a load loss or faults in the load.

The system notifies the SRC when a system-busy unit requires loading. The SRC group manager creates a group of PMs that can be broadcast-loaded.

When the SRC forms a group, it coordinates the broadcast loading. If a PM has only one unit that requires broadcast loading, the PM drops from the group. The SRC submits a normal load request for the unit. To save system resources, the SRC uses broadcast loading even when the group contains only one PM. Broadcast loading saves system resources because when both units require broadcast loading, unit 0 sends the load messages to unit 1.

If the SRC does not recover a group of PMs, the SRC attempts automatic broadcast loading again. If the second attempt fails, the SRC attempts to recover the PMs one by one.

*Note:* The SRC performs automatic broadcast loading on the following PMs:

- XPMs (data entered in table LTCINV)
- line concentrating modules (LCM) (data entered in table LCMINV)
- digital line modules (DLM) (data entered in table DLMINV)
- IPEs (data entered in table IPEINV)

There is a limit of eight broadcast load groups in a DMS switch at any one time.

***Note 1:*** Series I PMs do not support broadcast loading.

***Note 2:*** LCMs/DLMs/IPEs that subtend remote cluster controller (RCC) can be broadcast-loaded only with other LCMs/DLMs/IPEs that subtend RCCs. LCMs/DLMs/IPEs that subtend line group controller/ line trunk controller (LGC/LTC) XPMs can be broadcast-loaded only with other LCMs/DLMs/IPEs that subtend LGC/LTC XPMs. LCMs that subtend RCCs and LCMs/DLMs/IPEs that in turn subtend LGC/LTC XPMs cannot be broadcast-loaded together.

## Limit of concurrent load activities

The SRC monitors and controls the number of concurrent PM loading tasks. Single loading of XPMs does not use the grouping capability of the SRC. The SRC continues to provide control in the form of concurrency management.

The system can use all of its resources to load other units or groups. If the system uses all resources, the SRC queues single units and groups of PMs, while it waits for resources. The SRC can load eight load sets at the same time. A set is a single unit or several units that are in a group.

While the units wait in the queue for resources, the MAP display shows a system recovery progress message for each unit in the queue. The units or groups in the queue start to load when resources become available. Groups have priority over single units when the system allocates resources.

## Example of automatic broadcast loading

This section consists of examples of how automatic broadcast loading recovers series II PMs from dead and partly dead offices.

### Dead office

A dead office occurs when the -48 V dc A and B power feeds to the power distribution centers (PDC) become lost or interrupted. The loss of power causes a complete switch outage. When the system restores power, the following actions occur:

- The DMS-core reboots.
- The reboot of the DMS-core triggers a reload restart of the CM and MS and ENET (if applicable) software.
- The reload-restart of the DMS-core starts the SRC.
- The SRC monitors the recovery of the MS and network to determine when PM recovery can start. The SRC determines when PM recovery can starts, based on dependencies that the dependency manager enforces.
- When the SRC begins PM recovery, the SRC notes the absence of a software load in the PM.
- The SRC adds the PM to a group for broadcast loading.

- When all PMs that need loading are in the group, or 6 min after the first PM joined the group, the SRC begins the broadcast-load.

  ***Note:*** If the system requires more than eight automatic broadcast loading requests at the same time, the concurrent activity manager queues the excess.

- The PM software in the DMS-core starts the return-to-service task when broadcast loading is complete. The SRC single loads PMs that failed to broadcast load.

### Partial outage

A partial outage occurs when one or more PM frames lose DC power. After power returns to the PM, the following actions occur:

- The PM maintenance base software on the DMS core detects the absence of a software load in a PM.
- The SRC queries other PMs that share the same grouping criteria to see if they also need reloading.
- The maintenance base software for the PM on the DMS-core triggers the SRC to group these PMs for broadcast loading.
- When all PMs that need loading are in the group, or 6 min after first PM joined the group, the SRC begins the broadcast-load.

  ***Note:*** If the system requires more than eight automatic broadcast loading requests at the same time, the concurrent activity manager queues the excess.

- The PM software in the DMS-core starts the return-to-service task when broadcast loading is complete. The SRC single loads PMs that failed to broadcast load.

### Automatic single loading

The SRC single loads PMs that the SRC cannot group for broadcast loading.

***Note:*** The SRC single loads series II XPMs that have pre-NT6X45BA controller cards and are in table LTCINV.

## SRC recovery methods

The SRC recovers PMs by either single- or broadcast-loading. However, the type of recovery depends on the type of PM and the version of controller card in the PM. Some features of the SRC do not work on specified series II XPMs with pre-NT6X45BA controller cards.

### Series I PMs that the SRC automatically recovers

The SRC automatically single loads the following PMs, if these PMs do not carry traffic, regardless of the type of controller card:

- Austrian digital line module (ATM)
- digital carrier module Austria (DCA)
- digital carrier module Austria (DCM250)
- digital carrier module (DCM)
- digital carrier module (DCMT)
- digital echo suppressor (DES)
- digital line module (DLM)
- digital trunk module (DTM)
- integrated services module (ISM)
- intelligent peripheral equipment (IPE)
- line digital trunk (LDT)
- line module (LM)
- maintenance (trunk) module Austria (MMA)
- maintenance trunk module (MTM)
- maintenance trunk module Austria (MTMA)
- office alarm unit (OAU)
- package trunk module (PTM)
- remote carrier module SLC-96 (RCS)
- remote concentrator terminal (RCT)
- remote digital terminal (RDT (IDT))
- remote line module (RLM)
- small remote unit (SRU)
- service trunk module (STM)
- trunk module (TM)
- trunk module 2 (TM2)
- trunk module 4 (TM4)
- trunk module 8 (TM8)

### Series II PMs that the SRC automatically recovers

The SRC automatically groups and broadcast loads the following PMs, if the C-side PMs support broadcast-loading. To support broadcast loading, the

C-side PMs must have an NT6X45BA or higher controller card. To support broadcast loading, you must enter data into the correct tables.

- Austrian LCM (ALCM)
- enhanced LCM (ELCM)
- international LCM (ILCM)
- line concentrating module (LCM)
- enhanced LCM (LCME)
- LCM for ISDN offices (LCMI)

### Series II XMS-based PMs that the SRC automatically recovers

The SRC automatically recovers the following series II XPMs, if they do not carry traffic. If an NT6X45BA controller card is present, the SRC groups and broadcast loads these XPMs. If a pre-NT6X45BA controller card is present, the SRC single loads these XPMs. The SRC single loads DLMs and IPE units that cannot group for broadcast loading.

- Austrian digital trunk controller (ADTC)
- Austrian line group controller (ALGC)
- digital line module (DLM)
- digital trunk controller (DTC)
- ISDN digital trunk controller (DTCI)
- intelligent peripheral equipment (IPE)
- international digital trunk controller (IDTC)
- international line group controller (ILGC)
- international line trunk controller (ILTC)
- line group controller (LGC)
- ISDN line group controller (LGCI)
- line trunk controller (LTC)
- ISDN line trunk controller (LTCI)
- PCM30 digital trunk controller (PDTC)
- PCM30 line group controller (PLGC)
- subscriber carrier module-100 rural (SMR)
- subscriber carrier module-100S (SMS)
- subscriber carrier module-100 urban (SMU)
- Turkish digital trunk controller (TDTC)
- Turkish line trunk controller (TLTC)

- Turkish line group controller (TLGC)
- TOPS message switch (TMS)

The system single loads the following series II XPMs regardless of the type of NT6X45 card and without assistance of the SRC:

- Austrian RCC (ARCC)
- emergency standalone (ESA)
- RCC with ESA forced down option (FRCC)
- message switch and buffer (MSB)
- remote cluster controller (RCC)
- RCC for ISDN offices (RCCI)
- dual RCC-CPM based domestic (RCC2)
- RCC offshore (RCO2)
- SONET RCC (SRCC)
- TOPS message switch (TMS)
- Turkish RCC (TRCC)

### Series III LPP-based PMs that the SRC automatically recovers

The SRC groups and broadcast loads the following series III LPP-based PMs:

- link interface module (LIM)
- Common Channel Signaling 7 (CCS7) link interface unit (LIU7)
- high-speed link interface unit (HLIU)
- high-speed link router (HSLR)
- CCS7 server (SVR7)
- network interface unit (NIU)
- X.25/X.75 link interface unit (XLIU)
- Ethernet interface unit (EIU)
- frame relay interface unit (FRIU)
- voice processing unit (VPU)

## How to monitor SRC operation

You can use the MAP terminal and log reports to monitor the SRC recovery of nodes. This section describes the indicators that the SRC uses to communicate the status of the automatic recovery of a subsystem. The SRC communicates when the automatic recovery is pending, in progress, complete, or failed. The SRC also communicates when manual attempts to override the SRC started.

## MAP terminal displays

You can view the progress of the automatic recovery of the complete system or separate nodes at the SRSTATUS level of the MAP display. To view the progress, you can also post the PMs at the PM level of the MAP display.

The SRSTATUS level of the MAP display arranges the recovery information into recovery views. The recovery views are arranged hierarchically from the system level at the top, to individual nodes (or groups of nodes) at the lower levels.

### SRSTATUS level commands

The following commands are available at the SRSTATUS level of the MAP display.

#### VIEW

Use this command to navigate between the different recovery views. The syntax for the command is:

```
>VIEW  view_name
```

*where*

**view_name**
is one of SYSTEM, UP, OTHER, or a character string thatcorresponds to the name of a registered recovery view that isnot at the bottom of the order.

#### LIST

This command lists all nodes in the specified recovery view. You can use the state option to list all nodes in the specified recovery view in the specified recovery state. The syntax for the command is:

```
>LIST  <view_name>  <recovery_state>
```

*where*

**view_name**
is one of SYSTEM, UP, OTHER, or a character stringthat corresponds to the name of a registered recoveryview that is not at the bottom of the hierarchy

**recovery_state**
is one of PEND, INPROG, COMP, FAILED, orNOTNEEDED

#### HELP

This command shows help information for the SRSTATUS level of the MAP display.

### QUIT

This command exits the SRSTATUS level of the MAP display.

The MAP displays on the following pages show the different views available at the SRSTATUS level of the MAP display.

**Figure 1-2 System recovery controllerSRSTATUS level MAP display - SYSTEM view**

```
    CM     MS    IOD     Net       PM      CCS     Lns     Trks     Ext     APPL
     •      •     •     6LCM      2 RSC     •    110 GC     •        •       •
                         *C*       *C*            *C*
 SRSTATUS
          OVERALL STATUS Pend:  18%        InProg: 9%   Comp: 70%   Fail: 3%
 0  Quit   VIEW: SYSTEM                                          11:52:34
 2  View_       Pend InPrg  Comp    Fail           Pend InPrg  Comp    Fail
 3  List_ MS     0    0      2       0     IOD      5    5      30      2
 4        NET    0    0      6       0     Other    21   3      13      3
 5        SER1   0    1      6       0
 6        SER2   1    1      60      1
 7        SER3   11   8      30      1
 8
 9        SRSTATUS:
10
11
12
13
14
15
16
17
18
   OPERATOR
Time  11:52
```

The preceding example shows the SYSTEM view of the SRSTATUS level MAP display. From the SYSTEM view, you can list the status of the MS or network (JNET or ENET). From the SYSTEM view, you can access the SER1, SER2, and SER3 PM views.

The following is an example response to the command "**LIST MS**":

```
MS 0                 Recovery complete
MS 1                  Recovery failed
```

The following is an example response to the command "**LIST JNET**":

```
JNET 0 0             Recovery complete
JNET 1 0             Recovery complete
JNET 0 1             Recovery failed
JNET 1 1             Recovery failed
JNET 0 2             Recovery complete
JNET 1 2             Recovery complete
JNET 0 3             Recovery failed
JNET 1 3              Recovery failed
```

**Figure 1-3 SRSTATUS level MAP display - SER1 view**

```
   CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
    •      •     •    6LCM      2 RSC     •   110 GC      •       •      •
                      *C*       *C*           *C*
 SRSTATUS
          OVERALL STATUS Pend:  18%        InProg: 9%   Comp: 70%   Fail: 3%
 0  Quit   VIEW: SER1                                          11:52:34
 2  View_       Pend   Inprg   Comp   Fail         Pend   InPrg   Comp   Fail
 3  List_ TMs     4       0     10     16
 4
 5
 6
 7
 8
 9
10
11
12
13
14
15
16
17
18
   OPERATOR
Time  11:52
```

The preceding example shows the SER1 view of the SRSTATUS level MAP display. From the SER1 view, you can list the status of the LMs. From the SER1 view, you can access the TMS, DCMS, and OTHER PM views.

From the TM view, you can list the status of the following PM types: TM8, MTM, ATM, STM, DTM, CTM, PTM, RMM, and OAU.

From the DCM view, you can list the status of the following PM types: DCM, DCMT, DCM250, DSM, and DES.

From the OTHER view, you can list the status of the following PM types: TM2, TM4, TMA, MMA, TAN, and T8A.

**Figure 1-4 SRSTATUS level MAP display - SER2 view**

```
   CM     MS    IOD     Net       PM      CCS     Lns     Trks     Ext     APPL
    •      •     •     6LCM      2 RSC     •    110 GC     •        •       •
                        *C*       *C*            *C*
 SRSTATUS
          OVERALL STATUS Pend:  18%        InProg: 9%   Comp: 70%   Fail: 3%
 0  Quit   VIEW: SER2                                              11:52:34
 2  View_       Pend   Inprg   Comp   Fail         Pend   InPrg   Comp   Fail
 3  List_ XPMs    6       2      8      1
 4        LCDs    7       0      8      2
 5
 6
 7
 8
 9
10
11
12
13
14
15
16
17
18
   OPERATOR
Time  11:52
```

The preceding example shows the SER2 view of the SRSTATUS level MAP display. From the SER2 view, you can list the status of ICRMs and TPCs. From the SER2 view, you can access the LCDS and XPMs PM views.

From the LCD view, you can list the status of the following PM types: RCS, RCU, RCT, IPE, and DLM. From the LCDS view, you can access the LCM view. From the LCMS view, you can list the status of the following PM types: LCM, ILCM, ALCM, ELCM, LCME, LCMI, and SRU.

From the XPMS view, you can list the status of ESAs. From the XPMS view, you can access the DTC, LTC, MSB, LGC, SCM, RCC, and OTHER PM views.

From the DTC view, you can list the status of the following PM types: DTC, TDTC, IDTC, DTCI, PDTC, and ADTC.

From the LTC view, the you can list the status of the following PM types: LTC, ILTC, and TLTC.

From the MSB view, you can list the status of MSB6s and MSB7s.

From the LGC view, you can list the status of the following PM types: LGC, TLGC, ILGC, PLGC, and ALGC.

From the SCM view, you can list the status of the following PM types: SMR, SMA, SMU, SMS, SMSR, and SMA2.

From the RCC view, you can list the status of the following PM types: TRCC, SRCC, RCC2, PRCC, RCO2, RCC, ARCC, and RCCI.

From the OTHER view, you can list the status of the following PM types: TMS, ICP, and CSC.

The following example shows the XPMS view of the SRSTATUS level MAP display.

**Figure 1-5 SRSTATUS level MAP display - XPMS view**

```
   CM     MS    IOD     Net       PM      CCS     Lns     Trks     Ext     APPL
    •      •     •     6LCM      2 RSC     •    110 GC      •       •       •
                        *C*       *C*            *C*
SRSTATUS
         OVERALL STATUS Pend:  18%        InProg: 9%   Comp: 70%   Fail: 3%
0  Quit   VIEW: XPMS                                          11:52:34
2  View_      Pend   Inprg   Comp   Fail         Pend   InPrg   Comp   Fail
3  List_ DTCs    1       0      2      2
4        LTCs    3       0      4      0
5        MSBs    0       1      0      0
6        RCCs    1       0      2      1
7        ESA     1       1      0      0
8
9
10
11
12
13
14
15
16
17
18
  OPERATOR
Time  11:52
```

**Figure 1-6 SRSTATUS level MAP display - SER3 view**

```
   CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
    •      •     •    6LCM      2 RSC     •   110 GC      •       •      •
                      *C*       *C*           *C*
 SRSTATUS
          OVERALL STATUS Pend:  18%        InProg: 9%   Comp: 70%   Fail: 3%
 0  Quit   VIEW: SER3                                          11:52:34
 2  View_       Pend   Inprg   Comp   Fail         Pend   InPrg   Comp   Fail
 3  List_ LIM     0       0      0      2
 4        LIU7    2       0      0      0
 5        NIU     0       0      0      0
 6        XLIU   35       0      0      0
 7        EIU     2       0      0      0
 8        HLIU    0       0      0      0
 9        HSLR    0       0      0      0
10        SVR7    0       0      0      0
11
12
13
14
15
16
17
18
   OPERATOR
Time  11:52
```

The preceding example shows the SER3 view of the SRSTATUS level MAP display. From the SER3 view, you can list the status of the following PM types: LIM, LIU7, HLIU, HSLR, NIU, XLIU, EIU, FRIU, VPU, and SVR7.

The MAP display examples on the following pages show the information that appears for a posted DTC during automatic recovery.

***Note:*** During an inquiry about a PM in a group, the MAP terminal displays the status and progress of the first PM in that group. The status of the PM does not appear until the SRC completes the broadcast loading for the whole group.

**Figure 1-7 PM level MAP display of a system-busy DTC**

```
    CM    MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •     •    •    6LCM      2 RSC     •    110 GC     •       •      •
                      *C*       *C*            *C*
DTC                 SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit       PM    10        0         22        11        1         12
 2  Post_      DTC   3         0         0         0         0         0
 3  Listset
 4             DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_     Unit0: Act     SysB
 6  Tst_       Unit1: Inact   SysB
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

In the preceding MAP display, several critical alarms appear. Unit 0 and unit 1 of the posted DTC are system busy. The system-busy state of the DTC produces a critical alarm. The SRC also triggers recovery activity for the other PMs that the SRC can recover.

**Figure 1-8 MAP display of a system-busy DTC during a ROM/RAM query**

```
    CM    MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •     •    •    6LCM      2 RSC     •    110 GC     •       •      •
                      *C*       *C*            *C*
DTC                 SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit       PM    10        0         22        11        1         12
 2  Post_      DTC   3         0         0         0         0         0
 3  Listset
 4             DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_     Unit0: Act     SysB   Mtce    ROM/RAM Query
 6  Tst_       Unit1: Inact   SysB   Mtce    ROM/RAM Query
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display during a ROM/RAM query of a system-busy DTC. The next switch operating system (SOS) audit notes the system-busy state. The audit initiates system maintenance in order to return the DTC to service.

During the period that the DTC returns to service, a ROM/RAM query determines the state of the PM. During that period, a ROM/RAM query also determines if the PM needs to be loaded again. The ROM/RAM query requires less than 1 min to finish. The preceding figure shows a loss of software load.

**Figure 1-9 MAP display of a system-busy DTC that waits for the SRC to begin recovery**

```
     CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
      •      •     •    6LCM      2 RSC     •   110 GC      •       •      •
                         *C*       *C*           *C*
DTC                    SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit         PM    10         0         22        11        1         12
 2  Post_        DTC   3          0         0         0         0         0
 3  Listset
 4               DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_       Unit0: Act     SysB   Mtce    System Recovery
 6  Tst_         Unit1: Inact   SysB   Mtce    System Recovery
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display of system maintenance that determines if auto loading is necessary after the system detects a loss of load during the return-to-service task. The DMS-core displays a system recovery message for the DTC until the recovery process starts.

The message indicates that the system flagged the load arrangement for the DTC to the SRC. While the message appears, the group manager groups similar PMs, if necessary, and allocates DMS-core resources.

**Figure 1-10 MAP display of the load process that resets a system busy DTC**

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •    110 GC     •       •      •
                       *C*       *C*            *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit         PM    10        0         22        11        1         12
 2  Post_        DTC   3         0         0         0         0         0
 3  Listset
 4               DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_       Unit0: Act     SysB   Mtce    /Reset
 6  Tst_         Unit1: Inact   SysB   Mtce    /Reset
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display after the SRC initiates a maintenance action to perform the loading. The SRC performs a reset, as part of the loading process. The reset starts the firmware of the DCT again to a known, steady state. The reset can last 15 to 20 s.

**Figure 1-11 MAP display of the DMS-core that identifies a DTC**

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •    110 GC     •       •      •
                       *C*       *C*            *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit         PM    10        0         22        11        1         12
 2  Post_        DTC   3         0         0         0         0         0
 3  Listset
 4               DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_       Unit0: Act     SysB   Mtce    /Status
 6  Tst_         Unit1: Inact   SysB   Mtce    /Status
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display during the identification of a DTC as part of the loading process. The loading process reports the status to the DTC. The message gives the DTC a node number. The DTC uses the node number to communicate with the DMS-core. The process can last from 2 s to a maximum of 1 min.

**Figure 1-12 MAP display of the DMS-core that queries the ROM firmware of a DTC**

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •     6LCM      2 RSC     •    110 GC     •       •      •
                        *C*       *C*           *C*
DTC                   SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit          PM    10        0         22        11        1         12
 2  Post_         DTC   3         0         0         0         0         0
 3  Listset
 4                DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_        Unit0: Act     SysB   Mtce    ROM/RAM Query
 6  Tst_          Unit1: Inact   SysB   Mtce    ROM/RAM Query
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display of the load process. The load process performs a ROM/RAM query to determine the ROM firmware that is present in the DTC. The ROM/RAM query is necessary before the ROM tests begin because there are different ROM tests for different firmware. This query lasts less than 1 min.

**Figure 1-13 MAP display of the load process that tests the firmware of a DTC**

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •    110 GC     •       •      •
                       *C*       *C*            *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit         PM    10        0         22        11        1         12
 2  Post_        DTC   3         0         0         0         0         0
 3  Listset
 4               DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_       Unit0: Act     SysB   Mtce    NonDestr ROMtst
 6  Tst_         Unit1: Inact   SysB   Mtce    NonDestr ROMtst
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display during the load process tests of the DTC firmware. The load process tests the firmware with a ROM test that is not destructive. This test can last from 1 to 10 min. The length of time that the test lasts depends on the firmware.

**Figure 1-14 MAP display of the DMS-core that loads software again into a DTC**

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •    110 GC     •       •      •
                       *C*       *C*            *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit         PM    10        0         22        11        1         12
 2  Post_        DTC   3         0         0         0         0         0
 3  Listset
 4               DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_       Unit0: Act     SysB   Mtce    /Loading:520K  (48%)
 6  Tst_         Unit1: Inact   SysB   Mtce    /Loading:520K  (48%)
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display during the period that the DMS-core loads software again into a DTC. The load process reloads the software after the memory has passed the ROM test. The size of the loaded software increases from 0 kbyte to the final size in 13-kbyte increments. The display value updates with each increment. The percent loaded figure indicates the loading progress. The percentage is based on the total size of the load. The loading time for a PM varies depending on the PM type, its load size, and the CPU resources available.

**Figure 1-15 MAP display of the load process that runs a new software load on a DTC**

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •   110 GC      •       •      •
                        *C*       *C*           *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit         PM    10         0         22        11        1         12
 2  Post_        DTC   3          0         0         0         0         0
 3  Listset
 4               DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_       Unit0: Act     SysB   Mtce    /Run
 6  Tst_         Unit1: Inact   SysB   Mtce    /Run
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display during the period that the load process runs a new DTC software load. After the RAM is loaded, the load process signals the DTC to run the new software load. This begins the initialization of the modules in the DTC. This display lasts for less than 5 s, then the DTC begins initialization.

**Figure 1-16 MAP display of a DTC that initializes DTC modules after a software load**

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •   110 GC      •       •      •
                       *C*       *C*           *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit         PM    10        0         22        11        1         12
 2  Post_        DTC   3         0         0         0         0         0
 3  Listset
 4               DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_       Unit0: Act     SysB   Mtce    Initializing
 6  Tst_         Unit1: Inact   SysB   Mtce    Initializing
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display during the initialization of DTC modules after a software load. The message appears until the DTC initializes the modules. The DTC sends a message to the DMS-core when initialization is complete. The initialization time varies from 1 to 2.5 min.

**Figure 1-17 MAP display of the load process that resets the data areas of a DTC**

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •   110 GC      •       •      •
                       *C*       *C*           *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit         PM    10        0         22        11        1         12
 2  Post_        DTC   3         0         0         0         0         0
 3  Listset
 4               DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_       Unit0: Act     SysB   Mtce    /Clear Data
 6  Tst_         Unit1: Inact   SysB   Mtce    /Clear Data
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display of the load process that resets DTC static data areas. The load process resets the static data areas of the DTC to a NIL state. Resetting the data takes less than 30 s.

**Figure 1-18 MAP display of a static data download to a DTC**

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •    110 GC     •       •      •
                       *C*       *C*           *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit          PM    10        0         22        11        1         12
 2  Post_         DTC   3         0         0         0         0         0
 3  Listset
 4                DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_        Unit0: Act     SysB   Mtce    /Static Data
 6  Tst_          Unit1: Inact   SysB   Mtce    /Static Data
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display of the maintenance load process that downloads static data from the DMS-core to the DTC. Each PM has different static data. Static data is not broadcast loaded. The time required to enter the data can vary from less than 30 s to several minutes. The period of time depends on how the data is sent. The size of data varies with the configuration.

**Figure 1-19 MAP display of a core that downloads executable files into a DTC**

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •    110 GC     •       •      •
                        *C*       *C*           *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit         PM    10        0         22        11        1         12
 2  Post_        DTC   3         0         0         0         0         0
 3  Listset
 4               DTC  0  SysB   Links_OOS:     CSide0,PSide0
 5  Trnsl_       Unit0: Act     SysB   Mtce    Loading Execs
 6  Tst_         Unit1: Inact   SysB   Mtce    Loading Execs
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display of the maintenance load process that downloads executable files into the data memory of the DTC.

**Figure 1-20 MAP display of an in-service DTC**

```
    CM     MS   IOD    Net       PM      CCS    Lns     Trks    Ext    APPL
     •      •    •    6LCM      2 RSC     •    110 GC     •       •      •
                        *C*       *C*           *C*
DTC                  SysB      ManB      OffL      CBsy      ISTb      InSv
 0  Quit         PM    10        0         22        11        1         12
 2  Post_        DTC   3         0         0         0         0         0
 3  Listset
 4               DTC  0  InSv   Links_OOS:     CSide0,PSide0
 5  Trnsl_       Unit0: Act     InSv
 6  Tst_         Unit1: Inact   InSv
 7  Bsy_
 8  RTS_
 9  OffL
10  LoadPM_
11  Disp_
12  Next
13  SwAct
14  QueryPM
15
16
17  Perform
18
   TEAM22
Time 18:35
```

The preceding figure shows a MAP display of the DTC after the loading process that the SRC coordinates is complete and the DTC returns to service. The in-service message indicates that the SRC completely recovered the DTC.

The time for PM recovery can vary from 15 to 60 min or longer. This period of time begins at reset and ends at in-service.

The time for recovery depends on the following conditions:

- the amount of call processing that occurs in the DMS-core
- the amount of CPU available in the DMS-core
- the amount of parallel recovery that occurs
- the size of the PM load file

The MAP display continues to display critical alarms for other PMs. Resources to recover other PMs are available because the SRC completed the recovery of the DTC.

## Log reports

The system generates log reports during the SRC recovery process for complete and failed recovery attempts. Monitor the log reports to determine if the SRC completely recovered each node.

### Log retrieval utility for emergency (E1 & E2) occurrences (DLOG)

This utility allows operating companies to capture all logs on permanent store. The logs include any logs that the log utility (LOGUTIL) can threshold or suppress in the LOGUTIL. Field support or Northern Telecom personnel can use the utility as a debugging tool. Field support or Northern Telecom personnel also can turn the utility ON or OFF.

The DLOG command is better than the LOGUTIL. The DLOG command uses DIRP to record unformatted logs on permanent store. Unformatted logs are compact logs that you cannot read. The DLOG is faster and shorter than LOGUTIL. The risk that the DLOG loses logs during peak activity is less than the risk that the LOGUTIL loses logs.

You can use the LOGFORMAT command to format logs later. You can use the SCANLOG command to scan logs for analysis. You can use the interface in the form of a Command Interpreter (CI) level called DLOG to format logs. This interface allows you to choose the format parameters you set by the DLOG command.

The current log formatting utility (LOGFORMAT CI) remains. A message that informs you of DLOG utility appears on your terminal.

Only one user can format logs at one time. Only one user can enter the DLOG command level at one time. If another user attempts to enter the DLOG level, a message appears on the terminal. The message states that the utility is in use.

### DLOG nonmenu commands

The following sections describe the DLOG level non-menu commands.

### DLOG

The DLOG level command allows you to enter the DLOG level. The default format setting is ALL logs included and no logs excluded.

### STATUS

This subcommand displays the current DLOG format parameters (logs INCLUDED/EXCLUDED). The subcommand displays the earliest valid start time available for use with the FORMAT subcommand. The subcommand also shows information on the previous use of the DLOG command.

### EXCLUDEALL

This subcommand removes all logs from the current set of logs that you format. If you do not use the INCLUDE subcommand after you use the EXCLUDEALL subcommand, you cannot format any logs.

### INCLUDEALL

This subcommand resets the current set of logs that you format to ALL, which is the default value.

### EXCLUDE

This subcommand removes logs from the current set of logs that you format. Use of this subcommand requires that logs are present. The entry of this subcommand validates logs.

### INCLUDE

This subcommand adds logs to the current set of logs that you format. If the logs are already present, this subcommand is not necessary. The entry of this subcommand validates logs.

### EXCLUDEPROTO

This subcommand excludes protologs from the format of the log executed by the FORMAT command. Protogs are special and specific logs. These protologs are TRAP, SWER, INIT, LOCK or INFO logs. When you quit out of DLOG, the system resets to include these protologs.

### INCLUDEPROTO

This subcommand includes protologs in the format of the log executed by the FORMAT command. Protologs are special and specific logs. These protologs are TRAP, SWER, INIT, LOCK or INFO logs. The default is to include protologs in the format output.

### FORMAT

This subcommand executes the formal formatting process. The following parameters are part of this subcommand in the listed order:

- <STARTTIME> and <ENDTIME>: These parameters specify the length of time that DLOG can format logs. You need both parameters. The syntax is YYMMDDHHMMMSS.
- <OUPUT OPTIONS>: You need this parameter. This parameter has two valid values:
  - — ToFile: If this keyword is specified, you must enter an output device that stores the final formatted file.
  - — To terminal: If this keyword is specified, the output appears on the screen.

### FORMATFILE

You can use this subcommand to format DLOG data that is not formatted. To format DLOG data that is not formatted, enter a specified FILENAME. This procedure is the current functionality of the LOGFORMAT CI command.

- <FILENAME>: You need this parameter. This parameter is an unformatted DLOG file.
- <OUTPUT OPTIONS>: You need this parameter. This parameter has two valid values:
  - — ToFile: If this keyword is specified, you must enter an output device that stores the final formatted file.
  - — To terminal: If this keyword is specified, the output appears on the screen.
  - — <starting block> (0 to 4294967295): This is an optional parameter if the user knows what specific block number to start the formatting from instead of starting from the beginning block.

### LISTFILES

This subcommand displays the raw DLOG files with their start and end times to the user. These are the files recorded in the internal DLOG table that are used with the format subcommand start and end times to locate the appropriate files to format.

### QUIT

This subcommand exits the DLOG level.

For example, you can capture only PM logs that the system generated on a given day between set start and end times. The process starts when you enter the FORMAT command. The process includes the following steps:

- The software locates the appropriate file(s) which contain the logs based on the parameters that you entered.
- The formatting process begins. The process filters out the files and logs that do not fit the requirements. The result is a formatted DLOG file that only contains the specified logs.

The final file has a FILENAME of DLOG+date/time stamp with the current time, for example: DLOG940613102642. You can name the storage device that stores the final file.

### Logs that relate to recovery

The system generates the following logs during the successful recovery of a PM:

- PM181 (indicates that a PM is at the ROM level)
- PM181 (indicates the PM that is not loaded)
- PM181 (indicates a reset PM)
- PM181 (indicates a transfer of load files to the PM)
- PM181 (indicates that static data cleared)
- PM181 (indicates that static data updated)

When the SRC fails to recover a PM, the system generates the following logs:

- PM117 (indicates that the recovery failed before loading)
- PM181 (indicates that loading failed during recovery)
- PM117 (indicates that the recovery failed after loading)

*Log Report Reference Manual* documents log reports.

## Failure of SRC to recover a PM

During recovery, the system recovery message appears next to the name of the PM.

If the system cannot recovery the failed PM, the following actions occur:

- the PM remains system busy
- the system generates a log
- the system recovery message disappears

***Note:*** If a series II XPM does not automatically recover, the system does not generate alarms or messages. If the XPM is system busy or manual busy, the system generates an alarm.

A problem that causes the SRC to fail to recover a PM also generate a log report or alarm. Operating company personnel must clear the problem before recovery of the PM. For information on how to clear alarms, refer to *Alarm and Performance Monitoring Procedures*.

If the failed PM remains system busy after the alarm clears, do not attempt manual recovery. Contact the next level of support to determine the next action to take.

## Manual override of the SRC

**WARNING**
**Contact ETAS or the next level of support**
In the event of an equipment outage that affects service, contact the Emergency Technical Assistance Service (ETAS) of Nortel (Northern Telecom). Another option is to contact the next level of support. Contact ETAS or the next level of support before you override the software recovery controller (SRC).

**CAUTION**
**Loss of service**
Manual interruption during automatic system recovery actions may interrupt or prevent automatic recovery and extend service outage.

You can recover a PM manually while the SRC is recovering other PMs. Do not attempt to manually recover a PM during SRC operation before you contact the next level of support. Errors that occur during manual recovery can prolong service outage and hamper the best SRC's recovery steps.

You can manually override the SRC, if the SRC intervenes during manual maintenance activity on a PM. For example, you can override the SRC, if operating company personnel accidentally removed a PM from service. You can manually override the SRC at the PM level of the MAP display. Warnings appear to inform you how manual commands can affect the SRC.

The three commands that override the SRC are in the *DMS-100 Family Commands Reference Manual,* 297-1001-822. The three commands are:

- RECOVER
- BSY with the FORCE option
- the abort task (ABTK) command for series II PMs.

***Note:*** The following warning appears on the MAP display when any of the preceding commands cancels a broadcast load:

```
Aborting maintenance on this PM will affect maintenance on other
PMs.
```

# 2 System level recovery procedures

## Introduction to system level recovery procedures

This chapter contains procedures for performing system level recovery tasks for the DMS-100 switch. For each recovery task, you will find a procedure containing

- explanatory and context-setting information
- information
- step-action instructions

### Explanatory and context-setting information

The first page of each procedure contains the following headings:

- Application (when to use the procedure)
- Action (how to use the flowchart and step-action instructions)

### Summary flowchart

The flowchart is only a summary of the main actions, decision points, and possible paths you may take. Do not use the summary flowchart to perform the procedure. Instead, use it to preview what you will be doing and to prepare for it. For example, if you see that these instructions involve another office, you will know to advise that office before you begin the step-action instructions.

### Step-action instructions

The step-action instructions tell you how to perform the recovery task. Normally you will perform the steps in order, but you may be directed to return to a previous step and repeat a sequence. The successful completion of a step may depend on previous steps; therefore, always perform the steps in the order specified.

The step-action instructions provide the command syntax and system information you use or see while performing the procedure. For help on DMS commands, see *DMS-100 Family Commands Reference Manual*, 297-10001-822

# Booting a DMS switch

## Application

Use this procedure to boot a DMS SuperNode or DMS SuperNode SE switch from system load module (SLM) disk or tape. Perform this procedure as instructed by the next level of support.

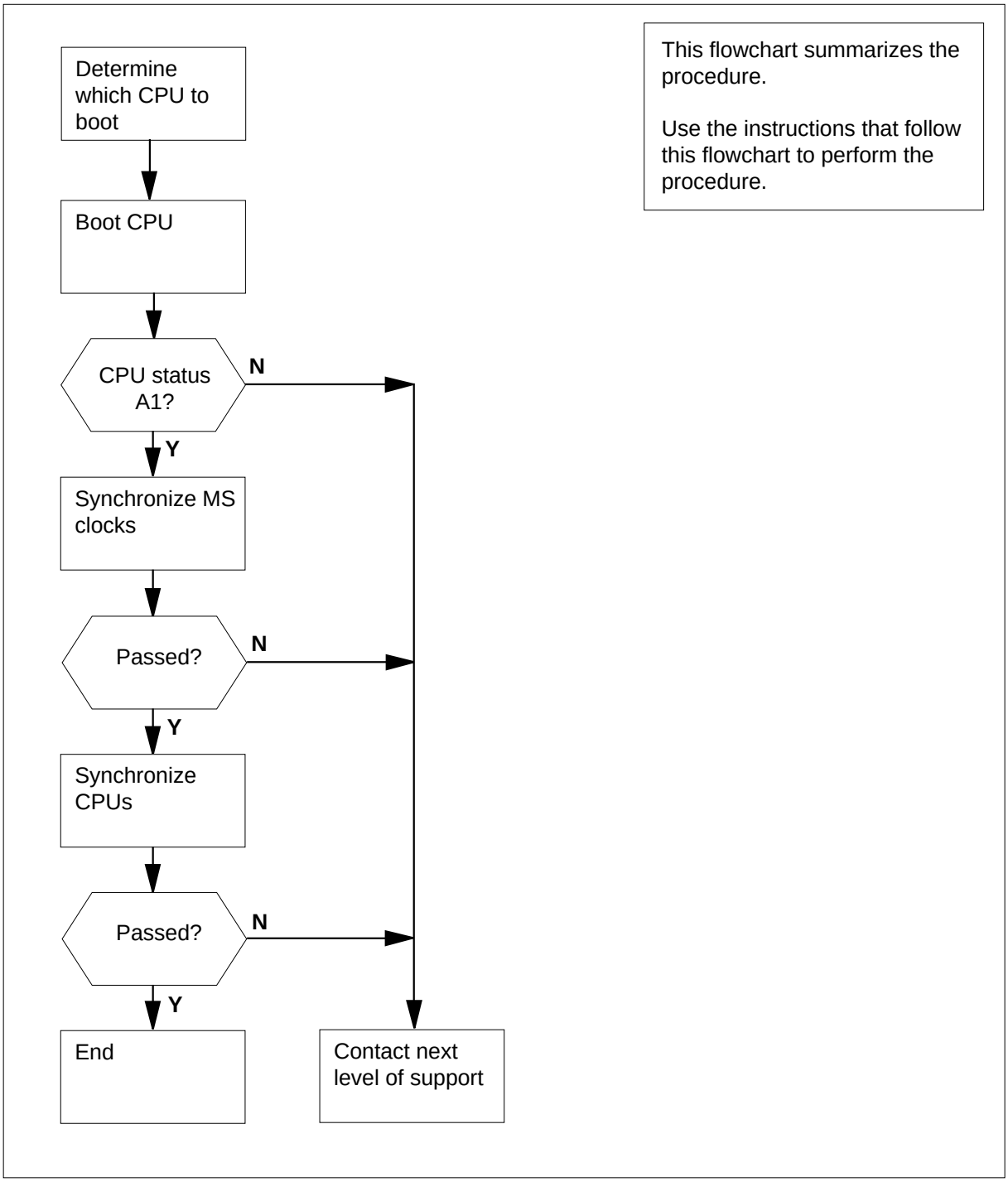
All calls drop when the switch boots.

## Action

This procedure contains a flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

# **Booting a DMS switch** (continued)

**Summary of Booting a DMS switch**



# **Booting a DMS switch** (continued)

### Booting a DMS switch

***At your current location***

**1**

**CAUTION**
**Contact the next level of support**
Do not attempt this procedure before you contact the next level of support.

**WARNING**
**Extended service interruption**
If you boot the switch from tape, the boot requires more recovery time than when you boot from disk. Make sure you boot from disk when possible. Call processing resumes more quickly after you boot from disk.

Determine from office records the name and location of the most recent office image file.

| If the most recent image file | Do |
|---|---|
| resides on the SLM disk | step 2 |
| resides on the SLM tape | step 2 |

***At the CM reset terminal for the INACTIVE CPU***

**2**

**WARNING**
**Set the ITOC file**
Ensure the ITOC file is set if the most recent image file resides on the SLM disk. This is necessary for proper system initialization.

To jam the inactive central processing unit (CPU), type

**>\JAM**

and press the Enter key.

*RTIF response:*

```
Please confirm: (YES/NO)
```

**3** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*

```
JAM DONE
```

***At the CM reset terminal, ACTIVE or INACTIVE CPU***

**4**

**DANGER**
**BOOT command**
A CPU mismatch occurs if you use the BOOT command when the CPUs are InSync. Mismatch handling and mismatch recovery can change the state of one of both CPUs. For example, the active CPU can reset the mate CPU during mismatch handling or recovering. Any in-progress commands such as BOOT terminate, as a result.

Determine if the computing module (CM) is in sync.

***Note:*** A dot or EccOn under the Sync header means that the CM is in sync. The word No means that the CM is not in sync.

| If the CM | Do |
|---|---|
| is in sync | step 5 |
| is not in sync | step 11 |

**5** Determine if the MAP display is available for issuing a drop CPU synchronization command.

| If the MAP display | Do |
|---|---|
| is available | step 9 |
| not available | step 6 |

***At the CM reset terminal for the INACTIVE CPU***

**6** To restart the inactive CPU, type

**>\RESTART**

and press the Enter key.

*RTIF response:*

## Booting a DMS switch (continued)

```
YES
```

**7** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*

```
RESTART DONE
```

**8** Verify that the CPUs are out of sync.

| If A1 | Do |
|---|---|
| flashes | step 11 |
| does not flash after 15 min | Repeat step 6, or contact your next level of support. |

***At the CM reset terminal for the INACTIVE CPU***

**9** Access the CM level of the MAP display, by typing

**>MAPCI;MTC;CM**

and pressing the Enter key.

**10** Perform a drop CPU synchronization, by typing

**>DpSync**

and pressing the Enter key.

***Note:*** The DpSync command must be used before you boot a DMS switch from any SLM device, tape or disk.

**11** Determine which CPU to boot.

| If the CPU is | Do |
|---|---|
| active | step 12 |
| inactive | step 21 |

**12** Determine the boot device (the most recent valid image).

| If the boot device is from an | Do |
|---|---|
| SLM tape | step 13 |
| SLM disk | step 17 |

***At the CM reset terminal for the ACTIVE CPU***

**13**

**DANGER**
**BOOT command**
A CPU mismatch occurs if you use the BOOT command when the CPUs are InSync. Mismatch handling and mismatch recovery can change the state of one of both CPUs. For example, the active CPU can reset the mate CPU during mismatch handling or recovering. Any in-progress commands such as BOOT terminate, as a result.

To override the active CPU, type

**>\OVERRIDE**

and press the Enter key.

*RTIF response:*

```
TEMP. RESET/JAM ENABLE
```

**14** Boot the active CPU by typing

**>\BOOT SLMslm_noT**

and pressing the Enter key.

*where*

**slm_no**
is the number of the SLM (0 or 1) with the required tape load

**15** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*

```
BOOT INITIATED
```

**16** Monitor the CM reset terminal for the active CPU to determine if the switch booted.

***Note:*** When the switch boots, the reset terminal displays the response Booting, followed by different diagnostic messages. Alphanumeric addresses appear in the status bar. When the switch boot finishes, A1 flashes in the status bar.

| If A1 | Do |
|---|---|
| flashes | step 37 |

## Booting a DMS switch (continued)

| If A1 | Do |
|---|---|
| does not flash after 15 min | Repeat step 6, or contact your next level of support. |

***At the CM reset terminal for the ACTIVE CPU***

**17**

**DANGER**
**BOOT command**
A CPU mismatch occurs if you use the BOOT command when the CPUs are InSync. Mismatch handling and mismatch recovery can change the state of one of both CPUs. For example, the active CPU can reset the mate CPU during mismatch handling or recovering. Any in-progress commands such as BOOT terminate, as a result.

To override the active CPU, type

**>\OVERRIDE**

and press the Enter key.

*RTIF response:*

```
TEMP. RESET/JAM ENABLE
```

**18** Boot the active CPU by typing

**>\BOOT SLM_no**

and pressing the Enter key.

*where*

**slm_no**
is the number of the SLM (0 or 1) with the required tape load

**19** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*

```
BOOT INITIATED
```

**20** Monitor the CM reset terminal for the active CPU to determine if the switch booted.

***Note:*** When the switch boots, the reset terminal displays the response Booting, followed by different diagnostic messages. Alphanumeric

## Booting a DMS switch (continued)

addresses appear in the status bar. When the switch boot finishes, A1 flashes in the status bar.

| If A1 | Do |
|---|---|
| flashes | step 37 |
| does not flash after 15 min | Repeat step 6, or contact your next level of support. |

**21** Determine the boot device (the most recent valid image).

| If the boot device is from an | Do |
|---|---|
| SLM tape | step 22 |
| SLM disk | step 30 |

**22**

**DANGER**
**BOOT command**
A CPU mismatch occurs if you use the BOOT command when the CPUs are InSync. Mismatch handling and mismatch recovery can change the state of one of both CPUs. For example, the active CPU can reset the mate CPU during mismatch handling or recovering. Any in-progress commands such as BOOT terminate, as a result.

Make sure that the SLM tape cartridge that contains the most recent image file is in the tape drive.

## Booting a DMS switch (continued)

***At the CM reset terminal for the INACTIVE CPU***

**23**

**DANGER**
**BOOT command**
A CPU mismatch occurs if you use the BOOT command when the CPUs are InSync. Mismatch handling and mismatch recovery can change the state of one of both CPUs. For example, the active CPU can reset the mate CPU during mismatch handling or recovering. Any in-progress commands such as BOOT terminate, as a result.

To boot the inactive CPU, type

**>\BOOT SLMslm_noT**

and press the Enter key.

*where*

**slm_no**
is the number of the SLM (0 or 1) with the required tape load

*Example input:*

**>\BOOT SLM0T**

*RTIF response:*

```
BOOT Please confirm: (YES/NO)
```

**24** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*

```
BOOT INITIATED
```

**25** To release the jam on the inactive CPU, type

**>\RELEASE JAM**

and press the Enter key.

*RTIF response:*

```
JAM RELEASE DONE
```

## Booking a DMS switch (continued)

***At the CM reset terminal for the ACTIVE CPU***

**26** To override the active CPU, type

**>\OVERRIDE**

and press the Enter key.

*RTIF response:*

```
TEMP. RESET/JAM ENABLE
```

**27** To jam the active CPU, type

**>\JAM**

and press the Enter key.

*RTIF response:*

```
Please confirm: (YES/NO)
```

***Note:*** An active CPU jam causes a switch of activity. A jam causes the active CPU to become inactive.

**28** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*

```
JAM DONE
```

**29** Monitor the CM reset terminal for the active CPU to determine if the switch booted.

***Note:*** When the switch boots, the reset terminal displays the response Booting, followed by different diagnostic messages. Alphanumeric addresses appear in the status bar. When the switch boot finishes, A1 flashes in the status bar.

| If A1 | Do |
|---|---|
| flashes | step 37 |
| does not flash after 15 min | Repeat step 6, or contact your next level of support. |

***At the CM reset terminal for the INACTIVE CPU***

**30** To boot the inactive CPU, type

**>\BOOT SLMslm_no**

and press the Enter key.

*where*

**slm_no**
is the number of the SLM (0 or 1) that contains the most recent

## **Booting a DMS switch** (continued)

image file

*Example input:*

**>\BOOT SLM0**

*RTIF response:*

```
BOOT Please confirm: (YES/NO)
```

**31** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*

```
BOOT INITIATED
```

**32** To release the jam on the inactive CPU, type

**>\RELEASE JAM**

and press the Enter key.

*RTIF response:*

```
JAM RELEASE DONE
```

***At the CM reset terminal for the ACTIVE CPU***

**33** To override the active CPU, type

**>\OVERRIDE**

and press the Enter key.

*RTIF response:*

```
TEMP. RESET/JAM ENABLE
```

**34** To jam the active CPU, type

**>\JAM**

and press the Enter key.

*RTIF response:*

```
Please confirm: (YES/NO)
```

***Note:*** An active CPU jam causes a switch of activity. A jam causes the active CPU to become inactive.

**35** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*

```
JAM DONE
```

**36** Monitor the CM reset terminal for the active CPU to determine if the switch booted.

***Note:*** When the switch boots, the reset terminal displays the response Booting, followed by different diagnostic messages. Alphanumeric addresses appear in the status bar. When the switch boot finishes, A1 flashes in the status bar.

| If A1 | Do |
|---|---|
| flashes | step 37 |
| does not flash after 15 min | Repeat step 6, or contact your next level of support. |

***At the MAP terminal***

**37** Determine if you must log in.

***Note:*** The message Please Login indicates that you must log in. Your office parameters determine if the system can log you in automatically.

*Example of a MAP response:*

```
Please Login.
```

| If | Do |
|---|---|
| you must log in | step 38 |
| the system logged you in automatically | step 42 |

**38** Press the Break key.

*Example of a MAP response:*

```
?
```

**39** To log in to the MAP terminal, type

**>LOGIN**

and press the Enter key.

*Example of a MAP response:*

```
Enter User Name
```

**40** To enter the user name, type

**>user_name**

and press the Enter key.

## Booting a DMS switch (continued)

*where*

**user_name**
is the name of the user for the account

*Example of a MAP response:*

```
Enter Password
```

**41** To enter the password, type

**>password**

and press the Enter key.

*where*

**password**
is the password for the account

*Example of a MAP response:*

```
 SuperNode1 Logged in on 1993/03/11 at 20:37:17.
```

**42** To access the MS Clock level of the MAP display, type

**>MAPCI;MTC;MS;CLOCK**

and press the Enter key.

**43** To synchronize the clocks, type

**>SYNC**

and press the Enter key.

| If the SYNC command | Do |
|---|---|
| passed | step 44 |
| failed | step 51 |

**44** To access the CM level of the MAP display, type

**>CM**

and press the Enter key.

**45** Determine if the CPUs are in sync.

***Note:*** A dot symbol under the Sync header indicates that the CPUs are in sync. The word No indicates that the CPUs are not in sync.

| If the CPUs | Do |
|---|---|
| are in sync | step 52 |
| are not in sync | step 46 |

## Booting a DMS switch (continued)

**46** Contact the next level of support to determine if you can synchronize the CPUs.

| If you | Do |
|---|---|
| can synchronize the CPUs | step 47 |
| cannot synchronize the CPUs | step 52 |

**47** Determine if the inactive CPU jammed.

***Note:*** The word yes under the Jam header indicates that the CPU jammed. The area is blank if the CPU did not jam.

| If the inactive CPU | Do |
|---|---|
| jammed | step 48 |
| did not jam | step 49 |

***At the CM reset terminal for the INACTIVE CPU***

**48** To release the jam on the inactive CPU, type

**>\RELEASE JAM**

and press the Enter key.

*RTIF response:*

```
JAM RELEASE DONE
```

***At the MAP terminal***

**49** To synchronize the CPUs, type

**>SYNC**

and press the Enter key.

| If the response | Do |
|---|---|
| indicates the SYNC command passed | step 52 |
| indicates a problem with mismatches makes the CPUs not in sync. Analyze the mismatch logs before you sync again.Do you wish to continue?Please Confirm(“YES", “Y", or “NO", "N")(SuperNode/SuperNode SE series 70 only) | step 50 |
| is other than listed here | step 51 |

**50** (SuperNode/SuperNode SE Series 70 only)

To deny the action, type

**>NO**

## **Booting a DMS switch** (end)

and press the Enter key.

Go to step 51.

**51** For additional help, contact the next level of support.

**52** The procedure is complete.

# DMS-Spectrum Peripheral Module recovery process

## Application

Use this procedure to monitor the DMS-Spectrum Peripheral Module (SPM) recovery process after a system-power-loss or dead-office recovery.

The SPM automatically recovers from the following failure situations:

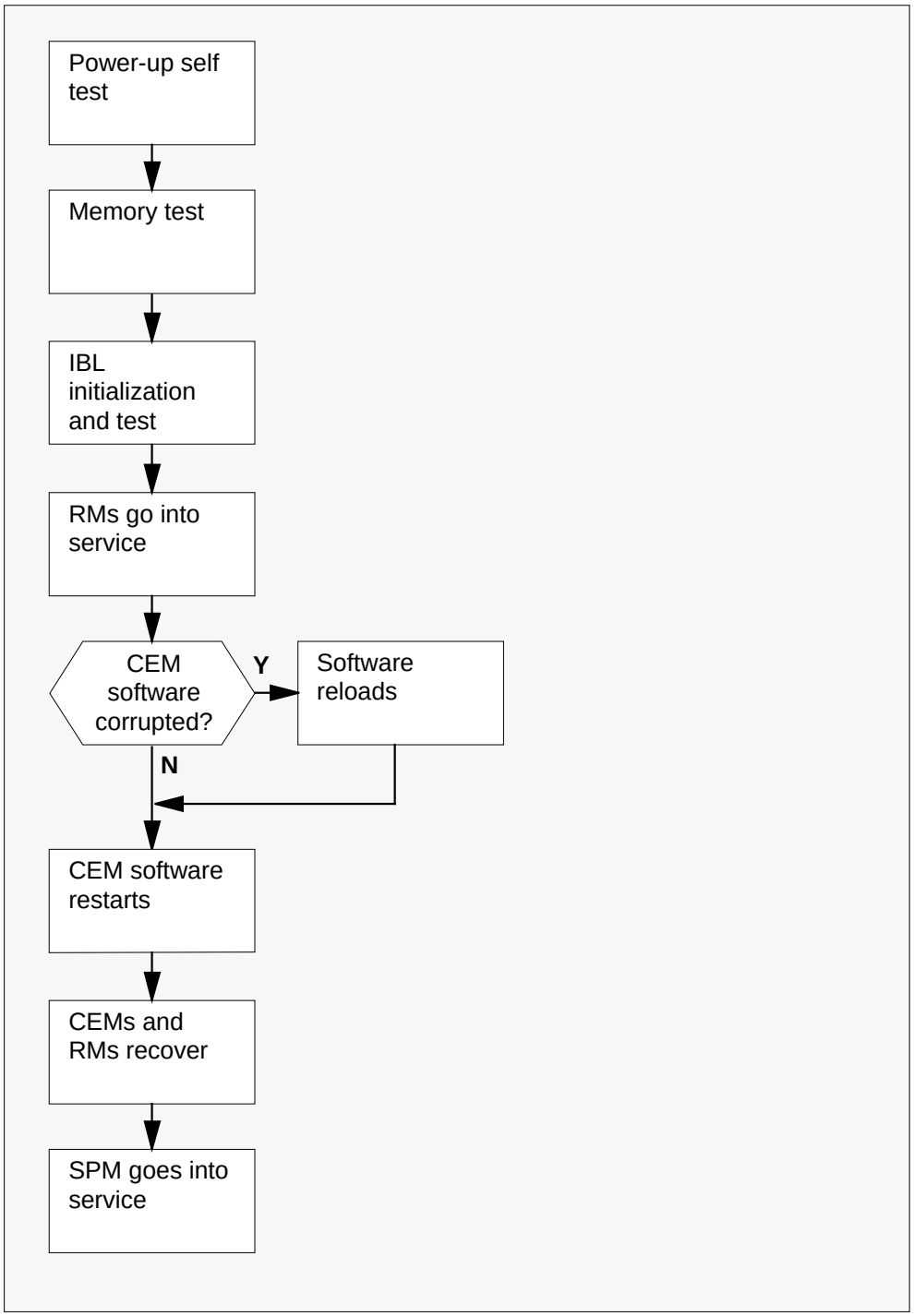
- dead office
- traffic overload
- office restart
- system power loss

## Action

The following flowchart provides an overview of the process. Use the instructions in the step-action procedure that follows the flowchart to monitor the recovery process.

***Note:*** The SPM automatically recovers from failure situations. This procedure describes how to monitor that process.

## DMS-Spectrum Peripheral Module recovery process (continued)



# DMS-Spectrum Peripheral Module recovery process (continued)

### Monitoring the SPM recovery process

***At the MAP terminal:***

**1** Access the PM screen level of the MAP display by typing

**>MAPCI;MTC;PM**

and pressing the Enter key.

**2** Access the SPM screen by typing

**>POST SPM spm_no**

and pressing the Enter key.

*where*

**spm_no**
is the number of the SPM (0 to 63) being monitored

The following is an example of an SPM screen:

```
   CM      MS      IOD      Net      PM      CCS      Lns      Trks     Ext      APPL
   .        .       .        .       .        .       .         .       .        .


SPM                                SysB     ManB     OffL     CBsy     ISTb     InSv
 0 Quit          PM                   0        0        0        0        0        1
 2 Post_         SPM                  0        0        0        0        0        1
 3 ListSet
 4 ListRes     SPM 11 INSV  Loc: Site HOST Floor 2 Row A  FrPos 0
 5 Trnsl
 6             Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
 7             DSP 2  1  A Insv  CEM 1  8  I Insv  -----  1 A Insv  --- -  8  - ----
 8             DSP 0  2 A Insv  OC3 0  9 A Insv  --- –  2 – ----  -----  9 A Insv
 9             DSP 1  3 I Insv  OC3 1 10 I Insv  --- –  3 – ----  --- – 10 – ----
10             DSP 3  4 I Insv  --- – 11 – ----  --- –  4 – ----  --- – 11 – ----
11 Disp_       --- –  5 – ----  --- – 12 – ----  --- –  5 – ----  --- – 12 – ----
12 Next        --- –  6 – ----  --- 4 13 A Insv  --- –  6 – ----  --- – 13 – ----
13 Select_     CEM 0  7 A Insv  --- 5 14 A Insv  --- –  7 – ----  --- – 14 – ----
14 QueryPM
15 ListAlm_
16
17
18

   14:12 >
```

## DMS-Spectrum Peripheral Module recovery process (end)

**3** Observe the status to the SPM modules during the recovery process.

| If | Do |
|---|---|
| all modules do not indicate InSv | SPM alarm clearing and card replacement procedures |
| all modules indicate InSv | Step 4 |

**4** You have completed this procedure. Return to the CI level of the MAP screen by typing

```
>QUIT ALL
```

and pressing the Enter key.

# Performing a cold restart

## Application

Use this procedure to perform a cold restart on a DMS SuperNode or DMS SuperNode SE switch. Perform this procedure as instructed by the next level of support.

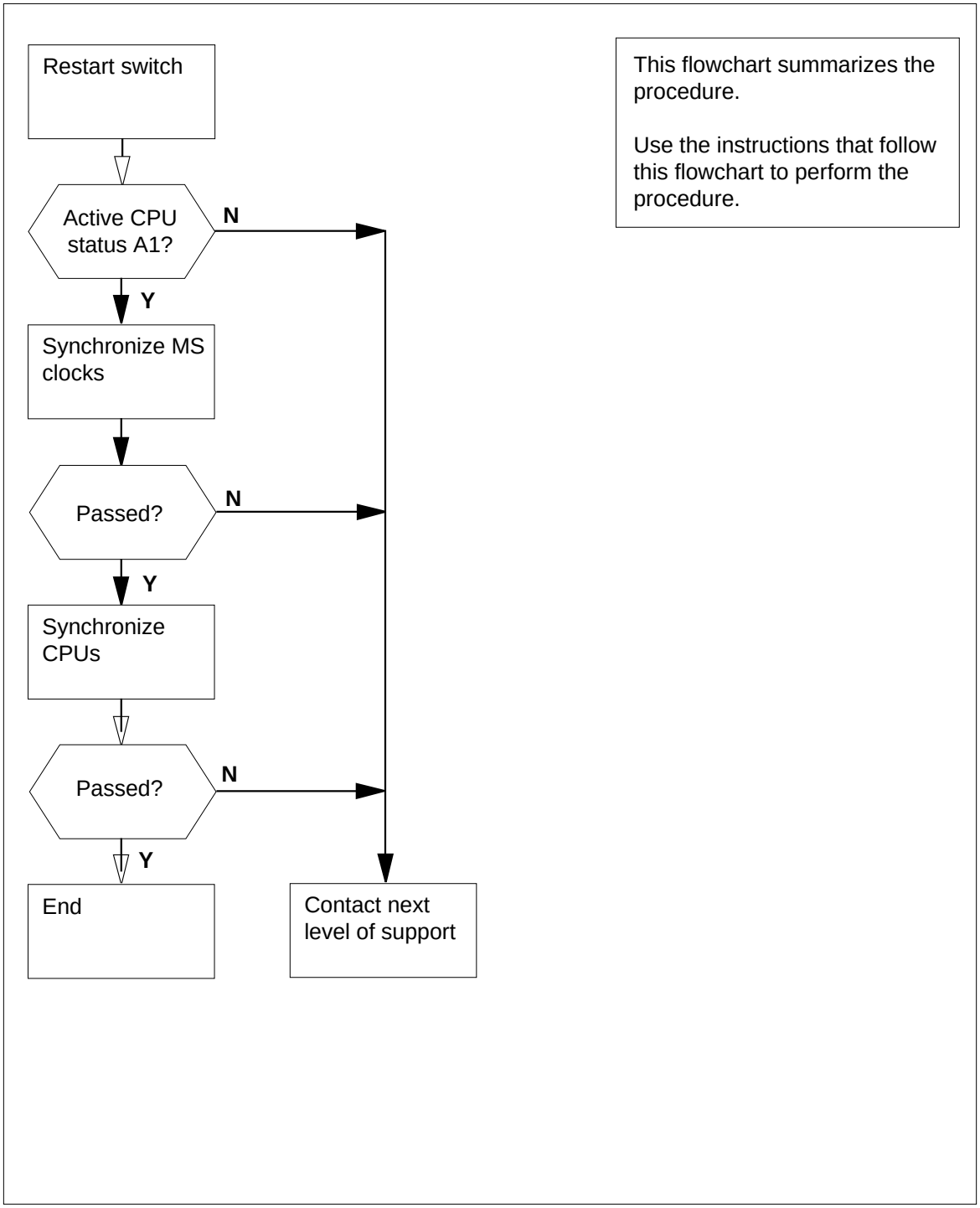
A cold restart is more severe than a warm restart, but less severe than a reload-restart. A cold restart is an initialization phase during which temporary storage deallocates and clears. All calls drop during the restart, and billing data does not record for these calls. Office configuration and translation data remain.

## Action

This procedure contains a flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

# **Performing a cold restart** (continued)

**Summary of Performing a cold restart**



### Performing a cold restart

***At your current location***

**1**

**WARNING**
**Contact your next level of support**
Do not attempt this procedure before you contact the next level of support.

**WARNING**
**Loss of Service**
All calls drop during a cold restart.

**WARNING**
**Extended service interruption**
Make sure you execute the restart from a MAP terminal. Depending on the severity of the problem, MAP terminals can be out of service. If a MAP terminal is not available, perform the restart from the CM reset terminals.

Determine if you can use a MAP terminal to execute the restart.

| If you | Do |
|---|---|
| can use a MAP terminal | step 2 |
| cannot use a MAP terminal | step 6 |

***At the MAP terminal***

**2** To access the CI level of the MAP display, type

```
>QUIT ALL
```

and press the Enter key.

**3** To restart the switch, type

```
>RESTART  COLD ACTIVE
```

and press the Enter key.

*Example of a MAP response:*

## Performing a cold restart (continued)

```
WARNING: This action will result in a CALL PROCESSING
OUTAGE.
Please confirm (”YES”, ”Y”, ”NO”, or ”N”):
```

**4** To confirm the command, type

**>YES**

and press the Enter key.

***At the CM reset terminal for the ACTIVE CPU***

**5** Monitor the CM reset terminal for the active central processing unit (CPU) to determine if the switch restarted.

***Note:*** When the switch restarts, alphanumeric addresses appear in the status bar for the reset terminal. When the switch restarts, A1 flashes in the status bar.

| If A1 | Do |
|---|---|
| flashes | step 16 |
| does not flash after 5 min | step 30 |

***At the CM reset terminal for the INACTIVE CPU***

**6** Check the status bar for the reset terminal to determine if the CPUs are in sync.

***Note:*** The word Sync in the status bar indicates that the CPUs are in sync. The word NoSync indicates that the CPUs are not in sync.

| If the CPUs | Do |
|---|---|
| are in sync | step 7 |
| are not in sync | step 12 |

**7** To jam the inactive CPU, type

**>\JAM**

and press the Enter key.

*RTIF response:*

```
Please confirm: (YES/NO)
```

**8** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*

```
JAM DONE
```

## Performing a cold restart (continued)

**9** To restart the inactive CPU, type

**>\RESTART COLD**

and press the Enter key.

*RTIF response:*

```
Please confirm: (YES/NO)
```

**10** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*

```
RESTART DONE
```

**11** Wait for the CPUs to drop synchronization.

***Note:*** The word NoSync appears in the reset terminal status bar when the CPUs drop synchronization.

***At the CM reset terminal for the ACTIVE CPU***

**12** To override the active CPU, type

**>\OVERRIDE**

and press the Enter key.

*RTIF response:*

```
TEMP. RESET/JAM ENABLE
```

**13** To restart the active CPU, type

**>\RESTART COLD**

and press the Enter key.

*RTIF response:*

```
Please confirm: (YES/NO)
```

**14** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*

```
RESTART DONE
```

## Performing a cold restart (continued)

**15** Monitor the CM reset terminal for the active CPU to determine if the switch restarted.

***Note:*** When the switch restarts, alphanumeric addresses appear in the status bar for the reset terminal. When the switch restarts, A1 flashes in the status bar.

| If A1 | Do |
|---|---|
| flashes | step 16 |
| does not flash after 5 min | step 30 |

***At the MAP terminal***

**16**

**WARNING**
**Extended service interruption**
The exact login procedure can vary, according to your office configuration. If you need additional help, contact the next level of support.

Determine if you must log in.

***Note:*** The message Please Login indicates that you must log in. Your office parameters determine if the system can log you in automatically.

*Example of a MAP response:*

```
Please Login.
```

| If | Do |
|---|---|
| you must login | step 17 |
| the system logged you in automatically | step 21 |

**17** Press the Break key.

*Example of a MAP response:*

```
?
```

**18** To log in to the MAP terminal, type

**`>LOGIN`**

and press the Enter key.

*Example of a MAP response:*

```
Enter User Name
```

## Performing a cold restart (continued)

**19** To enter the user name, type

**>user_name**

and press the Enter key.

*where*

**user_name**
is the name of the user for the account

*Example of a MAP response:*

```
Enter Password
```

**20** To enter the password, type

**>password**

and press the Enter key.

*where*

**password**
is the password for the account

*Example of a MAP response:*

```
SuperNode1 Logged in on 1993/03/11 at 20:37:17.
```

**21** To access the MS Clock level of the MAP display, type

**>MAPCI;MTC;MS;CLOCK**

and press the Enter key.

**22** To synchronize the clocks, type

**>SYNC**

and press the Enter key.

| If the SYNC command | Do |
|---|---|
| passed | step 23 |
| failed | step 30 |

**23** To access the CM level of the MAP display, type

**>CM**

and press the Enter key.

**24** Determine if the CPUs are in sync.

***Note:*** A dot symbol under the Sync header indicates that the CPUs are in sync. The word No indicates that the CPUs are not in sync.

| If the CPUs | Do |
|---|---|
| are in sync | step 31 |
| are not in sync | step 25 |

## Performing a cold restart (continued)

**25** Determine from the next level of support if you can synchronize the CPUs.

| If you | Do |
|---|---|
| can synchronize the CPUs | step 26 |
| cannot synchronize the CPUs | step 31 |

**26** Determine if the inactive CPU jammed.

***Note:*** The word yes under the Jam header indicates that the CPU jammed. The area is blank if the CPU did not jam.

| If the inactive CPU | Do |
|---|---|
| jammed | step 27 |
| did not jam | step 28 |

***At the CM reset terminal for the INACTIVE CPU***

**27** To release the jam on the inactive CPU, type

**>\RELEASE JAM**

and press the Enter key.

*RTIF response:*

```
JAM RELEASE DONE
```

***At the MAP terminal***

**28** To synchronize the CPUs, type

**>SYNC**

and press the Enter key.

| If the response | Do |
|---|---|
| indicates the SYNC command passed | step 31 |
| indicates a problem with mismatches makes the CPUs not in sync. Analyze the mismatch logs before you sync again.<br>`Do you wish to continue?`<br>`Please Confirm("YES", "Y", or "NO", "N")` | step 29 |
| is other than listed here | step 30 |

## **Performing a cold restart** (end)

**29** (SN/ SNSE Series 70 only)

To deny the action, type

**>NO**

and press the enter key.

Go to step 30.

**30** For additional help, contact the next level of support.

**31** The procedure is complete.

# Performing a reload-restart

## Application

Use this procedure to perform a reload-restart on a DMS SuperNode or DMS SuperNode SE switch. Perform this procedure as instructed by the next level of support.

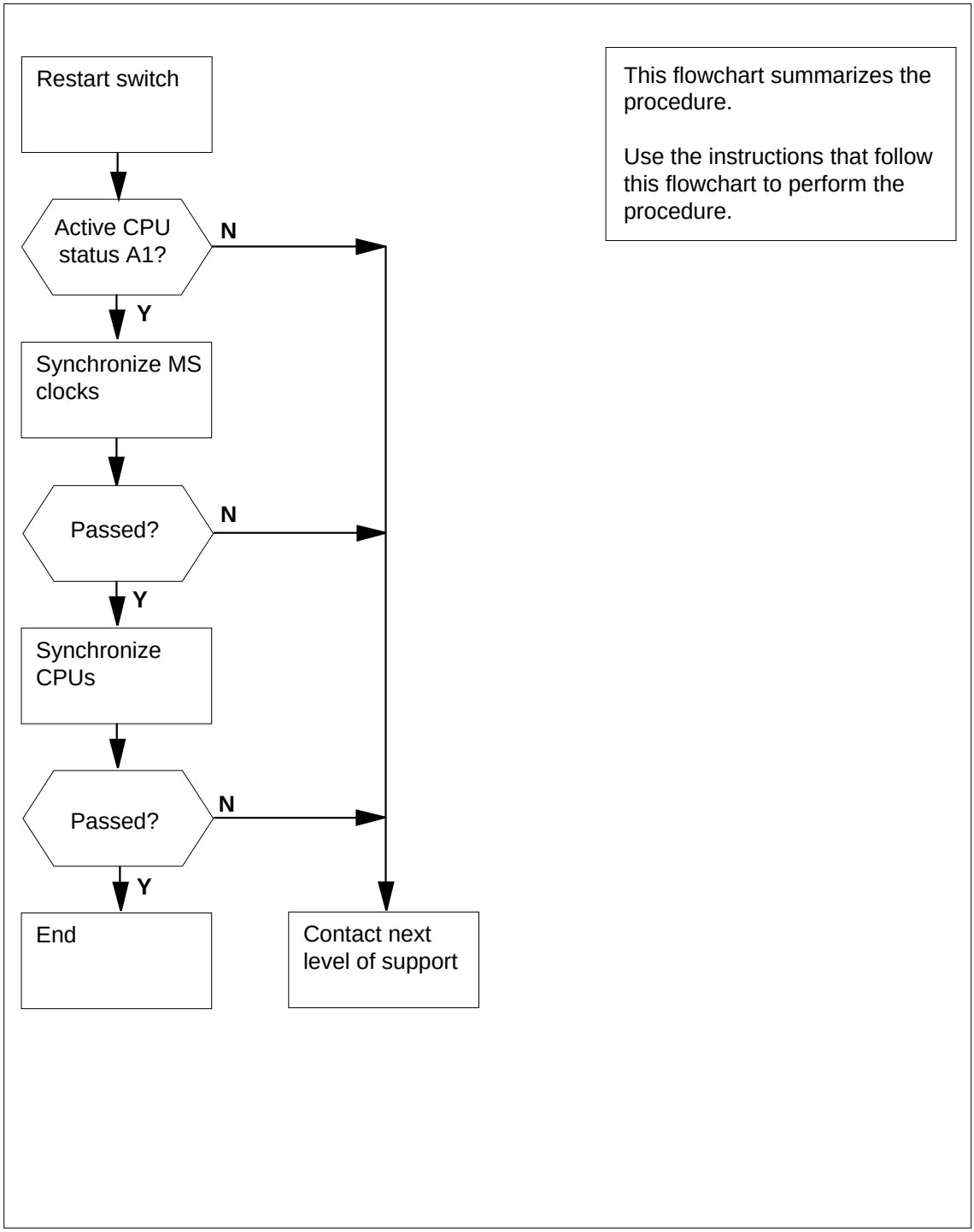
A reload-restart is more severe than a cold restart. A reload-restart simulates a reload of the current software into the switch. All calls drop during the restart, and billing data does not record for these calls. Office configuration and translation data remain.

## Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

# **Performing a reload-restart** (continued)

**Summary of Performing a reload-restart**



## Performing a reload-restart (continued)

### Performing a reload-restart

***At your current location***

**1**

**WARNING**
**Contact the next level of support**
Do not attempt this procedure before you contact the next level of support.

**WARNING**
**Loss of service**
All calls drop during a reload-restart, and billing data does not record.

**WARNING**
**Extended service interruption**
Execute the restart from a MAP terminal. According to the severity of the problem, MAP terminals can be out of service. If a MAP terminal is not available, perform the restart from the CM reset terminals.

Determine if you can use a MAP terminal to execute the restart.

| If you | Do |
|---|---|
| can use a MAP terminal | step 2 |
| cannot use a MAP terminal | step 6 |

***At the MAP terminal***

**2** To access the CI level of the MAP display, type

```
>QUIT ALL
```

and press the Enter key.

**3** To restart the switch, type

```
>RESTART RELOAD ACTIVE
```

and press the Enter key.

*Example of a MAP response:*

```
WARNING: This action will result in a call processing
outage.
Please confirm (”YES”, ”Y”, ”NO”, or ”N”):
```

**4** To confirm the command, type

**>YES**

and press the Enter key.

***At the CM reset terminal for the ACTIVE CPU***

**5** Monitor the CM reset terminal for the active central processing unit (CPU) to determine if the switch restarted.

***Note:*** When the switch restarts, alphanumeric addresses appear in the status bar for the reset terminal. When the switch restarts, A1 flashes in the status bar.

| If A1 | Do |
|---|---|
| flashes | step 16 |
| does not flash after 5 min | step 30 |

***At the CM reset terminal for the INACTIVE CPU***

**6** Determine from the reset terminal status bar if the CPUs are in sync

***Note:*** The word Sync in the status bar indicates that the CPUs are in sync. The word NoSync indicates that the CPUs are not in sync.

| If the CPUs | Do |
|---|---|
| are in sync | step 7 |
| are not in sync | step 12 |

**7** To jam the inactive CPU, type

**>\JAM**

and press the Enter key.

*RTIF response:*

```
Please confirm: (YES/NO)
```

**8** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*

```
JAM DONE
```

## Performing a reload-restart (continued)

**9** To restart the inactive CPU, type

**>\RESTART RELOAD**

and press the Enter key.

*RTIF response:*

```
Please confirm: (YES/NO)
```

**10** To confirm the restart procedure, type

**>YES**

and press the Enter key.

*RTIF response:*

```
RESTART DONE
```

**11** Wait for the CPUs to drop synchronization.

***Note:*** The word NoSync appears in the reset terminal status bar when the CPUs drop synchronization.

***At the CM reset terminal for the ACTIVE CPU***

**12** To override the active CPU, type

**>\OVERRIDE**

and press the Enter key.

*RTIF response:*

```
TEMP. RESET/JAM ENABLE
```

**13** To restart the active CPU, type

**>\RESTART RELOAD**

and press the Enter key.

*RTIF response:*

```
Please confirm: (YES/NO)
```

**14** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*

```
RESTART DONE
```

## Performing a reload-restart (continued)

**15** Monitor the CM reset terminal for the active CPU to determine if the switch restarted.

***Note:*** When the switch restarts, alphanumeric addresses appear in the status bar for the reset terminal. When the switch restarts, A1 flashes in the status bar.

| If A1 | Do |
|---|---|
| flashes | step 16 |
| does not flash after 5 min | step 30 |

***At the MAP terminal***

**16**

**WARNING**
**Extended service interruption**
The exact login procedure can vary, according to your office configuration. If you need additional help, contact the next level of support.

Determine if you must log in.

***Note:*** The message Please Login indicates that you must log in. Depending on your office parameters, the system can log you in automatically.

*Example of a MAP response:*

```
Please Login.
```

| If | Do |
|---|---|
| you must log in | step 17 |
| the system logged you in automatically | step 21 |

**17** Press the Break key

*MAP response:*

?

**18** To log in to the MAP terminal, type

**`>LOGIN`**

and press the Enter key.

*MAP response:*

## Performing a reload-restart (continued)

```
Enter User Name
```

**19** To enter the user name, type

**>user_name**

and press the Enter key.

*where*

**user_name**
is the name of the user for the account

*Example of a MAP response:*

```
Enter Password
```

**20** To enter the password, type

**>password**

and press the Enter key.

*where*

**password**
is the password for the account

*Example of a MAP response:*

```
SuperNode1 Logged in on 1993/03/11 at 20:37:17.
```

**21** To access the MS Clock level of the MAP, type

**>MAPCI;MTC;MS;CLOCK**

and press the Enter key.

**22** To synchronize the clocks, type

**>SYNC**

and press the Enter key.

| If the SYNC command | Do |
|---|---|
| passed | step 23 |
| failed | step 30 |

**23** To access the CM level of the MAP, type

**>CM**

and press the Enter key.

## Performing a reload-restart (continued)

**24** Determine if the CPUs are in sync.

***Note:*** A dot symbol under the Sync header indicates that the CPUs are in sync. The word No indicates that the CPUs are not in sync.

| If the CPUs | Do |
|---|---|
| are in sync | step 31 |
| are not in sync | step 25 |

**25** Determine from the next level of support if you can synchronize the CPUs.

| If you | Do |
|---|---|
| can synchronize the CPUs | step 26 |
| cannot synchronize the CPUs | step 31 |

**26** Determine if the inactive CPU jammed.

***Note:*** The word yes under the Jam header indicates that the CPU jammed. The area is blank if the CPU did not jam.

| If the inactive CPU | Do |
|---|---|
| jammed | step 27 |
| did not jam | step 28 |

***At the CM reset terminal for the INACTIVE CPU***

**27** To release the jam on the inactive CPU, type

**>\RELEASE JAM**

and press the Enter key.

*RTIF response:*

```
JAM RELEASE DONE
```

***At the MAP terminal***

**28** To synchronize the CPUs, type

**>SYNC**

and press the Enter key.

*Example of a MAP response:*

## Performing a reload-restart (end)

```
Maintenance action submitted.
Synchronization successful.
```

| If the response | Do |
|---|---|
| indicates the SYNC command passed | step 31 |
| indicates a problem with mismatches make the CPUs not in sync. Analyze mismatch logs before you sync again.<br>`Do you wish to continue?`<br>`Please Confirm("YES", "Y", or "NO", "N")`<br>(SN/ SNSE series 70 only) | step 29 |
| is other than listed here | step 30 |

**29** (SN/SNSE Series 70 only)

To deny the action, type

**>NO**

and press the Enter key.

Go to step 30.

**30** For additional help, contact the next level of support.

**31** The procedure is complete.

# Performing a warm restart

## Application

Use this procedure to perform a warm restart on a DMS SuperNode or DMS SuperNode SE switch. Perform this procedure as instructed by the next level of support.

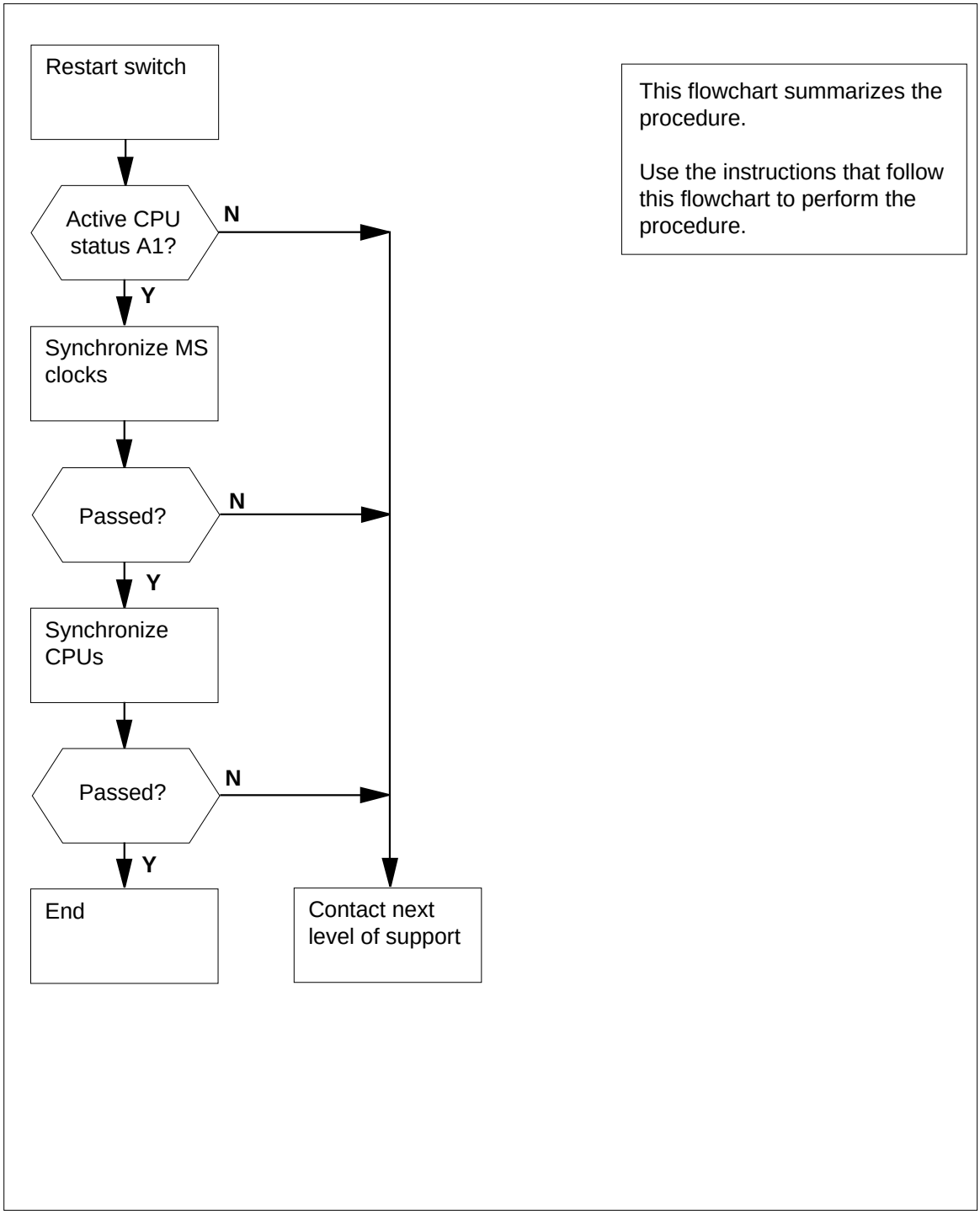
A warm restart is the least severe type of restart. A warm restart is an initialization phase during which temporary storage deallocates and clears. Calls in the talking state continue during the restart. Data associated with each call remains. Calls that do not reach the talking state disconnect.

## Action

This procedure contains a flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

## Performing a warm restart (continued)

**Summary of Performing a warm restart**



# Performing a warm restart (continued)

**Performing a warm restart**

***At your current location***

**1**

**WARNING**
**Contact the next level of support**
Do not attempt this procedure before you contact the next level of support.

**WARNING**
**Loss of service**
Processed calls that do not reach the talking state disconnect during a warm restart.

**WARNING**
**Extended service interruption**
Execute the restart from a MAP terminal. According to the severity of the problem, MAP terminals can be out of service. If a MAP terminal is not available, perform the restart from the CM reset terminals.

Determine if you can use a MAP terminal to execute the restart.

| If you | Do |
|---|---|
| can use a MAP terminal | step 2 |
| cannot use a MAP terminal | step 6 |

***At the MAP terminal***

**2** To access the CI level of the MAP display, type

```
>QUIT ALL
```

and press the Enter key.

**3** To restart the switch, type

```
>RESTART  WARM ACTIVE
```

and press the Enter key.

*Example of a MAP response:*

## Performing a warm restart (continued)

```
WARNING: This action will result in a CALL PROCESSING
OUTAGE.
Please confirm (″YES″, ″Y″, ″NO″, or ″N″):
```

**4** To confirm the command, type

**>YES**

and press the Enter key.

***At the CM reset terminal for the ACTIVE CPU***

**5** Monitor the CM reset terminal for the active central processing unit (CPU) to determine that the switch restarted.

***Note:*** When the switch restarts, alphanumeric addresses appear in the status bar for the reset terminal. When the switch restarts, A1 flashes in the status bar.

| If A1 | Do |
|---|---|
| flashes | step 16 |
| does not flash after 5 min | step 29 |

***At the CM reset terminal for the INACTIVE CPU***

**6** Check the status bar of the reset terminal to determine if the CPUs are in sync.

***Note:*** The word Sync in the status bar indicates that the CPUs are in sync. The word NoSync indicates that the CPUs are not in sync.

| If the CPUs | Do |
|---|---|
| are in sync | step 7 |
| are not in sync | step 12 |

**7** To jam the inactive CPU, type

**>\JAM**

and press the Enter key.

*RTIF response:*

```
Please confirm: (YES/NO)
```

**8** To confirm the command, type

**>YES**

and press the Enter key.

*RTI F response:*

```
JAM DONE
```

## Performing a warm restart (continued)

**9** To restart the inactive CPU, type

**>\RESTART WARM**

and press the Enter key.

*RTIF response:*

```
Please confirm: (YES/NO)
```

**10** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*

```
RESTART DONE
```

**11** Wait for the CPUs to drop synchronization.

***Note:*** The word NoSync appears in the reset terminal status bar when the CPUs drop synchronization.

***At the CM reset terminal for the ACTIVE CPU***

**12** To override the active CPU, type

**>\OVERRIDE**

and press the Enter key.

*RTIF response:*

```
TEMP. RESET/JAM ENABLE
```

**13** To restart the active CPU, type

**>\RESTART WARM**

and press the Enter key.

*RTIF response:*

```
Please confirm: (YES/NO)
```

**14** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*

```
RESTART DONE
```

## Performing a warm restart (continued)

**15** Monitor the CM reset terminal for the active CPU to determine if the switch restarted.

***Note:*** When the switch restarts, alphanumeric addresses appear in the status bar for the reset terminal. When the switch restarts, A1 flashes in the status bar.

| If A1 | Do |
|---|---|
| flashes | step 16 |
| does not flash after five minutes | step 29 |

***At the MAP terminal***

**16**

**WARNING**
**Extended service interruption**
The exact login procedure can vary, according to your office configuration. If you need additional help, contact the next level of support.

Determine if you must log in.

***Note:*** The message Please Login indicates that you must log in. Depending on your office parameters, the system logs you in automatically.

*Example of a MAP response:*

```
Please Login.
```

| If | Do |
|---|---|
| you must log in | step 17 |
| the system logs you in automatically | step 21 |

**17** Press the Break key.

*MAP response:*

?

**18** To log in to the MAP terminal, type

**`>LOGIN`**

and press the Enter key.

*MAP response:*

## Performing a warm restart (continued)

```
Enter User Name
```

**19** To enter the user name, type

**>user_name**

and press the Enter key.

*where*

**user_name**
is the name of the user for the account

*MAP response:*

```
Enter Password
```

**20** To enter the password, type

**>password**

and press the Enter key.

*where*

**password**
is the password for the account

*Example of a MAP response:*

```
SuperNode1 Logged in on 1993/03/11 at 20:37:17.
```

**21** To access the MS Clock level of the MAP, type

**>MAPCI;MTC;MS;CLOCK**

and press the Enter key.

**22** To synchronize the clocks, type

**>SYNC**

and press the Enter key.

| If the SYNC command | Do |
|---|---|
| passed | step 23 |
| failed | step 29 |

**23** To access the CM level of the MAP, type

**>CM**

and press the Enter key.

## Performing a warm restart (continued)

**24** Determine if the CPUs are in sync.

***Note:*** A dot symbol under the Sync header indicates that the CPUs are in sync. The word No indicates that the CPUs are not in sync.

| If the CPUs | Do |
|---|---|
| are in sync | step 30 |
| are not in sync | step 25 |

**25** Contact the next level of support to determine if you can synchronize the CPUs.

| If you | Do |
|---|---|
| can synchronize the CPUs | step 26 |
| cannot synchronize the CPUs | step 30 |

**26** Determine if the inactive CPU jammed.

***Note:*** The word yes under the Jam header indicates that the CPU jammed. The area is blank if the CPU did not jam.

| If the inactive CPU | Do |
|---|---|
| jammed | step 27 |
| did not jam | step 28 |

***At the CM reset terminal for the INACTIVE CPU***

**27** To release the jam on the inactive CPU, type

**>\RELEASE JAM**

and press the Enter key.

*RTIF response:*

```
JAM RELEASE DONE
```

***At the MAP terminal***

**28** To synchronize the CPUs, type

**>SYNC**

and press the Enter key.

| If the SYNC command | Do |
|---|---|
| passed | step 30 |
| failed | step 29 |

**29** For additional help, contact the next level of support.

## **Performing a warm restart** (end)

**30** The procedure is complete.

# Recovering a composite clock

## Application

Use this procedure to recover from loss of the composite clock on a DMS-100 MMP switch.

The following peripheral modules (PM) use the composite clock to synchronize links:

- Common Channel Signaling 7 (CCS7) link interface units (LIU7) or multiple link interface unit (MLIU)—for DS-0 clocking
- high-speed link interface units (HLIU)—for DS-1 clocking

Log PM181 indicates the loss of a composite clock. If one clock is lost, all LIU7s, MLIUs and all HLIUs become in-service trouble (ISTb). The HLIUs will return to in-service state automatically when the composite clock is recovered. If the HLIUs are in ManB (manual busy) of OffL (offline) state, performing RTS on the HLIUs does not return the HLIUs to in-service state.

If both clocks are lost, all LIU7 and MLIU-based CCS7 links lose synchronization and become system busy (SysB). HLIU-based CCS7 links maintain synchronization by:

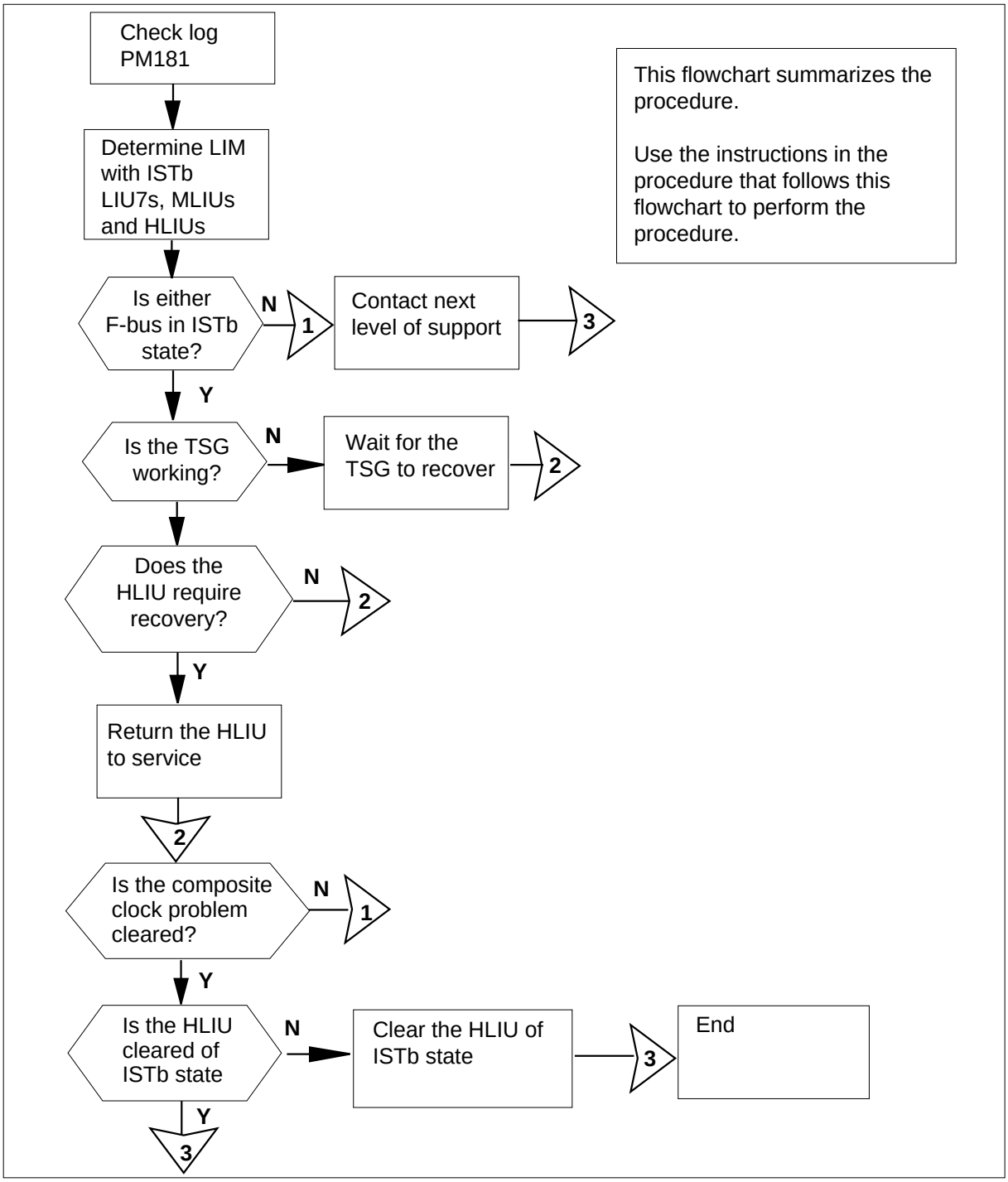
- locking to the incoming link clock to recover incoming data
- using an internal Stratum-3 clock for outgoing data.

## Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Recovering a composite clock (continued)

**Summary of Recovering a composite clock**



## Recovering a composite clock (continued)

**Recovering a composite clock**

**CAUTION**
**Possible equipment damage or service interruption**
Do not attempt this procedure before contacting your next level of support.

**DANGER**
**Possible service interruption**
Do not attempt to manually busy the high-speed link interface unit (HLIU), or use RTS to return the HLIU to service.

***At the MAP terminal***

**1** Access LOGUTIL at the CI level of the MAP display by typing

```
>LOGUTIL
```

and pressing the Enter key.

**2** Determine if log PM181 was generated by typing

```
>OPEN  PM181
```

and pressing the Enter key.

***Note:*** The PM181 log indicates the loss of a composite clock.

| If a PM181 log | Do |
|---|---|
| was generated | step 3 |
| was not generated | step 20 |

**3** Find out more information about the last five PM181 logs generated by typing

```
>BACK  5
```

and pressing the Enter key.

**4** Post the LIM indicated in log PM181 by typing

```
>MAPCI;MTC;PM POST  LIM  lim_no
```

and pressing the Enter key.

*where*

**lim_no**
is the number of the LIM indicated in log PM181

## Recovering a composite clock (continued)

*Example of a MAP response for LPPs:*

```
LIM  1  ISTB
                Links_OOS Taps_OOS
    Unit0: ManB      2       16
    Unit1: InSv      .       .
```

*Example of a MAP response for ELPPs:*

```
LIM 0  ISTB     OOS     OOS_Taps
                Links  LIS1  LIS2  LIS3
Unit0: ManB     2       12    12    12
Unit1: InSv     .       .     .     .
```

**5** Refer to the MAP display in step 4 to determine if the processor is an LPP or an ELPP.

| If the processor is | Do |
|---|---|
| LPP | step 6 |
| ELPP | step 7 |

**6** Access the F-bus level of the MAP display by typing

**>FBUS**

and pressing the Enter key.

*Example of a MAP display:*

```
           Tap: 0    4    8    12  16  20  24  28  32
FBus0: ManB     BBBB BBBB BBBB BBBB ---- ---- ---- ---B BB--
FBus1: InSv      .M.. .I..S... .... ---- ---- ---- ---. ..--
```

***Note:*** In the example, B indicates that the F-bus is manual busy or that the controlling LIM unit is system busy or manual busy, a dot (.) indicates an in-service tap, M indicates a manual-busy tap, I indicates an in-service trouble tap, S indicates a system-busy tap, and a dash (-) indicates an unequipped tap.

Go to step 9.

**7** Access the LIS level of the MAP display by typing

**>LIS  lis_no**

and pressing the Enter key.

*where*

**lis_no**
is the number of the link interface shelf (LIS): 1, 2, or 3

*Example of a MAP display:*

## Recovering a composite clock (continued)

```
LIS 1                Tap: 0    4     8
FBus0: InSv               II.. --.-   ..II
FBus1: ManB               BBBB --B-   BBBB
```

***Note:*** In the example, B indicates that the F-bus is manual busy or that the controlling LIM unit is system busy or manual busy, a dot (.) indicates an in-service tap, M indicates a manual-busy tap, I indicates an in-service trouble tap, S indicates a system-busy tap, and a dash (-) indicates an unequipped tap.

**8** Repeat step 7 for the remaining two LISs.

**9** Determine if either F-bus is in ISTb state.

| If either F-bus is | Do |
|---|---|
| in ISTb state, | step 10 |
| anything else | step 16 |

**10** Contact the personnel responsible for maintaining the timing signal generator (TSG) and determine if the TSG is working.

| If the TSG is | Do |
|---|---|
| working | step 15 |
| not working | step 11 |

**11** Wait until the personnel responsible for maintaining the TSG returns it to service.

**12** Determine if the HLIU that is in ISTb state due to the composite clock failure is also in ManB, or OffL state, and if it requires recovery.

| If HLIU | Do |
|---|---|
| is in OffL state and requires recovery, | step 13 |
| is in ManB state and requires recovery, | step 14 |
| does not require recovery, | step 15 |

***Note:*** When the composite clock is down, the HLIU goes into ISTb state. The HLIU in ISTb state returns to in-service state when the composite clock is recovered. Do not attempt to recover the HLIU with the RTS command. Use step 12, 13 and 14 to return a stuck HLIU to service,

**13** Manually busy the HLIU that is in OffL state by typing

**`>BUSY hliu_no`**

*where*

## Recovering a composite clock (continued)

**hliu_no**
is the number of the HLIU

**14** To return an ISTb HLIU in ManB or OffL state to service, type

**>RTS FORCE**

and press the Enter key.

***Note:*** If you attempted an RTS before performing the RTS FORCE command on the HLIU, the HLIU will remain in the ISTb state even after the composite clock is recovered. Refer to step 17 for information on how to clear an HLIU of ISTb state after the composite clock is recovered.

The following is a description of what happens after you apply the RTS FORCE command to an HLIU:

| If the composite clock | Dothen |
|---|---|
| is the preferred clock for the HLIU, | the HLIU returns to service in an ISTb state. When the composite clock is restored, the system clears the ISTb state from the HLIU and returns it to the InSv (In-service) state. |
| is not the preferred clock for the HLIU, | the HLIU returns to the ISTb state, and then the InSv state. |

**15** Wait 5 min to see if the links become synchronized.

| If the links | Do |
|---|---|
| become synchronized | step 20 |
| do not become synchronized | step 16 |

**16** For further assistance, contact the personnel responsible for the next level of support.

**17** For HLIUs that remain in ISTb state after the composite clock is recovered, determine the condition by typing

**>QUERYFLT**

and pressing the Enter key.

***Note:*** Check for the failed 00S test. A failed 00S test indicates that the HLIU was in ISTb state when the composite clock failed. If there is no failed 00S test, follow the "Recovering a stuck HLIU" procedure to clear the HLIU of ISTb state.

**18** To clear the HLIU of ISTb condition after the composite clock is recovered, perform this step and step 19 during a scheduled maintenance interval. To start clearing, manually busy the HLIU by typing

**>BUSY hliu_no**

and pressing the Enter key.

## Recovering a composite clock (end)

*where*

**hliu_no**
is the number of the HLIU

**19** To return the ManB HLIU to service, type

**>RTS hliu_no**

and press the Enter key.

*where*

**hliu_no**
is the number of the HLIU

***Note:*** Perform the above procedure during a scheduled maintenance interval.

**20** You have completed this procedure.

# Recovering from a dead system in a SuperNode switch

## Application

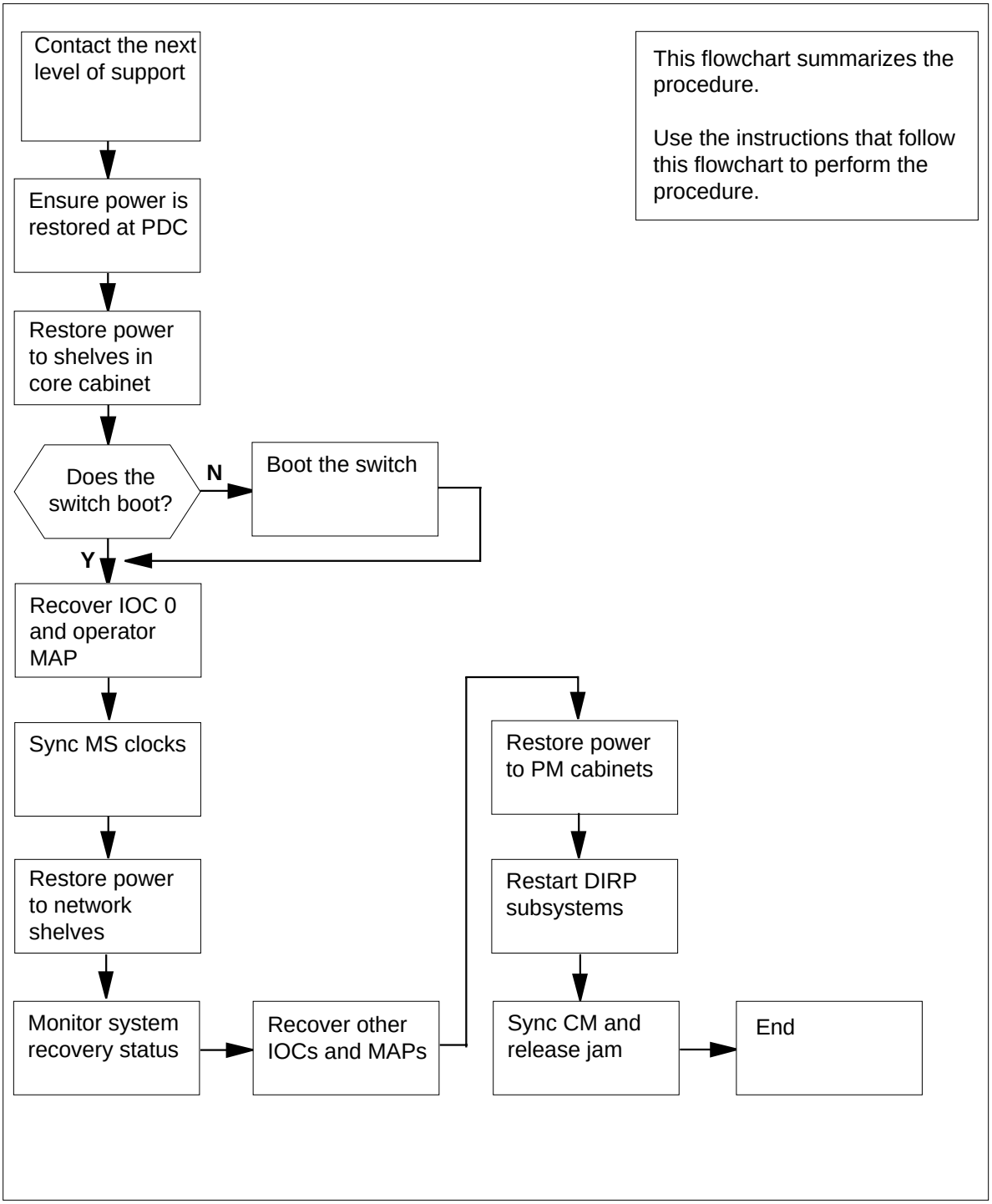
Use this procedure to recover a dead system. Consider a DMS SuperNode switch dead when the switch does not have power. This power loss is the result of the loss or interruption of A and B dc power feeds to the power distribution centers (PDC).

## Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the recovery procedure.

## Recovering from a dead system in a SuperNode switch (continued)

**Summary of Recoverying from a dead system in a SuperNode switch**



# Recovering from a dead system in a SuperNode switch (continued)

**Recovering from a dead system in a SuperNode switch**

**DANGER**

**Contact ETAS or your next level of support**

In the event of a dead system, contact Emergency Technical Assistance Services (ETAS) at Nortel, or your next level of support, before you perform this procedure.

**DANGER**

**Risk of electrocution**

Do not touch the cabinet wiring. Contact with cabinet wiring that is not shielded can result in electric shock. Only qualified power maintenance personnel must perform the voltage measurements in step 3.

***At the PDC***

**1** When you detect the power outage, remove all fuse holders from the PDCs. Remove the fuse holder for the LCE talk batteries, TME talk batteries, and PDC filter fuses.

***Note:*** The location of the fuse holders in the fuse panel depends on your office configuration. To locate the fuse holders, consult the fuse assignment diagram for your office or contact the next level of support for help.

**2** The voltage of the feed that powers the system (-48 V dc or -60 V dc) determines the next step.

| If the system | Do |
|---|---|
| uses -48 V dc | step 3 |
| uses -60 V dc | step 4 |

**3** When power is restored at the power plant for your office, notify power maintenance personnel. The power maintenance personnel must verify that an acceptable power level is restored for each PDC. At the rear of each PDC, measure the dc voltage across the A feed bus and the battery return plate. Repeat for the B feed bus. The power is restored when the voltage on is -48 V dc.

***Note:*** The system distributes power at the potential of -48 V dc. In extreme conditions, like a commercial power failure, the operating voltage can range from -43.75 V dc to -55.8 V dc.

| If power | Do |
|---|---|
| is restored | step 6 |

## Recovering from a dead system in a SuperNode switch (continued)

| If power | Do |
|---|---|
| is not restored | step 5 |

**4** When power is restored at the power plant for your office, notify power maintenance personnel. The power maintenance personnel verify that an acceptable power level is restored for each PDC. At the rear of each PDC, measure the dc voltage across the A feed bus and the battery return plate. Repeat for the B feed bus. The power is restored when the voltage on is -60 V dc.

***Note:*** The system distributes power at a potential of -60 V dc. In extreme conditions like a commercial power failure, the operating voltage can range from -57.4 V dc to -67.7 V dc.

| If power | Do |
|---|---|
| is restored | step 6 |
| is not restored | step 5 |

***At the power room***

**5** To restore power to the PDC, contact the personnel responsible for power maintenance at your site for help.

When power returns to the PDC, return to this point.

***At the PDC***

**6** Inspect the alarm-indicating fuses for the dual-plane combined core (DPCC) and network cabinets.

| If a fuse | Do |
|---|---|
| has blown | step 7 |
| has not blown | step 14 |

**7** Replace the blown cartridge fuse in the back of the affected fuse holder. Make sure that the amperage of the replacement cartridge fuse matches the amperage marked on the PDC.

**8** Remove the blown alarm-indicating fuse from the front of the fuse holder.

**9** Reinsert the empty fuse holder into the PDC.

**10** Obtain a replacement alarm-indicating fuse.

**11** Insert the replacement fuse into the fuse holder.

**12** Proceed as follows:

| If | Do |
|---|---|
| fuses continue to blow | step 13 |
| fuse replacement is successful | step 14 |

## Recovering from a dead system in a SuperNode switch (continued)

**13** Contact your next level of support for help.

When you replace all blown fuses, and power returns to the DPCC and network cabinets, proceed to step 14.

**14** To assist in the recovery, a second person can restore power from the PDC to the peripheral module frames. Steps 103 through 136 of this procedure describe power restoration. To recover the core and network, complete steps 15 through 89. If only one person is available, recover the core and network first.

**15** Determine if the switch is equipped with a remote oscillator shelf (Bliley shelf).

| If the switch | Do |
|---|---|
| is equipped with a remote oscillator shelf | step 16 |
| is not equipped with a remote oscillator shelf | step 17 |

***At the remote oscillator shelf***

**16** Turn on the power converters for the shelf.

***At the DPCC cabinet***

**17** Locate the two NT9X47 power converters for the system load module (SLM) shelf from slots 1F and 33F on that shelf.

**18** Turn on the two NT9X47 power converters at the same time, lift and release the power switches. The power switches are located on the faceplates of the converters.

**19** Locate the two NT9X30 power converters for the SLM shelf from slots 4F and 36F on that shelf.

**20** Turn on the two NT9X30 power converters at the same time, lift and release the power switches. The power switches are located on the faceplates of the converters.

**21** Locate the NT9X31 and NT9X30 power converters for the message switch 0 (MS 0) shelf. Locate these power converters in slots 1F, 4F, 33F, and 36F on the MS 0 shelf.

**22** Make sure the NT9X31 and NT9X30 power converters are turned off. If the power converters are turned on, turn off both converters. To turn off the power converters, push and release the power switches. The power switches are located on the faceplates of the converters.

**23** Turn on the NT9X31 and NT9X30 power converters in slots 33F and 36F at the same time, lift and release the power switches. The power switches are located on the faceplates of the converters.

**24** Turn on the NT9X31 power converter in slot 1F first, and the NT9X30 power converter in slot 4F last. To turn on the power converters, lift and release the power switches. The power switches are located on the faceplates of the converters.

## Recovering from a dead system in a SuperNode switch (continued)

**25** Locate the NT9X31 and NT9X30 power converters for the message switch 1 (MS 1 ) shelf. Locate these power converters in slots 1F, 4F, 33F, and 36F on the MS 1 shelf.

**26** Make sure the NT9X31 and NT9X30 power converters are off. If the power converters are turned on, turn off both converters. To turn off the power converters, push and release the power switches. The power switches are located on the faceplates of the converters.

**27** Turn on the NT9X31 and NT9X30 power converters in slots 33F and 36F at the same time. To turn on the power converters, lift and release the power switches. The power switches are located on the faceplate of each converter.

**28** Turn on the NT9X31 power converter in slot 1F first and the NT9X30 power converter in slot 4F last. To turn on the power converters, lift and release the power switches. The power switches are located on the faceplate of each converter.

**29** Locate the two NT9X31 power converters for the computing module (CM) shelf from slots 1F and 33F on that shelf.

**30** Make sure that both power converters are off. If the converters are on, turn off both power converters. To turn off the power converters, push and release the power switches. The power switches are located on the faceplate of each converter.

**31** Turn on the two NT9X31 power converters at the same time. To turn on the power converters, lift and release the power switches. The power switches are located on the faceplate of each converter.

**32** Locate the two NT9X30 power converters for the CM shelf.

***Note:*** Locate the NT9X30 power converters from slots 4F and 36F on the CM shelf.

**33** Turn on the two NT9X30 power converters at the same time. To turn on the power converters, lift and release the power switches. The power switches are located on the faceplate of each converter.

**34** Determine if all the converters have power. When all of the Converter Off lights are off, the converter has power.

| If | Do |
|---|---|
| all the converters have power | step 36 |
| none of the converters have power | step 35 |

**35** To power up the frame, perform the *Clearing an Ext FSP DPCC cabinet major alarm* procedure in *Alarm and Performance Monitoring Procedures*.

When you have completed the procedure, return to this point.

Go to step 17.

## Recovering from a dead system in a SuperNode switch (continued)

***At the CM reset terminal for the INACTIVE CPU***

**36** To release the jam on the inactive CPU, type

**>\RELEASE JAM**

and press the Enter key

*RTIF response:*

```
JAM RELEASE DONE
```

***At the CM reset terminal for the ACTIVE CPU***

**37** Monitor the CM reset terminal for the active CPU to determine if the switch booted.

***Note:*** When the switch boots, the reset terminal displays the response "Booting" followed by various diagnostic messages. The status bar displays alphanumeric addresses. When the switch boot completes, A1 flashes in the status bar.

| If A1 | Do |
|---|---|
| flashes | step 44 |
| does not flash after 15 min | step 38 |

***At the CM reset terminal for the INACTIVE CPU***

**38** To jam the inactive CPU, type

**>\JAM**

and press the Enter key.

*RTIF response:*

```
Please confirm: (YES/NO)
```

**39** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*

```
JAM DONE
```

***At the CM reset terminal for the ACTIVE CPU***

**40** To override the active CPU, type

**>\OVERRIDE**

and press the Enter key.

*RTIF response:*

```
TEMP. RESET/JAM ENABLE
```

## Recovering from a dead system in a SuperNode switch (continued)

**41** To boot the active CPU, type

**>\BOOT SLM slm_no**

and press the Enter key.

*where*

**slm_no**
is the number of the SLM (0 or 1) that contains the most recent image file

*Example input:*

**>\BOOT SLM 0**

*RTIF response:*

```
Please confirm: (YES/NO)
```

**42** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*

```
JAM DONE
```

**43** Wait until A1 flashes on the reset terminal for the active CPU to determine if the switch booted.

| If A1 | Do |
|---|---|
| flashes | step 44 |
| does not flash after 15 min | step 183 |

***At the IOD frame***

**44** Turn on the power converters on input/output controller 0 (IOC 0).

***Note:*** The vintage of IOC determines if the IOC is equipped with one or two power converters.

**45** Press the reset button on one of the IOC power converters. Hold the reset button and lift the FSP circuit breaker switch for IOC 0.

**46** Release the reset button.

**47** Turn on the power inverter that supplies the operator MAP.

# Recovering from a dead system in a SuperNode switch (continued)

***At the operator MAP terminal***

**48**

**WARNING**
**Extended service interruption**
The exact login procedure depends on your office configuration. If you need further assistance, contact the personnel responsible for the next level of support.

Determine if you have to log in.

***Note:*** The message Please Login indicates that you must log in. Your office parameters determine the login procedure. Your login can be automatic.

*Example of a MAP response:*

```
Please Login.
```

| If you | Do |
|---|---|
| have to log in | step 49 |
| are logged in automatically | step 53 |

**49** Press the Break key.

*MAP response:*

*?*

**50** To log in to the MAP terminal, type

**>LOGIN**

and press the Enter key.

*MAP response:*

```
Enter User Name
```

**51** To enter the user name, type

**>user_name**

and press the Enter key.

*where*

**user_name**
is the name of the user for the account

*MAP response:*

```
Enter Password
```

## Recovering from a dead system in a SuperNode switch (continued)

**52** To enter the password, type

**>password**

and press the Enter key.

*where*

**password**
is the password for the account

*Example of a MAP response:*

```
SuperNode1 Logged in on 1993/03/11 at 20:37:17.
```

**53** To turn on priority, type

**>PRIORITY ON**

and press the Enter key.

*MAP response:*

```
Pref>
```

**54** To determine if the system time is correct, type

**>TIME**

and press the Enter key.

*Example of a MAP response:*

```
Time is 14:55:50
```

| If the system time | Do |
|---|---|
| is correct | step 57 |
| is not correct | step 55 |

**55** To enter the correct time (by the 24-h clock), type

**>SETTIME hh mm**

and press the Enter key.

*where*

**hh**
is the hour (00 to 23)

**mm**
is the minute (00 to 59)

*Example input:*

**>SETTIME 16 55**

*Example of a MAP response:*

## Recovering from a dead system in a SuperNode switch (continued)

```
Warning:    There is an automated TOD clock change
            request scheduled on:
            1996/10/15 at 1:00 (see table DSTTABLE).
            Do you want to proceed with this request?
            Please confirm (”YES”, ”Y”, ”NO”, or ”N”):
```

**56** To confirm the command, type

**>Y**

and press the Enter key.

*Example of a MAP response:*

```
Time is 16:55:00 on TUE 1996/10/15.
```

**57** Determine if the system date is correct.

| If the system date | Do |
|---|---|
| is correct | step 60 |
| is not correct | step 58 |

**58** To enter the correct date, type

**>SETDATE dd mm yyyy**

and press the Enter key.

*where*

**dd**
is the day (01 to 31)

**mm**
is the month (01 to 12)

**yyyy**
is the year

*Example input:*

**>SETDATE 12 07 1996**

*Example of a MAP response:*

```
setdate  12 07 1996
Warning:    There is an automated TOD clock change
            request scheduled on:
            1996/10/30 at 1:00 (see table DSTTABLE).
            Do you want to proceed with this request?
            Please confirm (”YES”, ”Y”, ”NO”, or ”N”):
```

**59** To confirm the command, type

**>Y**

and press the Enter key.

## Recovering from a dead system in a SuperNode switch (continued)

*Example of a MAP response:*

```
Date is THU.  12/JUL/1996  00:00:00
```

**60** To access the SRSTATUS level of the MAP display, type

**>MAPCI;MTC;SRSTATUS**

and press the Enter key.

*Example of a MAP display:*

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                        11:52:34
 2  View_       Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS     0    0      2       0   IOD   5     5      30     2
 4        NET    0    0      6       0   Other 21    3      13     3
 5        SER1   0    1      6       0
 6        SER2   1    1      60      1
 7        SER3   11   8      30      1
 8
 9        SRSTATUS:
```

**61** Determine the recovery status of the MSs.

***Note:*** MS recovery status appears to the right side of the word MS in the MAP display. Recovery status for each MS can be one of pending, in progress, complete, or failed.

| If status of either MS | Do |
|---|---|
| is failed recovery | step 183 |
| is pending recovery | step 62 |
| is other than listed here | step 63 |

**62** Wait for recovery of both MSs to be in-progress, or complete.

When both MSs are no longer pending recovery, go to step 61.

**63** To access the MS Clock level of the MAP display, type

**>MS;CLOCK**

and press the Enter key.

**64** To synchronize the clocks, type

**>SYNC**

and press the Enter key.

| If the SYNC command | Do |
|---|---|
| succeeded | step 66 |
| failed | step 65 |

## Recovering from a dead system in a SuperNode switch (continued)

**65** Record the reason for synchronization failure, as shown in the MAP response. Continue this procedure at step 66 to recover networks and peripheral modules. Repeat the attempt to synchronize the MS clocks after the networks and the PMs are in-service.

**66** Determine the type of network equipped on your switch.

| If the network type | Do |
|---|---|
| is ENET | step 67 |
| is JNET | step 78 |

***At the ENET frames***

**67** Locate the NT9X31 power converters in slots 1F and 33F on the ENET shelves.

**68** Make sure that the power converters are off. If the converters are not off, turn off the power converters. To turn off the power converters, push and release the power switches. The power switches are located on the faceplate of each converter.

**69** To turn on the NT9X31 power converters, lift and release the power switches. The power switches are located on the faceplate of each converter.

**70** Locate the NT9X30 power converters in slots 4F and 36F on the ENET shelves.

**71** To turn on the NT9X30 power converters, lift and release the power switches. The power switches are located on the faceplate of each converter.

**72** Determine if all the converters powered up. If all the Converter Off lights are off, all the converters have power.

| If | Do |
|---|---|
| all the converters have power | step 74 |
| any converters do not have power | step 73 |

**73** To power up the ENET frame, perform the *Clearing an Ext FSP DPCC cabinet major alarm* procedure in *Alarm and Performance Monitoring Procedures*.

When you complete the procedure, return to this point.

Go to step 67.

***At the MAP terminal***

**74** To access the SRSTATUS level of the MAP display, type

**>SRSTATUS**

and press the enter key.

*Example of a MAP display:*

## Recovering from a dead system in a SuperNode switch (continued)

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                        11:52:34
 2  View_      Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS    0    0      2       0   IOD   5     5      30     2
 4        NET   0    0      6       0   Other 21    3      13     3
 5        SER1  0    1      6       0
 6        SER2  1    1      60      1
 7        SER3  11   8      30      1
 8
 9        SRSTATUS:
```

**75** From the MAP display, determine the recovery status of the network.

***Note:*** Network recovery status appears to the right side of the word NET in the MAP display. The recovery status can be pending, in progress, complete, or failed.

| If the status of any network element | Do |
|---|---|
| is failed | step 77 |
| is pending | step 76 |
| is other than listed here | step 90 |

**76** Wait until there are no network elements pending recovery.

Go to step 75.

**77** To recover the ENET manually, perform the procedure *Recovering Enhanced Network* in this document.

When you complete the procedure, return to this point.

Go to step 74.

***At the JNET shelf***

**78**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) or a modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Locate the first junctored network shelf to recover.

## Recovering from a dead system in a SuperNode switch (continued)

**79** Determine if the power converter is an NT2X70AE card.

| If the power converter | Do |
|---|---|
| is an NT2X70AE card | step 80 |
| is not an NT2X70AE card | step 83 |

**80** Determine if the FSP or MSP has circuit breakers.

| If the FSP or MSP | Do |
|---|---|
| has circuit breakers | step 81 |
| does not have circuit breakers | step 82 |

**81** Power up the converter.

**a** Pull and set the handle of the POWER switch up to the RESET position and hold.

**b** Set the handle of the converter circuit breaker on the FSP or MSP up. The handle clicks into place.

**c** Release the handle.

**d** Go to step 86.

**82** Power up the converter.

**a** Pull and set the handle of the POWER switch up to the RESET position and hold. The CONVERTER FAIL LED goes off.

**b** Release the handle.

**c** Go to step 86.

**83** Determine if the FSP or MSP has circuit breakers.

| If the FSP or MSP | Do |
|---|---|
| has circuit breakers | step 84 |
| does not have circuit breakers | step 85 |

**84** Power up the converter.

**a** Pull and set the handle of the POWER switch up to the ON position.

**b** Press and hold the RESET button on the power converter.

**c** Set the handle of the converter circuit breaker on the FSP or MSP up. The handle clicks into place.

**d** Release the RESET button.

**e** Go to step 86.

**85** Power up the converter.

**a** Pull and set the handle of the POWER switch up to the ON position.

## Recovering from a dead system in a SuperNode switch (continued)

**b** Press the RESET button on the power converter until the CONVERTER FAIL LED goes off.

**c** Release the RESET button.

***At the MAP terminal***

**86** To access the NET level of the MAP display, type

**>NET**

and press the Enter key.

*Example of a MAP display:*

```
Net
                        11111  11111  22222  22222  33
Plane 01234   56789   01234  56789  01234  56789  01
  0  0000
  1  0000
JNET:
```

**87** To manually busy the network module for a return to service, type

**>BSY plane_no pair_no**

and press the Enter key.

*where*

**plane_no**
is the network plane number (0 or 1)

**pair_no**
is the network plane pair number (0 to 31)

**88** To return the network module to service, type

**>RTS plane_no pair_no**

and press the Enter key.

*where*

**plane_no**
is the network plane number (0 or 1)

**pair_no**
is the network plane pair number (0 to 31)

**89** Repeat steps 78 through 88 for each JNET shelf.

When all JNET shelves are recovered, proceed to step 90.

**90** Determine if there are additional IOCs and MAP terminals to recover.

| If additional IOCs and MAP terminals | Do |
|---|---|
| require recovery | step 91 |
| are recovered | step 103 |

**91** Restore power to all power inverters in the office that remain.

## Recovering from a dead system in a SuperNode switch (continued)

***At the IOC***

**92** Locate the IOC for recovery.

| If the controller | Do |
|---|---|
| is IOC | step 93 |
| is IOM | step 97 |

**93** Turn on the power converters on the IOC.

***Note:*** The vintage of the IOC determines if the IOC is equipped with one or two power converters.

**94** Press the reset button on one of the IOC power converters and hold the reset button. Lift the associated circuit breaker switch on the FSP.

**95** Release the reset button.

**96** Repeat steps 92 through 95 for each IOC to recover. Proceed to step 97.

**97** To access the IOD level of the MAP display, type

```
>IOD
```

and press the Enter key.

**98** To access the IOC level of the MAP display for the IOC that requires recovery, type

```
>IOC  ioc_no
```

and press the Enter key.

*where*

**ioc_no**
is the number of the IOC or input/output module (IOM) to berecovered

**99** To manually busy the IOC or IOM, type

```
>BSY  ioc_no
```

and press the Enter key.

*where*

**ioc_no**
is the number of the IOC or IOM

**100** To return the IOC or IOM to service, type

```
>RTS  ioc_no
```

and press the Enter key.

*where*

**ioc_no**
is the number of the IOC or IOM

**101** Repeat steps 98 through 100 for each IOC or IOM to recover. Proceed to step 102.

**102** Log in to additional MAP terminals as required.

***Note:*** Steps 48 through 52 describe how to log in to the MAP terminal.

## Recovering from a dead system in a SuperNode switch (continued)

**103** Determine if your switch is equipped with one or more link peripheral processors (LPP).

| If the switch you recover | Do |
|---|---|
| has LPPs | step 104 |
| has LPPs or ELPPs | step 104 |
| does not have LPPs | step 121 |
| does not have LPPs or ELPPs | step 121 |

**104** Determine if PDC power is restored to the LPP(s).

| If PDC power | Do |
|---|---|
| is restored to the LPPs | step 108 |
| is restored to the LPPs or ELPPs | step 108 |
| is not restored to the LPPs | step 105 |
| is not restored to the LPPs or ELPPs | step 105 |

**105** Check the PDC fuses that supply the LPP.

| If a fuse | Do |
|---|---|
| has blown | step 106 |
| has not blown | step 107 |

**106** Replace the blown fuses.

***Note:*** If fuses blow repeatedly, contact your next level of support for help.

When PDC power returns to the LPPs, go to step 108.

**107** Contact the personnel responsible for power maintenance at your site, or consult your next level of support for help.

When PDC power returns to the LPPs, proceed to step 108.

**108** Locate the LPPs for recovery.

# Recovering from a dead system in a SuperNode switch (continued)

***At the LPP cabinet***
***At the LPP or ELPP cabinet***

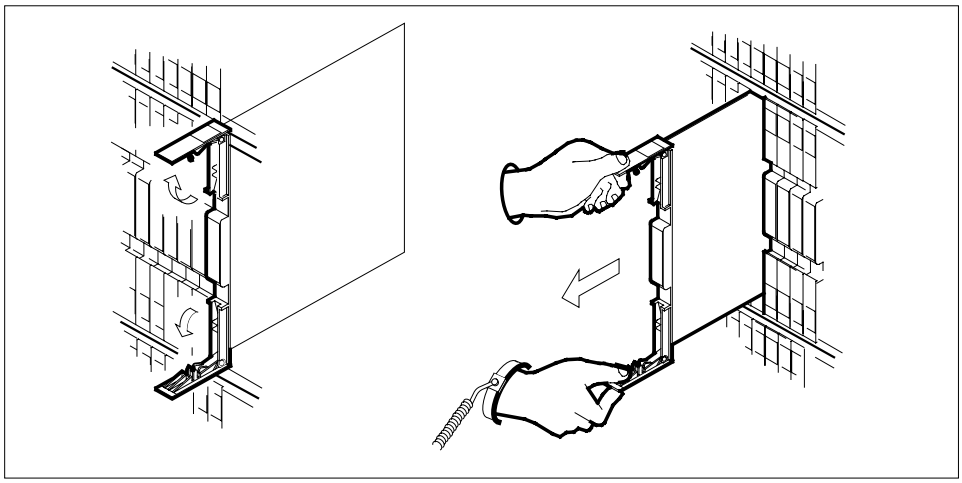
**109**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) or a modular supervisory panel (MSP) to handle circuit cards. This protects the cards against static electricity damage.

Locate the NT9X74 cards in all link interface shelves (LIS).

***Note:*** Locate the NT9X74 cards from shelf positions 7F and 32F on all LISs.

**110** To unseat each NT9X74 card, unlatch the locking levers. Carefully pull the card toward you 25 mm (1 in.).



**111** Locate the NT9X30 power converters in slots 4F and 36F of the link interface module (LIM) unit shelf.

**112** Locate the NT9X30 or NTDX16 power converters for each LIS.

***Note:*** Locate the NT9X30 power converters from slots 4F and 36F for each LIS. Another location for the NTDX16 power converters is in slots 1F, 4F, 33F, and 36F for each LIS.

**113** To turn on the LIS power converters, toggle the switch on each NT9X30 or NTDX16 card.

**114** Determine if all the converters have power. When the Converter Off lights are not lit, the converters have power.

| If | Do |
|---|---|
| all the converters have power | step 116 |

## Recovering from a dead system in a SuperNode switch (continued)

| If | Do |
|---|---|
| any converters do not have power | step 115 |

**115** To power up the frame, perform the *Clearing an Ext FSP LPP cabinet major alarm* procedure in *Alarm and Performance Monitoring Procedures*.

When you complete the procedure, return to this point.

Go to step 111.

**116** Reseat all NT9X74 cards as follows:

**a** Carefully slide the card back into the LIS.

**b** Push on the upper and lower edges of each faceplate to reseat the card on the shelf.

**c** Close the locking levers on each card.

**117** Repeat steps 108 through 116 for each LPP in your office.

When power returns to all LPPs, proceed to step 118.

**118** To access the SRSTATUS level of the MAP display, type

**>SRSTATUS**

and press the enter key.

*Example of a MAP display:*

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                      11:52:34
 2  View_      Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS    0    0      2       0   IOD   5     5      30     2
 4        NET   0    0      6       0   Other 21    3      13     3
 5        SER1  0    1      6       0
 6        SER2  1    1      60      1
 7        SER3  11   8      30      1
 8
 9        SRSTATUS:
```

**119** From the MAP display, determine the recovery status of the Series III PMs.

***Note:*** Series III PM recovery status appears to the right side of the word “SER3" in the MAP display. Recovery status can be one of pending, in progress, complete, or failed.

| If the number of Series III PMs that fail recovery | Do |
|---|---|
| is zero | step 121 |
| is other than listed here | step 120 |

**120** To recover the PMs manually, perform the *Recovering Link Peripheral Processors* procedure in this document.

When the procedure is complete, return to this point.

# Recovering from a dead system in a SuperNode switch (continued)

**121** Steps 122 through 136 describe how to restore power from the PDC to Series I and Series II peripheral module frames. Proceed as follows:

| If PDC power | Do |
|---|---|
| is restored to the PM frames | step 137 |
| is not restored to the PM frames | step 122 |

**122** Obtain one of the following capacitor charging tools:

- a 100-W, 120-V light bulb in a socket that has pigtail leads
- tool number T000655 (CPC number NTA0600512), that has a fuse holder-style connector instead of pigtail leads for easier insertion

***At the PDC***

**123**

**DANGER**
**Possible equipment damage or extended service interruption**
Use the correct fuses. When you return fuses to the PDC, make sure that the amperage of the fuses match the amperage marked on the PDC.

At the first empty fuse slot in the PDC, connect the leads of the capacitor charging tool across the contacts for the fuse holder until the lamp dims. If you use a charging tool with a fuse holder-style connector, insert the connector into the slot until the lamp dims.

**124** Remove the capacitor charging tool and immediately reinsert the correct fuse holder into the slot.

**125** Repeat steps 123 and 124 for the LCE talk battery, TME talk battery, and PDC filter fuse holders, removed in step 1. When all fuses are restored to the PDCs, continue this procedure.

**126** Determine if any alarm-indicating fuses are blown.

***Note:*** The fuse alarm-indicator lamp lights when an alarm indicates a blown fuse.

| If an alarm-indicating fuse | Do |
|---|---|
| has blown | step 127 |
| has not blown | step 137 |

**127** Locate a fuse holder with a blown alarm-indicating fuse.

***Note:*** Replace blown fuses in any order.

**128** A blown cartridge fuse is in the fuse holder. Remove the fuse holder from the PDC.

## Recovering from a dead system in a SuperNode switch (continued)

**129** Replace the blown cartridge fuse in the back of the fuse holder. Make sure that the amperage of the replacement cartridge fuse matches the amperage marked on the PDC.

**130** Remove the blown alarm-indicating fuse from the front of the fuse holder.

**131** Reinsert the fuse holder, with the alarm-indicating fuse removed, into the PDC.

**132** Obtain a replacement alarm-indicating fuse.

**133** Insert the replacement alarm-indicating fuse into the fuse holder.

**134** Determine if the alarm-indicating fuse blows.

***Note:*** The fuse alarm indicator lamp lights when an alarm-indicating fuse blows.

| If the alarm-indicating fuse | Do |
|---|---|
| blows | step 183 |
| does not blow | step 135 |

**135** Determine if all the blown alarm-indicating fuses are replaced.

| If all the blown alarm-indicating fuses | Do |
|---|---|
| are replaced | step 136 |
| are not replaced | step 127 |

**136** Determine if the fuse alarm indicator lamp is lit.

| If the fuse alarm indicator lamp | Do |
|---|---|
| is lit | step 183 |
| is not lit | step 137 |

***At the PM frames***

**137** Select a peripheral module (PM) frame to power up.

***Note:*** Power up the PM frames in any order.

**138** Locate the frame supervisory panel (FSP) and the power converters on the frame.

**139** Determine if the FSP for the frame has fuses or breakers.

| If the FSP | Do |
|---|---|
| has fuses | step 140 |
| has breakers | step 145 |

## Recovering from a dead system in a SuperNode switch (continued)

**140** Determine if the power converters have Power Reset buttons or Power Reset switches.

| If the power converters | Do |
|---|---|
| have Power Reset buttons | step 141 |
| have Power Reset switches | step 143 |

**141** To turn on each power converter, press and hold the Power Reset button for 2 s.

***Note:*** The Converter Fail light is not lit when the power converter has power.

**142** Determine if all the converters have power. The Converter Fail lights are not lit when the converters have power.

| If | Do |
|---|---|
| all the converters have power | step 147 |
| any converters do not have power | step 148 |

**143** To turn on each power converter, pull the power switch out and toggle the switch to the Power Reset position.

***Note:*** The Converter Fail light is not lit when the power converter has power.

**144** Determine if all the converters have power. When the Converter Fail lights are not lit the converters have power.

| If | Do |
|---|---|
| all of the converters have power | step 147 |
| any of the converters do not have power | step 148 |

**145** Turn on each power converter, as follows:

**a** toggle the breaker to the ON position

**b** press and hold the Power Reset button for 2 s

**c** release the breaker and the Power Reset button

***Note:*** The Converter Fail light is not lit when the power converter has power.

**146** Determine if all the converters have power. When the Converter Fail lights are not lit the converter have power.

| If | Do |
|---|---|
| all of the converters have power | step 147 |

## Recovering from a dead system in a SuperNode switch (continued)

| If | Do |
|---|---|
| any of the converters do not have power | step 148 |

**147** Determine if all PM frames have power.

| If | Do |
|---|---|
| all frames have power | step 151 |
| any frames do not have power | step 148 |

**148** Determine if an attempt to restore power to the remaining frames occurred.

| If an attempt to restore power to the remaining frames | Do |
|---|---|
| did not occur | step 149 |
| failed | step 150 |

**149** Power up the next frame.

Go to step 138.

**150** To power up the PM frames that remain, perform the correct procedures in *Alarm and Performance Monitoring Procedures*. Complete the procedure and return to this point.

***At the MAP terminal***

**151** To access the SRSTATUS level of the MAP display, type

**>SRSTATUS**

and press the enter key.

*Example of a MAP display:*

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                      11:52:34
 2  View_       Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS     0    0      2       0   IOD   5     5      30     2
 4        NET    0    0      6       0   Other 21    3      13     3
 5        SER1   0    1      6       0
 6        SER2   1    1      60      1
 7        SER3   11   8      30      1
 8
 9        SRSTATUS:
```

**152** From the MAP display, determine the recovery status of the Series I and II PMs.

***Note:*** Series I PM recovery status appears to the right side of the word SER1 in the MAP display, Series II PM recovery status appears to the right

## Recovering from a dead system in a SuperNode switch (continued)

side of the word SER2 in the MAP display. The recovery status can be pending, in progress, complete, or failed.

| If the number of Series I and II PMs that failed recovery | Do |
|---|---|
| is zero | step 155 |
| is other than listed here | step 153 |

**153** Determine from office records or other office personnel the first PM to recover.

**154** To recover the PMs manually and in the required order, perform the correct alarm clearing procedures in *Alarm and Performance Monitoring Procedures*. Completed the procedures and return to this point.

**155**

**WARNING**
**Loss of billing data**
Depending on your office configuration, billing systems other than, or in addition to, AMA may be used. Contact your next level of support to determine if other billing systems are used, and if recovery action is required.

To access the DIRP level of the MAP display, type

```
>IOD;DIRP
```

and press the Enter key.

**156** To determine the state of the recording volumes for the billing subsystem, type

```
>QUERY  subsystem  ALL
```

and press the Enter key.

*where*

**subsystem**
is the name of the DIRP subsystem for billing

*Example input:*

```
>QUERY  AMA  ALL
```

*Example of a MAP response:*

## Recovering from a dead system in a SuperNode switch (continued)

```
SSNAME SSNO SEQNO ROTATES POOLNO PARLPOOL EMERGENCY
AMA       0     1       6      9       62 ***YES***
REGULAR
FILE(S) STATE VOLUME RECCOUNT BLOCK E V V_B VLID FNUM FRN#
ACTIVE    NONE
STANDBY1  NONE
PARALLEL
FILE          STATE VOLUME   BLOCK E  V V_B VLID FNUM FRN#
                NONE
REGULAR VOLUME(S)
VOL# VOLNAME  STATE      IOC CARD VOL FSEG ROOM VLID FILES
REGULAR SPACE
```

| If | Do |
|---|---|
| the word NONE under the STATE header on the MAP display indicates that the volumes are not allocated. | step 158 |
| any volume is IN ERROR, as indicated under the REGULAR VOLUME(S) header on the MAP display | step 157 |
| all volumes are READY,as indicated under the REGULAR VOLUME(S) header on the MAP display | step 159 |

**157** To reset any volumes IN ERROR, type

**>RSETVOL vol_name**

and press the Enter key.

*where*

**vol_name**
is the name of the volume to be reset

| If the RSETVOL command | Do |
|---|---|
| passed | step 159 |
| failed | step 183 |

**158** Perform the *Allocating recording volumes in the DIRP utility* procedure in *Routine Maintenance Procedures*. Complete this procedure and return to this point.

## Recovering from a dead system in a SuperNode switch (continued)

**159** To determine the state of the DLOG recording volumes, type

**>QUERY DLOG ALL**

and press the Enter key.

*Example of a MAP response:*

```
SSNAME SSNO SEQNO ROTATES POOLNO PARLPOOL EMERGENCY
DLOG      2     1     102     10  NONE    ***YES***
.
REGULAR
FILE(S) STATE VOLUME RECCOUNT BLOCK E V V_B VLID FNUM FRN#
ACTIVE  AVAIL S01DDLOG     6     6  0 22 NO  8447 0013 204D
STANDBY1 AVAIL S00DDLOG    0     0  0 23 NO  8408 0014 309B
.
REGULAR VOLUME(S)
VOL# VOLNAME  STATE      IOC CARD VOL FSEG ROOM VLID FILES
  22 S01DDLOG READY      N/A  N/A   7    5   18 8447 A
  23 S00DDLOG READY      N/A  N/A   8    4   18 8408 S1

REGULAR SPACE
VOL# VOLNAME  STATE      SEGS   EXP UNEXP TOTAL
  22 S01DDLOG READY         5    13     0    18
  23 S00DDLOG READY         4    14     0    18
```

| If | Do |
|---|---|
| the word NONE under the STATE header on the MAP display indicates that volumes are not allocated. | step 161 |
| any volume is IN ERROR, as indicated under the REGULAR VOLUME(S) header on the MAP display | step 160 |
| all volumes are READY,as indicated under the REGULAR VOLUME(S) header on the MAP display | step 162 |

**160** To reset any volumes IN ERROR, type

**>RSETVOL vol_name**

and press the Enter key.

*where*

## Recovering from a dead system in a SuperNode switch (continued)

**vol_name**
is the name of the volume to be reset

| If the RSETVOL command | Do |
|---|---|
| passed | step 162 |
| failed | step 183 |

**161** Perform the *Allocating recording volumes in the DIRP utility* procedure in *Routine Maintenance Procedures*. Complete the procedure and return to this point.

**162** Determine from your next level of support if you need to recover other DIRP subsystems at this point (for example, JF, OM).

| If other DIRP subsystems | Do |
|---|---|
| require recovery | step 163 |
| do not required recovery | step 166 |

**163** Perform the correct procedures in *Alarm and Performance Monitoring Procedures*. Complete the procedures, and return to this point.

**164** To determine if the system generated DIRP logs , type

```
>LOGUTIL;OPEN  DIRP
```

and press the Enter key.

| If the system | Do |
|---|---|
| generated DIRP logs | step 165 |
| did not generate DIRP logs | step 166 |

**165** Refer to the *Log Report Reference Manual* and take the correct action. Complete the log report activities and return to this point.

**166** Determine if the attempt to synchronize the clocks in step 64 succeeded.

| If synchronization | Do |
|---|---|
| succeeded | step 169 |
| failed | step 167 |

**167** To access the MS Clock level of the MAP display, type

```
>MS;CLOCK
```

and press the Enter key.

**168** To synchronize the clocks, type

```
>SYNC
```

and press the Enter key.

| If the SYNC command | Do |
|---|---|
| succeeded | step 169 |
| failed | step 183 |

**169** To access the CM level of the MAP display, type

```
>CM
```

and press the Enter key.

**170** Determine if the CPUs are in sync.

***Note:*** A dot symbol under the Sync header indicates that the CPUs are in sync. The word no indicates that the CPUs are not in sync.

| If the CPUs | Do |
|---|---|
| are in sync | step 176 |
| are not in sync | step 171 |

**171** Determine from the next level of support if you have permission to synchronize the CPUs.

| If you | Do |
|---|---|
| have permission to synchronize the CPUs | step 172 |
| do not have permission to synchronize the CPUs | step 176 |

**172** Determine if the inactive CPU jammed.

***Note:*** The word yes under the Jam header indicates that the CPU jammed. The area is blank if the CPU did not jam.

| If the inactive CPU | Do |
|---|---|
| jammed | step 173 |
| did not jam | step 174 |

***At the CM reset terminal for the INACTIVE CPU***

**173** To release the jam on the inactive CPU, type

```
>\RELEASE  JAM
```

and press the Enter key.

*RTIF response:*

```
JAM RELEASE DONE
```

## Recovering from a dead system in a SuperNode switch (continued)

***At the MAP terminal***

**174** To synchronize the CPUs, type

**>SYNC**

and press the Enter key.

| If the response indicates | Do |
|---|---|
| the SYNC command was successful | step 176 |
| `The CPUs are out of sync due to a problem with mismatches. The mismatch logs should be analyzed before re-syncing.Do you wish to continue? Please Confirm(“YES", “Y", or “NO", “N")` (SuperNode and SuperNode SE series 70 only) | step 175 |
| other than listed here | step 183 |

**175** (SuperNode and SuperNode SE series 70 only)

To deny the action, type

**>NO**

and press the enter key.

Go to step 183.

**176** To turn off priority, type

**>PRIORITY OFF**

and press the Enter key.

**177** To access the SRSTATUS level of the MAP display, type

**>MAPCI;MTC;SRSTATUS**

and press the Enter key.

*Example of a MAP display:*

# Recovering from a dead system in a SuperNode switch (end)

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                        11:52:34
 2  View_      Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS    0    0      2       0   IOD   5     5      30     2
 4        NET   0    0      6       0   Other 21    3      13     3
 5        SER1  0    1      6       0
 6        SER2  1    1      60      1
 7        SER3  11   8      30      1
 8
 9        SRSTATUS:
```

**178** Determine the system recovery status.

| If | Do |
|---|---|
| any Series III PMs failed recovery | step 179 |
| any Series I or II PMs failed recovery | step 180 |
| any IODs or other devices and services failed recovery | step 182 |
| the whole system recovered | step 184 |

**179** To recover the PMs manually, perform the *Recovery of Link Peripheral Processors* procedure in this document.

Complete the procedure and return to this point.

Go to step 177.

**180** Determine from office records or other office personnel the first PM to recover.

**181** To recover the PMs manually and in the required order, perform the correct alarm clearing procedures in *Alarm and Performance Monitoring Procedures*.

Complete the procedure and return to this point.

Go to step 177.

**182** To recover IODs, other devices and services manually, perform a procedure listed in this document or consult the operating procedures for your site.

**183** For additional help, contact the personnel responsible for the next level of support.

**184** This procedure is complete.

# Recovering from a dead system in a SuperNode SE switch

## Application

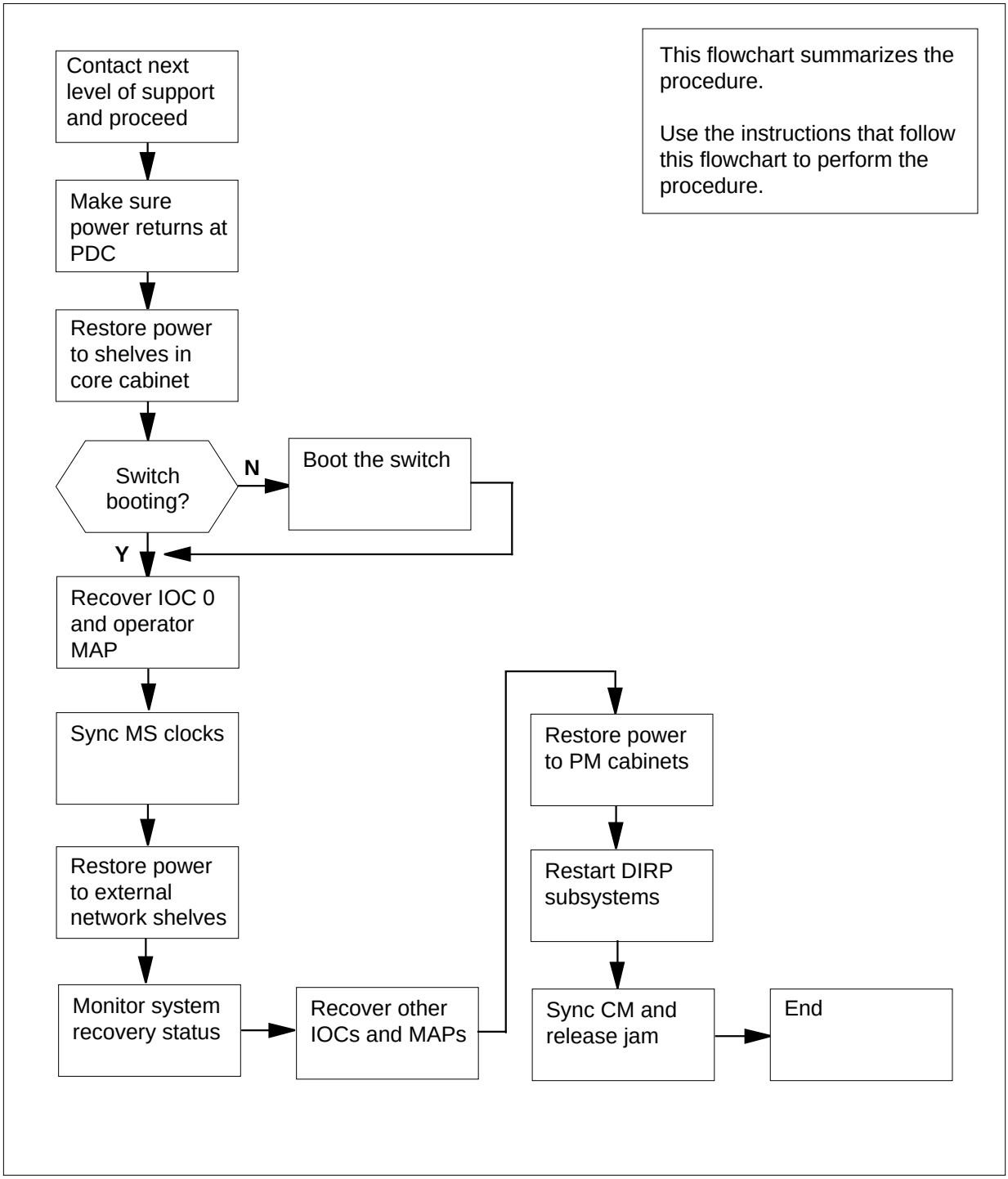
Use this procedure to recover a dead system. A DMS SuperNode SE switch is dead if the whole switch is without power. Loss or interruption of A and B dc power feeds to the power distribution centers (PDC) causes a dead switch.

## Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Recovering from a dead system in a SuperNode SE switch (continued)

**Summary of Recovering from a dead system in a SuperNode SE switch**



## Recovering from a dead system in a SuperNode SE switch (continued)

**Recovering from a dead system in a SuperNode SE switch**

**DANGER**

**Contact ETAS or the next level of support**

In the event of a dead system, contact Emergency Technical Assistance Services (ETAS) of Nortel. Make sure you contact the next level of support before you perform this procedure.

**DANGER**

**Risk of electrocution**

Do not touch the cabinet wiring. Contact with cabinet wiring that is not shielded can result in electric shock. Only qualified power maintenance personnel can perform the voltage measurements in step 3.

***At the PDC***

**1** As soon as possible after detection of the power failure, remove :

- fuse holders for the line concentrating equipment (LCE) talk batteries
- talk batteries for the trunk module equipment (TME)
- filter fuses for the power distribution center (PDC) from the appropriate PDCs

***Note:*** The location of the fuse holders in the fuse panel can vary, according to your office configuration. Consult the fuse assignment diagram for your office for help to locate the fuse holders. Contact the next level of support for help to locate the fuses.

**2** Determine if a -48 V dc feed or a -60 V dc feed powers the system.

| If | Do |
|---|---|
| a -48 V dc feed powers the system | step 3 |
| a -60 V dc feed powers the system | step 4 |

**3** When you receive information that power returned to power plant for your office, consult power maintenance personnel. Have power maintenance personnel verify that acceptable power returned at each PDC. At the rear of each PDC, measure the dc voltage across the A feed bus and the battery

## Recovering from a dead system in a SuperNode SE switch (continued)

return plate. Repeat for the B feed bus. Consider power restored when the voltage is -48 V dc on feeds A and B.

***Note:*** Power distribution occurs at a standard potential of -48 V dc. Under varied conditions, like a commercial power failure, the operating voltage can range from -43.75 V dc to -55.8 V dc.

| If power | Do |
|---|---|
| is restored | step 6 |
| is not restored | step 5 |

**4** When you receive information that power returned to the power plant for your office, consult power maintenance personnel. Have power maintenance personnel verify that acceptable power returned at each PDC. At the rear of each PDC, measure the dc voltage across the A feed bus and the battery return plate. Repeat for the B feed bus. Consider power restored when the voltage is -60 V dc on feeds A and B.

***Note:*** Power distribution occurs at a standard potential of -60 V dc. Under varied conditions, like a commercial power failure, operating voltage can range from -57.4 V dc to -67.7 V dc.

| If power | Do |
|---|---|
| is restored | step 6 |
| is not restored | step 5 |

***At the power room***

**5** For help to restore power to the PDC, contact the operating company personnel responsible for power maintenance at your site.

When power returns to the PDC, return to this point.

***At the PDC***

**6** Inspect the alarm-indicating fuses for the SuperNode combined core (SCC) and network cabinets (if equipped).

| If the fuses | Do |
|---|---|
| are blown | step 7 |
| are not blown | step 14 |

**7** Replace the blown cartridge fuse in the back of the affected fuse holder. Make sure that the amperage of the replacement cartridge fuse matches the amperage on a label on the PDC.

**8** Remove the blown alarm-indicating fuse from the front of the fuse holder.

**9** Insert the fuse holder into the PDC. Make sure you remove the alarm-indicating fuse from the fuse holder.

**10** Obtain a replacement alarm-indicating fuse.

## Recovering from a dead system in a SuperNode SE switch (continued)

**11** Insert the replacement alarm-indicating fuse in to the fuse holder.

**12** Proceed as follows:

| If the | Do |
|---|---|
| fuses have blown repeatedly | step 13 |
| fuse replacement is successful | step 14 |

**13** Contact the next level of support for help.

Replace all blown fuses correctly, and restore power to the SCC and network cabinets. Go to step 14.

**14** Restore power from the PDC to the peripheral module frames if a second person is available to help. The second person uses the information described in steps 106 through 143 of this procedure to restore power. While the second person restores power, complete steps 15 through 95 to recover the core and network. If only one person is available, recover the core and network first.

**15** Determine if the switch has a remote oscillator shelf (Bliley shelf).

| If the switch | Do |
|---|---|
| has a remote oscillator shelf | step 16 |
| does not have a remote oscillator shelf | step 17 |

***At the remote oscillator shelf***

**16** Turn on the power converters for the shelf.

***At the SCC cabinet***

**17** Locate the two NT9X31 power converters for message switch 0 (MS 0) and message switch 1 (MS 1).

***Note:*** Slots 1F and 33F on the MS shelf contain the NT9X31 power converters.

**18** Ensure that the power converters are off. If they are not off, turn off the power converters by pushing down and releasing the power switches located on the faceplate of each converter.

**19** Turn on the NT9X31 power converters at the same time. Lift and release the power switches on the faceplates of the converters to turn on the NT9X31 power converters.

**20** Locate the two NT9X30 power converters for MS 0 and MS 1.

***Note:*** Slots 4F and 36F on the MS shelf contain the NT9X30 power converters.

**21** Turn on the NT9X30 power converters at the same time. Lift and release the power switches on the faceplates of the converters to turn on the NT9X30 power converters.

## Recovering from a dead system in a SuperNode SE switch (continued)

**22** Locate the two NT9X91 power converters for the system load modules (SLMs).

***Note:*** Slots 1F and 36F on the CM/SLM shelf contain the NT9X91 power converters.

**23** Turn on the two NT9X91 power converters at the same time. Lift and release the power switches on the faceplates of the converters to turn on the NT9X91 power converters.

**24** Locate the two NTDX15 power converters for the computing module (CM).

***Note:*** Slots 4F and 33F on the CM/SLM shelf contain the NTDX15 power converters.

**25** Turn on the two NTDX15 power converters at the same time. Lift and release the power switches on the faceplates of the converters to turn on the NTDX15 power converters.

**26** Determine if the SCC cabinet has an enhanced network and interface (ENI) shelf.

| If an ENI shelf | Do |
|---|---|
| is present | step 27 |
| is not present | step 32 |

**27** Locate the NT9X31 power converters in slots 1 and 33 on the ENI shelf.

**28** Ensure that the power converters are off. If they are not off, turn off the power converters by pushing down and releasing the power switches located on the faceplate of each converter.

**29** Turn on the NT9X31 power converters at the same time. Lift and release the power switches on the faceplates of the converters to turn on the NT9X31 power converters.

**30** Locate the NT9X30 power converters in slots 4 and 36 on the ENI shelf.

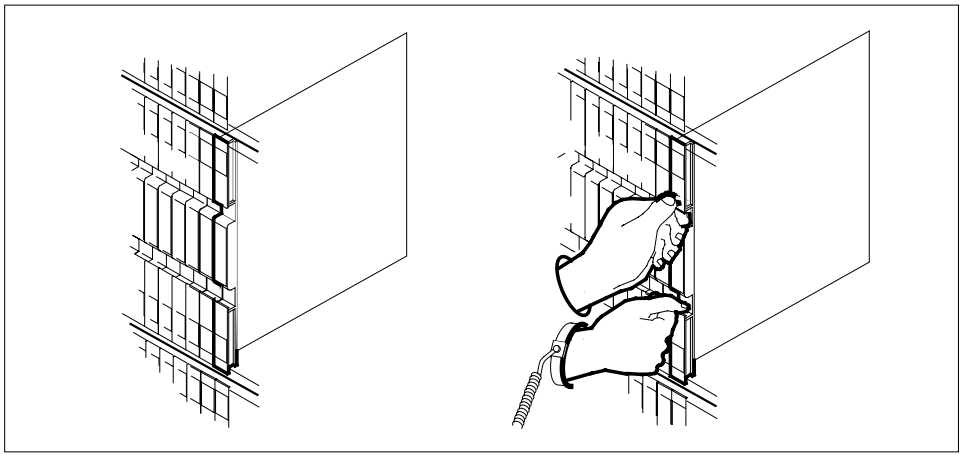
**31** Turn on the NT9X30 power converters at the same time. Lift and release the power switches on the faceplates of the converters to turn on the NT9X30 power converters.

**32** Determine if the SCC cabinet has a link interface shelf (LIS).

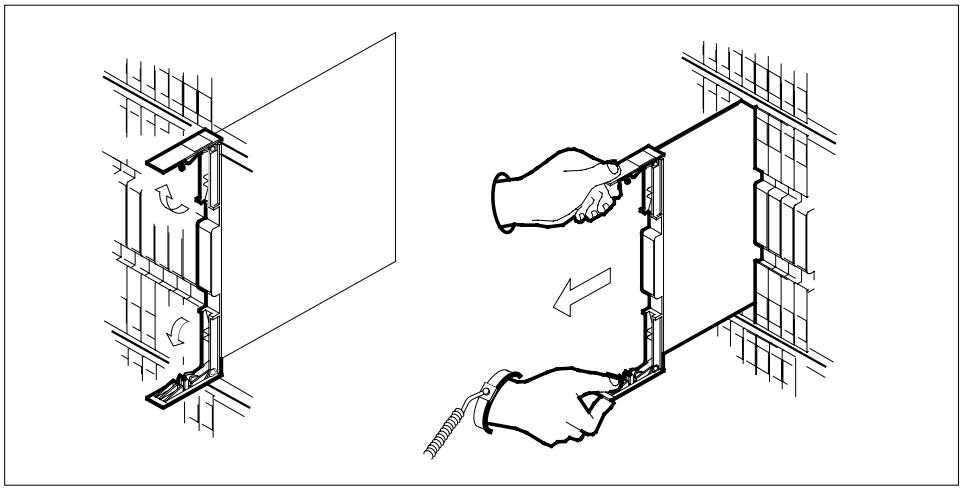
| If an LIS | Do |
|---|---|
| is present | step 33 |
| is not present | step 40 |

**33** Locate the NT9X74 cards in slots 7F and 32F on the SCC LIS.

## Recovering from a dead system in a SuperNode SE switch (continued)



**34** Unlock the latches of the locking levers and carefully pull each NT9X74 card toward you 25 mm (1 in.).



**35** Leave the NT9X74 cards seated in the slots.

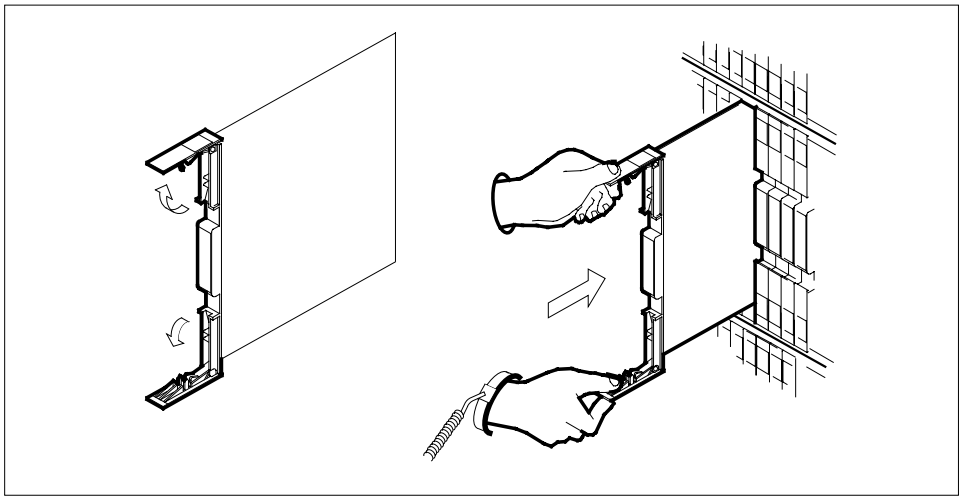
**36** Locate the NT9X30 or NTDX16 power converters for the SCC LIS.

***Note:*** Slots 4F and 36F on the SCC LIS contain the NT9X30 power converters. Slots 1F, 4F, 33F, and 36F on the SCC LIS contain the NTDX16 power converters.

**37** Turn on the NT9X30 or NTDX16 power converters at the same time. Lift and release the power switches on the faceplates of the converters to turn on the NT9X30 or NTDX16 power converters.

**38** Carefully slide the NT9X74 cards in slots 7F and 32F into the SCC LIS.

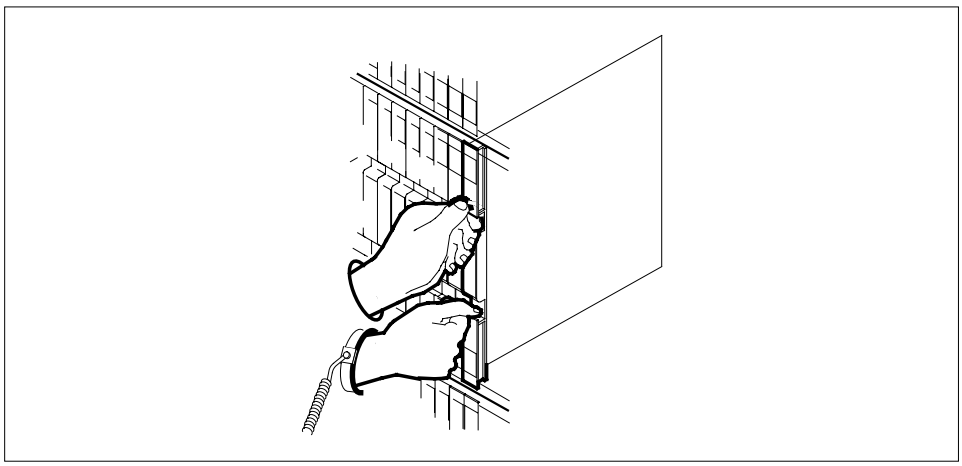
## Recovering from a dead system in a SuperNode SE switch (continued)



**39** Seat and lock the cards, as follows:

**a** Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Make sure that the card sits completely in the shelf.

**b** Close the locking levers.



**40** Determine if all the converters powered up correctly. All the Converter Off lights go off to indicate the converters powered up.

| If all the converters | Do |
|---|---|
| powered up | step 42 |
| did not power up | step 41 |

**41** Power up the frame. Perform the procedure *Clearing an Ext FSP DPCC cabinet major alarm* in *Alarm and Performance Monitoring Procedures*.

Complete the procedure and return to this point.

## Recovering from a dead system in a SuperNode SE switch (continued)

Go to step 36.

***At the CM RESET terminal for the INACTIVE CPU***

**42** To release the jam on the inactive CPU, type

**>\RELEASE JAM**

and press the Enter key.

*RTIF response:*
JAM RELEASE DONE

***At the CM RESET terminal for the ACTIVE CPU***

**43** Monitor the CM RESET terminal for the active CPU to determine if the switch booted.

***Note:*** When the switch boots, the RESET terminal displays the response Booting, followed by different diagnostic messages. Alphanumeric addresses appear in the status bar of the RESET terminal. When the switch boots, A1 flashes in the status bar.

| If A1 | Do |
|---|---|
| flashes | step 50 |
| does not flash after 15 min | step 44 |

***At the CM RESET terminal for the INACTIVE CPU***

**44** To jam the inactive CPU, type

**>\JAM**

and press the Enter key.

*RTIF response:*
Please confirm: (YES/NO)

**45** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*
JAM DONE

***At the CM RESET terminal for the ACTIVE CPU***

**46** To override the active CPU, type

**>\OVERRIDE**

and press the Enter key.

*RTIF response:*
TEMP. RESET/JAM ENABLE

**47** To boot the active CPU, type

**>\BOOT SLM slm_no**

## Recovering from a dead system in a SuperNode SE switch (continued)

and press the Enter key.

*where*

**slm_no**
is the number of the SLM (0 or 1) that contains the most recent image file

*Example input:*

```
>BOOT  SLM 0
```

*RTIF response:*
Please confirm: (YES/NO)

**48** To confirm the command, type

**>YES**

and press the Enter key.

*RTIF response:*
JAM DONE

**49** Wait until A1 flashes on the RESET terminal for the active CPU. Determine if the switch booted.

| If A1 | Do |
|---|---|
| flashes | step 50 |
| does not flash after 15 min | step 193 |

***At the IOD frame***

**50** Turn on the power converters on input/output controller (IOC) 0.

***Note:*** The vintage of IOC determines if the IOC has one or two power converters.

**51** Press the RESET button on one of the IOC power converters. While you press the RESET button, lift the circuit breaker switch for the frame supervisory panel (FSP) for IOC 0.

**52** Release the RESET button.

**53** Turn on the power inverter that supplies the operator MAP terminal.

***At the operator MAP terminal***

**54** Determine if you must log in.

***Note:*** The message Please Login means that you must log in. Your office parameters determine if the system can log you in automatically.

*Example of a MAP response:*
Please Login.

| If | Do |
|---|---|
| you must log in | step 55 |

## Recovering from a dead system in a SuperNode SE switch (continued)

| If | Do |
|---|---|
| the system logged you in automatically | step 59 |

**55**

**WARNING**
**Extended service interruption**
The exact login procedure can vary, according to your office configuration. If you require additional help, contact the next level of support.

Press the Break key.

*MAP response:*
?

**56** To log in to the MAP terminal, type

**`>LOGIN`**

and press the Enter key.

*MAP response:*
Enter User Name

**57** To enter the user name, type

**`>user_name`**

and press the Enter key.

*where*

**user_name**
is the name of the user for the account

*MAP response:*
Enter Password

**58** To enter the password, type

**`>password`**

and press the Enter key.

*where*

**password**
is the password for the account

*Example of a MAP response:*
SuperNode1 Logged in on 1993/03/11 at 20:37:17.

**59** To turn on priority, type

**`>PRIORITY  ON`**

and press the Enter key.

## Recovering from a dead system in a SuperNode SE switch (continued)

*MAP response:*
Pref>

**60** To determine if the system time is correct, type

**>TIME**

and press the Enter key.

*Example of a MAP response:*
Time is 14:55:50

| If the system time | Do |
|---|---|
| is correct | step 63 |
| is wrong | step 61 |

**61** To enter the correct time (use the 24-h clock), type

**>SETTIME hh mm**

and press the Enter key.

*where*

**hh**
is the hour (00 to 23)

**mm**
is the minute (00 to 59)

*Example input:*

**>SETTIME 16 55**

*Example of a MAP response:*
Warning:There is an automated TOD clock change request
scheduled on:1996/10/15 at 1:00 (see table
DSTTABLE).
Do you want to proceed with this request?
Please confirm ("YES", "Y", "NO", or "N"):

**62** To confirm the command, type

**>Y**

and press the Enter key.

*Example of a MAP response:*

```
Time is 16:55:00 on TUE 1996/10/15.
```

**63** Determine if the system date is correct

| If the system date | Do |
|---|---|
| is correct | step 66 |
| is wrong | step 64 |

## Recovering from a dead system in a SuperNode SE switch (continued)

**64** To enter the correct date, type

**>SETDATE dd mm yyyy**

and press the Enter key.

*where*

**dd**
is the day (01 to 31)

**mm**
is the month (01 to 12)

**yyyy**
is the year

*Example input:*

**>SETDATE 12 07 1996**

*Example of a MAP response:*
setdate 12 07 1996
Warning:There is an automated TOD clock change request scheduled on:1996/10/30 at 1:00 (see table DSTTABLE).
Do you want to proceed with this request?
Please confirm ("YES", "Y", "NO", or "N"):

**65** To confirm the command, type

**>Y**

and press the Enter key.

*Example of a MAP response:*

```
Date is THU.  12/JUL/1996  00:00:00
```

**66** To access the SRSTATUS level of the MAP display, type

**>MAPCI;MTC;SRSTATUS**

and press the Enter key.

*Example of a MAP display:*

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                        11:52:34
 2  View_      Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS    0    0      2       0   IOD   5     5      30     2
 4        NET   0    0      6       0   Other 21    3      13     3
 5        SER1  0    1      6       0
 6        SER2  1    1      60      1
 7        SER3  11   8      30      1
 8
 9        SRSTATUS:
```

## Recovering from a dead system in a SuperNode SE switch (continued)

**67** Determine the recovery status of the MSs.

***Note:*** The MS recovery status appears on the right side of the word MS in the MAP display. Recovery status for each MS can be pending, in progress, complete, or failed.

| If | Do |
|---|---|
| either MS failed recovery | step 193 |
| either MS waits for recovery | step 68 |
| MS recovery status is other than listed here | step 69 |

**68** Wait until both MSs are in recovery progress or completed recovery.

When the MSs do not continue to wait for recovery, go to step 67.

**69** To access the MS Clock level of the MAP display, type

```
>MS;CLOCK
```

and press the Enter key.

**70** To synchronize the clocks, type

```
>SYNC
```

and press the Enter key.

| If the SYNC command | Do |
|---|---|
| passed | step 72 |
| failed | step 71 |

**71** Record the reason for the synchronization failure as shown in the MAP response. Continue this procedure at step 72 to recover networks and peripheral modules. Repeat the attempt to synchronize the MS clocks later, after networks and peripheral modules (PM) are in service.

**72** Determine the type of network equipped on the switch.

| If the network type | Do |
|---|---|
| is 16K ENET only (no external network cabinet) | step 80 |
| is ENET (with external network cabinet) | step 73 |
| is JNET | step 84 |

## Recovering from a dead system in a SuperNode SE switch (continued)

***At the ENET frames***

**73** Locate the NT9X31 power converters for the enhanced network (ENET) shelves.

***Note:*** Slots 1F and 33F on the ENET shelf contain the NT9X31 power converters.

**74** Ensure that the power converters are off. If they are not off, turn off the power converters by pushing down and releasing the power switches located on the faceplate of each converter.

**75** Turn on the NT9X31 power converters. Lift and release the power switches on the faceplates of the converters to turn on the NT9X31 power converters.

**76** Locate the NT9X30 power converters for the ENET shelves.

***Note:*** Slots 4F and 36F on the ENET shelf contain the NT9X30 power converters.

**77** Turn on the NT9X30 power converters. Lift and release the power switches on the faceplates of the converters to turn on the NT9X30 power converters.

**78** Determine if all the converters powered up correctly. The indication is that all the Converter Off lights go off.

| If all the converters | Do |
|---|---|
| powered up | step 80 |
| did not power up | step 79 |

**79** Power up the ENET frame. Perform the procedure *Clearing an Ext FSP DPCC cabinet major alarm* in *Alarm and Performance Monitoring Procedures*

Complete the procedure and return to this point.

Go to step 73.

***At the MAP terminal***

**80** To access the SRSTATUS level of the MAP display, type

**>SRSTATUS**

and press the Enter key.

*Example of a MAP display:*

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
0  Quit    VIEW: SYSTEM                                      11:52:34
2  View_       Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
3  List_ MS     0    0      2       0   IOD   5     5      30     2
4        NET    0    0      6       0   Other 21    3      13     3
5        SER1   0    1      6       0
6        SER2   1    1      60      1
7        SER3   11   8      30      1
8
9        SRSTATUS:
```

## Recovering from a dead system in a SuperNode SE switch (continued)

**81** From the MAP display, determine the recovery status of the network.

***Note:*** Network recovery status appears on the right side of the word NET in the MAP display. Recovery status can be pending, in progress, complete, or failed.

| If the status of any network element | Do |
|---|---|
| failed | step 83 |
| is pending | step 82 |
| is other than listed here | step 96 |

**82** Wait until network elements pending recovery are not present.

Go to step 81.

**83** Perform the procedure *How to recover the Enhanced Network* in this document to manually recover the ENET.

Complete the procedure and return to this point.

Go to step 80.

***At the JNET shelf***

**84**

**DANGER**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point to handle circuit cards. A grounding point is on the frame supervisory panel (FSP) or the modular supervisory panel (MSP). The wrist strap protects the cards against static electricity damage.

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point to handle circuit cards. A grounding point is on the frame supervisory panel (FSP) or the modular supervisory panel (MSP). The wrist strap protects the cards against static electricity damage.

Locate the first junctured network shelf to recover.

## Recovering from a dead system in a SuperNode SE switch (continued)

**85** Determine if the power converter is an NT2X70AE card.

| If the power converter | Do |
|---|---|
| is an NT2X70AE card | step 86 |
| is not an NT2X70AE card | step 89 |

**86** Determine if the FSP or MSP has circuit breakers.

| If the FSP or MSP does | Do |
|---|---|
| has circuit breakers | step 87 |
| does not have circuit breakers | step 88 |

**87** Power up the converter.

**a** Move the handle of the POWER switch up to the RESET position and hold.

**b** Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Make sure that the card sits completely in the shelf.

**c** Move the handle of the converter circuit breaker on the FSP or MSP up until the handle clicks into place.

**d** Release the handle.

Go to step 92.

**88** Power up the converter.

**a** Move the handle of the POWER switch up to the RESET position and hold until the CONVERTER FAIL LED goes off.

**b** Release the handle.

Go to step 92.

**89** Determine if the FSP or MSP has circuit breakers.

| If the FSP or MSP | Do |
|---|---|
| has circuit breakers | step 90 |
| does not have circuit breakers | step 91 |

**90** Power up the converter.

**a** Move the handle of the POWER switch up and set to the ON position.

**b** Press and hold the RESET button on the power converter.

**c** Move the handle of the converter circuit breaker on the FSP or MSP up until the handle clicks into place.

**d** Release the RESET button.

Go to step 92.

**91** Power up the converter.

## Recovering from a dead system in a SuperNode SE switch (continued)

**a** Move the handle of the POWER switch up and set to the ON position.

**b** Press the RESET button on the power converter until the CONVERTER FAIL LED goes off.

**c** Release the RESET button.

***At the MAP terminal***

**92** To access the NET level of the MAP display, type

**>NET**

and press the Enter key.

*Example of a MAP display:*

```
Net
                     11111   11111   22
222 22222  33
Plane 01234  56789  01234   56789   01
234 56789  01
   0  0000
   1  0000
JNET
```

**93** To manually busy the network module to return to service, type

**>BSY plane_no pair_no**

and press the Enter key.

*where*

**plane_no**
is the network plane number (0 to 1)

**pair_no**
is the network plane pair number (0 to 31)

**94** To return the network module to service, type

**>RTS plane_no pair_no**

and press the Enter key.

*where*

**plane_no**
is the network plane number (0 to 1)

**pair_no**
is the network plane pair number (0 to 31)

**95** Repeat steps 84 through 94 for each JNET shelf.

When all JNET shelves recover, continue the procedure at step 96.

## Recovering from a dead system in a SuperNode SE switch (continued)

**96** Determine if you must recover additional IOCs and MAPs.

| If you | Do |
|---|---|
| must recover additional IOCs and MAPs | step 97 |
| do not need to recover additional IOCs and MAPs | step 109 |

**97** Restore power to all power inverters that remain in the office.

***At the IOC***

**98** Locate the IOC to recover.

| If the controller | Do |
|---|---|
| is IOC | step 99 |
| is IOM | step 103 |

**99** Turn ON the power converters on the IOC.

***Note:*** The vintage of IOC determines if the IOC has one or two power converters.

**100** While you press the RESET button on one of the IOC power converters, lift the associated circuit breaker switch on the FSP.

**101** Release the RESET button.

**102** Repeat steps 98 through 101 for each IOC to recover. Continue this procedure at step 103.

**103** To access the IOD level of the MAP display, type

```
>IOD
```

and press the Enter key.

**104** To access the IOC level of the MAP display, type

```
>IOC    ioc_no
```

and press the Enter key.

*where*

**ioc_no**
is the number of the IOC or input/output module (IOM) to recover

**105** To manually busy the IOC or IOM, type

```
>BSY    ioc_no
```

and press the Enter key.

*where*

**ioc_no**
is the number of the IOC or IOM

## Recovering from a dead system in a SuperNode SE switch (continued)

**106** To return the IOC or IOM to service, type

**>RTS ioc_no**

and press the Enter key.

*where*

**ioc_no**
is the number of the IOC or IOM

**107** Repeat steps 104 through 106 for each IOC or IOM to recover. Continue this procedure at step 108.

**108** Log in to additional MAP terminals as required.

***Note:*** Steps 54 through 58 describe how to log in to the MAP display.

**109** Determine if your switch has Series III peripheral modules.

*Note:* Series III PMs have:

- CCS7 link interface units (LIU7s)
- High-speed link interface unit (HLIU)
- High-speed link router (HSLR)
- CCS7 server (SVR7)
- Ethernet interface units (EIUs)
- network interwork units (NIUs)
- voice processor units (VPUs)
- application processor units (APUs)
- frame relay interface units (FRIUs)

| If your switch | Do |
|---|---|
| has Series III PMs | step 110 |
| does not have Series III PMs | step 131 |

**110** Determine if a link peripheral processor (LPP) or enhanced link peripheral processor (ELPP) contains any Series III PMs.

| If an LPP or ELPP | Do |
|---|---|
| contains any Series III PMs | step 111 |
| does not contain any Series III PMs | step 126 |

**111** Determine if PDC power returned to the LPP(s).

| If PDC power | Do |
|---|---|
| returned to the LPP(s) | step 115 |
| did not return to the LPP(s) | step 112 |

## Recovering from a dead system in a SuperNode SE switch (continued)

**112** Check the PDC fuses that supply the LPP or ELPP.

| If blown fuses | Do |
|---|---|
| are present | step 113 |
| are not present | step 114 |

**113** Replace the blown fuses.

***Note:*** If fuses blow repeatedly, contact the next level of support for help.

When PDC power returns to the LPPs or ELPPs, go to step 115.

**114** Contact the operating company personnel responsible for the maintenance of power at your site. For additional help, contact the next level of support.

When PDC power returns to the LPPs or ELPPs, continue this procedure at step 115.

**115** Locate the LPPs or ELPPs to recover.

***At the LPP or ELPP cabinet***

**116**

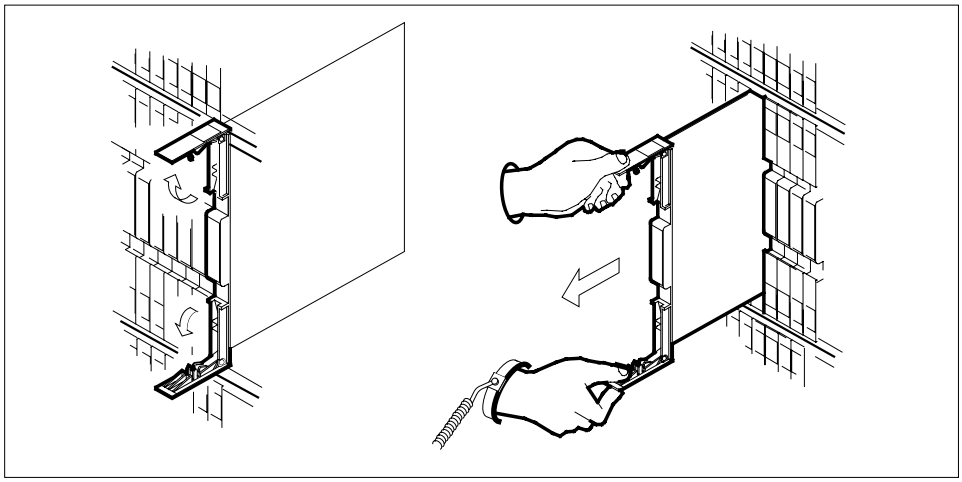
**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point to handle circuit cards. A grounding point is on the frame supervisory panel (FSP) or the modular supervisory panel (MSP). The wrist strap protects the cards against static electricity damage.

Locate the NT9X74 cards in all link interface shelves (LIS).

***Note:*** Shelf positions 7F and 32F on all LISs contain NT9X74 cards.

**117** Unlock the latches on the locking levers and carefully pull the NT9X74 cards toward you 25 mm (1 in.).

## Recovering from a dead system in a SuperNode SE switch (continued)



**118** Locate the NT9X30 power converters in slots 4F and 36F of the link interface module (LIM) unit shelf.

**119** Turn on the LIM unit shelf power converters. Toggle the switch on each NT9X30 card.

**120** Locate the NT9X30 or NTDX16 power converters for each LIS.

***Note:*** Slots 4F and 36F for each LIS contain the NT9X30 power converters. Slots 1F, 4F, 33F, and 36F for each LIS can contain NTDX16 power converters.

**121** Turn on the LIS power converters. Toggle the switch on each NT9X30 or NTDX16 card.

**122** Determine if all the converters powered up correctly. The indication is if all the Converter Off lights go off.

| If all the converters | Do |
|---|---|
| powered up | step 124 |
| did not power up | step 123 |

**123** Power up the frame. Perform the procedure *Clearing an Ext FSP LPP cabinet major alarm* in *Alarm and Performance Monitoring Procedures*.

Complete the procedure and return to this point.

Go to step 118.

**124** Replace all NT9X74 cards as follows:

**a** Slide each card into the LIS carefully.

**b** Use fingers and thumbs to push on the upper and lower edges of each faceplate. Make sure that the card sits completely in the shelf.

**c** Close the locking levers on each card.

**125** Repeat steps 115 through 124 for each LPP or ELPP in your office.

## Recovering from a dead system in a SuperNode SE switch (continued)

When power returns to all LPPs or ELPPs, continue this procedure at step 126.

**126** To access the SRSTATUS level of the MAP display, type

**>SRSTATUS**

and press the Enter key.

*Example of a MAP display:*

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                      11:52:34
 2  View_      Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS    0    0      2       0   IOD   5     5      30     2
 4        NET   0    0      6       0   Other 21    3      13     3
 5        SER1  0    1      6       0
 6        SER2  1    1      60      1
 7        SER3  11   8      30      1
 8
 9        SRSTATUS:
```

**127** From the MAP display, determine the recovery status of the Series III PMs.

***Note:*** Series III PM recovery status appears on the right side of the word SER3 in the MAP display. Recovery status can be pending, in progress, complete, or failed.

| If the number of Series III PMs that failed recovery | Do |
|---|---|
| is zero | step 131 |
| is other than zero | step 128 |

**128** Determine if a link peripheral processor (LPP) or enhanced link peripheral processor (ELPP) or the SCC contains the Series III PMs that failed recovery.

| If the Series III PMs that failed recovery are in | Do |
|---|---|
| an LPP or ELPP | step 130 |
| the SCC | step 129 |

**129** Perform the procedure *Recovering SuperNode SE application specific units* in this document to manually recover the PMs.

Complete the procedure and return to this point. Go to step 131.

**130** Perform the procedure *Recovering link peripheral processors* in this document to manually recover the PMs.

Complete the procedure and return to this point.

# Recovering from a dead system in a SuperNode SE switch (continued)

**131** Steps 132 through 146 describe how to restore power from the PDC to Series I and Series II peripheral module frames. Proceed as follows:

| If PDC power | Do |
|---|---|
| returns to the PM frames | step 147 |
| does not return to the PM frames | step 132 |

**132** Obtain one of the following capacitor tools:

- 100-W 120-V light bulb screwed into a socket that has bare-ended twisted wires
- tool number T000655 (CPC number NTA0600512), fitted with a fuseholder-style connector instead of bare-ended twisted wires for easier insertion

***At the PDC***

**133** At the first empty fuse slot in the PDC, connect the leads of the capacitor charging tool. Connect the leads across the contacts for the fuse holder until the light dims. (If you use a tool that charges with a fuseholder-style connector, insert the connector in the slot until the light dims.)

**134**

**DANGER**
**Possible equipment damage or extended service interruption**
Make sure you use the correct fuses. When you return fuses to the PDC, make sure that the amperage of the fuses matches the amperage marked on the PDC.

Remove the capacitor charging tool and immediately insert the correct fuse holder in the slot.

**135** Repeat steps 133 and 134 for all the LCE talk battery, TME talk battery, and PDC filter fuse holders. You removed the fuse holders in step 1. When all fuses return to the PDCs, continue with the procedure.

**136** Determine if any alarm-indicating fuses are blown.

***Note:*** The fuse alarm-indicator lamp lights when an alarm-indicating fuse blows.

| If alarm-indicating fuses | Do |
|---|---|
| are blown | step 137 |
| are not blown | step 147 |

**137** Locate a fuse holder with a blown alarm-indicating fuse.

***Note:*** Replace blown fuses in any order.

**138** The cartridge fuse in the fuse holder is blown. Remove the fuse holder from the PDC.

## Recovering from a dead system in a SuperNode SE switch (continued)

**139** Replace the blown cartridge fuse in the back of the fuse holder. Make sure that the amperage of the replacement cartridge fuse matches the amperage marked on the PDC.

**140** Remove the blown alarm-indicating fuse from the front of the fuse holder.

**141** Insert the fuse holder into the PDC. Make sure you remove the alarm-indicating fuse.

**142** Obtain a replacement alarm-indicating fuse.

**143** Insert the replacement alarm-indicating fuse into the fuse holder.

**144** Determine if the alarm-indicating fuse blows.

***Note:*** The fuse alarm indicator lamp lights when an alarm-indicating fuse blows.

| If the alarm-indicating fuse | Do |
|---|---|
| blows | step 193 |
| does not blow | step 145 |

**145** Determine if you replaced all the blown alarm-indicating fuses.

| If you | Do |
|---|---|
| replaced all the blown alarm-indicating fuses | step 146 |
| did not replace all the blown alarm-indicating fuses | step 137 |

**146** Determine if the fuse alarm indicator lamp is lit.

| If the fuse alarm indicator lamp | Do |
|---|---|
| is lit | step 193 |
| is not lit | step 147 |

***At the PM frames***

**147** Select a peripheral module (PM) frame to turn on.

***Note:*** The PM frames can activate in any order.

**148** Locate the FSP and the power converters on the frame.

**149** Determine if the FSP for the frame has fuses or breakers.

| If the FSP | Do |
|---|---|
| has fuses | step 150 |
| has breakers | step 155 |

## Recovering from a dead system in a SuperNode SE switch (continued)

**150** Determine if the power converters have POWER RESET buttons or POWER RESET switches.

| If the power converters | Do |
|---|---|
| have POWER RESET buttons | step 151 |
| have POWER RESET switches | step 153 |

**151** Press and hold the POWER RESET button on the converter for 2 seconds to turn on each power converter.

***Note:*** The Converter Fail light goes off with the power converter turned on.

**152** Determine if all the converters powered up correctly. The indication is all the Converter Fail lights go off.

| If all the converters | Do |
|---|---|
| powered up | step 157 |
| did not power up | step 158 |

**153** Turn ON each power converter. Pull the power switch out and toggle the switch to the POWER RESET position to turn on each power converter.

***Note:*** The Converter Fail light goes off with the power converter turned on.

**154** Determine if all the converters powered up correctly.

***Note:*** When a converter powers up correctly, the Converter Fail light goes off.

| If all the converters | Do |
|---|---|
| powered up | step 157 |
| did not power up | step 158 |

**155** Turn ON each power converter, as follows:

**a** Toggle the breaker to the ON position.

**b** Press and hold the POWER RESET button for 2 s.

**c** Release the breaker and the POWER RESET button.

***Note:*** The Converter Fail light goes off with the power converter turned on.

**156** Determine if all the converters powered up correctly. The indication is all the Converter Fail lights go off.

| If the converters | Do |
|---|---|
| powered up | step 157 |

## Recovering from a dead system in a SuperNode SE switch (continued)

| If the converters | Do |
|---|---|
| did not power up | step 158 |

**157** Determine if all PM frames powered up.

| If all frames | Do |
|---|---|
| powered up | step 161 |
| did not power up | step 158 |

**158** Determine if an attempt to power up the frames that remained occurred.

| If an attempt to power up the frames that remain | Do |
|---|---|
| did not occur | step 159 |
| occurred and failed | step 160 |

**159** Power up the next frame.

Go to step 148.

**160** Power up the PM frames that remain. Perform the correct procedures in *Alarm and Performance Monitoring Procedures.* Complete the procedure and return to this point.

***At the MAP terminal***

**161** To access the SRSTATUS level of the MAP display, type

**>SRSTATUS**

and press the Enter key.

*Example of a MAP display:*

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                        11:52:34
 2  View_       Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS    0    0      2       0   IOD   5     5      30     2
 4        NET   0    0      6       0   Other 21    3      13     3
 5        SER1  0    1      6       0
 6        SER2  1    1      60      1
 7        SER3  11   8      30      1
 8
 9        SRSTATUS:
```

**162** From the MAP display, determine the recovery status of the Series I and II PMs.

***Note:*** Series I PM recovery status appears on the right side of the word SER1 in the MAP display. Series II PM recovery status appears on the

## Recovering from a dead system in a SuperNode SE switch (continued)

right side of the word SER2 in the MAP display. Recovery status can be pending, in progress, complete, or failed.

| If the number of Series I and II PMs that failed recovery | Do |
|---|---|
| is zero | step 165 |
| is other than zero | step 163 |

**163** Determine from office records or operating company personnel the PMs to manually recover first.

**164** Perform the procedures in *Alarm and Performance Monitoring Procedures.* to manually recover the PMs in the required order. Complete the procedures and return to this point.

**165**

**CAUTION**
**Loss of billing data**
Office configuration can allow the system to use billing systems other than, or in addition to, AMA. Contact the next level of support to determine if other billing systems are in use. Determine if the system requires recovery action.

To access the DIRP level of the MAP display, type

```
>IOD;DIRP
```

and press the Enter key.

**166** To determine the state of the recording volumes for the billing subsystem, type

```
>QUERY  subsystem  ALL
```

and press the Enter key.

*where*

**subsystem**
is the name of the DIRP subsystem used for billing.

*Example input:*

```
>QUERY  AMA  ALL
```

*Example of a MAP response:*

## Recovering from a dead system in a SuperNode SE switch (continued)

```
SSNAME SSNO SEQNO ROTATES POOLNO PARLPOOL EMERGENCY
AMA       0     1       6      9       62 ***YES***

REGULAR
FILE(S)  STATE VOLUME   RECCOUNT BLOCK E  V V_B VLID FNUM FRN#
ACTIVE    NONE
STANDBY1  NONE

PARALLEL
FILE              STATE VOLUME   BLOCK E  V V_B VLID FNUM FRN#
                   NONE

REGULAR VOLUME(S)
VOL# VOLNAME  STATE         IOC CARD VOL FSEG ROOM VLID FILES

REGULAR SPACE
```

| If | Do |
|---|---|
| volumes are not allocated, as indicated by the word NONE under the STATE header on the MAP display | step 168 |
| a volume is IN ERROR, as indicated under the REGULAR VOLUME(S) header on the MAP display | step 167 |
| all volumes are READY, as indicated under the REGULAR VOLUME(S) header on the MAP | step 169 |

**167** To reset any volumes that are IN ERROR, type

**>RSETVOL vol_name**

and press the Enter key.

*where*

**vol_name**
is the name of the volume to reset

| If the RSETVOL command | Do |
|---|---|
| passed | step 169 |
| failed | step 193 |

**168** Perform the procedure *Allocating recording volumes in the DIRP utility* in *Routine Maintenance Procedures*. Complete the procedure and return to this point.

**169** To determine the state of the DLOG recording volumes, type

**>QUERY DLOG ALL**

## Recovering from a dead system in a SuperNode SE switch (continued)

and press the Enter key.

*Example of a MAP response:*

```
SSNAME SSNO SEQNO ROTATES POOLNO PARLPOOL EMERGENCY
DLOG      2     1     102     10  NONE    ***YES***

REGULAR
FILE(S)  STATE VOLUME   RECCOUNT BLOCK E  V V_B VLID FNUM FRN#
ACTIVE   AVAIL S01DDLOG         6     6 0 22 NO  8447 0013 204D
STANDBY1 AVAIL S00DDLOG         0     0 0 23 NO  8408 0014 309B


REGULAR VOLUME(S)
VOL# VOLNAME  STATE         IOC CARD VOL FSEG ROOM VLID FILES
  22 S01DDLOG READY         N/A  N/A   7    5   18 8447 A
  23 S00DDLOG READY         N/A  N/A   8    4   18 8408 S1

REGULAR SPACE
VOL# VOLNAME  STATE         SEGS   EXP UNEXP TOTAL
  22 S01DDLOG READY            5    13     0    18
  23 S00DDLOG READY            4    14     0    18
```

| If | Do |
|---|---|
| volumes are not allocated, as indicated by the word NONE under the STATE header on the MAP display | step 171 |
| a volume is IN ERROR, as indicated under the REGULAR VOLUME(S) header on the MAP display | step 170 |
| all volumes are READY, as indicated under the REGULAR VOLUME(S) header on the MAP display | step 172 |

**170** To reset any volumes that are IN ERROR, type

**>RSETVOL vol_name**

and press the Enter key.

*where*

**vol_name**
is the name of the volume to reset

| If the RSETVOL command | Do |
|---|---|
| passed | step 172 |
| failed | step 193 |

## Recovering from a dead system in a SuperNode SE switch (continued)

**171** Perform the procedure *Allocating recording volumes in the DIRP utility* in *Routine Maintenance Procedures*. Complete the procedure and return to this point.

**172** Consult the next level of support. Determine if you must recover other DIRP subsystems at this point (for example, JF, OM).

| If you | Do |
|---|---|
| must recover other DIRP subsystems | step 173 |
| do not need to recover other DIRP subsystems | step 176 |

**173** Perform the correct procedures in *Alarm and Performance Monitoring Procedures*. Complete the procedures and return to this point.

**174** To determine if the system generated DIRP logs, type

**>LOGUTIL;OPEN DIRP**

and press the Enter key.

| If the system | Do |
|---|---|
| generated DIRP logs | step 175 |
| did not generate DIRP logs | step 176 |

**175** Refer to the *Log Report Reference Manual* and perform the correct action. Complete the log report activities and return to this point.

**176** Determine if the attempt to synchronize the clocks in step 70 was successful.

| If synchronization | Do |
|---|---|
| was successful | step 179 |
| was not successful | step 177 |

**177** To access the MS Clock level of the MAP display, type

**>MS;CLOCK**

and press the Enter key.

**178** To synchronize the clocks, type

**>SYNC**

and press the Enter key.

**179** To access the CM level of the MAP display, type

**>CM**

and press the Enter key.

## Recovering from a dead system in a SuperNode SE switch (continued)

**180** Determine if the CPUs are in sync.

***Note:*** A dot symbol under the Sync header indicates that the CPUs are in sync. The word no indicates that the CPUs are not in sync.

| If the CPUs | Do |
|---|---|
| are in sync | step 186 |
| are not in sync | step 181 |

**181** Contact the next level of support to determine if you can synchronize the CPUs.

| If you | Do |
|---|---|
| can synchronize the CPUs | step 182 |
| can not synchronize the CPUs | step 186 |

**182** Determine if the inactive CPU jammed.

***Note:*** The word yes under the JAM header indicates a jammed inactive CPU. The area is blank if the inactive CPU is not jammed.

| If the inactive CPU | Do |
|---|---|
| is jammed | step 183 |
| is not jammed | step 184 |

***At the CM RESET terminal for the INACTIVE CPU***

**183** To release the jam on the inactive CPU, type

```
>\RELEASE  JAM
```

and press the Enter key.

*RTIF response:*
JAM RELEASE DONE

***At the MAP terminal***

**184** To synchronize the CPUs, type

```
>SYNC
```

and press the Enter key.

| If the response | Do |
|---|---|
| indicates the SYNC command was successful | step 179 |

## Recovering from a dead system in a SuperNode SE switch (continued)

| If the response | Do |
|---|---|
| indicates `The CPUs are out of sync due to a problem with mismatches. The mismatch logs should be analyzed before re-syncing. Do you wish to continue? Please Confirm("YES", "Y", or "NO", "N")`<br><br>(SuperNode and SuperNode SE series 70 only) | step 185 |
| failed | step 193 |

**185** (SuperNode and SuperNode SE Series 70 only)

To deny the action, type

**>NO**

and press the Enter key.

Go to step 193.

**186** To turn off priority, type

**>PRIORITY OFF**

and press the Enter key.

**187** To access the SRSTATUS level of the MAP display, type

**>MAPCI;MTC;SRSTATUS**

and press the Enter key.

*Example of a MAP:*

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                      11:52:34
 2  View_      Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS    0    0      2       0   IOD   5     5      30     2
 4        NET   0    0      6       0   Other 21    3      13     3
 5        SER1  0    1      6       0
 6        SER2  1    1      60      1
 7        SER3  11   8      30      1
 8
 9        SRSTATUS:
```

## Recovering from a dead system in a SuperNode SE switch (end)

**188** Determine the system recovery status.

| If | Do |
|---|---|
| any Series III PMs in an LPP or ELPP failed recovery | step 189 |
| any Series III PMs in the SCC failed recovery | step 190 |
| any Series I or II PMs failed recovery | step 191 |
| any IODs or other devices and services failed recovery | step 192 |
| the system recovered completely | step 194 |

**189** Perform the procedure *Recovering link peripheral processors* in this document to manually recover the PMs.

Complete the procedure and return to this point.

Go to step 187.

**190** Perform the procedure *Recovering SuperNode SE application specific units* in this document to manually recover the PMs.

Complete the procedure and return to this point.

Go to step 187.

**191** Perform the correct procedures in *Alarm and Performance Monitoring Procedures* to manually recover the PMs in the required order.

Complete the procedure and return to this point.

Go to step 187.

**192** Manually recover IODs and other devices and services. Perform the correct procedure in this document. Consult your site operation procedures.

**193** For additional help, contact the next level of support.

**194** The procedure is complete.

# 3 Node level recovery procedures

## Introduction to node level recovery procedures

This chapter contains procedures for performing node level recovery tasks for the DMS-100 switch. For each recovery task, you will find a procedure containing

- explanatory and context-setting information
- information
- step-action instructions

### Explanatory and context-setting information

The first page of each procedure contains the following headings:

- Application (when to use the procedure)
- Action (how to use the flowchart and step-action instructions)

### Summary flowchart

The flowchart is only a summary of the main actions, decision points, and possible paths you may take. Do not use the summary flowchart to perform the procedure. Instead, use it to preview what you will be doing and to prepare for it. For example, if you see that these instructions involve another office, you will know to advise that office before you begin the step-action instructions.

### Step-action instructions

The step-action instructions tell you how to perform the recovery task. Normally you will perform the steps in order, but you may be directed to return to a previous step and repeat a sequence. The successful completion of a step may depend on previous steps; therefore, always perform the steps in the order specified.

The step-action instructions provide the command syntax and system information you use or see while performing the procedure. For help on DMS commands, see *DMS-100 Family Commands Reference Manual*, 297-10001-822

# Recovering the enhanced network

## Application

Use this procedure to manually recover the enhanced network (ENET) if the automatic ENET system recovery fails. Perform the procedure if the next level of support directs you to.

## Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

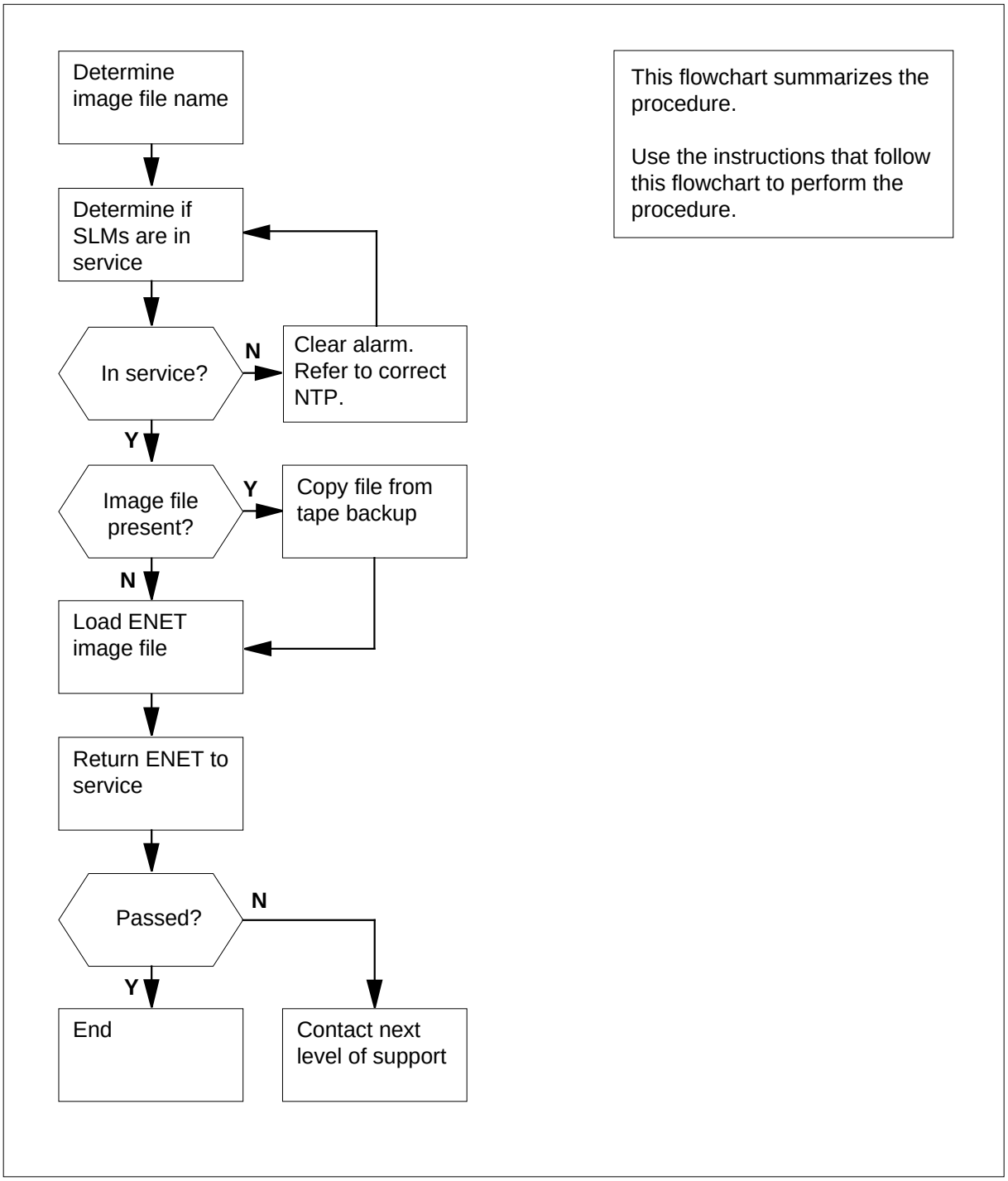
***Note:*** MAP displays in this procedure are for the 128K ENET. Displays for the 64K ENET are identical to the 128K ENET except that only shelves 0 and 1 are equipped. In the MAP display, shelves 2 and 3 appear unequipped (-) as follows:

*Example of a 64K ENET MAP display:*

```
ENET        System  Matrix  Shelf   0 1 2 3
 Plane 0    Fault     .             C . – –
 Plane 1               .   .         . . – –
```

# Recovering the enhanced network (continued)

**Summary of Recovering the enhanced network**



## Recovering the enhanced network (continued)

**Recovering the enhanced network**

**WARNING**
**Contact ETAS or your next level of support**
If an equipment outage that affects service occurs, contact Emergency Technical Assistance Service (ETAS) of Nortel before you perform the procedure. You can also contact the next level of support.

**CAUTION**
**Loss of service**
Manual interruption during automatic system recovery actions can interrupt or delay automatic recovery. The interruption can prolong service outage.

**CAUTION**
**Potential service interruption**
Do not perform this procedure while a restart is in progress. When you log on after a restart, wait 5 min to allow the ENET time to try to recover.

***At your current location***

**1** Determine if the local operating company keeps a log book of office image files.

| If a log book | Do |
|---|---|
| is kept | step 2 |
| is not kept | step 3 |

**2** From the local office log book, record the latest image file name. Go to step 7.

**3** To access table ENINV, type

```
>TABLE  ENINV
```

and press the Enter key.

## Recovering the enhanced network (continued)

***At the MAP terminal***

**4** To display all the tuples in table ENINV, type

**`>LIST ALL`**

and press the Enter key.

*Example of a MAP response:*

***Note:*** Every equipped ENET shelf has a tuple.

```
FRPOS0 SHELF0 LOAD0    MSCARD1 FLOOR1 ROW1 FRPOS1 SHELF1 LOAD1
------ ------ -----    ------- ------ ---- ------ ------ -----
     5     39 ENC33BM        8      0    A      5     13 ENC33BM
```

**5** Record the latest file name that appears under the header LOAD0 and LOAD1.

**6** To quit table ENINV, type

**`>QUIT`**

and press the Enter key.

**7** To access the SLM level of the MAP display, type

**`>MAPCI;MTC;IOD;SLM`**

and press the Enter key.

*Example of a MAP response:*

```
SLM          0       1
Stat         .       .
```

**8** Determine the system load modules (SLM) that are in service. A dot (.) in the SLM status field indicates the SLMs that are in service.

| If | Do |
|---|---|
| both SLMs are in service | step 20 |
| one SLM is in service | step 15 |
| neither SLM is in service | step 9 |

**9** Determine the status of the SLMs.

| If the status | Do |
|---|---|
| is S | step 10 |
| is M | step 11 |
| is O | step 12 |
| is I | step 13 |

## Recovering the enhanced network (continued)

**10** Perform the procedure in *Alarm and Performance Monitoring Procedures* to clear an IOD SLM bsy major alarm. Complete the procedure and return to this point.

Go to step 14.

**11** Perform the procedure in *Alarm and Performance Monitoring Procedures* to clear an IOD SLM bsy minor alarm. Complete the procedure and return to this point.

Go to step 14.

**12** Perform the procedure in *Alarm and Performance Monitoring Procedures* to clear an IOD SLM off minor alarm. Complete the procedure and return to this point.

Go to step 14.

**13** Perform the procedure in *Alarm and Performance Monitoring Procedures* to clear an IOD SLM tbl minor alarm. Complete the procedure and return to this point.

Go to step 14.

**14** To access the CI level of the MAP display, type

```
>QUIT  ALL
```

and press the Enter key.

**15** To access the disk utility level of the MAP display, type

```
>DISKUT
```

and press the Enter key.

*Example of a MAP response:*

```
Disk utility is now active.
DISKUT:
```

**16** To list the volumes on the SLMs, type

```
>LISTVOLS CM
```

and press the Enter key.

**17** Record the SLM volume name.

**18** To list the files in the SLM volume on the in-service SLM, type

```
>LISTFL  disk_volume_name
```

and press the Enter key.

*where*

**disk_volume_name**
is the name of the SLM disk (S00D or S01D) and the name of the SLM volume on the disk (for example, S00DENET)

*Example of a MAP response:*

## Recovering the enhanced network (continued)

```
File information for file S00DENET:
(Note:  1 BLOCK = 512 BYTES )
-------------------------------------------------------
CREATE    MODIFY     NUM     NUM    MAX.   IN   FILE
                                    RECORD
DATE      DATE       BLKS    REC    LENGTH  ITOC  NAME
-------------------------------------------------------
92/08/24  92/08/20   49364   4682   1020    N   ENET_0820
92/08/24  92/08/24   72190   6095   1020    N   ENET_0824
92/08/30  92/08/25   69364   4682   1020    N   ENET_0825
92/08/30  92/08/26   75310   7655   1020    N   ENET_0826
92/08/30  92/08/30   99370   8890   1020    N   ENET_0830
```

***Note:*** In the preceding example, the FILE ORG, FILE CODE, REC TYPE, and FILE STATUS columns of the MAP display do not appear. These columns do not appear because of the small amount of space.

**19** Determine if the latest image file is present on the disk. You recorded the latest image file in either step 2 or 5.

| If the latest image file | Do |
|---|---|
| is present | step 35 |
| is not present | step 27 |

**20** To access the disk utility level of the MAP display, type

**`>DISKUT`**

and press the Enter key.

**21** To list the volumes on both SLMs, type

**`>LISTVOLS CM`**

and press the Enter key.

**22** Record the SLM volume names.

**23** To list the files in one of the SLM volumes, type

**`>LISTFL  disk_volume_name`**

and press the Enter key.

*where*

**disk_volume_name**
is the name of the SLM disk (S00D or S01D) and

the name of an SLM volume (for example,

S00DENET)

*Example of a MAP response:*

## Recovering the enhanced network (continued)

```
File information for file S00DENET:
(Note:  1 BLOCK = 512 BYTES )
-------------------------------------------------------
CREATE    MODIFY     NUM   NUM    MAX      IN   FILE
                                  RECORD
DATE      DATE       BLKS  REC    LENGTH   ITOC NAME
-------------------------------------------------------
92/08/24  92/08/20  49364   4682  1020      N   ENET_0820
92/08/24  92/08/24  72190   6095  1020      N   ENET_0824
92/08/30  92/08/25  69364   4682  1020      N   ENET_0825
92/08/30  92/08/26  75310   7655  1020      N   ENET_0826
92/08/30  92/08/30  99370   8890  1020      N   ENET_0830
```

***Note:*** In the preceding example, the FILE ORG, FILE CODE, REC TYPE, and FILE STATUS columns of the MAP display do not appear because of the small amount of space.

**24** Determine if the latest image file is present on the disk. You recorded the latest image file in either step 2 or 5.

| If the latest image file | Do |
|---|---|
| is present | step 35 |
| is not present | step 25 |

**25** To list the files in the other SLM volume, type

**`>LISTFL  disk_volume_name`**

and press the Enter key.

*where*

**disk_volume_name**
is the name of the SLM disk (S00D or S01D) and the name of the other SLM volume (for example, S00DENET)

**26** Determine if the latest image file is present on the disk. You recorded the latest image file in either step 2 or 5.

| If the latest image file | Do |
|---|---|
| is present | step 35 |
| is not present | step 27 |

**27** Obtain the latest backup tape that contains an ENET image.

***At the SLM***

**28** Insert the backup tape into the correct SLM tape drive unit.

## Recovering the enhanced network (continued)

***At the MAP terminal***

**29** To mount the tape, type

**`>INSERTTAPE device_name`**

and press the Enter key.

*where*

**device_name**
is S00T if you are working on SLM 0, or S01T if youare working on SLM 1

*Example of a MAP response:*

```
The INSERT operation may take up to 5 minutes to tension
the tape.
```

**30** To list the files on the backup tape, type

**`>LISTFL device_name`**

and press the Enter key.

*where*

**device_name**
is S00T or S01T

**31** To copy the file from tape to disk, type

**`>RESTORE FILE disk_volume_name tape_device_name file_name`**

and press the Enter key.

*where*

**disk_volume_name**
is the name of the SLM disk (S00D or S01D) and the name of the volume on the disk (for example, S00DENET)

**tape_device_name**
is S00T if you are working on SLM 0, or S01T if youare working on SLM 1

**file_name**
is the image file name

**32** To list the files on the volume to confirm that the ENET image file is present, type

**`>LISTFL disk_volume_name`**

and press the Enter key.

*where*

**disk_volume_name**
is the name of the SLM disk (S00D or S01D) and the name of the volume on the disk (for example, S00DENET)

## Recovering the enhanced network (continued)

**33** Determine if the image file name has a date stamp.

| If the file | Do |
|---|---|
| has a date stamp | step 34 |
| does not have a date stamp | step 35 |

***At the MAP terminal***

**34**

**CAUTION**
**Improper image file name prohibits download of patches**
When you copy the file to disk, remove the date stamp or other information added to the file name on tape. Failure to remove excess information prohibits the automatic download of patches to the local operating company switch.For additional information, refer to *How to record a 16K ENET image on an SLM disk* in *Routine Procedures*.

To change the image file name to the correct file name, type

**`>RENAMEFL  old_file_name  new_file_name`**

and press the Enter key.

*where*

**old_file_name**
is the name of a previous image file with a datestamp (for example, ENC33BM_0227)

**new_file_name**
is the correct file name (for example, ENC33BM)

*Example of a MAP response:*

```
File ENC33BM_0227 on volume S01DISLOADS has been renamed
to ENC33BM.
```

**35** To quit the disk utility level of the MAP display, type

**`>QUIT`**

and press the Enter key.

**36** To access the SYSTEM level of the MAP display, type

**`>MAPCI;MTC;NET;SYSTEM`**

and press the Enter key.

*Example of a MAP response:*

```
SYSTEM
   Shelf        Plane 0         Plane 1
   00           S                    .
   01           S                    .
   02           S                    .
   03           S                    .
```

**37** Determine the plane-shelves that are system busy. The letter S in the Plane field indicates plane-shelves that are system busy.

| If | Do |
|---|---|
| all shelves on a plane are system busy | step 39 |
| a minimum of one shelf on a plane is system busy but not all shelves are system busy | step 43 |

**38** To stop all traffic flow on all shelves of the affected plane, type

**>DELOAD plane_number SET**

and press the Enter key.

*where*

**plane_number**
is 0 or 1

**39** To manually busy all shelves on the affected plane, type

**>BSY plane_number ALL**

and press the Enter key.

*where*

**plane_number**
is 0 or 1

**40** Determine if the shelf you specified is busied correctly.

| If the MAP response | Do |
|---|---|
| is Request to MAN BSYALL ENET Plane:n completed. | step 47 |
| is WARNING: You will be aborting the following maintenance action on ENET Plane:n Shelf:nn. Please confirm (“Yes" or “No") | step 41 |

**41** Another maintenance action is in progress on one or more of the plane-shelves you specified. To cancel the BSY command, type

**>NO**

and press the Enter key.

**42** Wait 3 min for the in-progress maintenance action to complete. Go to step 37.

## Recovering the enhanced network (continued)

**43** To select a system busy plane-shelf and set it to manual busy, type

**>BSY plane_number shelf_number**

and press the Enter key.

*where*

**plane_number**
is 0 or 1

**shelf_number**
is 0 to 1 for 64K ENET, or 0 to 7 for 128K ENET

**44** Determine if the shelf you specified is busied correctly.

| If the MAP response | Do |
|---|---|
| is Request to MAN BUSY ENET Plane:n Shelf:nn completed. | step 47 |
| is WARNING: You will be aborting the following maintenance action on ENET Plane:n Shelf:nn. Please confirm (“Yes" or “No") | step 45 |

**45** Another maintenance action is in progress on the plane-shelf you specified. To cancel the BSY command, type

**>NO**

and press the Enter key.

**46** Wait 3 min for the in-progress maintenance action to complete. Go to step 37.

**47** Determine if more system busy plane-shelves are present.

| If | Do |
|---|---|
| more system busy plane-shelves are present | step 43 |
| all system busy plane-shelves are set to manual busy | step 48 |

**48** To load each node with the latest ENET image file, type

**>LOADENALL file_name**

and press the Enter key.

*where*

**file_name**
is the latest ENET image file name

*Example of a MAP response:*

```
WARNING: This action will be performed on ALL ENET shelves
that are MBSY.  Please confirm (”YES” OR ”NO”)
```

**49** To confirm the command, type

**>YES**

and press the Enter key.

*Example of a MAP response:*

```
WARNING: Any software load in the MBSY ENETS will be
destroyed. Please confirm (”YES” or ”NO” )
```

**50** To confirm the command, type

**>YES**

and press the Enter key.

*Example of a MAP response:*

```
Request to LOADENALL ENET in both planes submitted.
Request to LOADENALL ENET in both planes completed.
Plane:0 Shelf:00 Passed.
Plane:0 Shelf:01 Passed.
Plane:0 Shelf:02 Passed.
Plane:0 Shelf:03 Passed.
```

**51** Determine if any nodes failed to load the ENET image file.

| If | Do |
|---|---|
| all nodes passed the software load | step 53 |
| some nodes failed the software load | step 52 |
| all nodes failed the software load | step 58 |

**52** To return to service all nodes that passed the software load, type

**>RTS plane_number shelf_number**

and press the Enter key.

*where*

**plane_number**
is 0 or 1

**shelf_number**
is 0 to 1 for 64K ENET, or 0 to 7 for 128K ENET

Go to step 58.

**53** To return all manual busy nodes to service, type

**>RTS plane_number ALL**

and press the Enter key.

*where*

**plane_number**
is 0 or 1

## Recovering the enhanced network (end)

**54** Determine if any of the nodes failed to return to service.

| If | Do |
|---|---|
| any of the nodes failed to return to service | step 55 |
| all nodes returned to service | step 59 |

**55** To return to service the node that failed, type

**`>RTS plane_number shelf_number`**

and press the Enter key.

*where*

**plane_number**
is 0 or 1

**shelf_number**
is 0 to 1 for 64K ENET, or 0 to 7 for 128K ENET

| If the RTS command | Do |
|---|---|
| passed | step 59 |
| failed | step 56 |

**56** Determine if the system generated a card list.

| If the system | Do |
|---|---|
| generated a card list | step 57 |
| did not generate a card list | step 58 |

**57** Determine the alarm that the system generated under the Net header. Perform the correct procedure in *Alarm and Performance Monitoring Procedures* to clear the alarm.

**58** For additional help, contact the next level of support.

**59** To return all traffic flow on all shelves of the affected plane, type

**`>DELOAD plane_number CLEAR ALL`**

and press the Enter key.

*where*

**plane_number**
is 0 or 1

**60** The procedure is complete.

# Recovering link peripheral processors

## Application

Use this procedure to recover link peripheral processors (LPP) or fiberized LPPs (FLPP) that are system busy (SysB).

> ***Note:*** Throughout this document, LPP is used to refer to both the LPP and FLPP.

LPPs become SysB when both link interface module (LIM) units lose A and B dc power feeds. If the whole switch loses power, restore primary switching functions. Do not use this procedure until the primary switching functions are restored. To restore primary switching functions, use the procedure *Recovering from a dead system in a SuperNode switch*. Or refer to the *Recovering from a dead system in a SuperNode SE switch* procedure. The procedure indicates when to recover the LPP.

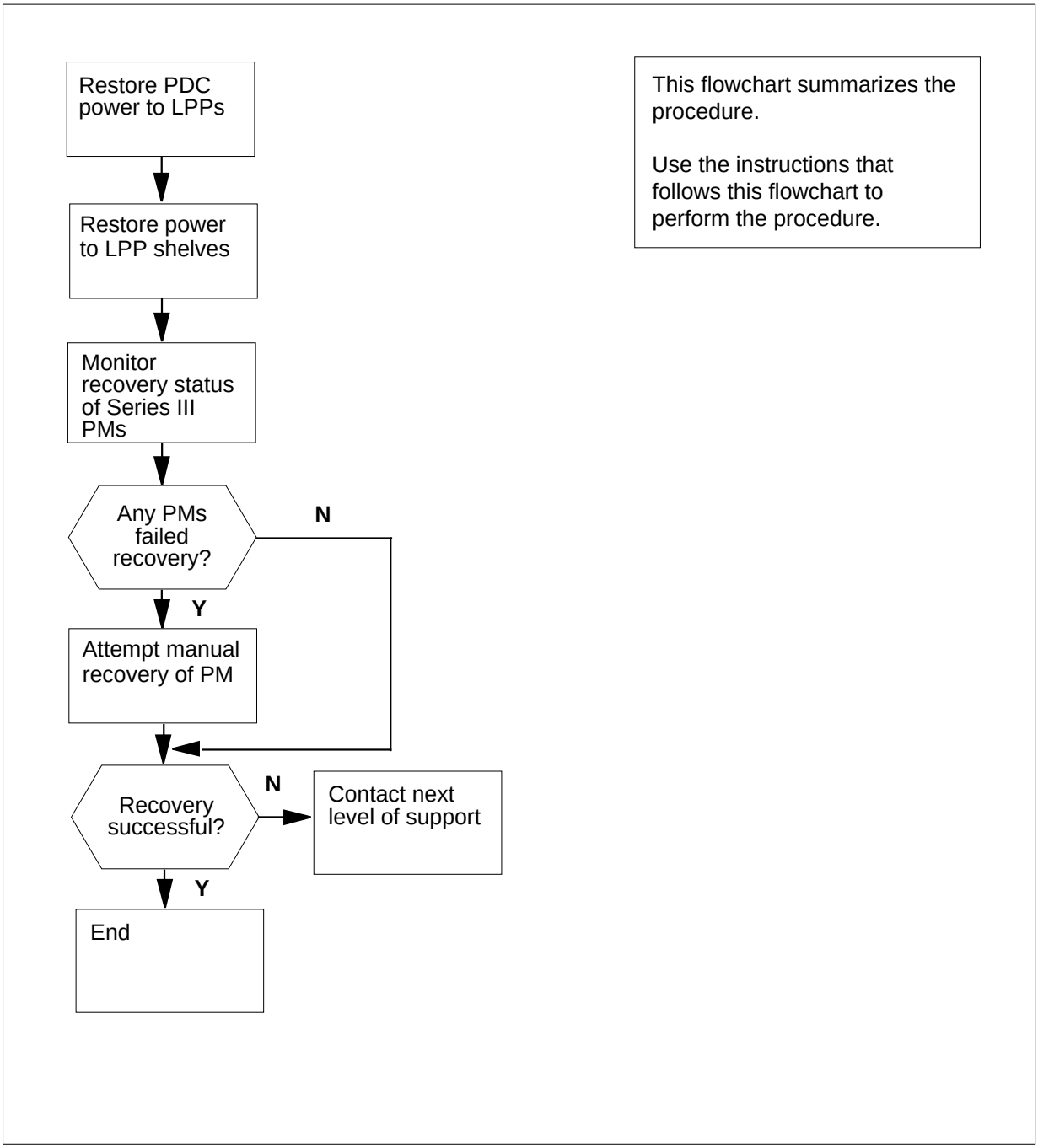
To recover LPPs when both LIMs are system busy because of other faults, refer to the procedure *Clearing a PM LIM critical alarm* and *Alarm and Performance Monitoring Procedures*.

## Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the recovery task.

# Recovering link peripheral processors (continued)

**Summary of Recovering link peripheral processors**



# Recovering link peripheral processors (continued)

## Recovering link peripheral processors

***At the PDC***

**1**

**DANGER**
**Possible equipment damage or service interruption**
To ensure that the LPP is recovered as quickly as possible, contact Nortel's Emergency Technical Assistance Services (ETAS) or your next level of support before you begin this procedure.

**DANGER**
**Possible equipment damage or service interruption**
To ensure that the LPP is recovered as quickly as possible, contact Nortel's Emergency Technical Assistance Services (ETAS) or your next level of support before you begin this procedure.

Check the PDC fuses that supply the LPPs that you want to recover.

| If | Do |
|---|---|
| there are blown fuses | step 2 |
| there are no blown fuses | step 3 |

**2** Replace the blown fuses.

***Note:*** If fuses blow repeatedly, contact your next level of support.

When PDC power is restored to the LPPs, go to step 3 of this procedure.

**3** Locate the LPPs that you want to recover.

***At the LPP cabinet***

**4** Determine if the LPP shelves have power.

***Note:*** When the LPP shelves have power, the Converter Off lights on all power converters (NT9X30, NT9X31 if present, or NTDX16 cards) are not lit.

| If the Converter Off lights in the LPP | Do |
|---|---|
| are not lit | step 15 |
| are lit | step 5 |

## Recovering link peripheral processors (continued)

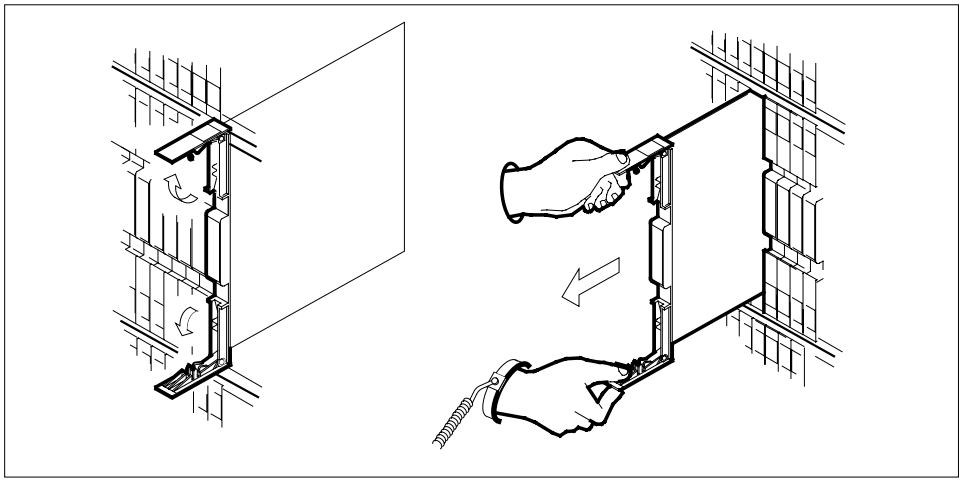
**5**

**WARNING**
**Static electricity damage**
Wear a wrist strap connected to the wrist-strap grounding point of a frame supervisory panel (FSP) or a modular supervisory panel (MSP) while handling circuit cards. This protects the cards against static electricity damage.

Locate the NT9X74 cards in all link interface shelves (LIS) in the LPP.

***Note:*** NT9X74 cards are in shelf positions 7F and 32F on all LISs.

**6** Unseat each NT9X74 card. To unseat a card, unlatch the locking levers and slowly pull the card toward you 25 mm (1 in.).



**7** Locate the NT9X30 power converters in slot 4F and 36F on the link interface module (LIM) unit shelf. Locate the NT9X31 power converters in slots 1F and 33F if applicable.

**8** To turn on the LIM unit shelf power converters, toggle the switch of each NT9X30 and NT9X31 card.

**9** Locate the NT9X30 or NTDX16 power converters for each LIS in the LPP.

***Note:*** NT9X30 power converters are in slots 4F and 36F for each LIS. NTDX16 power converters are in slots 1F, 4F, 33F, and 36F for each LIS.

**10** To turn on the LIS power converter, toggle the switch of each NT9X30 or NTDX16 card.

**11** Determine if all the converters have power. To determine if the converter has power, check the Converter Off switch. When all of the Converter Off lights are off, the converters have power.

| If all power converters | Do |
|---|---|
| powered up | step 13 |

# Recovering link peripheral processors (continued)

| If all power converters | Do |
|---|---|
| did not power up | step 12 |

**12** To restart the power for the frame, perform the procedure *Clearing an Ext FSP LPP cabinet major alarm* procedure from the *Alarm and Performance Monitoring Procedures*.

When the procedure is complete, return to this point.

Go to step 7.

**13** Reseat all NT9X74 cards as follows:

**a** Slowly slide each card back into the LIS.

**b** Push on the upper and lower edges of each faceplate to reseat the card completely in the shelf.

**c** Close the locking levers on the card.

**14** Repeat steps 3 through 13 for each LPP in your office.

When all LPPs have power, continue this procedure at step 15.

***At the MAP***

**15** To access the SRSTATUS level of the MAP display, type

**>MAPCI;MTC;SRSTATUS**

and press Enter

*Example of a MAP display:*

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                      11:52:34
 2  View_      Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS    0    0      2       0   IOD   5     5      30     2
 4        NET   0    0      6       0   Other 21    3      13     3
 5        SER1  0    1      6       0
 6        SER2  1    1      60      1
 7        SER3  11   8      30      1
 8
 9        SRSTATUS:
```

**16** From the MAP display, determine the recovery status of the Series III PMs

***Note:*** The series III PM recovery status appears at the right of the word SER3 of the MAP display. The recovery status is either pending, in progress, complete, or failed.

| If the number of Series III PMs that failed recovery is | Do |
|---|---|
| zero | step 86 |
| other than zero | step 17 |

## Recovering link peripheral processors (continued)

**17** To access the PM level of the MAP display, type

**>PM**

and press the Enter key.

**18** To display a list of all system-busy PMs, type

**>DISP STATE SYSB**

and press the Enter key.

*Example of a MAP response:*

```
SysB LIM    : 0
SysB LIU7   : 102, 202, 207, 302, 308
SysB HLIU   : 309, 311, 315, 330, 350
SysB HSLR   : 309, 311, 315, 330, 350
```

**19** Determine which of the Series III PM types are system busy.

| If there are | Do |
|---|---|
| any system-busy LIMs | step 20 |
| any system-busy NIUs | step 29 |
| any system-busy LIU7s | step 36 |
| any system-busy HLIUs | step 42 |
| any system-busy HSLRs | step 48 |
| any system-busy SVR7s | step 54 |
| any system-busy EIUs | step 60 |
| any system-busy APUs | step 65 |
| any system-busy VPUs | step 70 |
| any system-busy XLIUs | step 75 |
| any system-busy FRIUs | step 80 |
| no system-busy Series III PMs | step 86 |

**20** Select a system-busy LIM to work on.

**21** To post the system-busy LIM, type

**>POST LIM lim_no**

and press the Enter key.

*where*

**lim_no**
is the number of the LIM (0 to 16)

## Recovering link peripheral processors (continued)

*Example of a MAP response:*

```
LIM  1  SysB
                 Links_OOS   Taps_OOS
Unit0: SysB            6         5
Unit1: SysB            6         5
```

**22** Determine if the LIM unit is system-busy, resource not available.

***Note:*** When a LIM unit is system-busy, resource unavailable the indication SysB (RU) appears in the MAP response. This message appears to the right of the LIM unit number.

| If | Do |
|---|---|
| either LIM unit is SysB (RU) | step 23 |
| neither LIM unit is SysB (RU) | step 85 |

**23** To clear the fault, refer to the *Clearing a PM LIM critical alarm* procedure in *Alarm and Performance Monitoring Procedures*.

When you have completed the procedure, return to this point.

**24** To access the F-bus level of the MAP display, type

**>FBUS**

and press the Enter key.

**25** Determine if the F-buses are in-service.

| If | Do |
|---|---|
| both F-buses are InSv | step 18 |
| one or both F-buses are SysB | step 26 |

**26** To manually busy the system-busy F-bus, type

**>BSY FBUS fbus_no**

and press the Enter key.

*where*

**fbus_no**
is the number of the F-bus (0 or 1) that you want to manually busy

**27** To return the F-bus to service, type

**>RTS FBUS fbus_no**

and press the Enter key.

*where*

## Recovering link peripheral processors (continued)

**fbus_no**
is the number of the F-bus (0 or 1) that returns to service

| If the RTS command | Do |
|---|---|
| passed | step 28 |
| failed | step 85 |

**28** If the other F-bus is system busy, repeat steps 26 and 27 for the other F-bus. When both of the F-buses are in-service, go to step 18.

**29** Select a system-busy NIU to work on.

**30** To post the system-busy NIU, type

**>POST NIU niu_no**

and press the Enter key.

*where*

**niu_no**
is the number of the NIU (0 to 29)

**31** To manually busy one of the units of the affected NIU, type

**>BSY UNIT unit_no FORCE**

and press the Enter key.

*where*

**unit_no**
is the unit number of the NIU unit (0 or 1)

**32** To load the NIU unit, type

**>LOADPM UNIT unit_no**

and press the Enter key.

*where*

**unit_no**
is the unit number of the busy unit (0 or 1)

| If the LOADPM command | Do |
|---|---|
| passed | step 33 |
| failed | step 85 |

**33** To return the NIU to service, type

**>RTS UNIT unit_no**

and press the Enter key.

*where*

## Recovering link peripheral processors (continued)

**unit_no**
is the unit number of the busy NIU unit (0 or 1)

| If the RTS command | Do |
|---|---|
| passed | step 34 |
| failed | step 85 |

**34** Determine if the other unit of the posted NIU is system busy or in-service.

| If | Do |
|---|---|
| both units of the posted NIU are InSv | step 18 |
| one unit of the posted NIU is SysB | step 35 |

**35** To manually busy the system-busy NIU unit, type

```
>BSY  UNIT  unit_no  FORCE
```

and press the Enter key.

*where*

**unit_no**
is the number of the system-busy NIU unit (0 or 1)

Go to step 32.

**36** To post the system-busy LIU7s that failed to recover, type

```
>POST  LIU7  liu_nos
```

and press the Enter key.

*where*

**liu_nos**
are the numbers of the system-busy LIU7s (0 to 511)

***Note:*** Use a space to separate each number.

*Example input*

```
>POST  LIU7  101  102  103  104  105  106  107  108
```

**37** To manually busy the LIU7s in the posted set, type

```
>BSY  ALL  FORCE
```

## Recovering link peripheral processors (continued)

and press the Enter key.

| If the response is | Do |
|---|---|
| `Link link_no:Traffic is running on that link Please confirm (“YES",“Y",“NO", or “N"):` | step 38 |
| anything else including additional messages with above response | step 85 |

**38** To confirm the command, type

**>YES**

and press the Enter key.

**39** To load the posted LIU7, type

**>LOADPM**

and press the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 40 |
| failed | step 85 |

**40** To return the LIU7 to service, type

**>RTS**

and press the Enter key.

| If the RTS command | Do |
|---|---|
| passed, but not all LIU7s in the posted set are in service | step 41 |
| passed and all LIU7s in the posted set are in service | step 18 |
| failed | step 85 |

**41** To display the next LIU7 in the posted set, type

**>NEXT**

and press the Enter key.

Go to step 39.

**42** To post the system-busy HLIUs that failed to recover, type

**>POST HLIU liu_nos**

and press the Enter key.

*where*

**liu_nos**
are the numbers of the system-busy HLIUs (0 to 511)

***Note:*** Use a space to separate each HLIU number.

*Example input*

**>POST HLIU 101 102 103 104 105 106 107 108**

**43** To manually busy the HLIUs in the posted set, type

**>BSY ALL FORCE**

and press the Enter key.

| If the response is | Do |
|---|---|
| `Link link_no:Traffic is running on that link Please confirm (“YES",“Y",“NO", or “N"):` | step 44 |
| anything else including additional messages with above response | step 85 |

**44** To confirm the command, type

**>YES**

and press the Enter key.

**45** To load the posted HLIU, type

**>LOADPM**

and press the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 46 |
| failed | step 85 |

**46** To return the HLIU to service, type

**>RTS**

## Recovering link peripheral processors (continued)

and press the Enter key.

| If the RTS command | Do |
|---|---|
| passed, but not all HLIUs in the posted set are in service | step 47 |
| passed and all HLIUs in the posted set are in service | step 18 |
| failed | step 85 |

**47** To display the next HLIU in the posted set, type

**>NEXT**

and press the Enter key.

Go to step 45.

**48** To post the system-busy HSLRs that failed to recover, type

**>POST HSLR liu_nos**

and press the Enter key.

*where*

**liu_nos**
are the numbers of the system-busy HSLRs (0 to 511)

***Note:*** Use a space to separate each HSLR number.

*Example input*

**>POST HSLR 101 102 103 104 105 106 107 108**

**49** To manually busy the HSLRs in the posted set, type

**>BSY ALL FORCE**

and press the Enter key.

| If the response is | Do |
|---|---|
| `Link link_no:Traffic is running on that link Please confirm (“YES",“Y",“NO", or “N"):` | step 50 |
| anything else including additional messages with above response | step 85 |

**50** To confirm the command, type

**>YES**

and press the Enter key.

**51** To load the posted HSLR, type

**>LOADPM**

and press the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 52 |
| failed | step 85 |

**52** To return the HSLR to service, type

**>RTS**

and press the Enter key.

| If the RTS command | Do |
|---|---|
| passed, but not all HSLRs in the posted set are in service | step 53 |
| passed and all HSLRs in the posted set are in service | step 18 |
| failed | step 85 |

**53** To display the next HSLR in the posted set, type

**>NEXT**

and press the Enter key.

Go to step 51.

**54** To post the system-busy SVR7s that failed to recover type

**>POST SVR7 svr_nos**

and press the Enter key.

*where*

**svr_nos**
are the numbers of the system-busy SVR7s (0 to 511)

***Note:*** Use a space to separate each SVR7 number.

*Example input*

**>POST SVR7 101 102 103 104 105 106 107 108**

**55** To manually busy the SVR7s in the posted set, type

**>BSY ALL FORCE**

## Recovering link peripheral processors (continued)

and press the Enter key.

| If the response is | Do |
|---|---|
| `Link link_no:Traffic is running on that link Please confirm (“YES",“Y",“NO", or “N"):` | step 56 |
| anything else including additional messages with above response | step 85 |

**56** To confirm the command, type

**>YES**

and press the Enter key.

**57** To load the posted SVR7, type

**>LOADPM**

and press the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 58 |
| failed | step 85 |

**58** To return the SVR7 to service, type

**>RTS**

and press the Enter key.

| If the RTS command | Do |
|---|---|
| passed, but not all SVR7s in the posted set are in service | step 59 |
| passed and all SVR7s in the posted set are in service | step 18 |
| failed | step 85 |

**59** To display the next SVR7 in the posted set, type

**>NEXT**

and press the Enter key.

Go to step 57.

## Recovering link peripheral processors (continued)

**60** To post the system-busy EIUs that failed to recover, type

**>POST EIU eiu_nos**

and press the Enter key.

*where*

**eiu_nos**
are the numbers of the system busy EIUs (0 to 511)

***Note:*** Use a space to separate each number.

*Example input*

**>POST EIU 101 102 103 104 105 106 107 108**

**61** To manually busy the EIUs in the posted set, type

**>BSY ALL FORCE**

and press the Enter key.

**62** To load the posted EIU, type

**>LOADPM**

and press the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 63 |
| failed | step 85 |

**63** To return the EIU to service, type

**>RTS EIU eiu_no**

and press the Enter key.

*where*

**eiu_no**
is the number of the EIU (0 to 511) that you want to return to service

| If the RTS command | Do |
|---|---|
| passed, but not all EIUs in the posted set are in service | step 64 |
| passed and all EIUs in the posted set are in service | step 18 |
| failed | step 85 |

**64** To display the next EIU in the posted set, type

**>NEXT**

and press the Enter key.

Go to step 62.

## Recovering link peripheral processors (continued)

**65** To post the system-busy APUs that failed to recover, type

**>POST APU apu_nos**

and press the Enter key.

*where*

**apu_nos**
are the numbers of the system-busy APUs (0 to 511)

***Note:*** Use a space to separate each number.

*Example input*

**>POST APU 101 102 103 104 105 106 107 108**

**66** To manually busy the APUs in the posted set, type

**>BSY ALL FORCE**

and press the Enter key.

**67** To load the posted APU, type

**>LOADPM**

and press the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 68 |
| failed | step 85 |

**68** To return the APU to service, type

**>RTS**

and press the Enter key.

| If the RTS command | Do |
|---|---|
| passed, but not all APUs in the posted set are in service | step 69 |
| passed and all APUs in the posted set are in service | step 18 |
| failed | step 85 |

**69** To display the next APU in the posted set, type

**>NEXT**

and press the Enter key.

Go to step 67.

**70** To post the system-busy VPUs that failed to recover, type

**>POST VPU vpu_nos**

and press the Enter key.

## Recovering link peripheral processors (continued)

*where*

**vpu_nos**
are the numbers of the system-busy VPUs (0 to 215)

***Note:*** Use a space to separate each number.

*Example input:*

```
>POST   VPU   101  102  103  104  105  106  107  108
```

**71** To manually busy the VPUs in the posted set, type

```
>BSY  ALL  FORCE
```

and press the Enter key.

**72** To load the posted VPU, type

```
>LOADPM
```

and press the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 73 |
| failed | step 85 |

**73** To return the VPU to service, type

```
>RTS
```

and press the Enter key.

| If the RTS command | Do |
|---|---|
| passed, but not all VPUs in the posted set are in service | step 74 |
| passed and all VPUs in the posted set are in service | step 18 |
| failed | step 85 |

**74** To display the next VPU in the posted set, type

```
>NEXT
```

and press the Enter key.

Go to step 72.

**75** To post the system-busy XLIUs that failed to recover, type

```
>POST  XLIU  xliu_nos
```

and press the Enter key.

*where*

**xliu_nos**
are the numbers of the system busy XLIUs (0 to 511)

## Recovering link peripheral processors (continued)

***Note:*** Use a space to separate each number.

*Example input:*

```
>POST  XLIU  101  102  103  104  105  106  107  108
```

**76** To manually busy the XLIUs in the posted set, type

```
>BSY  ALL  FORCE
```

and press the Enter key.

**77** To load the posted XLIU, type

```
>LOADPM
```

and press the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 78 |
| failed | step 85 |

**78** To return the XLIU to service, type

```
>RTS
```

and press the Enter key.

| If the RTS command | Do |
|---|---|
| passed, but not all XLIUs in the posted set are in service | step 79 |
| passed and all XLIUs in the posted set are in service | step 18 |
| failed | step 85 |

**79** To display the next XLIU in the posted set, type

```
>NEXT
```

and press the Enter key.

Go to step 77.

**80** To post the system-busy FRIUs that failed to recover, type

```
>POST  FRIU  friu_nos
```

and press the Enter key.

*where*

**friu_nos**
are the numbers of the system busy FRIUs (0 to 511)

***Note:*** Use a space to separate each number.

*Example input*

```
>POST  FRIU  101  102  103  104  105  106  107  108
```

## Recovering link peripheral processors (end)

**81** To manually busy the FRIUs in the posted set, type

**>BSY ALL FORCE**

and press the Enter key.

**82** To load the posted FRIU, type

**>LOADPM**

and press the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 83 |
| failed | step 85 |

**83** To return the FRIU to service, type

**>RTS**

and press the Enter key.

| If the RTS command | Do |
|---|---|
| passed, but not all FRIUs in the posted set are in service | step 84 |
| passed and all FRIUs in the posted set are in service | step 18 |
| failed | step 85 |

**84** To display the next FRIU in the posted set, type

**>NEXT**

and press the Enter key.

Go to step 82.

**85** For additional help, contact the personnel responsible for the next level of support.

**86** The procedure is complete.

# Recovering SuperNode SE application specific units

## Application

Use this procedure to manually recover application-specific units (ASU) residing on a SuperNode SE link interface shelf (LIS) or enhanced network interface (ENI) shelf. Application-specific units include:

- network interface units (NIU)
- Common Channel Signaling 7 (CCS7) link interface units (LIU7)
- CCS7 server (SVR7)
- Ethernet interface units (EIU)
- high-speed link interface unit (HLIU)
- high-speed link router (HSLR)
- voice processor units (VPU)
- application processor units (APU)
- X.25/X.75 link interface units (XLIU)
- frame relay interface units (FRIU)

To recover ASUs which reside in a link peripheral processor (LPP) cabinet, refer to the procedure *Recovering link peripheral processors* in this document. To recover ASUs which reside in an enhanced LPP (ELPP) cabinet, refer to the procedure *Recovering enhanced link peripheral processors* in this document.

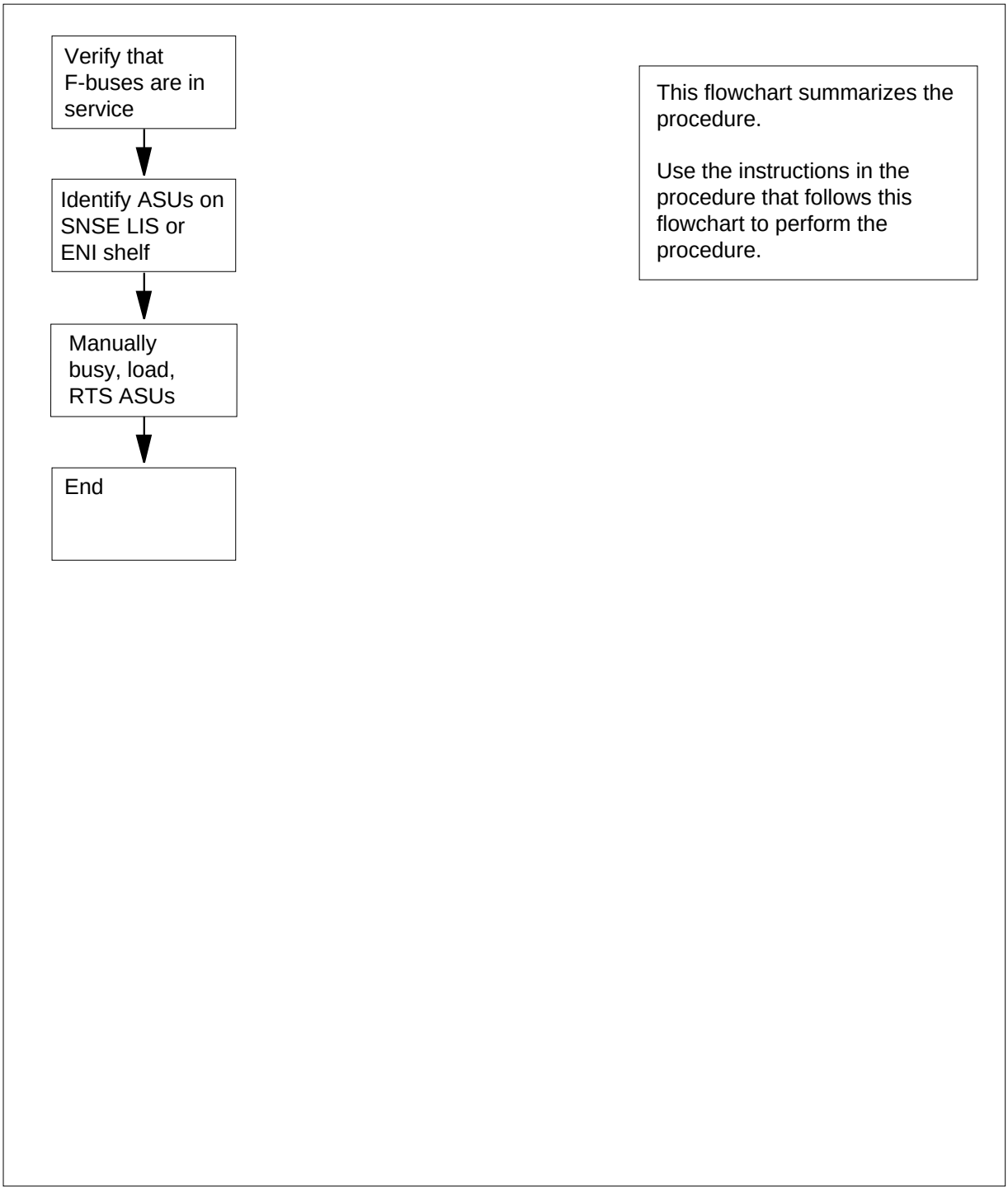
If the entire switch has lost power, do not use this procedure until you have first restored primary switching functions using the procedure *Recovering from a dead system* in this document. Recover the ASUs when directed to do so by that procedure.

## Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Recovering SuperNode SE application specific units (continued)

**Summary of Recovering SuperNode SE application specific units**



# Recovering SuperNode SE application specific units (continued)

### Recovering SuperNode SE application specific units

***At the MAP***

**1** Access the MS shelf level of the MAP display by typing

**`>MAPCI;MTC;MS;SHELF`**

and pressing the Enter key.

**2** Access the TFI card level by typing

**`>CARD card_number`**

and pressing the Enter key.

*where*

**card_number**
is the card number of the NT9X73 T-bus to F-bus interfacecard.

**3** Determine if the F-buses are in service.

| If the state of the F-buses is | Do |
|---|---|
| InSv | step 8 |
| SysB | step 4 |

**4** Manually busy each F-bus by typing

**`>BSY 0 FBUS; BSY 1 FBUS`**

and pressing the Enter key.

**5** Return each manual-busy F-bus to service by typing

**`>RTS 0 FBUS; RTS 1 FBUS`**

and pressing the Enter key.

**6** Determine if both F-buses have returned to service.

| If both F-buses have | Do |
|---|---|
| returned to service | step 8 |
| not returned to service | step 7 |

**7** Clear any MS alarms that may be preventing the F-buses from returning to service. If necessary, consult your next level of support.

Once the F-buses are in service, continue this procedure at step 8.

**8** Determine what type of ASUs are equipped on the SuperNode SE LIS or ENI shelf you are recovering.

| If the SuperNode SE LIS or ENI shelf is equipped with | Do |
|---|---|
| any NIUs | step 9 |

## Recovering SuperNode SE application specific units (continued)

| If the SuperNode SE LIS or ENI shelf is equipped with | Do |
|---|---|
| any other type of ASU | step 23 |

**9** Access the NIU inventory table by typing

```
>TABLE  NIUINV
```

and pressing the Enter key.

**10** List the contents of the inventory table by typing

```
>LIST  ALL
```

and pressing the Enter key.

**11** Record the NIUNO (NIU number) of each NIU associated with the SuperNode SE LIS or ENI shelf being recovered.

**12** Access the PM level of the MAP display by typing

```
>PM
```

and pressing the Enter key.

**13** Post the NIUs recorded in step 11 by typing

```
>POST   NIU   niu_nos
```

and pressing the Enter key.

*where*

**niu_nos**
are the numbers of the NIUs (0 to 29) associated with the LIS or ENI shelf

***Note:*** Use a space to separate each number from the preceding number.

*Example input*

```
>POST  NIU  4  12
```

**14** Determine if the posted NIU is system-busy.

| If the posted NIU is | Do |
|---|---|
| system-busy | step 16 |
| in any other state | step 15 |

**15** Access the next NIU in the posted set by typing

```
>NEXT
```

and pressing the Enter key.

| If | Do |
|---|---|
| the set is empty | step 23 |
| the next NIU in the set is posted | step 14 |

## Recovering SuperNode SE application specific units (continued)

**16** Manually busy unit zero of the affected NIU by typing

**>BSY UNIT 0 FORCE**

and pressing the Enter key.

**17** Load the NIU unit by typing

**>LOADPM UNIT 0**

and pressing the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 18 |
| failed | step 33 |

**18** Return the NIU unit to service by typing

**>RTS UNIT 0**

and pressing the Enter key.

| If the RTS command | Do |
|---|---|
| passed | step 19 |
| failed | step 33 |

**19** Determine if the other unit of the posted NIU is in service.

| If | Do |
|---|---|
| both units of the posted NIU are in service | step 23 |
| the other unit of the posted NIU is not in service | step 20 |

**20** Manually busy the NIU unit by typing

**>BSY UNIT 1 FORCE**

and pressing the Enter key.

**21** Load the NIU unit by typing

**>LOADPM UNIT 1**

and pressing the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 22 |
| failed | step 33 |

## Recovering SuperNode SE application specific units (continued)

**22** Return the NIU unit to service by typing

**>RTS UNIT 1**

and pressing the Enter key.

| If the RTS command | Do |
|---|---|
| passed | step 15 |
| failed | step 33 |

**23** Access the link interface unit inventory table by typing

**>TABLE LIUINV**

and pressing the Enter key.

**24** List the contents of the inventory table by typing

**>LIST ALL**

and pressing the Enter key.

**25** Record the LIUNO (LIU number) of any LIU7, EIU, VPU, APU, XLIU, FRIU, SVR7, HLIU, and HSLR associated with the SuperNode SE LIS or ENI shelf being recovered.

**26** Access the PM level of the MAP display by typing

**>PM**

and pressing the Enter key.

**27** Display a list of all system-busy PMs by typing

**>DISP STATE SYSB**

and pressing the Enter key.

*Example of a MAP response:*

```
SysB LIU7   : 102, 202, 207, 302, 308
```

**28** Determine if any of the PMs recorded in step 25 appear in the MAP response generated at step 27.

| If there are | Do |
|---|---|
| system busy PMs associated with the shelf being recovered | step 29 |
| no system busy PMs associated with the shelf being recovered | step 34 |

**29** Post the system-busy PM by typing

**>POST pm_type pm_no**

and pressing the Enter key.

*where*

## Recovering SuperNode SE application specific units (end)

**pm_type**
is the type of PM (LIU7, EIU, APU, VPU, XLIU, FRIU, SVR7, HLIU, or HSLR)

**pm_no**
is the number of the system-busy PM

**30** Manually busy the posted PM by typing

**>BSY FORCE**

and pressing the Enter key.

**31** Load the posted PM by typing

**>LOADPM**

and pressing the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 32 |
| failed | step 33 |

**32** Return the PM to service by typing

**>RTS pm_type pm_no**

and pressing the Enter key.

*where*

**pm_type**
is the type of PM (LIU7, EIU, APU, VPU, XLIU, or FRIU)

**pm_no**
is the number of the system-busy PM

| If the RTS command | Do |
|---|---|
| passed | step 27 |
| failed | step 33 |

**33** For further assistance, contact the personnel responsible for the next level of support.

**34** You have completed this procedure.

# 4 Recovery procedures for individual devices and services

## Introduction to recovery procedures for individual devices and services

This chapter contains procedures for performing recovery tasks for individual devices and services for recovery tasks for the DMS-100 switch. For each recovery task, you will find a procedure containing

- explanatory and context-setting information
- information
- step-action instructions

### Explanatory and context-setting information

The first page of each procedure contains the following headings:

- Application (when to use the procedure)
- Action (how to use the flowchart and step-action instructions)

### Summary flowchart

The flowchart is only a summary of the main actions, decision points, and possible paths you may take. Do not use the summary flowchart to perform the procedure. Instead, use it to preview what you will be doing and to prepare for it. For example, if you see that these instructions involve another office, you will know to advise that office before you begin the step-action instructions.

### Step-action instructions

The step-action instructions tell you how to perform the recovery task. Normally you will perform the steps in order, but you may be directed to return to a previous step and repeat a sequence. The successful completion of a step may depend on previous steps; therefore, always perform the steps in the order specified.

The step-action instructions provide the command syntax and system information you use or see while performing the procedure. For help on DMS

commands, see *DMS-100 Family Commands Reference Manual*, 297-10001-822

# Checking for call completion

## Application

Use this procedure to ensure that calls can be completed through the following CCS7 signaling links:

- CCS7 link interface unit and multiple link interface unit (LIU7 and MLIU)
- CCS7 dual-link interface unit (DLIU)

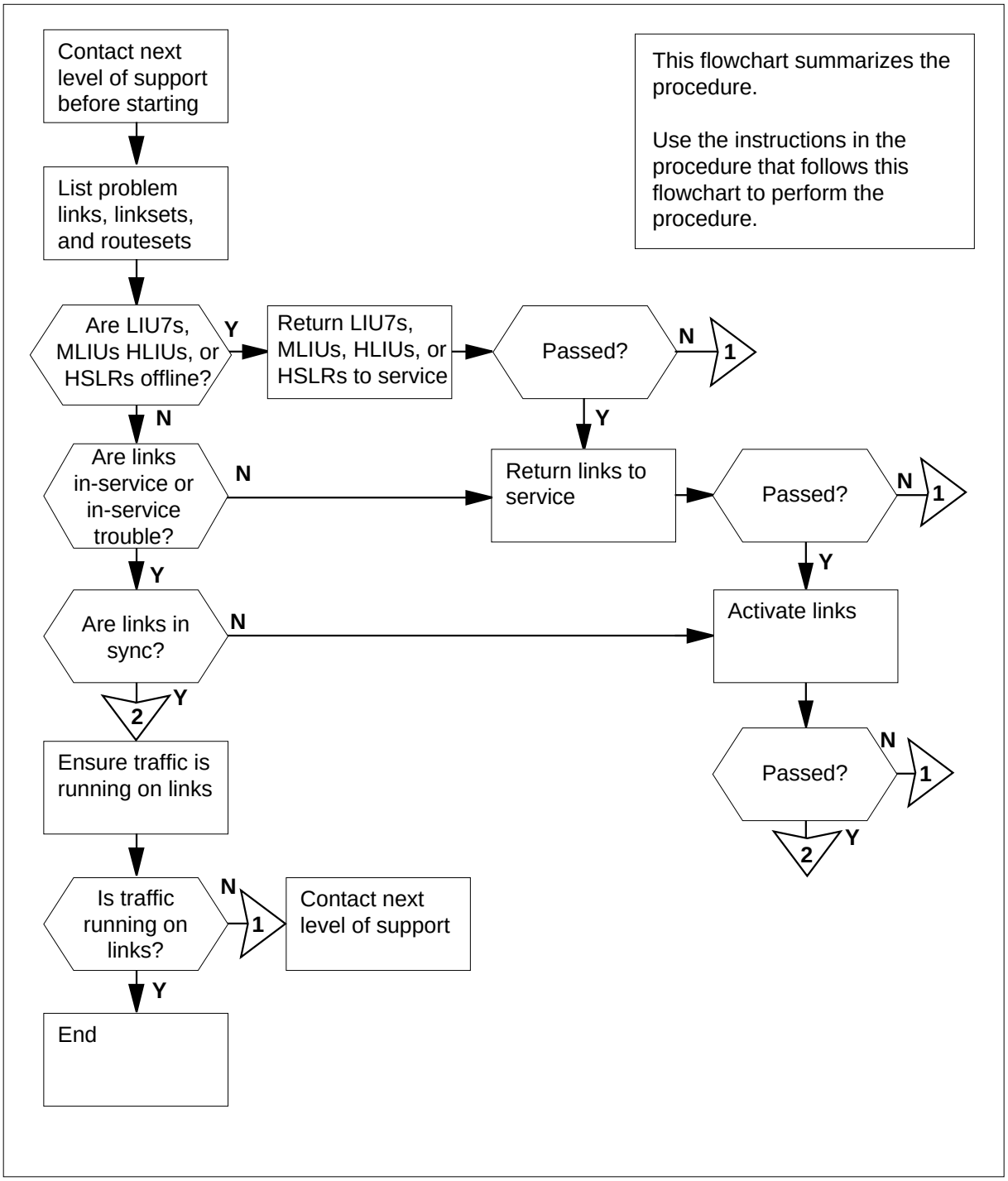
A DLIU consists of a high-speed link interface unit (HLIU) and a high-speed link router (HSLR).

## Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

## Checking for call completion (continued)

**Summary of Checking for call completion**



# Checking for call completion (continued)

### Checking for call completion

**CAUTION**
**Possible equipment damage or service interruption**
Contact your next level of support before attempting this procedure.

***At the MAP***

**1** As LIU7s, MLIUs, HLIUs, and HSLRs begin to recover from a system failure, check the following logs:

AUDT612, AUDT613, AUDT614, AUDT615, or AUDT623, which indicate state mismatches.

CCS101, which indicates a status indication out of service (SIOS) from the far end.

CCS177, which detects inconsistency in route data.

For additional information about the log reports, see the *Log Report Reference Manual*.

Also look for the following operational measurements (OM) groups:

C7LINK2, which provides information on calls and congestion for CCS7.

C7LINK1, which provides information on the failures and recoveries of a CCS7 link.

For further information about OMs, see *Operational Measurements Reference Manual*.

**2** Record the LIU7s, MLIUs, DLIUs, linksets, and routesets that are indicated in the logs and OMs examined in step 1. Ensure that you have correctly matched each routeset with its component linksets and LIU7s, MLIUs or DLIUs.

**3** Make test calls to the far-end office associated with the routesets you recorded in step 2. Record any problems encountered when making the test calls, and match these problems to the routesets.

**4** Choose a routeset that is associated with call completion problems through this office.

***Note:*** Depending on the position of this office in the network, some routesets may have priority over others. Check with your next level of support to determine priority.

**5** Access the C7RTESET level of the MAP display by typing

```
>MAPCI;MTC;CCS;CCS7;C7RTESET
```

and pressing the Enter key.

**6** Post the routeset by typing

```
>POST  C  rteset_name
```

## Checking for call completion (continued)

and pressing the Enter key.

*where*

**rteset_name**
is the name of the routeset associated with the linkset chosenin step 4

*Example input:*

```
>POST  C  SSP100_RT
```

*Example of a MAP display:*

```
C7Routeset  SSP100_RT          SysB    Linkset  Transfer
  Rte   State  Mode Cost Linkset          State    Status
  0     SysB  Assoc 0    SSP100_LK         SysB       TFP
  1     SysB  Quasi 1    SSP101_LK         SysB       TFP
```

**7** Determine which linksets in the posted routeset are causing problems.

| If | Do |
|---|---|
| one or more linksets are out of service | step 8 |
| there are no more out-of-service linksets and there are still routesets associated with call completion problems | step 4 |
| there are no more out-of-service linksets and there are no more routesets associated with call completion problems | step 51 |

**8** Choose a linkset to work on.

**9** Access the C7LKSET level of the MAP display by typing

```
>C7LKSET
```

and pressing the Enter key.

**10** Post the linkset by typing

```
>POST  C  linkset_name
```

and pressing the Enter key.

*where*

**linkset_name**
is the name of the linkset chosen in step 8

## Checking for call completion (continued)

```
Linkset  SSP100_LK        SYSB
   Traf Sync
Link
LK Stat Stat Resource  Stat Physical Access   Stat Action
0  SysB SysB LIU7 101  SysB DS0A
1  SysB SysB LIU7 103  SysB DS0A
2  SysB SysB DLIU 300  SysB DS1

Size of Posted Set = 3
```

***Note:*** Where the link interface unit is an MLIU, MLIU is shown in the MAP display in place of LIU7.

**11** Determine which links are out of service.

**12** Choose an out-of-service link.

| If the link is | Do |
|---|---|
| an LIU7 or a DLIU that is InSv or ISTb | step 39 |
| an LIU7 that is ManB, SysB, or OffL | step 13 |
| a DLIU that is ManB, SysB, or OffL | step 21 |
| anything else | step 48 |

**13** Access the PM level of the MAP display by typing

**>PM**

and pressing the Enter key.

**14** Post the LIU7 or MLIU by typing

**>POST LIU7 liu_no**

or

**>POST MLIU mliu_no**

and pressing the Enter key.

*where*

**liu_no or mliu_no**
is the number of the LIU7 or MLIU (0 to 511) associated with the link you chose in step 12

| If the state of the LIU7 or MLIU is | Do |
|---|---|
| SysB or OffL | step 15 |
| ManB | step 16 |

**15** Force the LIU7 or MLIU to busy by typing

**>BSY FORCE**

## Checking for call completion (continued)

and pressing the Enter key.

**16** Return the LIU7 or MLIU to service by typing

**>RTS**

and pressing the Enter key.

| If the RTS command | Do |
|---|---|
| passed | step 36 |
| failed | step 17 |
| anything else | step 50 |

**17** Force the LIU7 or MLIU to busy by typing

**>BSY FORCE**

and pressing the Enter key.

**18** Reset the LIU7 or MLIU by typing

**>PMRESET**

and pressing the Enter key.

| If the PMRESET command | Do |
|---|---|
| passed, and the LIU7 is `ISTb` or `InSv` | step 36 |
| passed, and the LIU7 is `ManB` | step 20 |
| failed, and the LIU7 is `ManB` | step 19 |

***Note:*** Where the link interface unit is an MLIU, MLIU is shown in the MAP display in place of LIU7.

**19** Reload the LIU7 or MLIU by typing

**>LOADPM**

and pressing the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 20 |
| failed | step 50 |

**20** Return the LIU7 or MLIU to service by typing

**>RTS**

and pressing the Enter key.

| If the RTS command | Do |
|---|---|
| passed | step 36 |
| failed | step 50 |

**21** Access the PM level of the MAP display by typing

**>PM**

and pressing the Enter key.

**22** Post the HLIU by typing

**>POST HLIU liu_no**

and pressing the Enter key.

*where*

**liu_no**
is the number of the HLIU (0 to 511) associated with the link you chose in step 12

| If the state of the HLIU is | Do |
|---|---|
| SysB or OffL | step 23 |
| ManB | step 24 |
| InSv | step 29 |

**23** Force the HLIU to busy by typing

**>BSY FORCE**

and pressing the Enter key.

**24** Return the HLIU to service by typing

**>RTS**

and pressing the Enter key.

| If the RTS command | Do |
|---|---|
| passed | step 29 |
| failed | step 25 |
| anything else | step 50 |

**25** Force the HLIU to busy by typing

**>BSY FORCE**

and pressing the Enter key.

## Checking for call completion (continued)

**26** Reset the HLIU by typing

**>PMRESET**

and pressing the Enter key.

| If the PMRESET command | Do |
|---|---|
| passed, and the HLIU is ISTb or InSv | step 29 |
| passed, and the HLIU is ManB | step 28 |
| failed, and the HLIU is ManB | step 27 |

**27** Reload the HLIU by typing

**>LOADPM**

and pressing the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 28 |
| failed | step 50 |

**28** Return the HLIU to service by typing

**>RTS**

and pressing the Enter key.

| If the RTS command | Do |
|---|---|
| passed | step 29 |
| failed | step 50 |

**29** Post the HSLR by typing

**>POST HSLR liu_no**

and pressing the Enter key.

*where*

**liu_no**
is the number of the HSLR (0 to 511) associated with the link you chose in step 12

| If the state of the HSLR is | Do |
|---|---|
| SysB or OffL | step 30 |
| ManB | step 31 |
| InSv | step 36 |

## Checking for call completion (continued)

**30** Force the HSLR to busy by typing

**>BSY FORCE**

and pressing the Enter key.

**31** Return the HSLR to service by typing

**>RTS**

and pressing the Enter key.

| If the RTS command | Do |
|---|---|
| passed | step 36 |
| failed | step 32 |
| anything else | step 50 |

**32** Force the HSLR to busy by typing

**>BSY FORCE**

and pressing the Enter key.

**33** Reset the HSLR by typing

**>PMRESET**

and pressing the Enter key.

| If the PMRESET command | Do |
|---|---|
| passed, and the HSLR is `ISTb` or `InSv` | step 36 |
| passed, and the HSLR is `ManB` | step 35 |
| failed, and the HSLR is `ManB` | step 34 |

**34** Reload the HSLR by typing

**>LOADPM**

and pressing the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 35 |
| failed | step 50 |

**35** Return the HSLR to service by typing

**>RTS**

## Checking for call completion (continued)

and pressing the Enter key.

| If the RTS command | Do |
|---|---|
| passed | step 36 |
| failed | step 50 |

**36** Access the C7LKSET level of the MAP display by typing

**>CCS;CCS7;C7LKSET**

and pressing the Enter key.

**37** Post the linkset associated with the link that resides on the LIU7, MLIU or DLIU you are working on by typing

**>POST C linkset_name**

and pressing the Enter key.

*where*

**linkset_name**
is the name of the linkset associated with the LIU7 or MLIU

**38** Determine if the link associated with the LIU7, MLIU or DLIU you are working on is still out of service.

| If the link is | Do |
|---|---|
| InSv or ISTb, and the linkset is InSv orISTb | step 43 |
| InSv or ISTb, and the linkset is out of service | step 43 |
| out of service | step 39 |

**39** Manually busy the link by typing

**>BSY link_no**

and pressing the Enter key.

*where*

**link_no**
is the number of the link (0 to 15)

**link_no**
is the number of the link (0 to 7)

**40** Confirm the command by typing

**>YES**

and pressing the Enter key.

**41** Return the link to service by typing

**>RTS link_no**

and pressing the Enter key.

*where*

## Checking for call completion (continued)

**link_no**
is the number of the link in the posted linkset (0 to 15)

**link_no**
is the number of the link in the posted linkset (0 to 7)

| If the RTS command | Do |
|---|---|
| passed | step 42 |
| failed | step 50 |

**42** Activate the link by typing

**>ACT link_no**

and pressing the Enter key.

*where*

**link_no**
is the number of the link (0 to 15)

**link_no**
is the number of the link in the posted linkset (0 to 7)

| If the RTS command | Do |
|---|---|
| passed | step 43 |
| failed | step 50 |

**43** Determine if traffic is running on the link by typing

**>QUERYTRF link_no**

and pressing the Enter key.

*where*

**link_no**
is the number of the link in the linkset (0 to 15)

**link_no**
is the number of the link in the linkset (0 to 7)

*Example of a MAP response:*

```
QueryTrf: Link occupancy for 13:30:00 – 14:00:00
Link    Speed   Byte/sec  Erlang    MSU len %RTx  Msg/sec
   4    7000          0     0.00         0       0    0
```

***Note:*** In the Byte/sec, Erlang, and MSU len fields, a value of 0 (zero) means that no traffic is running, and a value greater than zero means that traffic is running. In the above example, no traffic is running on the link.

| If traffic on the link is | Do |
|---|---|
| running, and the linkset is InSv or ISTb | step 46 |

## Checking for call completion (continued)

| If traffic on the link is | Do |
|---|---|
| running, and the linkset is out of service | step 46 |
| not running | step 44 |

**44** Wait until the next query traffic snapshot is taken.

**45** Determine whether traffic has begun to run on the link by typing

**>QUERYTRF link_no**

and pressing the Enter key.

*where*

**link_no**
is the number of the link in the linkset (0 to 15)

**link_no**
is the number of the link in the linkset (0 to 7)

*Example of a MAP response:*

```
QueryTrf: Link occupancy for 13:30:00 – 14:00:00
Link    Speed   Byte/sec  Erlang    MSU len %RTx  Msg/sec
   4    7000        3360    0.40       28     0    120
```

| If traffic on the link is | Do |
|---|---|
| running, and the linkset is InSv or ISTb | step 46 |
| running, and the linkset is out of service | step 46 |
| not running | step 50 |

**46** Check if there are more out-of-service links in the linkset on which you are working.

| If there are | Do |
|---|---|
| more out of service links in the linkset on which you are working | step 12 |
| no more out-of-service links in the linkset on which you are working and the linkset state is InSv or ISTb | step 7 |
| no more out-of-service links in the linkset on which you are working and the linkset out of service | step 47 |

## Checking for call completion (end)

**47** You have restored traffic to the link, but the linkset is still out of service. Contact the far-end office. Tell far-end personnel that you have in-service or in-service trouble links, and that the associated linkset is out of service.

Go to step 7.

**48** Access the C7RTESET level of the MAP display by typing

**>C7RTESET**

and pressing the Enter key.

*Example of a MAP display:*

```
C7Routeset  SSP100_RT          InSv    Linkset   Transfer
  Rte   State  Mode Cost Linkset         State    Status
  0     InSv  Assoc 0    SSP100_LK       InSv      TFA
  1     InSv  Quasi 1    SSP101_LK       InSv      TFA
```

**49** Determine the state of the routeset.

| If the state of the routeset is | Do |
|---|---|
| InSv | step 4 |
| anything else | step 50 |

**50** For further assistance, contact the personnel responsible for the next level of support.

**51** You have completed this procedure.

# Checking for message throughput

## Application

Use this procedure to ensure that, after system failure, messages can be sent over the following CCS7 signaling links:

- CCS7 link interface unit (LIU7 or MLIU)
- dual link interface unit (DLIU)

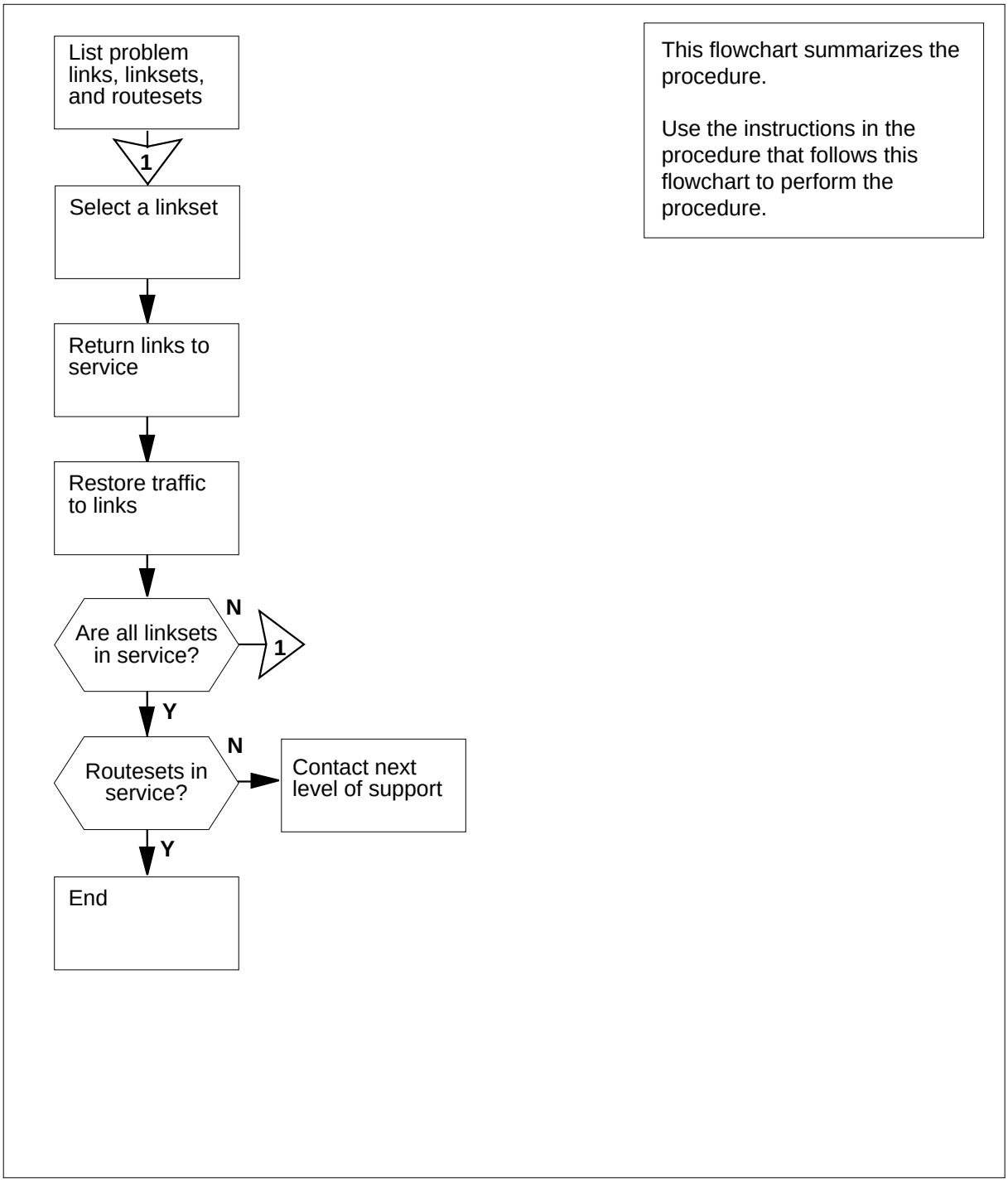
A DLIU consists of a high-speed link interface unit (HLIU) and a high-speed link router (HSLR).

## Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Checking for message throughput (continued)

**Summary of Checking for message throughput**



# Checking for message throughput (continued)

**Checking for message throughput**

**DANGER**
**Possible equipment damage or service interruption**
Do not attempt this procedure before contacting your next level of support.

***At the MAP terminal***

**1** As LIU7s, MLIUs, HLIUs, and HSLRs begin to recover from a system failure, check the following logs:

AUDT612, AUDT613, AUDT614, AUDT615, or AUDT623, which indicate state mismatches.

CCS101, which indicates the far end has a status indication out-of-service (SIOS) message.

CCS177, which detects problems in route data.

For additional information about the log reports, see *Log Report Reference Manual.*

Also look for the following operational measurements (OM):

C7LINK2

C7LINK1

For additional information about OMs, see *Operational Measurements Reference Manual.*

**2** Record the LIU7s, MLIUs, DLIUs, linksets, and routesets that are indicated in the logs and OMs examined in step 1. Ensure that you correctly matched each routeset with its component linksets and LIU7s, MLIUs or DLIUs.

**3** Ask your next level of support to make test calls to and from the far-end offices associated with the routesets you recorded in step 2. Record any problems encountered when making the test calls, and match these problems to the routesets.

**4** Choose a routeset that is associated with call completion problems through this office.

***Note:*** Depending on the position of this office in the network, some routesets may have priority over other messages. Check with your next level of support to determine priority.

**5** Access the C7RTESET level of the MAP display by typing

```
>MAPCI;MTC;CCS;CCS7;C7RTESET
```

and pressing the Enter key.

**6** Post the routeset by typing

```
>POST  C  rteset_name
```

and pressing the Enter key.

*where*

**rteset_name**
is the name of the routeset associated with the linkset chosen at step 4

*Example input:*

```
>POST  C  SSP100_RT
```

*Example of a MAP response:*

```
C7Routeset  SSP100_RT         SysB     Linkset   Transfer
  Rte   State  Mode Cost Linkset          State    Status
  0     SysB  Assoc 0    SSP100_LK        SysB       TFP
  1     SysB  Quasi 1    SSP101_LK        SysB       TFP
```

**7** Determine which linksets in the posted routeset are causing problems.

| If | Do |
|---|---|
| one or more linksets are out of service | step 8 |
| no more out-of-service linksets, exist but routesets associated with call completion problems still exist | step 4 |
| no more out-of-service linksets, exist and there are no more routesets on your list of routesets made in step 2 | step 52 |

**8** Choose a linkset on which to work.

**9** Access the C7LKSET level of the MAP display by typing

```
>C7LKSET
```

and pressing the Enter key.

**10** Post the linkset by typing

```
>POST  C  linkset_name
```

and pressing the Enter key.

*where*

**linkset_name**
is the name of the linkset chosen in step 8

*Example of a MAP response:*

## Checking for message throughput (continued)

```
Linkset  SSP100_LK        SYSB
   Traf Sync                                          Link
LK Stat Stat Resource  Stat Physical Access   Stat Action
0  SysB SysB LIU7 101  SysB DS0A
1  SysB SysB LIU7 103  SysB DS0A
2  SysB SysB DLIU 300  SysB DS1

Size of Posted Set = 3
```

***Note:*** Where the link interface unit is an MLIU, MLIU is shown in the MAP display in place of LIU7.

**11** Determine which links are out of service.

**12** Choose an out-of-service link.

| If the chosen link is | Do |
|---|---|
| an LIU7, MLIU or DLIU that is InSv or ISTb | step 41 |
| an LIU7 or MLIU that is ManB, SysB, or Offl | step 13 |
| a DLIU that is ManB, SysB, or Offl | step 21 |
| anything else | step 54 |

**13** Access the PM level of the MAP display by typing

**>PM**

and pressing the Enter key.

*Example of a MAP response:*

```
          SysB   ManB   OffL   CBsy   ISTb   InSv
 PM          1     10     12      0      6     49
```

**14** Post the LIU7 or MLIU by typing

**>POST LIU7 liu_no**

or

**>POST MLIU mliu_no**

and pressing the Enter key.

*where*

**liu_no or mliu_no**
is the number of the LIU7 or MLIU (0 to 511) associated with the link you chose at step 12

| If the state of the LIU7 or MLIU is | Do |
|---|---|
| SysB or Offl | step 15 |

## Checking for message throughput (continued)

| If the state of the LIU7 or MLIU is | Do |
|---|---|
| ManB | step 16 |

**15** Force the LIU7 or MLIU to busy by typing

**>BSY FORCE**

and pressing the Enter key.

**16** Return the LIU7 or MLIU to service

**>RTS**

and pressing the Enter key.

| If the RTS command | Do |
|---|---|
| passed, and the LIU7 is ISTb or InSv | step 36 |
| failed, and the LIU7 is ManB or SysB | step 17 |
| anything else | step 54 |

***Note:*** Where the link interface unit is an MLIU, MLIU is shown in the MAP display in place of LIU7.

**17** Force the LIU7 or MLIU to busy by typing

**>BSY FORCE**

and pressing the Enter key.

**18** Reset the LIU7 or MLIU by typing

**>PMRESET**

and pressing the Enter key.

| If the PMRESET command | Do |
|---|---|
| passed, and the LIU7 is ManB | step 20 |
| failed, and the LIU7 is ManB | step 19 |

***Note:*** Where the link interface unit is an MLIU, MLIU is shown in the MAP display in place of LIU7.

**19** Reload the LIU7 or MLIU by typing

**>LOADPM**

and pressing the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 20 |
| failed | step 54 |

## Checking for message throughput (continued)

**20** Return the LIU7 or MLIU to service

**>RTS**

and pressing the Enter key.

| If the RTS command | Do |
|---|---|
| passed | step 36 |
| failed | step 54 |

**21** Access the PM level of the MAP display by typing

**>PM**

*Example of a MAP response:*

```
         SysB   ManB   OffL   CBsy   ISTb   InSv
PM          1     10     12      0      6     49
```

**22** Post the HLIU by typing

**>POST HLIU liu_no**

and pressing the Enter key.

*where*

**liu_no**
is the number of the HLIU (0 to 511) associated with the link you chose at step 12

| If the state of the HLIU is | Do |
|---|---|
| SysB or Offl | step 23 |
| ManB | step 24 |
| InSv | step 29 |

**23** Force the HLIU to busy by typing

**>BSY FORCE**

and pressing the Enter key.

**24** Return the HLIU to service

**>RTS**

and pressing the Enter key.

| If the RTS command | Do |
|---|---|
| passed, and the HLIU is ISTb or InSv | step 29 |
| failed, and the HLIU is ManB or SysB | step 25 |
| anything else | step 54 |

## Checking for message throughput (continued)

**25** Force the HLIU to busy by typing

**>BSY FORCE**

and pressing the Enter key.

**26** Reset the HLIU by typing

**>PMRESET**

and pressing the Enter key.

| If the PMRESET command | Do |
|---|---|
| passed, and the HLIU is ManB | step 28 |
| failed, and the HLIU is ManB | step 27 |

**27** Reload the HLIU by typing

**>LOADPM**

and pressing the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 28 |
| failed | step 54 |

**28** Return the HLIU to service

**>RTS**

| If the RTS command | Do |
|---|---|
| passed | step 29 |
| failed | step 54 |

**29** Post the HSLR by typing

**>POST HSLR liu_no**

and pressing the Enter key.

*where*

**liu_no**
is the number of the HSLR (0 to 750) associated with the link you chose in step 12

| If the state of the HSLR is | Do |
|---|---|
| SysB or Offl | step 30 |
| ManB | step 31 |
| InSV | step 36 |

## Checking for message throughput (continued)

**30** Force the HSLR to busy by typing

**>BSY FORCE**

and pressing the Enter key.

**31** Return the HSLR to service

**>RTS**

and pressing the Enter key.

| If the RTS command | Do |
|---|---|
| passed, and the HSLR is ISTb or InSv | step 36 |
| failed, and the HSLR is ManB or SysB | step 32 |
| anything else | step 54 |

**32** Force the HSLR to busy by typing

**>BSY FORCE**

and pressing the Enter key.

**33** Reset the HSLR by typing

**>PMRESET**

and pressing the Enter key.

| If the PMRESET command | Do |
|---|---|
| passed, and the HSLR is ManB | step 35 |
| failed, and the HSLR is ManB | step 34 |

**34** Reload the HSLR by typing

**>LOADPM**

and pressing the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 35 |
| failed | step 54 |

**35** Return the HSLR to service

**>RTS**

## Checking for message throughput (continued)

and pressing the Enter key.

| If the RTS command | Do |
|---|---|
| passed | step 36 |
| failed | step 54 |

**36** Access the C7LKSET level of the MAP display by typing

```
>C7LKSET
```

and pressing the Enter key.

**37** Post the linkset associated with the link that resides on the LIU7, MLIU or the HLIU and HSLR that you just worked on by typing

```
>POST  C  linkset_name
```

and pressing the Enter key.

*where*

**linkset_name**
is the name of the linkset associated with the LIU7, MLIU or the HLIU and HSLR

**38** Determine if the link associated with the LIU7, MLIU or the HLIU and HSLR that you just worked on is still out of service.

| If the link is | Do |
|---|---|
| InSv or ISTb, and the linkset is InSv or ISTb | step 39 |
| InSv or ISTb, and the linkset is out of service | step 40 |
| out of service | step 41 |

**39** You restored traffic on the linkset.

Go to step 7 and choose another out of service linkset on which to work.

**40** You restored traffic to the link, but the linkset is still out of service. Contact the far-end office. Tell personnel there that you have in service or in-service trouble links and that the associated linkset is out of service.

Go to step 7.

**41** Inhibit the link from traffic flow for safety by typing

```
>INH  link_no
```

and pressing the Enter key.

*where*

**link_no**
is the number of the link (0 to 15)

**link_no**
is the number of the link (0 to 7)

## Checking for message throughput (continued)

***Note:*** The link_no shown applies only to the ITU protocol. ITU is the only protocol that supports MLIU.

| If the INH command | Do |
|---|---|
| passed | step 42 |
| failed | step 54 |

**42** Manually busy the link by typing

**>BSY link_no**

and pressing the Enter key.

*where*

**link_no**
is the number of the link (0 to 15)

**link_no**
is the number of the link (0 to 7)

*MAP response:*

```
ENTER YES TO
CONFIRM BSY
OR NO TO QUIT
```

**43** Confirm the command by typing

**>YES**

and pressing the Enter key.

| If the BSY command | Do |
|---|---|
| passed | step 44 |
| failed | step 54 |

**44** To deactivate the link, type

**>DEACT link_no**

and pressing the Enter key.

*where*

**link_no**
is the number of the link (0 to 15)

**link_no**
is the number of the link (0 to 7)

| If the DEACT command | Do |
|---|---|
| passed | step 45 |
| failed | step 54 |

## Checking for message throughput (continued)

**45** Activate the link by typing

**>ACT link_no**

and pressing the Enter key.

*where*

**link_no**
is the number of the link (0 to 15)

**link_no**
is the number of the link (0 to 7)

| If the ACT command | Do |
|---|---|
| passed | step 46 |
| failed | step 54 |

**46** Return the link to service by typing

**>RTS link_no**

and pressing the Enter key.

*where*

**link_no**
is the number of the link (0 to 15)

**link_no**
is the number of the link (0 to 7)

| If the RTS command | Do |
|---|---|
| passed | step 47 |
| failed | step 54 |

**47** To uninhibit the link from traffic flow, type

**>UINH link_no**

and pressing the Enter key.

*where*

**link_no**
is the number of the link (0 to 15)

**link_no**
is the number of the link (0 to 7)

| If the INH command | Do |
|---|---|
| passed | step 48 |
| failed | step 54 |

**48** Determine if traffic is running on the link by typing

**>QUERYTRF link_no**

## Checking for message throughput (continued)

and pressing the Enter key.

*where*

**link_no**
is the number of the link (0 to 15)

**link_no**
is the number of the link (0 to 7)

*Example of a MAP response:*

```
QueryTrf: Link occupancy for 13:30:00 – 14:00:00
Link    Speed    Byte/sec  Erlang   MSU len %RTx
   4    7000           0     0.00        0     0
Link    CellRate Cell/sec  Erlang
   5    3622           0     0.00
```

***Note:*** In the Byte/sec, Erlang, and MSU len fields, a value of 0 (zero) indicates that no traffic is running, and a value greater than zero indicates that traffic is running. In the above example, there is no traffic running on the link.

| If traffic on the link is | Do |
|---|---|
| running, and the linkset is InSv or ISTb | step 39 |
| running, and the linkset is out of service | step 40 |
| not running | step 49 |

**49** Wait until the next query traffic snapshot is taken.

**50** Determine if traffic has begun to run on the link by typing

**`>QUERYTRF link_no`**

and pressing the Enter key.

*where*

**link_no**
is the number of the link (0 to 15)

**link_no**
is the number of the link (0 to 7)

*Example of a MAP response:*

```
QueryTrf: Link occupancy for 14:00:00 – 14:30:00
Link    Speed    Byte/sec  Erlang   MSU len %RTx
   4    7000           52    0.40       28     0
Link    CellRate Cell/sec  Erlang
   5    3622           45    0.36
```

| If traffic on the link is | Do |
|---|---|
| running, and the linkset is InSv or ISTb | step 39 |

## Checking for message throughput (end)

| If traffic on the link is | Do |
|---|---|
| running, and the linkset is out of service | step 40 |
| not running | step 51 |

**51** Check if there are more out-of-service links in the linkset on which you are working.

| If there are | Do |
|---|---|
| more out-of-service links in the linkset on which you are working | step 12 |
| no more out-of-service links in the linkset on which you are working | step 7 |

**52** Access the C7RTESET level of the MAP display by typing

**>C7RTESET**

and pressing the Enter key.

*Example of a MAP display*

```
C7Routeset  SSP100_RT         InSv     Linkset   Transfer
  Rte   State  Mode Cost Linkset         State     Status
  0     InSv  Assoc 0    SSP100_LK        InSv       TFA
  1     InSv  Quasi 1    SSP101_LK        InSv       TFA
```

**53** Determine the state of all recorded routesets.

| If the state of all recorded route-sets is | Do |
|---|---|
| InSv | step 55 |
| anything else | step 54 |

**54** For additional help, contact the personnel responsible for the next level of support.

**55** You have completed this procedure.

# MP position (integrated) recovery

## Application

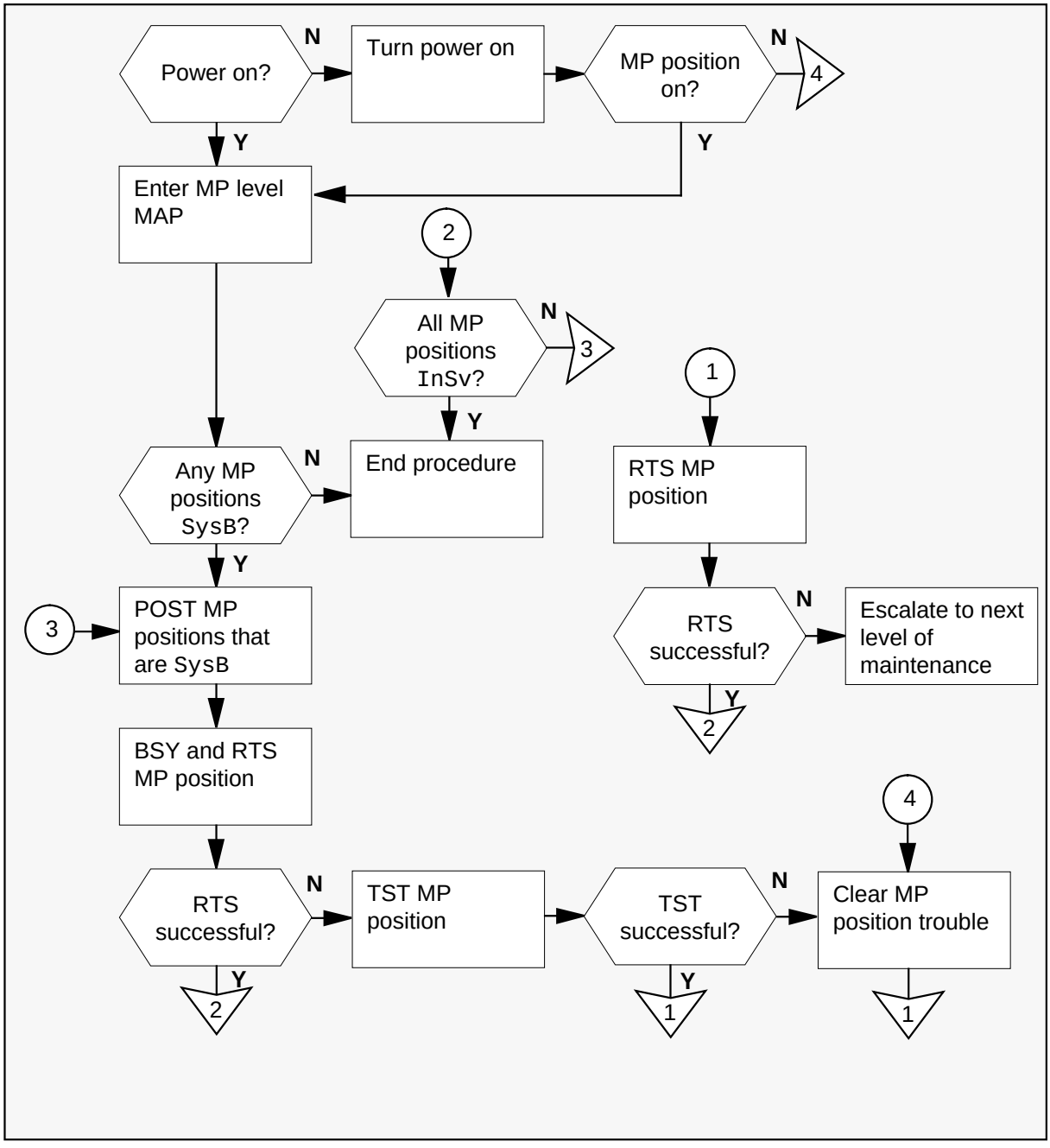
This TOPS Multipurpose Position (MP) recovery procedure returns the TOPS MP system to service after a dead switching system fault clears.

## Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

# MP position (integrated) recovery (continued)

**Summary of MP position (integrated) recovery**



# MP position (integrated) recovery (continued)

**MP position (integrated) recovery**

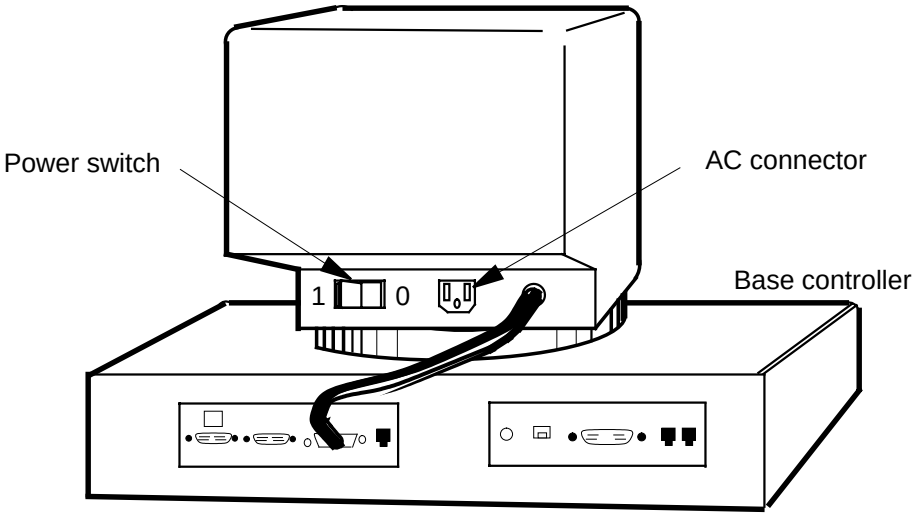
***You enter this procedure because of an emergency disruption to service.***

**1** Determine if the MP position is on.

| If MP position | Do |
|---|---|
| is on | step 3 |
| is off | step 2 |

**2** To turn on the MP position, move the power switch on the MP VDU to the on (1) position.

**Rear view MP position**




| If power switch is on and MP position | Do |
|---|---|
| is on | step 3 |
| is off | step 8 |

# MP position (integrated) recovery (continued)

***At the MAP display:***

**3** To access the MP position level type:

**>MAPCI;MTC;PM;POST  TPC x,MP**

and press the Enter key.

*where*

**x**
is the recovered TPC

**4** To post MP positions that are system busy, type:

**> MP;POST P SB**

and press the Enter key.

| If MP position | Do |
|---|---|
| is SysB | step 5 |
| is InSv | step 12 |

**5** To busy the MP position, type:

**>BSY**

and press the Enter key.

**6** To return the MP position to service, type:

**>RTS**

and press the Enter key.

| If RTS | Do |
|---|---|
| passes | step 10 |
| fails | step 7 |

**7** To test the MP position, type:

**>TST**

and press the Enter key.

| If TST | Do |
|---|---|
| passes | step 9 |
| fails | step 8 |

**8** Refer to *TOPS MP Trouble Locating and Clearing Procedures* and return to step 9.

**9** To return the MP position to service, type:

**>RTS**

## MP position (integrated) recovery (end)

and press the Enter key.

| If RTS | Do |
|---|---|
| passes | step 10 |
| fails | step 11 |

**10** Determine if all MP positions are in service.

| If all MP positions | Do |
|---|---|
| are InSv | step 12 |
| are not InSv | step 4 |

**11** For additional help, contact the next level of maintenance.

**12** The procedure is complete. If alarms appear, refer to *Alarm Clearing Procedures*.

# MP position (standalone) recovery

## Application

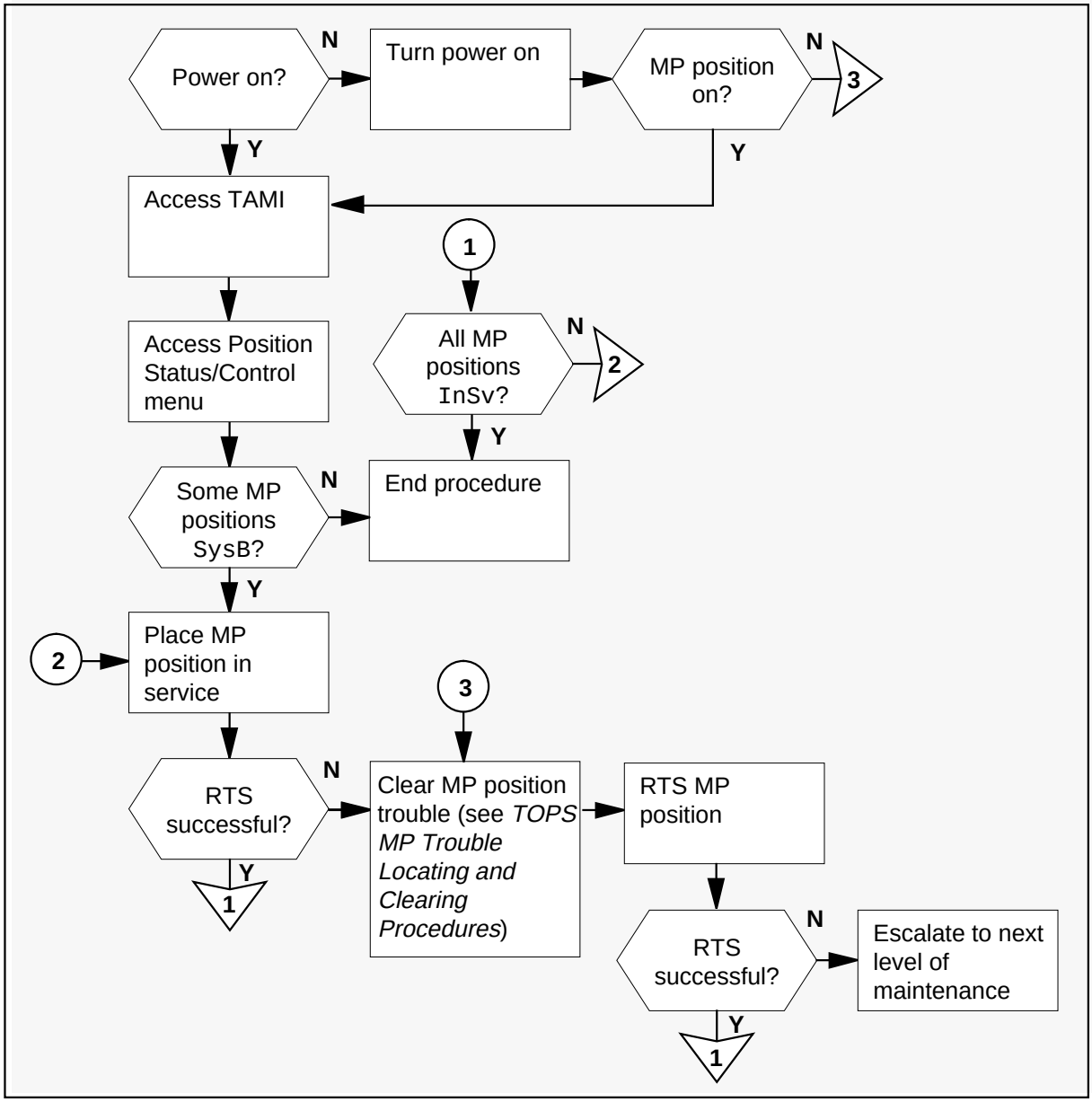
This TOPS Multipurpose Position (MP) recovery procedure returns the TOPS MP system to service after a dead switching system fault clears.

## Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

# MP position (standalone) recovery (continued)

**Summary of MP position (standalone) recoveryrecovery**




**MP position (standalone) recovery**

**ATTENTION**

Enter this procedure because of an emergency disruption to service.

# MP position (standalone) recovery (continued)

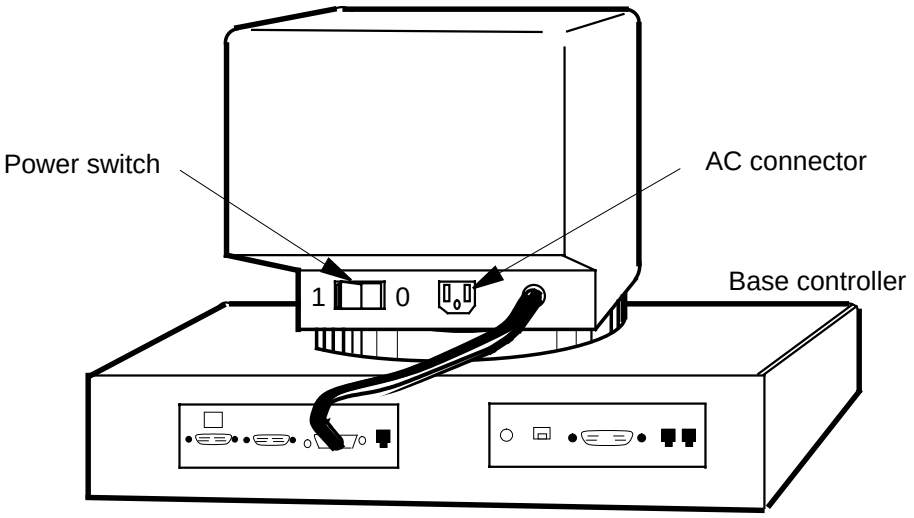
***At the affected MP position:***

**1** Determine if the MP position is on.

| If MP position | Do |
|---|---|
| is on | step 3 |
| is off | step 2 |

**2** To turn on the MP position, move the power switch on the MP VDU to the on (1) position.

**Rear view MP position**




| If power switch is on, and MP position | Do |
|---|---|
| is on | step 3 |
| is off | step 15 |

***At the TAMI:***

**3** To access the Position Status/Control menu from the TAMI main menu, type:

**>3**

and press the Enter key.

*Example of a MAP display response:*

# MP position (standalone) recovery (continued)

```
                POSITION STATUS/CONTROL
    1.  Bsy

    2.  RTS

    3.  OffL

    4.  RTS ALL POSITIONS

POSITION NUMBER            STATUS              CARD PRESENT
     0.                    SysB                    YES
     1.                    SysB                    YES
     2.                    InSv                    YES
     3.                    SysB                    YES

     MAKE CHOICE:
```

**4** Examine the status line to determine if any MP position is SysB.

| If MP position | Do |
|---|---|
| is SysB | step 5 |
| is InSv | step 17 |

**5** To busy the MP position(s), type:

**>1**

and press the Enter key.

**>n**

and press the Enter key.

*where*

**n**
is the MP position number (0, 1, 2, or 3)

***Note:*** Repeat this step until you return to service all positions that apply.

**6** To return the MP position(s) to service, type:

**>2**

and press the Enter key.

**>n**

and press the Enter key.

*where*

**n**
is the MP position number (0, 1, 2, or 3)

# MP position (standalone) recovery (continued)

***Note:*** Repeat this step until you return to service all positions that apply.

| If RTS | Do |
|---|---|
| passes | step 7 |
| fails | step 15 |

***At the MAP display:***

**7** To access the TTP level, type:

**>MAPCI;MTC;TRKS;TTP**

and press the Enter key.

**8** To post the MP position trunk that applies, type:

**>POST T TOPSPOS n**

and press the Enter key.

*where*

**n**
is the MP position number (0, 1, 2, or 3)

**9** Note the status of the trunk circuits.

| If the trunk status | Do |
|---|---|
| is MB | step 11 |
| is SB | step 10 |

**10** To busy the posted trunk, type:

**>BSY**

and press the Enter key.

**11**

**CAUTION**
**Trunk goes system busy**
Do not RTS the TOPSPOS trunk until the MP position is downloaded (VDU displays Link problems encountered).

The trunk goes system busy if the trunk is RTSed before Link problems encountered appears on the VDU.

To return the posted trunk to service, type:

**>RTS**

## MP position (standalone) recovery (end)

and press the Enter key.

***Note:*** Repeat steps 8 through 11 until you return to service all positions that apply.

**12** Determine if trunk returns to service.

| If trunk | Do |
|---|---|
| returns to service and RES appears on MAP terminal | step 13 |
| fails to return to service | step 16 |

**13** Examine the MP VDU.

| If | Do |
|---|---|
| `Please log on` appears | step 14 |
| other message appears | step 16 |

**14** Determine if all MP positions are in service.

| If all MP positions | Do |
|---|---|
| are InSv | step 17 |
| are not InSv | step 1 |

**15** Refer to *TOPS MP Trouble Locating and Clearing Procedures*, and return to step 3.

**16** For additional help, contact the next level of maintenance.

**17** The procedure is complete. If alarms appear, refer to *Alarm Clearing Procedures*.

# PM TPC recovery

## Application

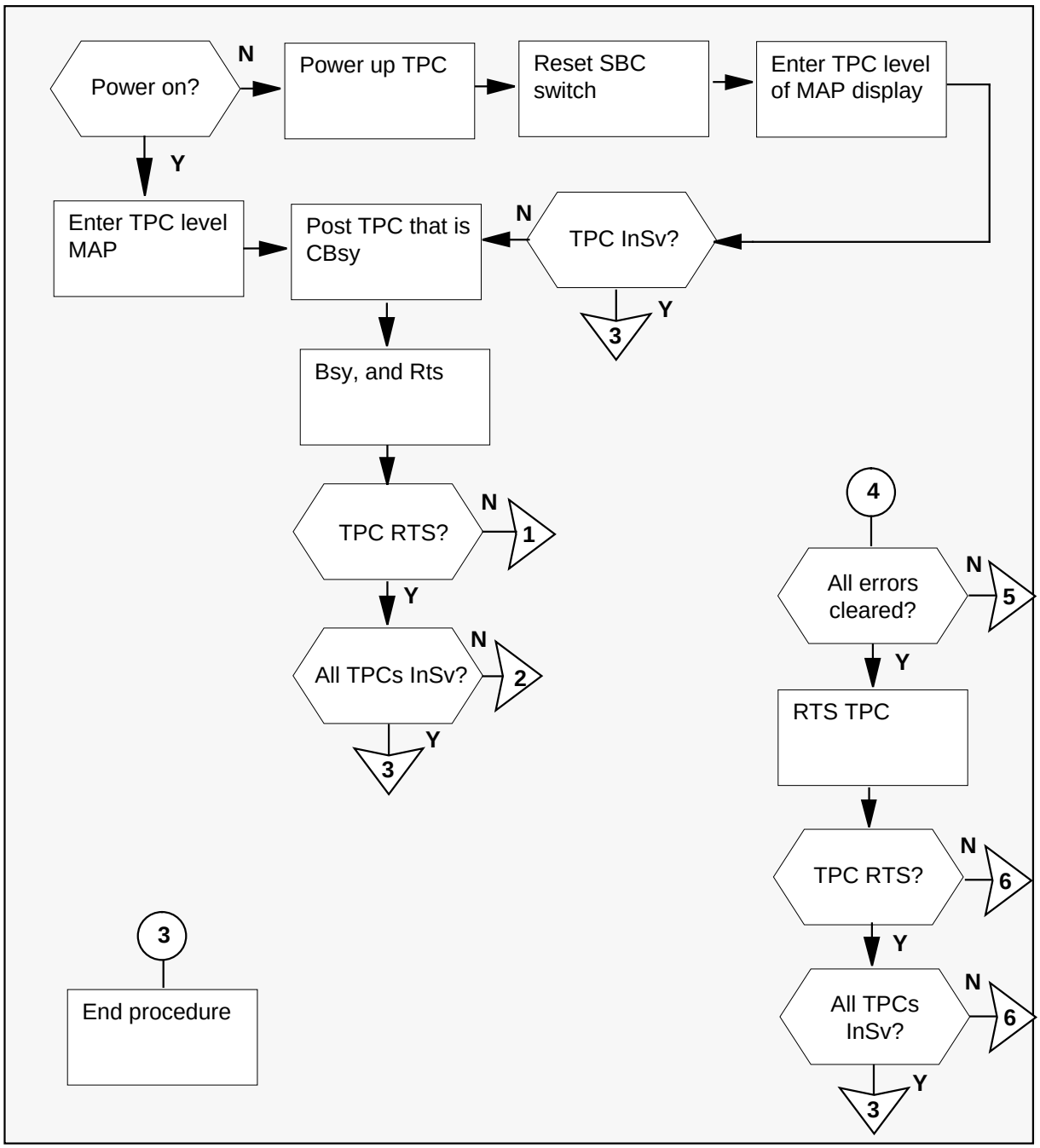
The TOPS Position Controller (TPC) recovery procedure returns the TOPS MP system to service after a dead switching system default clears.

## Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

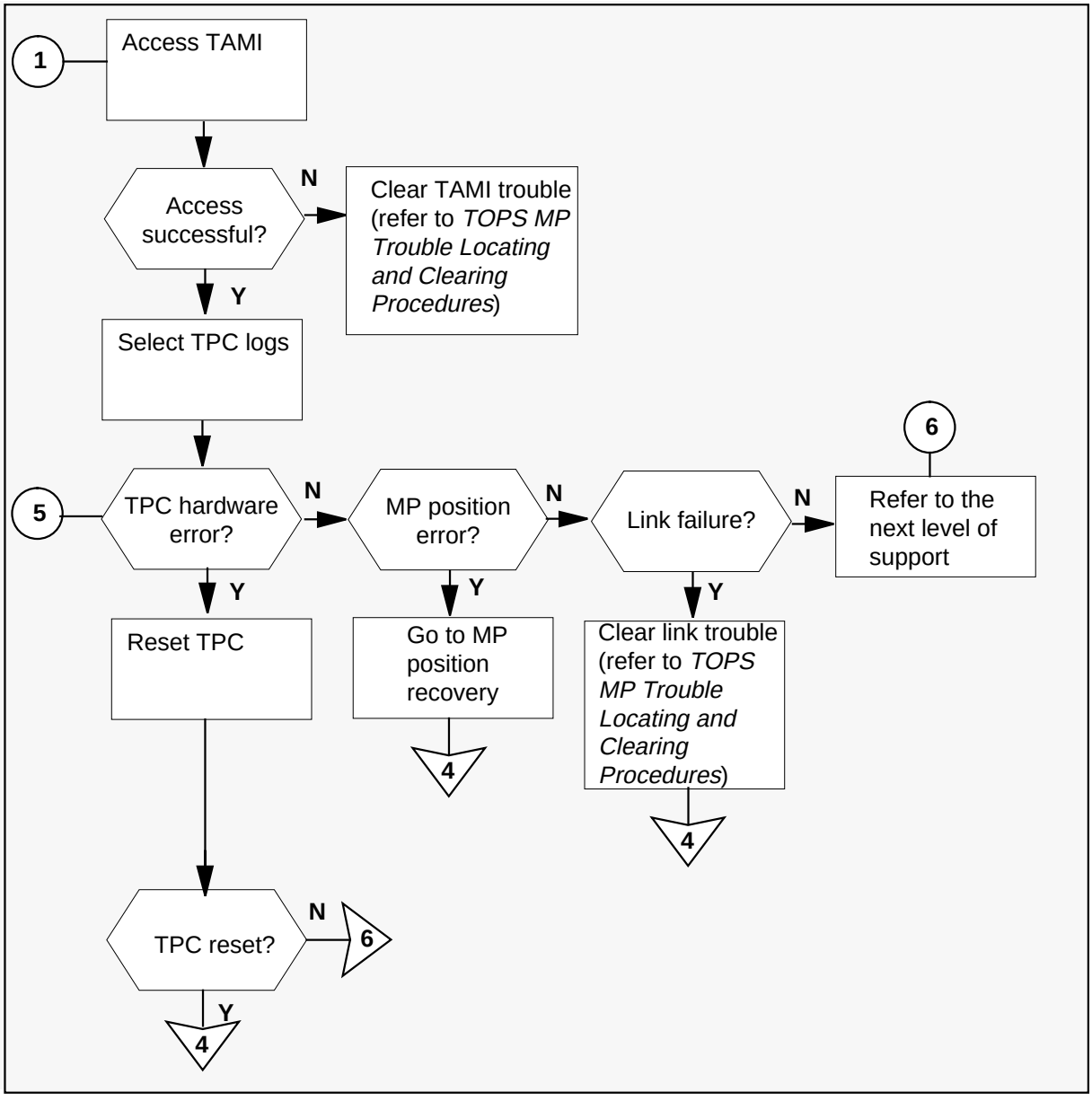
# PM TPC
# recovery (continued)

**Summary of PM TPC recovery**



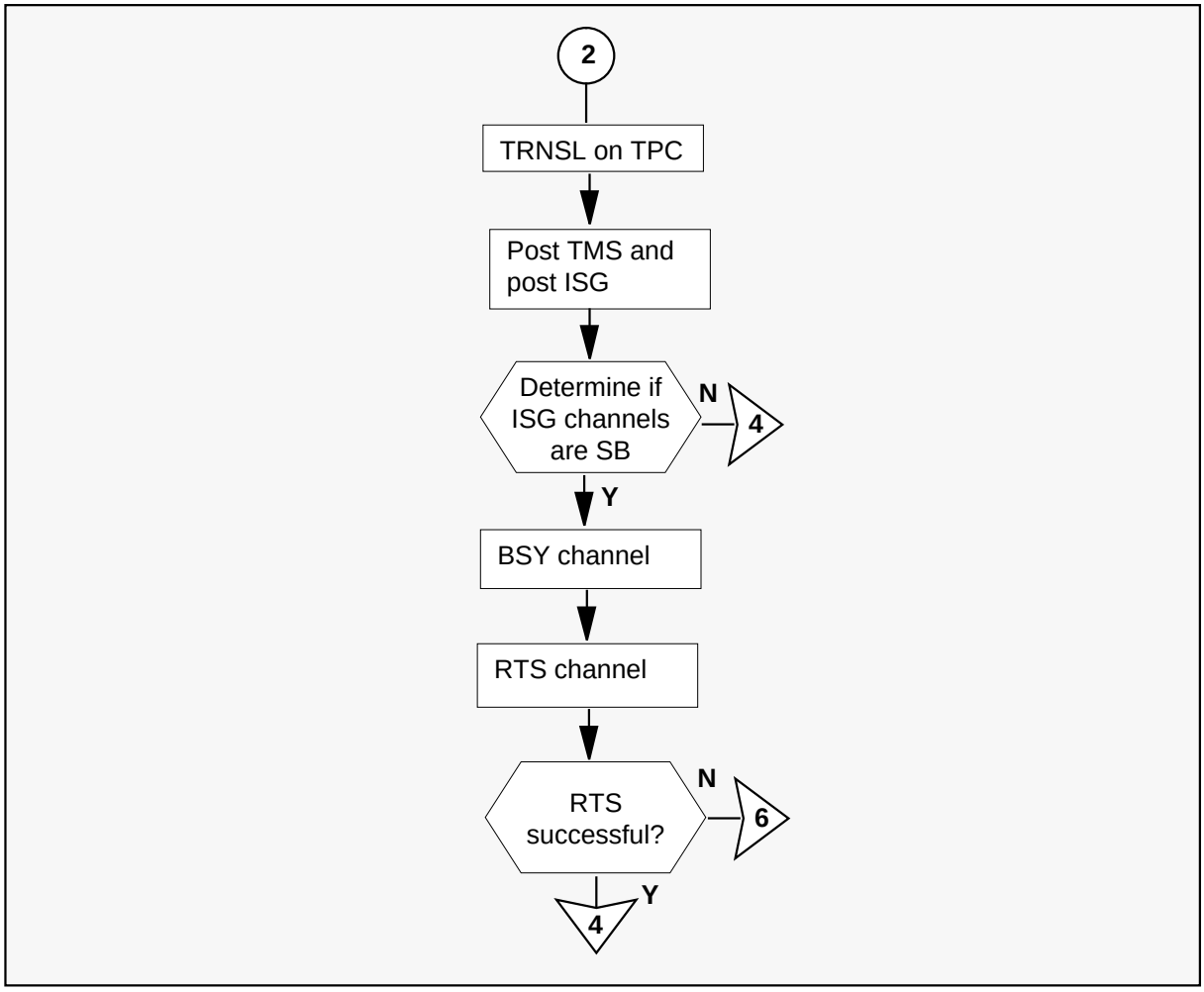
# PM TPC recovery (continued)

**Summary of PM TPC recovery (continued)**



# PM TPC
# recovery (continued)

**Summary of PM TPC recovery (continued)**

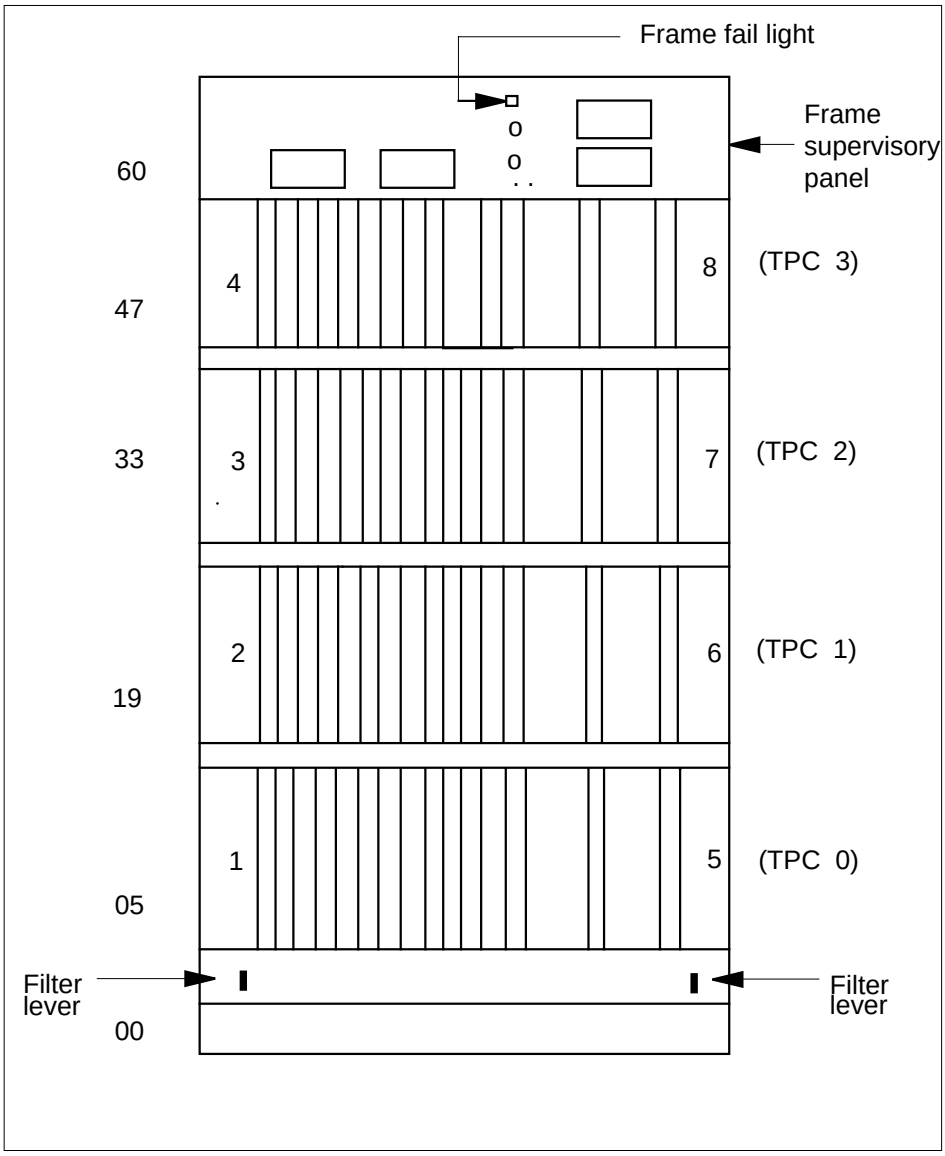



**PM TPC Recovery**

***Enter this procedure because of an emergency disruption to service.***

**1** To determine if the TPC has a power outage, check the frame fail light on the frame supervisory panel (FSP).

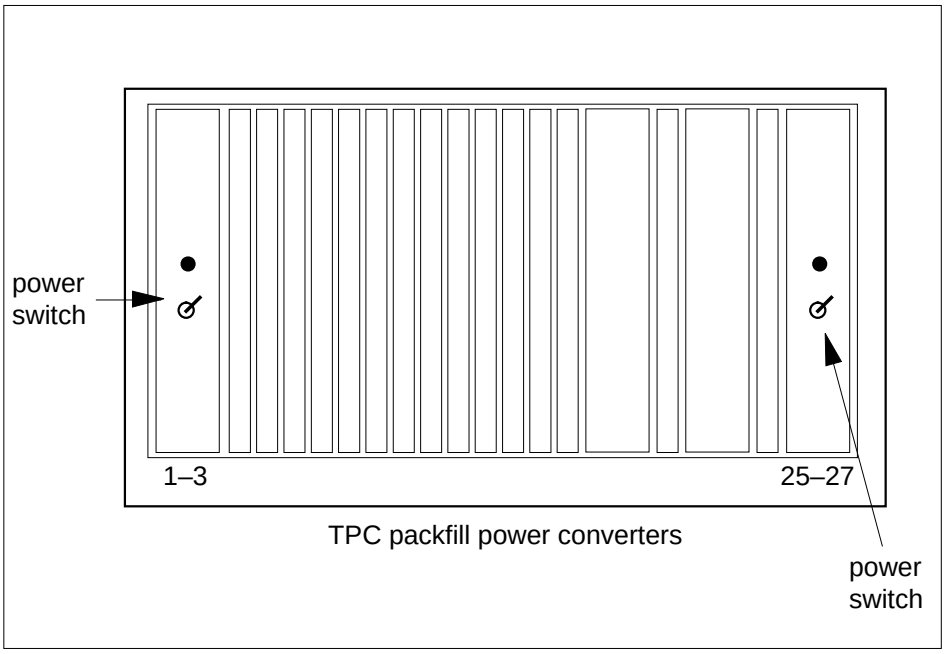
# PM TPC
## recovery (continued)




| If TPC | Do |
|---|---|
| is powered up | step 4 |
| is not powered up | step 2 |

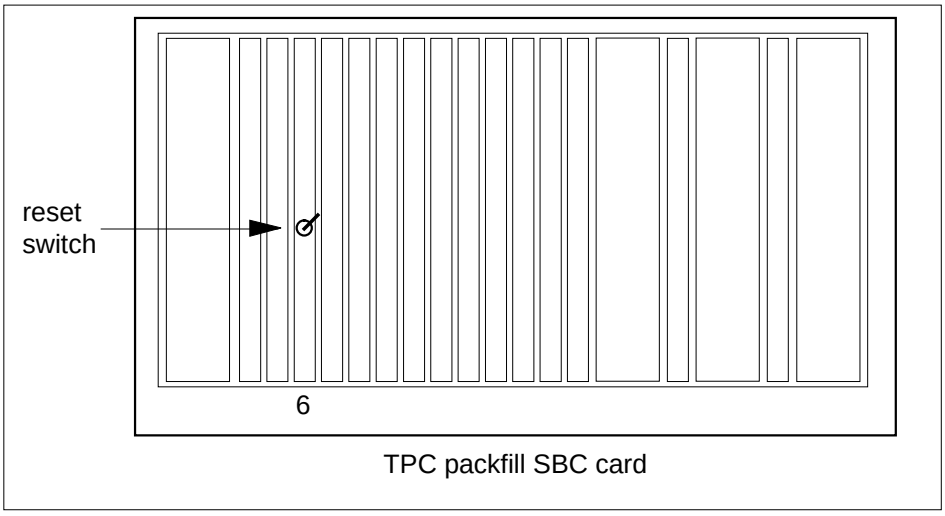
**2** To power-up the TPC, turn the switches on the power converters in slots 1-3 and slots 25-27 to the up position.

## PM TPC
## **recovery** (continued)




TPC packfill power converters

**3** To reset the TPC, move the switch on the SBC card in slot 6 to the down position. Return the switch to the up position.




TPC packfill SBC card

# PM TPC
## recovery (continued)

***At the MAP display:***

**4** To enter the TPC level of the MAP display, type:

**>MAPCI;MTC;PM; POST TPC n**

and press the Enter key.

*where*

**n**
is the TPC identified in step 2

**5** Examine the status line to determine if any TPCs are in trouble.

| If TPC | Do |
|---|---|
| is InSv | step 26 |
| is CBsy | step 6 |

**6** To post the CBsy TPC, type:

**>POST CBSY**

and press the Enter key.

```
CM   MS   IOD   Net   PM   CCS    Lc    Trks   Ext    EIO
.    .    .     .   n TPC   .     .      .     .      .
                      *C*
                      SysB  ManB   Offl  CBsy   ISTb  InSv
          PM             0     0     0     1      1    24
          TPC            0     0     0     1      0     0

     TPC  0 CBsy
```

*Example of a MAP response:*

**7** To busy, and return the TPC to service type:

**>BSY**

and press the Enter key.

*Example of a MAP response:*

```
Bsy
TPC 20 Bsy Passed
```

**>RTS**

and press the Enter key.

*Example of a MAP response:*

```
Rts
TPC 20 Rts Passed
```

# PM TPC
## recovery (continued)

**8** Check the status line to determine if the TPC returns to service.

| If TPC | Do |
|---|---|
| returns to service | step 9 |
| does not return to service | step 15 |

**9** Check the status line to determine if all TPCs are InSv.

| If all TPCs | Do |
|---|---|
| are InSv | step 26 |
| are CBsy | step 10 |

**10** To identify and record the numbers for the TMS and the ISDN service group (ISG), type:

**>TRNSL**

and press the Enter key.

*Example of a MAP response:*

```
TMS   0  0  6:  data; ISG   1  1
TMS   0  0  5:  data; ISG   2  5
TMS   0  0  1: voice; TOPSPOS     6; RES
TMS   0  0  2: voice; TOPSPOS     7; RES
TMS   0  0  3: voice; TOPSPOS     8; RES
TMS   0  0  4: voice; TOPSPOS     9; RES
```

**11** To post one of the ISGs, type:

**>POST TMS n;ISG;POST x**

and press the Enter key.

*where*

**n**
is the TMS identified in step 10

**x**
is one of the ISGs identified in step 10

*Example of a MAP response:*

***Note:*** Note the faulty ISG port

```
ISG              1111111111 2222222222 33
      123456789 0123456789 0123456789 01
      S00000000 0000000000 0000000000 00
ISG   1 DCH   1 InSv TMS   0 port 6
```

**12** Determine if the ISG channel is SB.

| If the ISG channel | Do |
|---|---|
| is SB | step 13 |
| is not SB | step 22 |

**13** To busy the system-busy ISG channels, type:

***>BSY*** **n**

and press the Enter key.

*where*

**n**
is the ISG channel

Repeat this step for each system-busy ISG channel and for the other ISG and the channels of the ISG.

*Example of a MAP response:*

```
Bsy 1
ISG channel 1 TDC Bsy Passed
```

**14** To RTS the busy channel, type:

***>RTS*** **n**

and press the Enter key.

*where*

**n**
is the busy ISG channel

*Example of a MAP response:*

```
Rts 1
ISG channel 1 TDC Rts Passed
```

| If RTS | Do |
|---|---|
| is successful | step 22 |
| is not successful | step 25 |

**15** Access the TAMI.

| If access to TAMI | Do |
|---|---|
| is successful | step 17 |
| is not successful | step 16 |

## PM TPC
## **recovery** (continued)

**16** Clear TAMI failure. *Refer to TOPS MP Trouble Locating and Clearing Procedures* and return to step 17.

***At the TAMI:***

**17** To access TPC Logs from the TAMI main menu, type:

**>1**

and press the Enter key.

**18** Check the logs to determine the type of error.

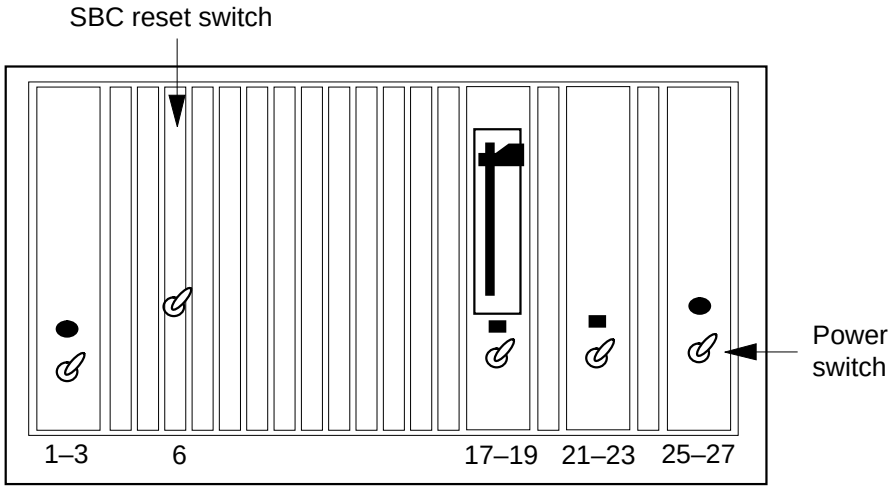
| If error | Do |
|---|---|
| is position failure | step 19 |
| is link failure | step 20 |
| is TPC hardware | step 21 |
| is other than listed here | step 25 |

**19** Clear position failure. Refer to *MP Position Recovery (integrated)* or *MP Position Recovery (standalone*). Return to step 22.

**20** Clear link failure. Refer to *TOPS MP Trouble Locating and Clearing Procedures*. Return to step 22.

**21** To reset the TPC, lower and lift the SBC reset switch.

# PM TPC
## **recovery** (continued)




Disk drives and switch locations on the TPC

| If TPC | Do |
|---|---|
| resets | step 22 |
| does not reset | step 25 |

**22** Determine if all errors clear.

| If all errors | Do |
|---|---|
| clear | step 23 |
| do not clear | step 18 |

***At the MAP display:***

**23** To return the TPC to service type:

**>RTS**

and press the Enter key.

*Example of a MAP display response:*

```
Rts
Rts passed
```

## PM TPC
## **recovery** (end)

**24** Check the status line to determine if the TPC returns to service.

| If TPC | Do |
|---|---|
| returns to service | step 9 |
| does not return to service | step 25 |

**25** For additional help, contact the next level of support.

**26** The procedure is complete. If the system displays other alarms, refer to *Alarm Clearing Procedures*.

# Recovering AMA data with block numbers

## Application

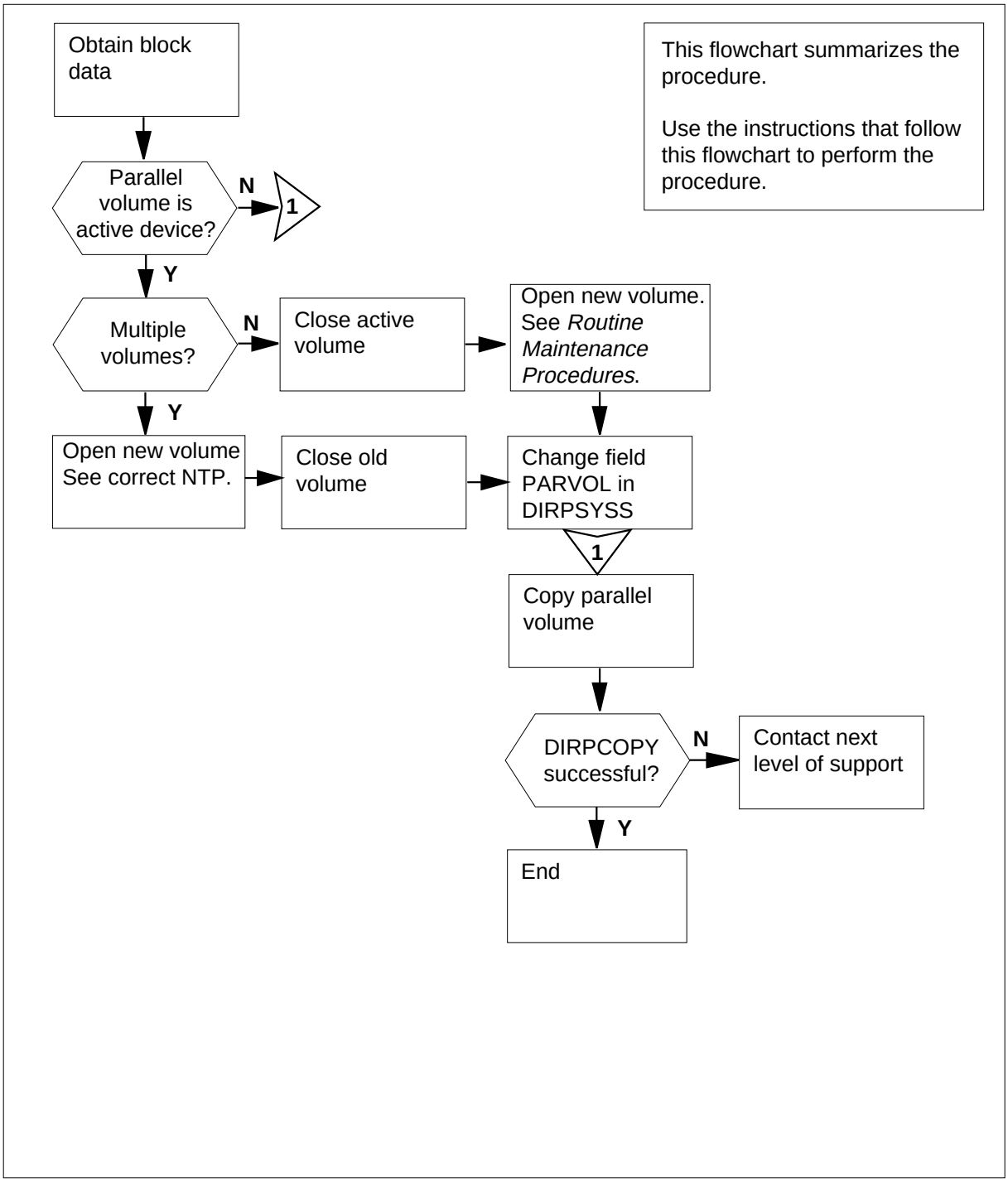
Use this procedure to recover automatic message accounting (AMA) data from a distributed processing peripheral (DPP). Use this procedure to recover AMA data from a DPP with two tape ports. The two tape ports failed as a result of a system fault. The fault causes the parallel data block numbers to appear on the DIRP101 logs. This procedure recovers the data from the DPP and copies the data to tape.

## Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Recovering AMA data with block numbers (continued)

**Summary of Recovering AMA data with block numbers**



### Recovering AMA data with block numbers

**CAUTION**
**Possible loss or damage of AMA data**
Use this procedure and follow it exactly. Not doing so will lose or corrupt automatic message accounting (AMA) data. The operating company uses AMA data to produce billings. Loss or damage of AMA data results in revenue loss for the operating company.

***At the MAP terminal***

**1** To access the DIRP level of the MAP, type

**`>MAPCI;MTC;IOD;DIRP`**

and press the Enter key.

**2** To enable the printer, type

**`>RECORD START ONTO device`**

and press the Enter key.

*where*

**device**
is the printer type

**3** To access the DIRP logs, type

**`>LOGUTIL;OPEN DIRP`**

and press the Enter key.

*Example of a MAP display:*

```
DIRP101 AUG13 19:50:33 nnnn INFO_DIRP_FLOW_LOG REASON= 16 SSYS#=0
SSNAME= AMA POOL#= 0 VOLUME#= # 22 SOS–FILE–ID= nnnn nnnn nnnn
TEXT1= NEXT PARALLEL FILE BLOCK NUMBER: 1            PARM1= 0
TEXT1= NEXT ACTIVE FILE BLOCK NUMBER: 4              PARM2= FFFF

DIRP101 AUG13 19:50:33 nnnn INFO_DIRP_FLOW_LOG REASON= 17 SSYS#=0
SSNAME= AMA POOL#= 0 VOLUME#= # 23 SOS–FILE–ID= nnnn nnnn nnnn
TEXT1= LAST PARALLEL FILE BLOCK NUMBER: 1            PARM1= 0
TEXT1= LAST ACTIVE FILE BLOCK NUMBER: 1              PARM2= FFFF
```

**4** Check the DIRP logs to determine if the parallel data block numbers appear on the log.

**5** The following are parallel block numbers in the DIRP101 log:

- the last sequence number before the DPP power failure
- the first sequence number after the DPP power failure

## Recovering AMA data with block numbers (continued)

**6** To query the volumes that are in the AMA subsystem, type

**>QUERY AMA VOLUMES**

and press the Enter key.

*Example of a MAP:*

```
SSNAME SSNO SEQNO ROTATES POOLNO PARLPOOL EMERGENCY
AMA       0    1       2      0        6   ***YES***

REGULAR VOLUMES
VOL#   VOLNAME  STATE   IOC  CARD  VOL  FSEG  ROOM  VLID  FILES   22
  T0   READY     0    0     0   N/A     0   2400
23         T    AVAIL     2    1     0   N/A     0   2400

PARALLEL VOLUME(S)
PARALLEL          STATE  IOC  CARD  VOL  FSEG  ROOM  VLID  CURR
B910212061307AMA  READY    0     0    0   N/A     1  2400  YES
```

| If | Do |
|---|---|
| If the parallel volume | Do |
| is the current file | step 7 |
| is not the current file | step 17 |

**7** Determine if your installation has multiple volumes.

| If | Do |
|---|---|
| If your installation | Do |
| has multiple volumes | step 8 |
| does not have multiple volumes | step 11 |

**8** Allocate a volume.

Refer to *Allocating recording volumes* in the DIRP utility in *Routine Maintenance Procedures*, and return to this point.

**9** To close the active volume, type

**>CLOSE AMA PARALLEL**

and press the Enter key.

*Example of a MAP response:*

```
SENDING REQUEST TO SUBSYSTEM
PLEASE CONFIRM ("YES" or "NO")
```

**10** To confirm the request, type

**>YES**

## Recovering AMA data with block numbers (continued)

and press the Enter key.

*Example of a MAP display:*

```
REQUEST SENT TO SUBSYSTEM.  CHECK DIRP LOGS FOR DETAILS
```

Go to step 14.

**11** To close the active volume, type

**>CLOSE AMA PARALLEL**

and press the Enter key.

*Example of a MAP display:*

```
SENDING REQUEST TO SUBSYSTEM
PLEASE CONFIRM ("YES" or "NO")
```

**12** To confirm the request, type

**>YES**

and press the Enter key.

*Example of a MAP response:*

```
REQUEST SENT TO SUBSYSTEM.  CHECK DIRP LOGS FOR DETAILS
```

**13** Allocate a volume.

Refer to *Allocating recording volumes* in the DIRP utility in *Routine Maintenance Procedures*, and return to this point.

**14** To query the volumes that are in the AMA subsystem, type

**>QUERY AMA VOLUMES**

and press the Enter key.

*Example of a MAP display:*

```
QUERY AMA PARALLEL NONE
```

**15** Check the DIRP logs for details on closure of the active volume.

*Example of a MAP display:*

```
DIRP101 AUG13 19:50:33 nnnn INFO_DIRP_FLOW_LOG REASON= 16 SSYS#=0
SSNAME= AMA POOL#= 0 VOLUME#= # 22 SOS–FILE–ID= nnnn nnnn nnnn
TEXT1= NEXT PARALLEL FILE BLOCK NUMBER: 1            PARM1= 0
TEXT1= NEXT ACTIVE FILE BLOCK NUMBER: 4              PARM2= FFFF
```

**16** To exit the table, type

**>QUIT**

and press the Enter key.

**17** Load a blank or expired tape on the magnetic tape drive.

Refer to *Magnetic Tape Reference Manual*, 297-1001-118, and return to this point.

## Recovering AMA data with block numbers (end)

**18** To copy the parallel AMA file to the tape, type

```
>DIRPCOPY  AMA  file_name  Tn  start_no  block_length
```

and press the Enter key.

*where*

**file_name**
is the parallel file name

**Tn**
is the number of the tape drive

**start_no**
is the first sequence number that you will recover (you obtained the sequence number in step 4)

**block_length is the first sequence number subtracted from the last**
sequence number (you obtained both sequence numbers in step 4)

*Example input:*

```
>DIRPCOPY  AMA  DIRPPARALLEL_AMA  T2  5400  100
```

***Note:*** The length of time the DIRPCOPY utility requires to copy the file depends on the length of the parallel file. The length of required time also depends on the number of blocks that the DIRPCOPY utility must copy.

| If | Do |
|---|---|
| If the DIRPCOPY command | Do |
| was successful | step 20 |
| was not successful | step 19 |

**19** For additional help, contact the next level of support.

**20** The procedure is complete.

# Recovering AMA data without DIRP block numbers

## Application

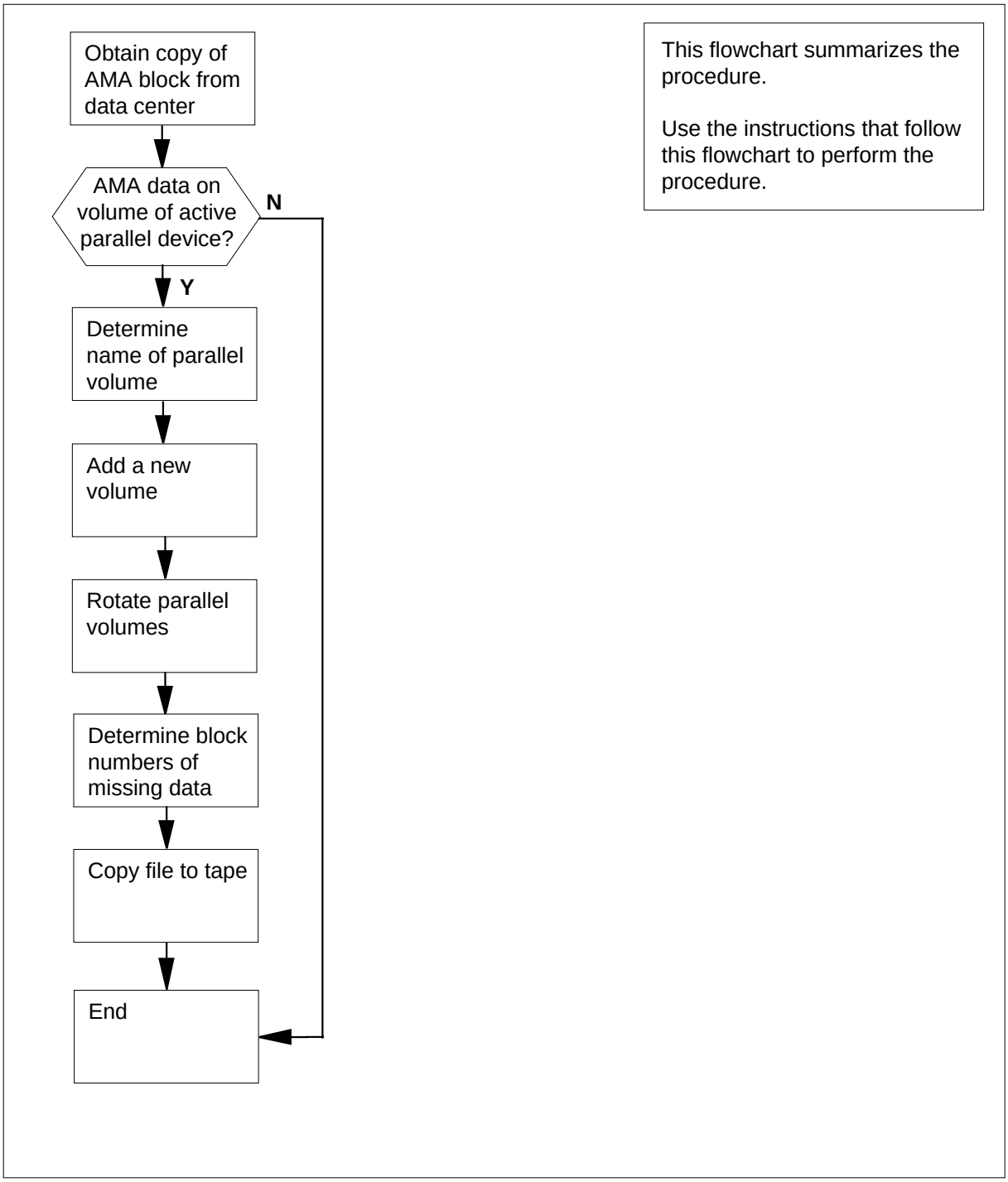
Use this procedure to recover automatic message accounting (AMA) data. Use this procedure after a fault on a distributed processing peripheral (DPP) disrupts recording to the DPP. The fault consists of inaccessible data that the DPP collected and stored earlier. The data is inaccessible because the DIRP data block numbers do not appear on the DIRP101 logs. This procedure shows you how to determine the DIRP block numbers of the data that the DPP did not record. This procedure shows you how to retrieve the data from the parallel recording device and copy the data to tape.

## Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action table that follows the flowchart to perform the procedure.

# Recovering AMA data without DIRP block numbers (continued)

**Summary of Recovering AMA data without DIRP block numbers**



# Recovering AMA data without DIRP block numbers (continued)

### Recovering AMA data without DIRP block numbers

***At your current location***

**1**

**CAUTION**
**Possible loss or damage of AMA data**
The operating company uses automatic message accounting (AMA) data to produce billings. Loss or damage of AMA data results in revenue loss for the operating company. If you do not use this procedure or do not follow this procedure exactly, you can lose or damage AMA data.

Contact your data center. Obtain the following information:

- the time frame of the missing AMA data
- the sequence number of the DPP block that the data center received before the DPP power failure
- the sequence number of the DPP block that the data center received after the DPP power failure

***Note:*** The sequence numbers this document refers to are DPP reference numbers. The DMS or data center do not assign these sequence numbers.

***At the MAP terminal***

**2** To access the DPP level of the MAP, type

```
>MAPCI;MTC;IOD;DPP  AMA
```

and press the Enter key.

**3** To access the DIRP logs, type

```
>LOGUTIL;OPEN  DIRP
```

and press the Enter key.

**4** To enable the printer, type

```
>RECORD  START  ONTO  device
```

and press the Enter key.

*where*

**device**
is the printer type

**5** To obtain a print of the DPP AMA block that the data center received before the DPP power failure, type

```
>IDXMAINT  EXAMINE  AMA  PACKED  first_sequence_no
```

## Recovering AMA data without DIRP block numbers (continued)

and press the Enter key.

*where*

**first_sequence_no**
is the sequence number that the data center received before the DPP power failure occurred. The data center supplies this number (see step 1).

*Example of a MAP display:*

```
00 00 00 00 00 00 00 00 12 25 11 15  00
07BA 0000 0040 0000 AA00 700C 043C 036C 0602 091C 036C
0602 091C 0021 3C00 000C 0200 000C 1C0C 1C00 0C60 2C82
0780 1C1C 0060 2C83 8579 2C00 0015 2C00 0000 000C 1010
301C 0000 0023 0C00 0838 8C
```

**6** In the office records, note the time and date that is on the first line of the AMA data block.

*For example:*

DATE=12 25TIME=11 15

**7** To obtain a print of the DPP AMA block that the data center received after the DPP power failure, type

**`>IDXMAINT EXAMINE AMA PACKED last_sequence_no`**

and press the Enter key.

*where*

**last_sequence_no**
is the sequence number that the data center received after the end of the DPP power failure. The data center supplies this number (see step 1).

***Note:*** The sequence numbers this document refers to are DPP reference numbers. The DMS or data center do not assign these sequence numbers.

*Example of a MAP display:*

```
00 00 00 00 00 00 00 00 12 25 11 15  00
07BA 0000 0040 0000 AA00 700C 043C 036C 0602 091C 036C
0602 091C 0021 3C00 000C 0200 000C 1C0C 1C00 0C60 2C82
0780 1C1C 0060 2C83 8579 2C00 0015 2C00 0000 000C 1010
301C 0000 0023 0C00 0838 8C
```

**8** In the office records, note the time and date that is on the first line of the AMA data block.

*For example:*

DATE=12 25TIME=11 15

## Recovering AMA data without DIRP block numbers (continued)

**9** Determine if the AMA blocks are concurrent with the time frame specified in step 1.

| If | Do |
|---|---|
| If the AMA blocks | Do |
| are concurrent | step 11 |
| are not concurrent | step 10 |

**10** Request a copy of the DPP AMA blocks from the data center.

**11** Prepare a record of the DPP block of AMA data that the data center received before the DPP power failure occurred. To prepare the record, locate the letters AA. These letters signify the start of the record in the block of data. Proceed according to the following example.

*Example of a MAP display:*

```
00 00 00 00 00 00 00 00 12 25 13 15  00
07BA 0000 0040 0000 AA00 700C 043C 036C 0602 091C 036C
0602 091C 0021 3C00 000C 0200 000C 1C0C 1C00 0C60 2C82
0780 1C1C 0060 2C83 8579 2C00 0015 2C00 0000 000C 1010
301C 0000 0023 0C00 0838 8C
```

***Note:*** The letter C indicates the end of each field.

A record prepared from the preceding example resembles the following:

- Structure code = 00700C
- Call code = 043C
- Originating numbering plan area (NPA) = 602C
- Originating number = 8207801C
- Terminating numbering plan area (NPA) = 00602C
- Terminating number = 8385792C
- Connected time = 0000152C

You can obtain additional information on how to break down the block of AMA data into the required record. For additional information, refer to *Bellcore Format Automatic Message Accounting Reference Guide*, 297-1001-830.

**12** Check the record again to make sure the record is correct.

**13** Repeat steps 11 and 12 for the block of AMA data that the data center received after the DPP power failure.

Go to step 14.

**14** Determine if the AMA data that requires recovery is on the parallel volume. The parallel volume is on the active device.

| If | Do |
|---|---|
| If the location of the AMA data | Do |

## Recovering AMA data without DIRP block numbers (continued)

| If | Do |
|---|---|
| is on the active parallel device | step 15 |
| is not on the active parallel device | step 34 |
| is not known | step 15 |

**15** To access the IOC level of the MAP, type

**>MTC;IOD;LISTDEV DDU**

and press the Enter key.

*Example of a MAP display:*

```
CC    CMC       IOD    Net    PM    Lns    Trks    Ext
                1DDUOS
                M
DDU             IOD    IOC   0     1     2      3      4
 0  Quit         Stat      1DDUOS
 2
 3              DIRP         XFER
 4 List Dev_
 5              IOC Card   0   1    2    3    4    5
 6 Tst          1  Port 0123 0123 0123 0123 0123 0123
 7 Bsy              Stat .--- ..SS .--- SSSS P--- SSSS
 8 RTS              Type  MTD  Cons DDU Cons DDU  Cons
 9 Offl
10
11 Start        Card 4   Unit           1
12 Stop            User         SYSTEM  Drive_State
13                 Status        SBsy   drive-faults
14
15 Status
16 Alloc
17 Fcnt
18 Clrfcnt_
   User ID
Time  hh  :     mm>
```

**16** Note the IOC number and card number for each disk drive utility (DDU).

**17** To determine the name of the parallel volume of each DDU, type

**>IOC ioc_no;CARD card_no;ALLOC**

and press the Enter key.

*where*

**ioc_no**
is the input/output controller number of the DDU that you noted in step 1

## Recovering AMA data without DIRP block numbers (continued)

**card_no**
is the card number of the DDU that you noted in step 16

*Example of a MAP display:*

```
IOD  IOC   0     1     2      3      4
Stat           1DDUOS

DIRP    EXFER:

IOC     Card   0   1    2    3    4    5
        Port 0123 0123 0123 0123 0123 0123
        Stat .--- ..SS .--- SSSS P--- SSSS


Card 4   Unit           1
        User         SYSTEM  Drive_State
        Status        Ready    on_line
Alloc

VOLID VOL_NAME SERIAL_NO BLOCKS ADDR TYPE R/O FILES OPEN
   0    IMAGE      A000    12288  D010   0   NO     0
   1    VOL1       A001     3000  D010   0   NO     0
   2    UNALLOCD   A002    15004 D010   1   NO     0
   3    AMAP      A002    15004 D010   1   NO     0
```

**18** Repeat step 17 for each DDU.

**19** To access the disk utility, type

**>DISKUT**

and press the Enter key.

**20** To enter the parallel volume name, type

**>LISTVOL vol_name ALL**

and press the Enter key.

*where*

**vol_name**
is the parallel volume name that you determined in step 17

*Example of a MAP display:*

```
DSKUT
>listvol D000AMAP ALL
```

**21** Note the active file name.

*For example:*

DIRPPARALEL_AMA

**22** To enter the active file name, type

**>SHOWFL file_name**

## Recovering AMA data without DIRP block numbers (continued)

and press the Enter key.

*where*

**file_name**
is the active file name that you noted in step 21

*Example of a MAP display:*

```
DSKUT:

>showfl B900821122501_AMA
Volume Size:    32000   blocks
Free Space:     1246 blocks
Number of Files:     26


Show all Volume data

>showvol D000AMAP   full
Volume Size:        32000   blocks
Free Space:         1246  blocks
Number of Files:        1
Volume number:      5
Volume Id:          2845


Show all File data

>showfl D000AMAP  full
Number of Records:  6788
Last Modified:    1991/11/17  00:00:23.387 MON.
Fixed Record:     2845 0008  0001
File Owner:         SYSTEM
```

**23** Note the Last Modified date and the time of each file.

**24** Repeat steps 20 through 23 for each parallel volume you obtained in step 17.

**25** Compare the times and dates that you obtained in step 23 with the same information given by the data center. This information is also the information that you recorded in steps 6 and 8. To locate the parallel volume that collected AMA data during the period that the DPP failed, compare the times and dates.

**26** To exit the disk utility, type

**>QUIT**

and press the Enter key.

**27** To access the DIRP level of the MAP, type

**>DIRP**

and press the Enter key.

## Recovering AMA data without DIRP block numbers (continued)

**28** To query the volumes, which are now mounted in the AMA subsystem, type

**>QUERY AMA VOLUMES**

and press the Enter key.

*Example of a MAP display:*

```
SSNAME SSNO SEQNO ROTATES POOLNO PARLPOOL EMERGENCY
AMA       0    1       2      0        6      NO

REGULAR VOLUMES
VOL#   VOLNAME  STATE   IOC  CARD  VOL  FSEG  ROOM  VLID  FILES
PARALLEL VOLUME(S)
VOL# VOLNAME STATE  IOC  CARD  VOL  FSEG  ROOM  VLID  CURR
   0 D00AMA2 READY    0     0    0   N/A     1  2400  YES
```

**29** From the MAP response you obtained in step 28, determine if you have parallel volumes in the available state.

| If | Do |
|---|---|
| If parallel volumes | Do |
| are available | step 31 |
| are not available | step 30 |

**30** Add a new disk volume.

Refer to *Setting up parallel recording on disk in the DIRP utility* in *Routine Maintenance Procedures*, and return to this point.

**31**

**CAUTION**
**Loss of parallel data**
Manual parallel rotations reduce the total amount of parallel data that the switch retains. Loss of parallel data can occur.

To rotate the subsystem, type

**>ROTATE AMA PARALEL**

and press the Enter key.

*Example of a MAP display:*

```
 **WARNING–MANUAL PARALLEL ROTATIONS REDUCE THE TOTAL
  **AMOUNT OF PARALLEL DATA RETENTION ON THE SWITCH
 SENDING REQUEST TO SUBSYSTEM
 PLEASE CONFIRM ("YES" OR NO"):
```

## Recovering AMA data without DIRP block numbers (continued)

**32** To confirm the information, type

**>YES**

and press the Enter key.

*Example of a MAP display:*

```
REQUEST SENT TO SUBSYSTEM, CHECK DIRP LOG FOR DETAILS
```

**33** Wait for a DIRP101 log to confirm the rotation.

| If | Do |
|---|---|
| If the DIRP101 log | Do |
| confirmed the rotation | step 34 |
| did not confirm the rotation | step 72 |

**34** To access the disk utility, type

**>DISKUT**

and press the Enter key.

**35** To locate the block number that the data center received after the DPP power failure, type

**>LISTVOL vol_name ALL**

and press the Enter key.

*where*

**vol_name**
is the parallel volume name that you determined in step 17

*Example of a MAP display:*

```
DSKUT
>LISTVOL D000AMAP ALL
```

**36** Note the active file name.

**37** Note the Last Modified date and time of each file.

**38** To exit the disk utility, type

**>QUIT**

and press the Enter key.

**39** To return to the DIRP level of the MAP, type

**>DIRP**

and press the Enter key.

**40** To dump the contents of the AMA file, type

**>AMADUMP BC file_name**

and press the Enter key.

## Recovering AMA data without DIRP block numbers (continued)

*where*

**file_name**
is the AMA file name that you noted in step 25

**41** Determine the number of the DPP block that the data center received before the DPP power failure. To determine the number, filter the information that you obtained in step 11. To begin, type

```
>FILTER  ADD  'structure_code
```

and press the Enter key.

*where*

**structure_code**
is the structure code you obtained in step 11

*Example input:*

```
>FILTER  ADD  '00700
```

*Example of a MAP display:*

```
>>>ADDING....STRUCTURE CODE: 00700
          RECORD CODE:  00700
            CALL CODE:
```

**42** Enter the call code that you obtained in step 11.

*Example input:*

```
>043C
```

In response, the filter function prompts you for a number of fields.

**43** To fill in the ORIG NPA field, use the originating numbering plan area (NPA) value that you obtained in step 11. If the value contains zeros, you must define the field with all the zeros included.

*Example input:*

```
>602* or 602C
```

To continue to the next field, press the Enter key.

***Note:*** The * is a wild card. The * matches any variable.

**44** To fill in the ORIG NUMBER field, use the originating number value that you obtained in step 11. If the value contains zeros, define the field with all the zeros included.

*Example input:*

```
>9422640* or 9422640C
```

To continue to the next field, press the Enter key.

***Note:*** The * is a wild card. The * matches any variable.

**45** To fill in the TERM NPA field, use the terminating numbering plan area (NPA) value you obtained in step 11. If the value contains zeros, define the field with all the zeros included.

*Example input:*

```
>00602* or 00602C
```

## Recovering AMA data without DIRP block numbers (continued)

To continue to the next field, press the Enter key.

***Note:*** The * is a wild card. The * matches any variable.

**46** To fill in the TERM NUMBER field, use the terminating number value that you obtained in step 11. If the value contains any zeros, define the field with all the zeros included.

*Example input:*

**>8385792* or 8385792C**

To continue to the next field, press the Enter key.

***Note:*** The * is a wild card. The * matches any variable.

**47** To fill in the CONNECT TIME field on the screen, use the connect time value that you obtained in step 11. If the value contains zeros, define the field with all the zeros included.

*Example input:*

**>0000152* or 0000152C**

Press the Enter key.

***Note:*** The * is a wild card. The * matches any variable.

**48** To stop the movement of prompts to the next field, type

**>$**

and press the Enter key.

**49** To check the information you entered in the filter field in steps 43 to 47, type

**>FILTER DISPLAY ALL**

and press the Enter key.

This command displays a record that contains all the fields that you defined.

*Example of a MAP display:*

```
*HEX ID = AA STRUCT CODE:00700*  CALL TYPE:****
SENSOR TYPE: **** SENSOR ID: ******** REC OFC TYPE: ****
REC OFC ID: ******** DATE: ****** TIMING IND: ******
STUDY IND: ******** ANSWER: ** SERV OBSERVED: **
OPER ACTION: ** SERV FEAT: **** ORIG NPA; 602C
ORIG NO: 9422640C OVERSEAS IND: **  TERM NPA; 00602C
TERM NO: 8385792C TIME: ******** ELAPSED TIME: **********
IC/INC PREFIX: ****** CC DATE: ****** CC TIME: 0000152C
ELAPSED CC: ********** IC/INC EVENT: **** TRK ROUTING: **
DIALING: ** ANI: **
```

**50** To enable the filter function, type

**>FILTER ENABLE**

and press the Enter key.

**51** To filter through the parallel file, type

**>DUMP CALL DETAILS**

and press the Enter key.

## Recovering AMA data without DIRP block numbers (continued)

This command filters through the parallel file. The command searches for the defined record. One record matches the data that you entered into the filter. When the utility locates the record, the block number that the data center received before the DPP power failure appears.

*Example of a MAP display:*

```
>>>BLOCK NO:15
*HEX ID = AA STRUCT CODE:00700*  CALL TYPE:****
SENSOR TYPE: **** SENSOR ID: ******** REC OFC TYPE: ****
REC OFC ID: ******** DATE: ****** TIMING IND: ******
STUDY IND: ******** ANSWER: ** SERV OBSERVED: **
OPER ACTION: ** SERV FEAT: **** ORIG NPA; 602C
ORIG NO: 9422640C OVERSEAS IND: **  TERM NPA; 00602C
TERM NO: 8385792C TIME: ******** ELAPSED TIME: **********
IC/INC PREFIX: ****** CC DATE: ****** CC TIME: 0000152C
ELAPSED CC: ********** IC/INC EVENT: **** TRK ROUTING: **
DIALING: ** ANI: **
```

**52** Note the block number that appears on the screen. In the example in step 51, the block number is 15.

**53** To check the full block against the block the data center provided, type

**`>DUMP CALL DETAILS block_number 1`**

and press the Enter key.

*where*

**block_number**
is the number that you recorded in step 52

**54** To disable the FILTER ADD command you used in step 41, type

**`>FILTER DISABLE`**

and press the Enter key.

**55** To delete the FILTER ADD command you used in step 41, type

**`>FILTER DELETE structure_code 1`**

and press the Enter key.

*where*

**structure_code**
is the structure code you obtained in step 11

*Example input:*

**`>FILTER DELETE '00700`**

**56** Determine the number of the DPP block the data center received after the DPP power failure. To determine the number, filter the information you obtained in step 13. To begin, type

**`>FILTER ADD 'structure_code`**

and press the Enter key.

*where*

## Recovering AMA data without DIRP block numbers (continued)

**structure_code**
is the structure code you obtained in step 13

*Example of a MAP display:*

```
>>>ADDING....STRUCTURE CODE: 00625
          RECORD CODE:  00625
            CALL CODE:
```

**57** Enter the call code that you obtained in step 13.

*Example input:*

**>067C**

In response, the filter function prompts you for a number of fields.

**58** To fill in the ORIG NPA field, use the originating numbering plan area (NPA) value that you obtained in step 13. If the value contains zeros, define the field with all the zeros included.

*Example input:*

**>602* or 602C**

To continue to the next field, press the Enter key.

***Note:*** The * is a wild card. The * matches any variable.

**59** To fill in the ORIG NUMBER field, use the originating number value that you obtained in step 13. If the value contains zeros, define the field with all the zeros included.

*Example input:*

**>602* or 602C**

To continue to the next field, press the Enter key.

***Note:*** The * is a wild card. The * matches any variable.

**60** To fill in the TERM NPA field, use the terminating numbering plan area (NPA) value that you obtained in step 13. If the value contains zeros, define the field with all the zeros included.

*Example input:*

**>00602* or 00602C**

To continue to the next field, press the Enter key.

***Note:*** The * is a wild card. The * matches any variable.

**61** To fill in the TERM NUMBER field, use the terminating number value that you obtained in step 13. If the value contains any zeros, define the field with all the zeros included.

*Example input:*

**>2239754* or 2239754C**

To continue to the next field, press the Enter key.

***Note:*** The * is a wild card. The * matches any variable.

**62** To fill in the CONNECT TIME field on the screen, use the connect time value you obtained in step 13. If the value contains zeros, define the field with all the zeros included.

## Recovering AMA data without DIRP block numbers (continued)

*Example input:*

**>0000943* or 0000943C**

Press the Enter key.

***Note:*** The * is a wild card. The * matches any variable.

**63** To stop the movement of prompts to the next field, type

**>$**

and press the Enter key.

**64** To check the information again that you obtained in the filter field in steps 58 to 62, type

**>FILTER DISPLAY ALL**

and press the Enter key.

This command displays a record that contains all the fields you defined in step 64.

*Example of a MAP display:*

```
*HEX ID = AA STRUCT CODE:00625*  CALL TYPE:****
SENSOR TYPE: **** SENSOR ID: ******** REC OFC TYPE: ****
REC OFC ID: ******** DATE: ****** TIMING IND: ******
STUDY IND: ******** ANSWER: ** SERV OBSERVED: **
OPER ACTION: ** SERV FEAT: **** ORIG NPA; 602C
ORIG NO: 6319561C OVERSEAS IND: **  TERM NPA; 00602C
TERM NO: 2239754C TIME: ******** ELAPSED TIME: **********
IC/INC PREFIX: ****** CC DATE: ****** CC TIME: 0000943C
ELAPSED CC: ********** IC/INC EVENT: **** TRK ROUTING: **
DIALING: ** ANI: **
```

**65** To enable the filter function, type

**>FILTER ENABLE**

and press the Enter key.

**66** To filter through the parallel file, type

**>DUMP CALL DETAILS**

and press the Enter key.

This command filters through the parallel file. This command searches for the defined record. One record matches the data you entered into the filter. When the utility locates the record, the block number the data center received before the DPP power failure appears.

*Example of a MAP display:*

## Recovering AMA data without DIRP block numbers (continued)

```
>>>BLOCK    NO:27
*HEX ID = AA STRUCT CODE:00625*  CALL TYPE:****
SENSOR TYPE: **** SENSOR ID: ******** REC OFC TYPE: ****
REC OFC ID: ******** DATE: ****** TIMING IND: ******
STUDY IND: ******** ANSWER: ** SERV OBSERVED: **
OPER ACTION: ** SERV FEAT: **** ORIG NPA; 602C
ORIG NO: 6319561C OVERSEAS IND: **  TERM NPA; 00602C
TERM NO: 2239754C TIME: ******** ELAPSED TIME: **********
IC/INC PREFIX: ****** CC DATE: ****** CC TIME: 0000943C
ELAPSED CC: ********** IC/INC EVENT: **** TRK ROUTING: **
DIALING: ** ANI: **
```

**67** Note the block number that appears on the screen.

**68** To check the block against the block the data center provided, type

**>DUMP CALL DETAILS block_number 1**

and press the Enter key.

*where*

**block_number**
is the number you noted in step 67

**69** Mount a tape acceptable for subsystem recording on a magnetic tape drive.

Refer to *Magnetic Tape Reference Manual*, 297-1001-118 and return to this point.

**70** To copy the parallel AMA file to the tape, type

**>DIRPCOPY AMA file_name Tn start_no block_length**

and press the Enter key.

*where*

**file_name**
is the parallel file name

**Tn**
is the number of the tape drive

**start_no**
is the block number you obtained in step 52, plus 1;

for example, 15+1=16

**block_length**
is the number you obtained in step 67. Subtract 1, and subtract the start_no; for example, (27-1)-16=10

*Example input:*

**>DIRPCOPY AMA DIRPPARALLEL_AMA T2 16 10**

***Note:*** The length of time the DIRPCOPY utility requires to copy the file depends on the length of the parallel file. The length of time required also depends on the number of blocks the utility must copy.

## Recovering AMA data without DIRP block numbers (end)

**71** Determine if the DIRPCOPY command was successful.

| If | Do |
|---|---|
| If the DIRPCOPY command | Do |
| was successful | step 73 |
| was not successful | step 72 |

**72** For additional help, contact the next level of support.

**73** The procedure is complete.

# Recovering CCS7 linksets

## Application

Use this procedure to recover Common Channel Signaling 7 (CCS7) linksets.

The CCS7 linksets consist of the following links:

- CCS7 link interface units (LIU7 and MLIU)
- CCS7 dual-link interface units (DLIU)

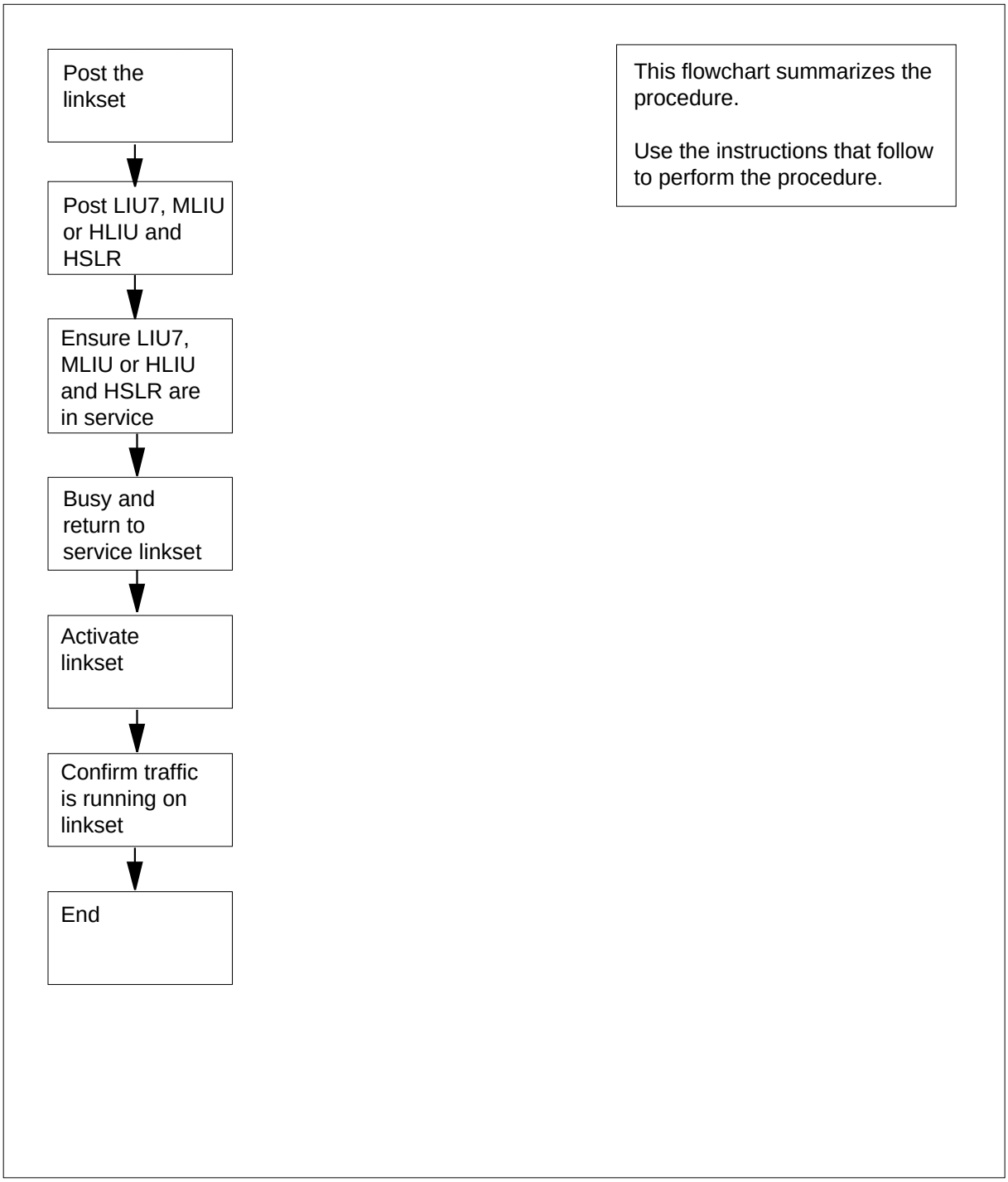
DLIU consists of high-speed link interface unit (HLIU) and high-speed link router (HSLR).

## Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the recovery task.

# Recovering CCS7 linksets (continued)

**Summary of Recovering CCS7 linksets**



# Recovering CCS7 linksets (continued)

### Recovering CCS7 linksets

***At the MAP terminal***

**1** To access the C7LKSET level of the MAP display, type

**>CCS;CCS7;C7LKSET**

and press the Enter key.

**2** To post the linksets that are in an in-service-trouble (ISTb) state, type

**>POST S ISTB**

and press the Enter key.

*Example of a MAP display:*

```
Linkset  SSP100_LK        ISTb
   Traf Sync                                          Link
LK Stat Stat Resource  Stat Physical Access   Stat Action
0  InSv Sync LIU7 101  InSv DS0A
1  ISTb Sync LIU7 103  InSv DS0A
2  InSv Sync DLIU 300  InSv DS1

Size of Posted Set = 3
```

| If there are | Do |
|---|---|
| ISTb linksets | step 4 |
| not ISTb linksets | step 3 |

**3** To post the linksets that are system busy (SysB), type

**>POST S SYSB**

and press the Enter key.

*Example of a MAP display:*

```
Linkset  SSP100_LK        SysB
   Traf Sync                                          Link
LK Stat Stat Resource  Stat Physical Access   Stat Action
0  SysB SysB LIU7 101  InSv DS0A
1  SysB SysB LIU7 103  InSv DS0A
2  SysB SysB DLIU 300  InSv DS1

Size of Posted Set = 3
```

| If there are | Do |
|---|---|
| SysB linksets | step 4 |

## Recovering CCS7 linksets (continued)

| If there are | Do |
|---|---|
| not SysB linksets | step 45 |

**4** Determine if any links are out of service.

| If one or more links are | Do |
|---|---|
| InSv or ISTb, and the linkset is InSv or ISTb | step 5 |
| out of service | step 6 |

**5** You have restored traffic on the linkset.

| If there are out-of-service link-sets and you have | Do |
|---|---|
| worked on all the linksets | step 42 |
| not worked on all the linksets | step 2 |

**6** Select an out-of-service link and follow the table below.

| If the selected link is associated with an | Do |
|---|---|
| LIU7 or MLIU | step 7 |
| DLIU | step 16 |

**7** To access the PM level of the MAP display, type

```
>MAPCI;MTC;PM
```

and press the Enter key.

**8** To post the LIU7 or MLIU, type

```
>POST  LIU7  liu_no
```

or

```
>POST MLIU mliu_no
```

and press the Enter key.

*where*

**liu_no**
is the number of the LIU7 (0 to 511)

**mliu_no**
is the number of the MLIU

## Recovering CCS7 linksets (continued)

**9** Determine the state of the posted LIU7 or MLIU.

| If the state of the LIU7 or MLIU is | Do |
|---|---|
| InSv | step 15 |
| Offl | step 10 |
| ManB | step 11 |

**10** To force the LIU7 or MLIU to busy, type

**>BSY FORCE**

and press the Enter key.

**11** To return the LIU7 or MLIU to service, type

**>RTS FORCE**

and press the Enter key.

| If the RTS command | Do |
|---|---|
| passed | step 15 |
| failed | step 12 |

**12** To reset the LIU7 or MLIU, type

**>PMRESET**

and press the Enter key.

| If the PMRESET command | Do |
|---|---|
| passed | step 14 |
| failed | step 13 |

**13** To load the LIU7 or MLIU, type

**>LOADPM**

and press the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 14 |
| failed | step 44 |

**14** To force the LIU7 or MLIU to return to service, type

**>RTS FORCE**

and press the Enter key.

| If the RTS command | Do |
|---|---|
| passed | step 15 |
| failed | step 44 |

**15** To determine which link this LIU7 or MLIU belongs to, type

**>QUERYPM**

and press the Enter key.

Go to step 32.

**16** To access the PM level of the MAP display, type

**>MAPCI;MTC;PM**

and press the Enter key.

**17** To post the HLIU, type

**>POST HLIU liu_no**

or

**>POST MLIU mliu_no**

and press the Enter key.

*where*

**liu_no or mliu_no**
is the number of the HLIU (0 to 511)

**18** Determine the state of posted HLIU.

| If the state of the HLIU is | Do |
|---|---|
| InSv | step 24 |
| Offl | step 19 |
| ManB | step 20 |

**19** To force the HLIU to busy, type

**>BSY FORCE**

and press the Enter key.

**20** To return the HLIU to service, type

**>RTS FORCE**

and press the Enter key.

| If the RTS command | Do |
|---|---|
| passed | step 24 |

## Recovering CCS7 linksets (continued)

| If the RTS command | Do |
|---|---|
| failed | step 21 |

**21** To reset the HLIU, type

**>PMRESET**

and press the Enter key.

| If the PMRESET command | Do |
|---|---|
| passed | step 23 |
| failed | step 22 |

**22** To load the HLIU, type

**>LOADPM**

and press the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 23 |
| failed | step 44 |

**23** To force the HLIU to return to service, type

**>RTS FORCE**

and press the Enter key.

| If the RTS command | Do |
|---|---|
| passed | step 24 |
| failed | step 44 |

**24** To post the HSLR, type

**>POST HSLR liu_no**

and press the Enter key.

*where*

**liu_no or mliu_no**
is the number of the HSLR (0 to 511)

**25** Determine the state of posted HSLR.

| If the state of the HSLR is | Do |
|---|---|
| InSv | step 31 |
| Offl | step 26 |

## Recovering CCS7 linksets (continued)

| If the state of the HSLR is | Do |
|---|---|
| ManB | step 27 |

**26** To force the HSLR to busy, type

**>BSY FORCE**

and press the Enter key.

**27** To return the HSLR to service, type

**>RTS FORCE**

and press the Enter key.

| If the RTS command | Do |
|---|---|
| passed | step 31 |
| failed | step 28 |

**28** To reset the HSLR, type

**>PMRESET**

and press the Enter key.

| If the PMRESET command | Do |
|---|---|
| passed | step 30 |
| failed | step 29 |

**29** To load the HSLR, type

**>LOADPM**

and press the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 30 |
| failed | step 44 |

**30** To force the HSLR to return to service, type

**>RTS FORCE**

and press the Enter key.

| If the RTS command | Do |
|---|---|
| passed | step 31 |
| failed | step 44 |

## Recovering CCS7 linksets (continued)

**31** To determine which link this HSLR belongs to, type

**>QUERYPM**

and press the Enter key.

Go to step 32.

**32** To post the linkset type

**>CCS;CCS7;C7LKSET;post c linkset_name**

where linkset_name is that returned by the QUERYPM command.

**33** To manually busy the link, type

**>BSY link_no**

and press the Enter key.

*where*

**link_no**
is the number of the link (0 to 15)

**link_no**
is the number of the link (0 to 7)

***Note:*** The link_no shown applies only to the ITU protocol. ITU is the only protocol that supports MLIU.

| If the response is | Do |
|---|---|
| `Link link_no:Traffic is running on that link`<br>`Please confirm(“YES",“Y",“NO", or “N"):` | step 34 |
| anything else including additional messages with above response | step 44 |

**34** To confirm the command, type

**>YES**

and press the Enter key.

**35** To return the link to service, type

**>RTS link_no**

and press the Enter key.

*where*

**link_no**
is the number of the link in the posted linkset (0 to 15)

**link_no**
is the number of the link in the posted linkset (0 to 7)

| If the RTS command | Do |
|---|---|
| passed | step 36 |
| failed | step 41 |

**36** To activate the link, type

**>ACT link_no**

and press the Enter key.

*where*

**link_no**
is the number of the link (0 to 15)

**link_no**
is the number of the link (0 to 7)

| If the ACT command | Do |
|---|---|
| passed | step 37 |
| failed | step 44 |

**37** To determine if traffic is running on the link, type

**>QUERYTRF link_no**

and press the Enter key.

*where*

**link_no**
is the number of the link in the linkset (0 to 15)

**link_no**
is the number of the link in the linkset (0 to 7)

*Example of a MAP response for LIU7 links:*

```
QueryTrf: Link occupancy for 13:30:00 – 14:00:00
Link    Speed   Byte/sec  Erlang  MSU len  %RTx  Msg/sec
   0    7000           0    0.00       17    0        0
```

***Note:*** For LIU7 or MLIU links, in the Byte/sec and Erlang fields, a value of 0 (zero) means that no traffic is running, and a value greater than zero means that traffic is running. In this example, no traffic is running on the link.

*Example of a MAP response for high-speed (DLIU) links:*

```
QueryTrf: Link occupancy for 13:30:00 – 14:00:00
Link  CellRate  Cell/sec  CPU Occ  MSU len  %RTx  Msg/sec
   0    3622       691       51%      25     0      671
```

## Recovering CCS7 linksets (continued)

***Note:*** For DLIU links, in the Cell/sec and CPU Occ fields, a value of 0 (zero) means that no traffic is running, and a value greater than zero means that traffic is running. In this example, traffic is running on the link.

| If traffic on the link is | Do |
|---|---|
| running, and the linkset is `InSv` or `ISTb` | step 41 |
| running, and the linkset is out of service | step 38 |
| not running | step 39 |

**38** You have restored traffic to the link, but the linkset is still out of service. Contact the far-end office. Tell far-end personnel that you have in-service or in-service trouble links, and that the associated linkset is out of service.

Go to step 41.

**39** Wait until the next query traffic snapshot. In the Example of a MAP response in step 37, the next snapshot is at 14:30.

**40** To determine if the traffic has begun to run on the link, type

**`>QUERYTRF link_no`**

and press the Enter key.

*where*

**link_no**
is the number of the link in the linkset (0 to 15)

**link_no**
is the number of the link in the linkset (0 to 7)

*Example of a MAP response:*

```
QueryTrf: Link occupancy for 14:00:00 – 14:30:00
Link    Speed  Byte/sec  Erlang   MSU len  %RTx  Msg/sec
   0    7000         52     0.40      28     0      128
```

| If traffic on the link is | Do |
|---|---|
| running, and the linkset is `InSv` or `ISTb` | step 41 |
| running, and the linkset is out of service | step 38 |
| not running | step 44 |

## Recovering CCS7 linksets (end)

**41** Check if out-of-service links still exist in the linkset on which you are working.

| If out-of-service links still exist in the linkset and you have | Do |
|---|---|
| not worked on those links | step 6 |
| worked on those links | step 42 |

**42** Determine if there are any alarms present in the alarm banner.

| If alarms are | Do |
|---|---|
| present | step 43 |
| not present | step 45 |

**43** Clear any alarms that remain. Perform the correct alarm clearing procedures in *Alarm and Performance Monitoring Procedures*. When this procedure is complete, return to step 42.

**44** For additional help, contact the next level of support.

**45** This procedure is complete.

# Recovering CompuCALL

## Application

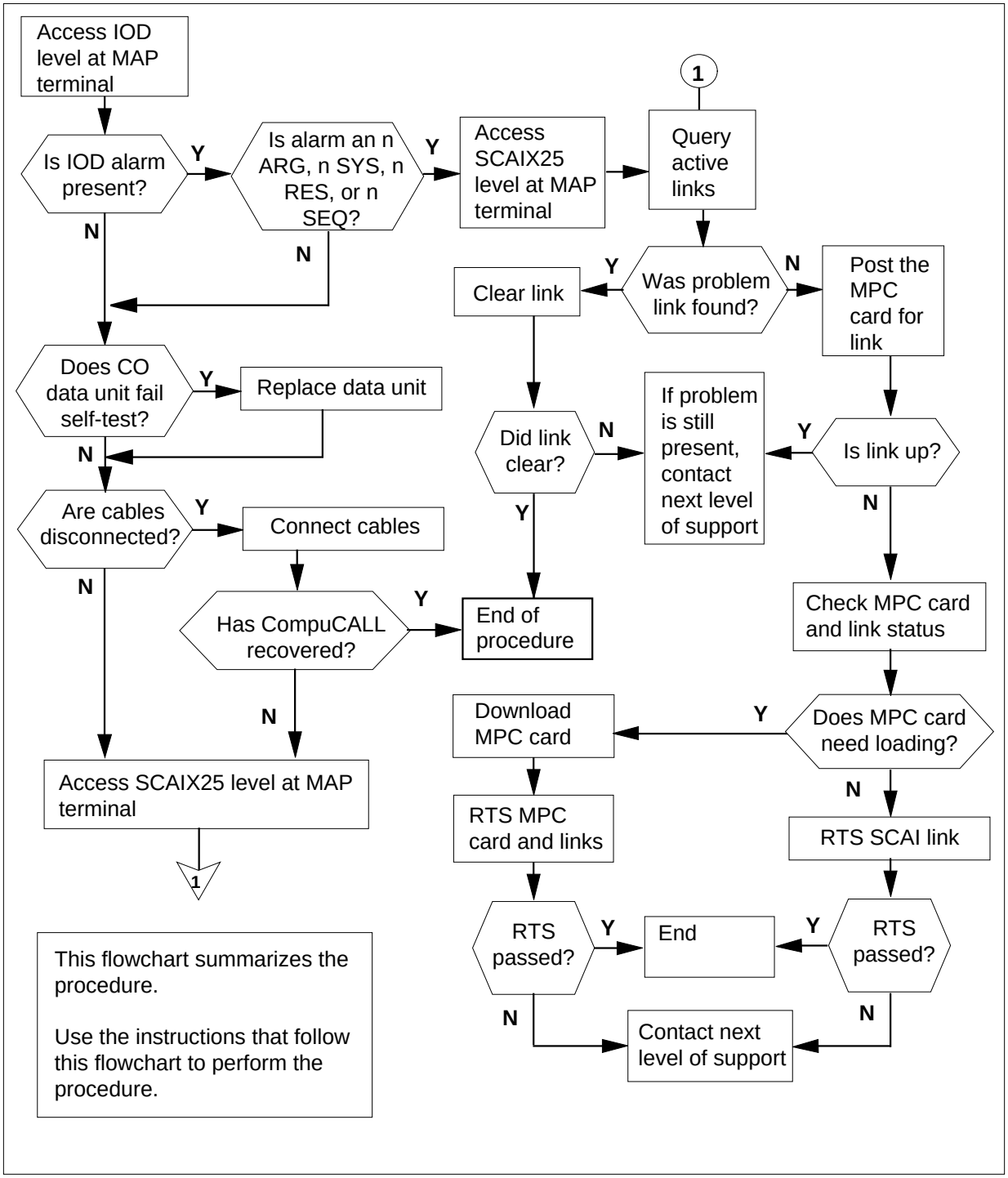
Use this procedure to restore CompuCALL to service.

## Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Recovering CompuCALL (continued)

**Summary of Recovering CompuCALL**



# Recovering CompuCALL (continued)

### Recovering CompuCALL

***At the MAP terminal:***

**1** To access the menu for the input/output device (IOD), type

**>MAPCI;MTC;IOD**

and press the Enter key.

**2** To check for an IOD alarm, look for an alarm code under the IOD subsystem header.

***Note:*** There are no alarms for CompuCALL. The alarms mentioned here are for the multiprotocol controller (MPC) card and MPC card functions.

*Example of a MAP display:*

```
CC  MS  IOD   Net  PM  CCS  Lns  Trks  Ext
 .   .    .     .   .   .    .    .     .
```

| If | Do |
|---|---|
| a dot (.) appears under the IOD subsystem header | step 4 |
| an alarm code appears under the IOD subsystem header | step 3 |

**3** Identify the alarm code under the IOD subsystem header.

*Example of a MAP display:*

```
CC  MS   IOD   Net  PM  CCS  Lns  Trks  Ext
 .   .   n ARG   .    .   .    .    .     .
```

| If | Do |
|---|---|
| an n ARG, n SYS, n RES, or n SEQ alarm code appears | step 9 |
| an alarm code other than listed here appears | clear the alarm and go to step 4. |

**4** Perform a self-test on the NT4X25 data unit to verify the operation of the data unit for the central office (CO).

Lift the flip-flop lid of the data unit. Toggle the self-test/normal option switch to the self-test position and back to the normal position.

You hear a short beep. After a short delay, all LEDs on the face of the data unit light for 4 s.

If the directory number (DN) LEDs flash, a self-test failure is present.

## Recovering CompuCALL (continued)

You hear a short beep. All LEDs (except the power LED) turn off.

| If the central office data unit | Do |
|---|---|
| fails the self-test | step 5 |
| passes the self-test | step 6 |

**5** Replace the data unit with a new data unit.

**6** Check for disconnected cables between the MPC circuit pack and the data unit. Check for disconnected cables between the data unit and the jackbox.

Connect the 32-pin connector of the NT0X26LY cable to either port 2 or port 3 of the MPC circuit pack.

Connect the 25-pin connector of the NT0X26LY cable to the data unit or modem.

Use a cable with RJ11 connectors to connect the data unit or modem to the jackbox. If the connect light on the data unit flashes, either the cable does not connect or the data unit is bad.

| If you | Do |
|---|---|
| find disconnected cables | step 7 |
| do not find disconnected cables | step 9 |

**7** Connect the disconnected cables.

**8** The CO part of this recovery procedure is complete. If CompuCALL is not recovered, go to step 9.

***At the MAP terminal:***

**9** The problem is not in the CO.

To access the SCAIX25 MAP terminal level, type

```
>MAPCI;MTC;IOD;SCAIX25
```

and press the Enter key.

**10** To post the link that has the problem, type

```
>POST  mpc#  link#
```

and press the Enter key.

*where*

**mpc#**
is the number of the MPC where the link is associated

**link#**
is the number of the link where you found the problem

**11** To query the active links, type

```
>QUERY session#
```

and press the Enter key.

## Recovering CompuCALL (continued)

*where*

**session#**
is the active session number to query (range of values is 0through 59)

| If you | Do |
|---|---|
| find the problem link | step 22 |
| do not find the problem link | step 12 |

**12** To post the MPC card for the problem link and make sure that the link is up, type

**>IOD;IOC x;CARD y**

and press the Enter key.

*where*

**IOC x**
is the IOC shelf number where the MPC resides

**CARD y**
is the number of the MPC card

| If the link | Do |
|---|---|
| is not up | step 13 |
| is up but trouble is present | step 24 |
| is up and fault cleared | step 25 |

**13** Check the status of the MPC and the MPC link.

```
Card 7      Unit  10
   User     SYSTEM BOARD LINK0 LINK1 LINK2 LINK3
   Status   Ready COMACT  UNEQ  N/A   UNEQ  OFFL
```

*Example of a MAP display:*

| If the MAP of the posted MPC | Do |
|---|---|
| resembles the following display | step 14 |
| does not resemble the following display | step 16 |

**14** To busy the link, type

**>BSY mpc# link#**

and press the Enter key.

*where*

**mpc#**
is the number of the MPC card

**link#**
is the number of the link

**15** To return the busied link to service, type

**>RTS mpc# link#**

and press the Enter key.

*where*

**mpc#**
is the number of the MPC card

**link#**
is the number of the link

| If RTS | Do |
|---|---|
| passed | step 25 |
| failed | step 24 |

**16** Continue to check the status of the MPC and the MPC link.

*Example of a MAP display:*

```
Card 7      Unit  10
   User     SYSTEM BOARD LINK0 LINK1 LINK2 LINK3
   Status   SysB  NOLOAD  UNEQ  N/A   UNEQ  OFFL
```

| If the MAP of the posted MPC | Do |
|---|---|
| resembles the following display | step 17 |
| does not resemble the following display | step 24 |

**17** To download the MPC card, type

**>DOWNLD mpc#**

and press the Enter key.

*where*

**mpc#**
is the number of the MPC card

*Example of a MAP display:*

```
Card 7  Unit    10
   User SYSTEM BOARD LINK0 LINK1 LINK2 LINK3
   Status   SysB  LOADED  UNEQ  N/A   UNEQ  OFFL
```

**18** To busy the MPC card, type

**>BUSY mpc#**

and press the Enter key.

## Recovering CompuCALL (continued)

*where*

**mpc#**
is the number of the MPC card

**19** To return the MPC card to service, type

**>RTS mpc#**

and press the Enter key.

*where*

**mpc#**
is the number of the MPC card

| If RTS | Do |
|---|---|
| passed | step 20 |
| failed | step 24 |

**20** To busy each link associated with the MPC card, type

**>BSY mpc# link#**

and press the Enter key.

*where*

**mpc#**
is the number of the MPC card

**link#**
is the number of the link

**21** To return each link to service, type

**>RTS mpc# link#**

and press the Enter key.

*where*

**mpc#**
is the number of the MPC card

**link#**
is the number of the link

| If RTS | Do |
|---|---|
| passed | step 25 |
| failed | step 24 |

# Recovering CompuCALL (end)

**22**

**WARNING**
**If you close the link, communications that use the link will close.**
If you issue the CLEAR command from the SCAIX25 MAP terminal level, the command ends the CompuCALL session. The link does not close.

To clear the link, type

**>CLEAR session#**

and press the Enter key.

*where*

**session#**
is the session# on the link to clear

*Example of a MAP terminal response:*

```
Active session:  Do you really want to clear
 (Yes or No)?
```

**23** To respond to the prompt, type

**>YES**

and press the Enter key.

| If the link | Do |
|---|---|
| cleared | step 25 |
| did not clear | step 24 |

**24** For additional help, contact the next level of support.

**25** The SCAI link is clear. If CompuCALL did not recover, contact operating company personnel. Inform operating company personnel that a problem occurred with customer premises equipment.

# Recovering data from a disk to tape

## Application

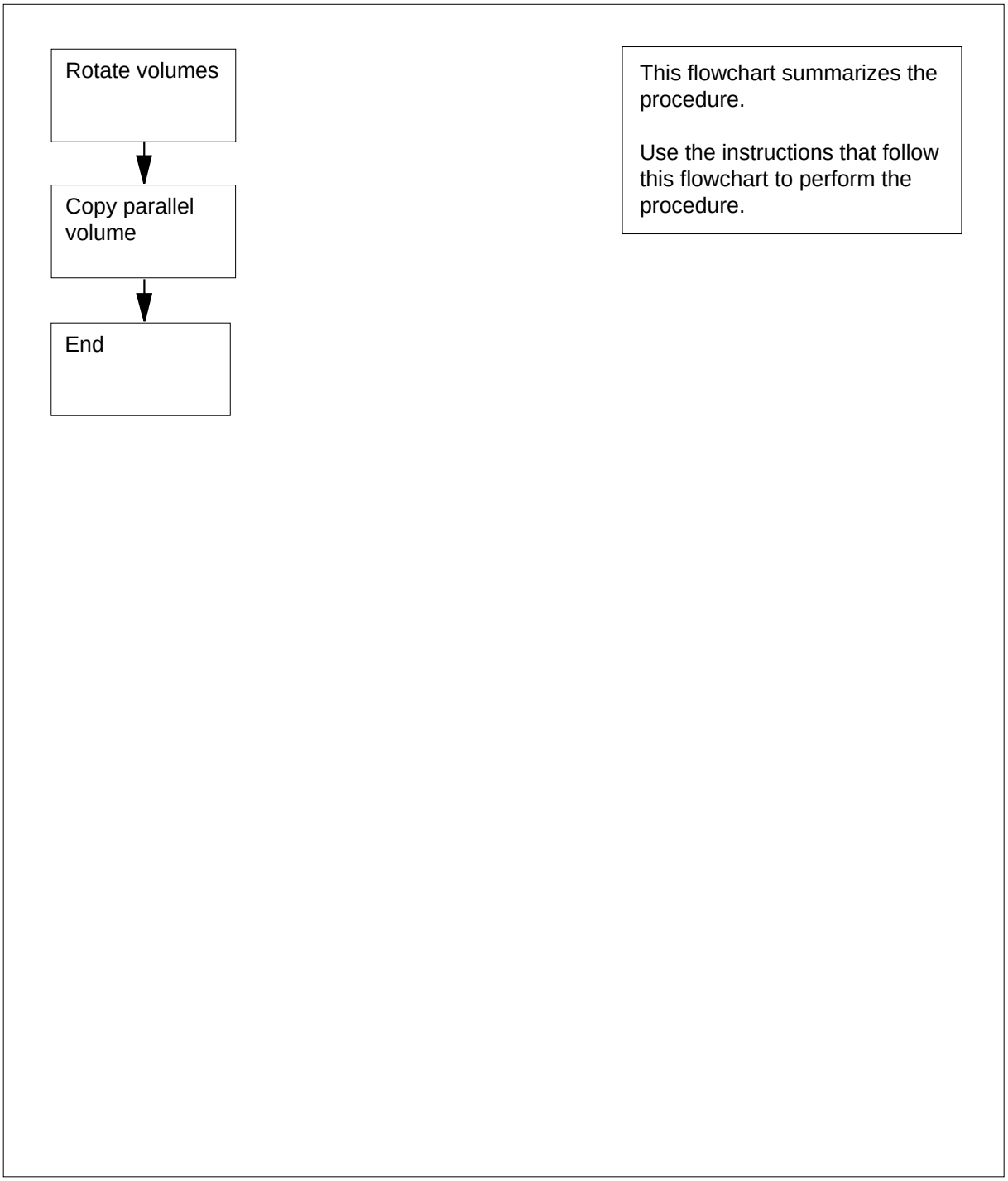
Use this procedure to recover a disk-type file that consists of detected errors. The detection of errors occurs during a data-link transmission to a data center. To recover the file, this procedure copies the file from disk to tape. You can transport the tape file to the data center.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Recovering data from a disk to tape (continued)

**Summary of Recovering data from a disk to tape**



## Recovering data from a disk to tape (continued)

**Recovering data from a disk to tape**

***At the MAP terminal***

**1**

**CAUTION**
**Possible loss or damage of AMA data**
Use this procedure and follow it exactly. Not doing so will lose or corrupt automatic message accounting (AMA) data. The operating company uses AMA data to produce billings. Loss or damage of AMA data results in revenue loss for the operating company.

To access the DIRP level of the MAP display, type

**>MAPCI;MTC;IOD;DIRP**

and press the Enter key.

**2** To access the DIRP logs, type

**>LOGUTIL;OPEN DIRP**

and press the Enter key.

**3** To enable the printer, type

**>RECORD START ONTO device**

and press the Enter key.

*where*

**device**
is the printer type

**4** Check the DIRP logs to determine the parallel data block numbers that the data center received. Determine the numbers that the data center received before and after the defective data-link transmission.

*Example of a MAP response:*

```
DIRP101 AUG13 19:50:33 nnnn INFO_DIRP_FLOW_LOG REASON= 16 SSYS#=0
SSNAME= AMA POOL#= 0 VOLUME#= # 22 SOS-FILE-ID= nnnn nnnn nnnn
TEXT1= NEXT PARALLEL FILE BLOCK NUMBER: 1            PARM1= 0
TEXT1= NEXT ACTIVE FILE BLOCK NUMBER: 4              PARM2= FFFF

DIRP101 AUG13 19:50:33 nnnn INFO_DIRP_FLOW_LOG REASON= 17 SSYS#=0
SSNAME= AMA POOL#= 0 VOLUME#= # 23 SOS-FILE-ID= nnnn nnnn nnnn
TEXT1= LAST PARALLEL FILE BLOCK NUMBER: 1            PARM1= 0
TEXT1= LAST ACTIVE FILE BLOCK NUMBER: 1              PARM2= FFFF
```

## Recovering data from a disk to tape (continued)

**5** Query the volumes that are in the subsystem. Determine the state of the parallel volume. To query the volumes and to determine the state of the parallel volume, type

**>QUERY ssys VOLUMES**

and press the Enter key.

*where*

**ssys**
is the affected subsystem

*Example of a MAP display:*

```
SSNAME SSNO SEQNO ROTATES POOLNO PARLPOOL EMERGENCY
AMA       0    1       2      0        6      No

REGULAR
VOL# VOLUMNAME  STATE     IOC  CARD  VOL  FSEG  ROOM  VLID  FILES

PARALLEL VOLUMES(S)
VOL# VOLNAME STATE  IOC  CARD  VOL  FSEG  ROOM  VLID  CURR
   0 D00AMA2 READY    0     0    0   N/A     1  2400  YES
```

| If | Do |
|---|---|
| If the parallel volume that you want to recover data from | Do |
| is the current device | step 6 |
| is not the current device | step 11 |

**6** Determine if parallel volumes are available.

| If | Do |
|---|---|
| If parallel volumes | Do |
| are available | step 8 |
| are not available | step 7 |

**7** Add a new disk volume.

Refer to *Setting up parallel recording on disk in the DIRP utility* in *Routine Maintenance Procedures*, and return to this point.

## Recovering data from a disk to tape (continued)

***At your current location***

**8**

**CAUTION**
**Loss of parallel data**
Manual parallel rotations reduce the total amount of parallel data that the switch retains. Loss of parallel data can occur.

To rotate the subsystem, type

**>ROTATE AMA PARALLEL**

and press the Enter key.

*Example of a MAP display:*

```
 **WARNING–MANUAL PARALLEL ROTATIONS REDUCE THE TOTAL
  **AMOUNT OF PARALLEL DATA RETENTION ON THE SWITCH
SENDING REQUEST TO SUBSYSTEM
PLEASE CONFIRM (”YES” OR NO”):
```

**9** To confirm the information, type

**>YES**

and press the Enter key.

*Example of a MAP response:*

```
REQUEST SENT TO SUBSYSTEM, CHECK DIRP LOG FOR DETAILS
```

**10** Wait for a DIRP101 log to confirm the rotation.

| If | Do |
|---|---|
| If the DIRP101 log | Do |
| confirms the rotation | step 11 |
| does not confirm the rotation | step 14 |

**11** Load an empty or expired tape on the magnetic tape drive.

Refer to *Magnetic Tape Reference Manual*, 297-1001-118, and return to this point.

**12** To copy the subsystem file to the tape, type

**>DIRPCOPY ssys file_name Tn start_no block_length**

and press the Enter key.

*where*

**ssys**
is the affected subsystem

# Recovering data from a disk to tape (end)

**file_name**
is the parallel file name

**Tn**
is the number of the tape drive

**start_no**
is the first sequence number that you will recover

(you obtained the sequence number in step 4)

**block_length**
is the first sequence number subtracted from the last sequence number (you obtained both sequence numbers in step 4).

*Example input:*

```
>DIRPCOPY  AMA DIRPPARALLEL_AMA T2 5400 100
```

***Note:*** The time that the DIRPCOPY utility requires to copy the file depends on the length of the parallel file. The time also depends on the number of files that the DIRCOPY must copy.

**13** Determine if the DIRPCOPY command was successful.

| If | Do |
|---|---|
| If the DIRPCOPY command | Do |
| was successful | step 15 |
| was not successful | step 14 |

**14** For additional help, contact the next level of support.

**15** The procedure is complete.

# Recovering a dead DIRP utility

## Application

Use this procedure to recover the main processes for the DIRP utility. The following are the main processes of the DIRP utility:

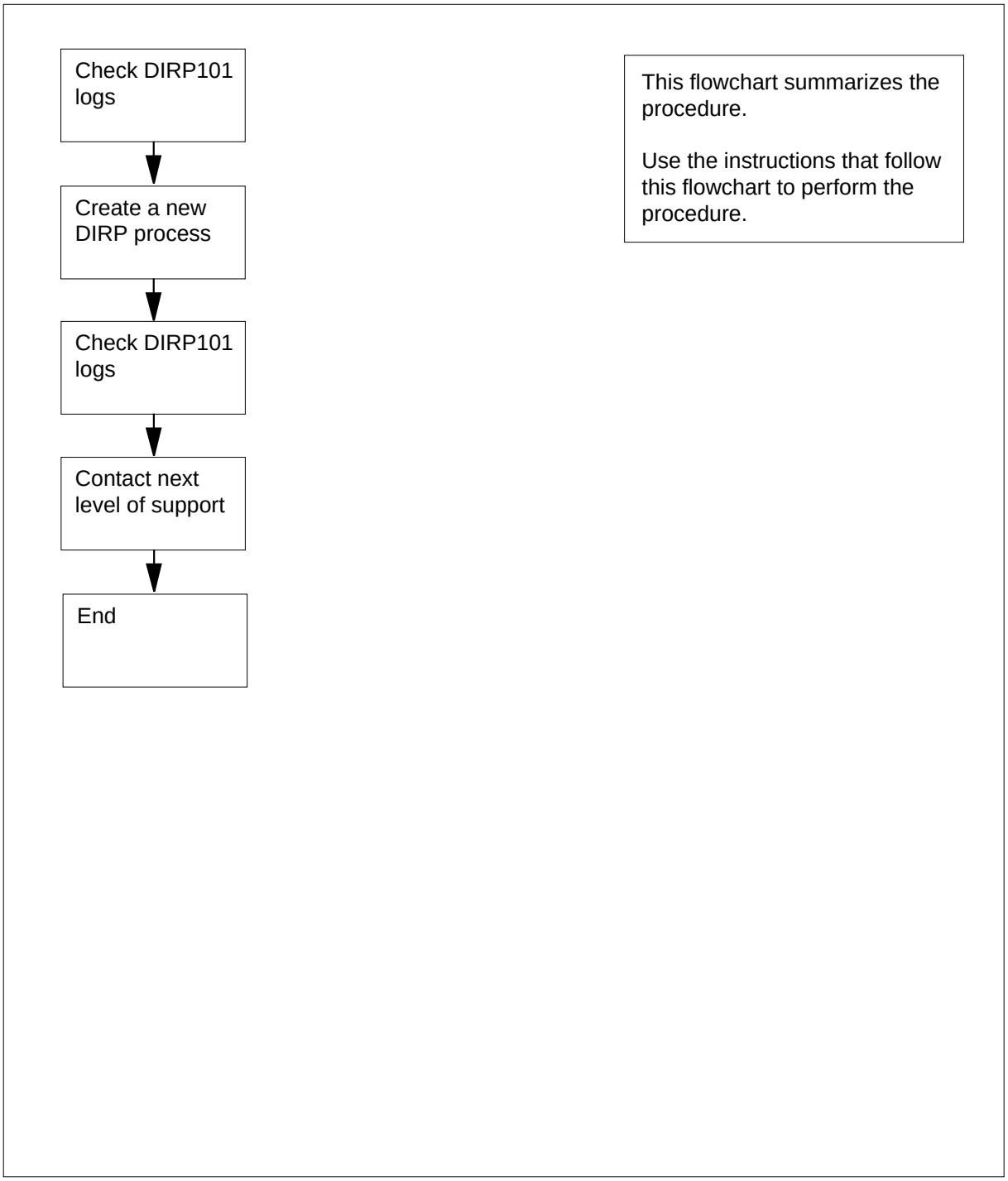
- DIRPGI
- DIRPDSON
- DIRPTSON

## Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Recovering a dead DIRP utility (continued)

**Summary of Recovering a dead DIRP utility**



## Recovering a dead DIRP utility (continued)

**Recovering a dead DIRP utility**

**CAUTION**
**Loss or damage of AMA data**
Use this procedure and follow it exactly. Not doing so will lose or corrupt automatic message accounting (AMA) data. The operating company uses AMA data to produce billings. Loss or damage of AMA data results in revenue loss for the operating company.

***At the MAP terminal***

**1** To silence an audible alarm, type

**>MTC;SIL**

and press the Enter key.

**2** To access the DIRP level of the MAP display, type

**>MAPCI;MTC;IOD;DIRP**

and press the Enter key.

**3** To enable the printer, type

**>RECORD START ONTO device**

and press the Enter key.

*where*

**device**
is the printer type

**4** To access the DIRP logs, type

**>LOGUTIL;OPEN DIRP**

and press the Enter key.

*Example of a MAP response:*

```
DIRP101 AUG13 19:50:33 nnnn INFO_DIRP_FLOW_LOG REASON= 60 SSYS#=0
SSNAME= AMA POOL#= 0 VOLUME#= # 22 SOS-FILE-ID= nnnn nnnn nnnn
TEXT1= COULDN'T RECREATE DIRGI AFTER DEATH PARM1= operatingsys. RC
TEXT2=                                     PARM2= hhh

DIRP101 AUG13 19:50:33 nnnn INFO_DIRP_FLOW_LOG REASON= 61 SSYS#=0
SSNAME= AMA POOL#= 0 VOLUME#= # 22 SOS-FILE-ID= nnnn nnnn nnnn
TEXT1= DIRGI NOT RECREATED, DIED TWICE<30secs PARM1= operatingsys. RC
TEXT2=                                     PARM2= hhh
```

**5** Check the DIRP logs to determine the DIRP process that died.

## Recovering a dead DIRP utility (end)

**6** To create the correct DIRP process (DIRPGI, DIRPDSON, or DIRPTSON), type

```
>REVIVE   ALL
```

and press the Enter key.

***Note:*** The REVIVE command puts life back into the DIRP child process. The command does not correct the problem that caused the death of the DIRP child process.

**7** Check the DIRP logs to determine if the REVIVE command created a new process. Go to step 8.

**8** For additional help, contact the next level of support.

**9** The procedure is complete.

# Recovering enhanced link peripheral processors

## Application

Use this procedure to recover enhanced link peripheral processors that are system busy (SysB). ELPPs are SysB when both link interface module (LIM) units lose A and B dc power feeds.

If the whole switch loses power, restore primary switching functions. Do not use this procedure until the primary switching functions are restored. To restore primary switching functions, refer to procedure *Recovering from a dead system in a SuperNode switch* in this document.

To recover ELPPs when both LIMs are system busy and other problems exist, refer to the following:

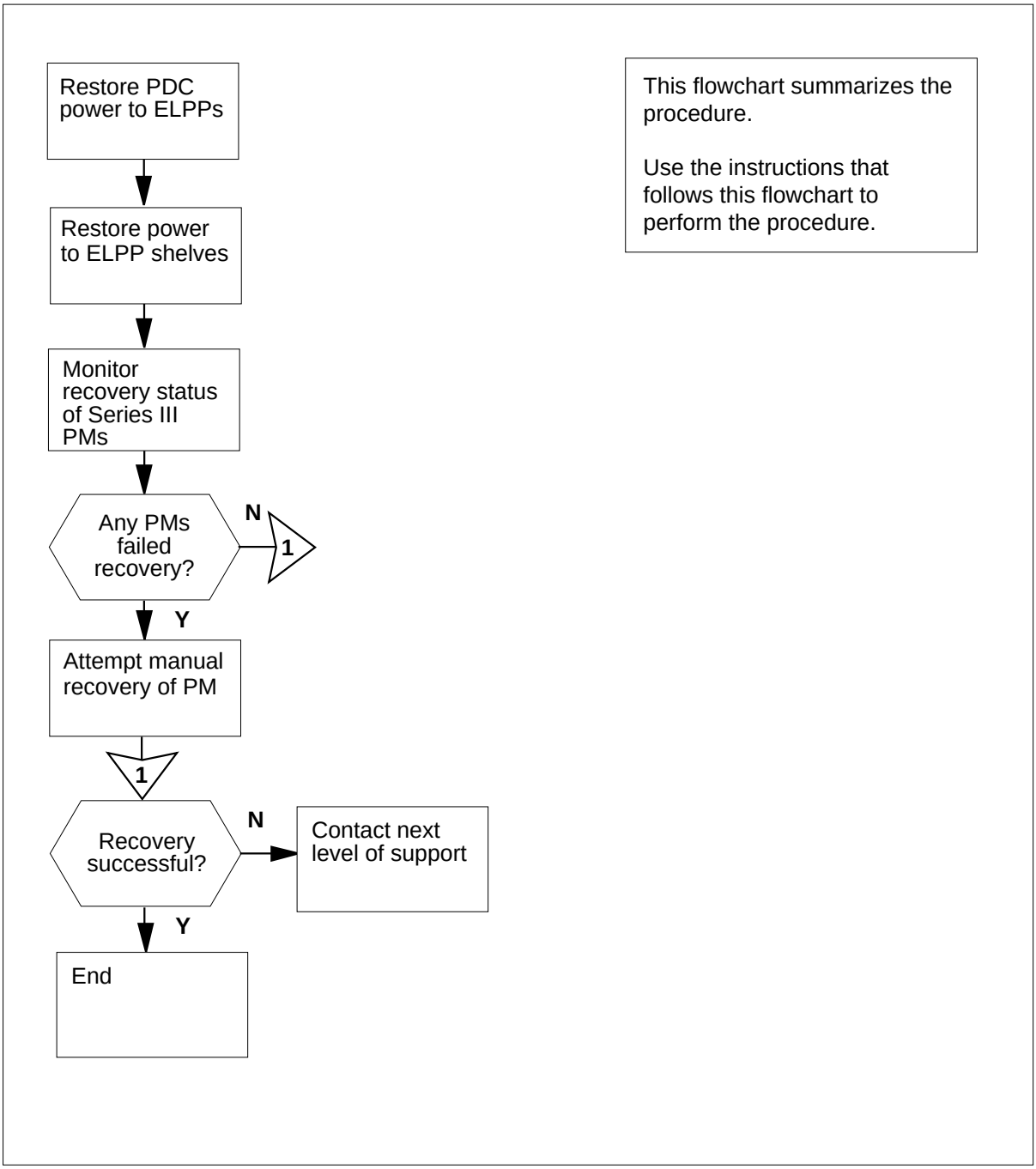
- *Clearing a PM LIM critical alarm*
- *Alarm and Performance Monitoring Procedures*

## Action

This procedure contains a summary flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the recovery task.

# Recovering enhanced link peripheral processors (continued)

**Summary of Recovering enhanced link peripheral processors**



# Recovering enhanced link peripheral processors (continued)

### Recovering enhanced link peripheral processors

***At the PDC***

**1**

**DANGER**
**Possible equipment damage or service interruption**
To ensure that the ELPP is recovered as quickly as possible, contact Nortel ETAS or your next level of support before you begin this procedure.

Check the PDC fuses that supply the ELPPs involved in the recovery process.

| If | Do |
|---|---|
| there are blown fuses | step 2 |
| there are no blown fuses | step 3 |

**2** Replace the blown fuses.

***Note:*** If fuses blow repeatedly, contact your next level of support.

When PDC power is restored to the ELPPs, go to step 3 of this procedure.

**3** Locate the ELPPs involved in the recovery process.

***At the ELPP cabinet***

**4** Determine if the ELPP shelves have power.

***Note:*** When the ELPP shelves have power, the Converter Off lights on all power converters (NT9X30, NT9X31, or NTDX16 cards) are not lit.

| If the Converter Off lights in the ELPP | Do |
|---|---|
| are not lit | step 15 |
| are lit | step 5 |

**5**

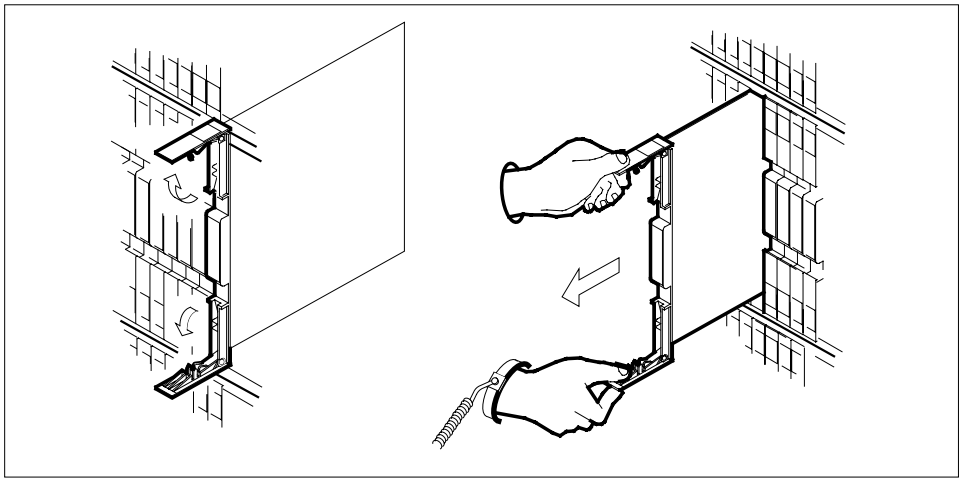
**WARNING**
**Static electricity damage**
Wear a wrist strap connected to the wrist-strap grounding point of a frame supervisory panel (FSP) or a modular supervisory panel (MSP) while handling circuit cards. This protects the cards against static electricity damage.

## Recovering enhanced link peripheral processors (continued)

Locate the NT9X74 cards in all link interface shelves (LIS) in the ELPP.

***Note:*** For a LIS, locate the NT9X74 card on shelf 7F and 32F.

**6** Unseat each NT9X74 card. To unseat a card, unlatch the locking levers and slowly pull the card toward you 25 mm (1 in.).



**7** Locate the NT9X30 power converters in slot 4F and 36F on the link interface module (LIM) unit shelf and the NT9X31 power converter in slots 1F and 33F.

**8** To turn on the LIM unit shelf power converters, toggle the switch of each NT9X30 and NT9X31 card.

**9** Locate the NT9X30 or NTDX16 power converters for each LIS in the ELPP.

***Note:*** For an LIS, locate the NT9X30 power converters in slots 4F and 36F. For an LIS, locate the NTDX16 power converters in slots 1F, 4F, 33F, and 36F for each LIS.

**10** To turn on the LIS power converter, toggle the switch of each NT9X30 or NTDX16 card.

**11** Determine if all the converters have power. To determine if the converter has power, check the Converter Off switch. When all of the Converter Off lights are off, the converter has power.

| If all power converters | Do |
|---|---|
| powered up | step 13 |
| did not power up | step 12 |

**12** To restart the power for the frame, refer to the *Clearing an Ext FSP LPP cabinet major alarm* procedure from *Alarm and Performance Monitoring Procedures*.

When the procedure is complete, return to this point.

Go to step 7.

**13** Reseat all NT9X74 cards as follows:

**a** Slowly slide the card back into the LIS.

## Recovering enhanced link peripheral processors (continued)

**b** Push on the upper and lower edges of each faceplate to reseat the card completely.

**c** Close the locking levers on the card.

**14** Repeat steps 3 through 13 for each ELPP in your office.

When all of the ELPPs are restored to power, continue this procedure at step 15.

***At the MAP***

**15** To access the SRSTATUS level of the MAP display, type

**>MAPCI;MTC;SRSTATUS**

and press Enter

*Example of a MAP display:*

```
SRSTATUS
          OVERALL STATUS Pend:  18%  InProg: 9%  Comp: 70%  Fail: 3%
 0  Quit   VIEW: SYSTEM                                      11:52:34
 2  View_      Pend InPrg  Comp    Fail      Pend  InPrg  Comp   Fail
 3  List_ MS    0    0      2       0   IOD   5     5      30     2
 4        NET   0    0      6       0   Other 21    3      13     3
 5        SER1  0    1      6       0
 6        SER2  1    1      60      1
 7        SER3  11   8      30      1
 8
 9        SRSTATUS:
```

**16** From the MAP display, determine the state of the recovered Series III PMs

***Note:*** The series III PM recovery status appears at the right of the word SER3 of the MAP display. The recovery status is either pending, in progress, complete, or failed.

| If the number of Series III PMs, that failed recovery | Do |
|---|---|
| is zero | step 32 |
| is other than listed here | step 17 |

**17** To access the PM level of the MAP display, type

**>PM**

and press the Enter key.

**18** To display a list of all system busy PMs, type

**>DISP STATE SYSB**

and press the Enter key.

**19** Determine which of the Series III PM types are system busy.

| If | Do |
|---|---|
| LIMs are SysB | step 21 |

## Recovering enhanced link peripheral processors (continued)

| If | Do |
|---|---|
| HLIUs are SysB | step 1 |
| HSLRs are SysB | step 7 |
| any other type of Series III PM types are SysB | step 20 |
| Series III PMs are not SysB | step 32 |

**20** Refer to procedure *Recovering link peripheral processors* in this document.

**21** Select a system busy LIM to work on.

**22** To post the system busy LIM, type

**>POST LIM lim_no**

and press the Enter key.

*where*

**lim_no**
is the number of the LIM (0 to 16)

*Example of a MAP response:*

```
LIM  0  SysB        OOS     OOS_Taps
                  Links  LIS1  LIS2  LIS3
Unit0: SysB        6      8       8     8
Unit1: SysB        6      8       8     8
```

**23** Determine if the LIM unit is system busy, resource unavailable (SysB RU).

***Note:*** When a LIM unit is system busy, the message SysB (RU) appears in the MAP response. This message appears to the right side of the LIM unit number.

| If | Do |
|---|---|
| either LIM unit is SysB (RU) | step 24 |
| neither LIM unit is SysB (RU) | step 31 |

**24** To clear the fault, refer to the *Clearing a PM LIM critical alarm* procedure in *Alarm and Performance Monitoring Procedures*.

When you have completed the procedure, return to this point.

**25** To access the LIS level of the MAP display, type

**>LIS_no**

and press the Enter key.

*where*

**lis_no**
is the number of the LIS (1, 2, or 3)

## Recovering enhanced link peripheral processors (continued)

***Note:*** For ELPPs F-bus 0 and F-bus 1 exist for each LIS level (1, 2, and 3).

**26** Determine if the F-buses are in-service.

| If | Do |
|---|---|
| all F-buses are InSv | step 18 |
| a minimum of one F-bus is SysB | step 27 |

**27** To manually busy the system busy F-bus, type

**>BSY FBUS fbus_no**

and press the Enter key.

*where*

**fbus_no**
is the number of the F-bus you wish to manually busy

**28** To return the F-bus to service, type

**>RTS FBUS fbus_no**

and press the Enter key.

*where*

**fbus_no**
is the number of the F-bus that you wish to return to service

| If the RTS command | Do |
|---|---|
| passed | step 29 |
| failed | step 31 |

**29** Determine if another F-bus is system busy.

| If | Do |
|---|---|
| all other F-buses are InSv | step 30 |
| another F-bus is SysB | step 27 |

**30** To access the next LIS level, type

**>NEXT**

and press the Enter key.

| If | Do |
|---|---|
| you have already accessed this LIS level | step 18 |

## Recovering enhanced link peripheral processors (end)

| If | Do |
|---|---|
| you have not already accessed this LIS level | step 26 |

**31** For additional help, contact the personnel responsible for the next level of support.

**32** The procedure is complete.

# Recovering a stuck HLIU or HSLR

## Application

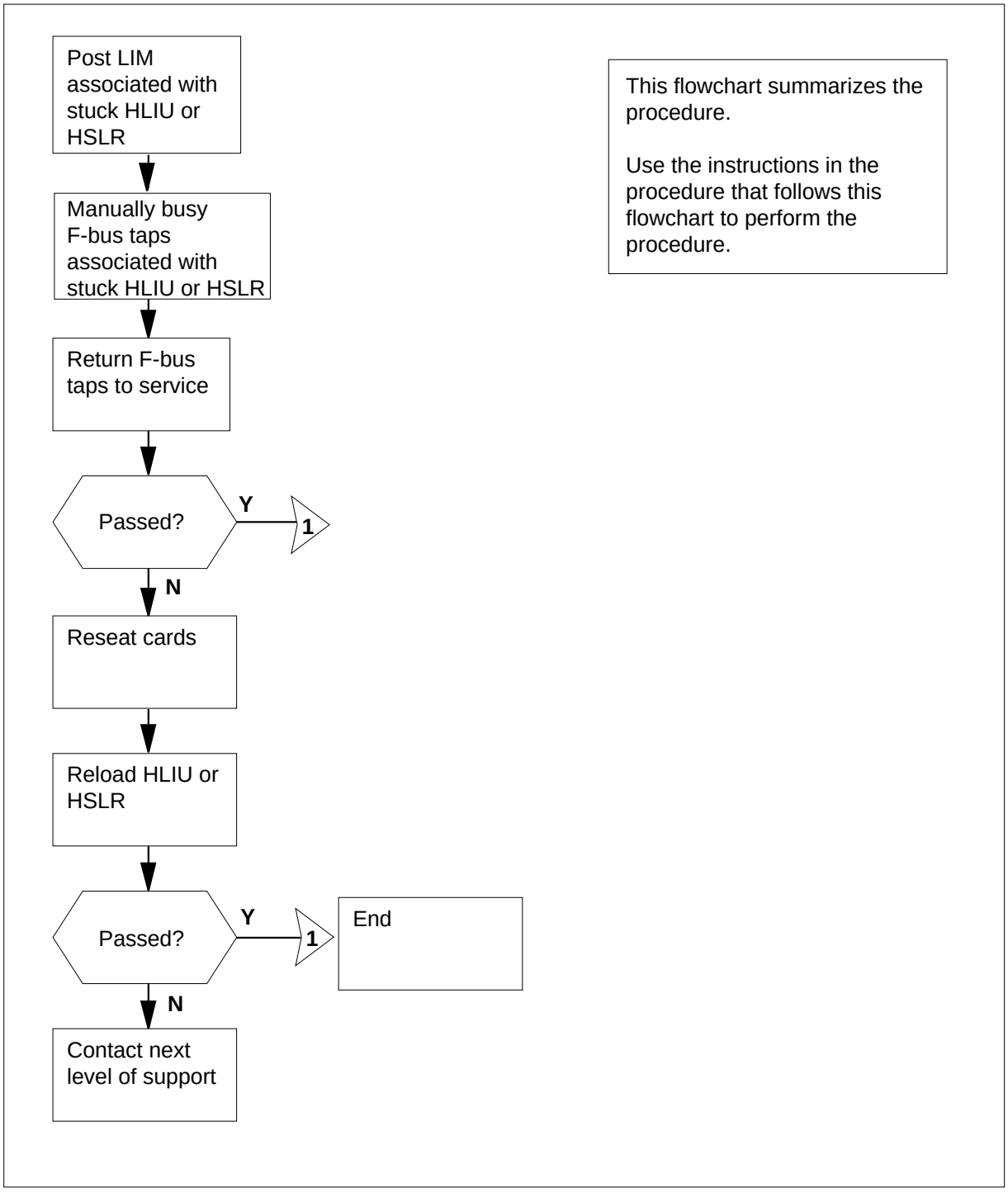
Use this procedure to recover a stuck high-speed link interface unit (HLIU) or a high-speed link router (HSLR). HLIUs and HSLRs are stuck when both F-bus taps of the individual HLIU or HSLR are not accessible (NA).

## Action

This procedure contains a summary flowchart and a list of specific steps. Use the flowchart as an overview of the procedure. Follow the specific steps to perform the procedure.

# Recovering a stuck HLIU or HSLR (continued)

**Summary of Recovering a stuck HLIU or HSLR**



# Recovering a stuck HLIU or HSLR (continued)

**Recovering a stuck HLIU or HSLR**

***At the MAP terminal***

**1**

**DANGER**
**Contact your next level of support**
Do not attempt this procedure before contacting your next level of support.

Access the PM level of the MAP display by typing

**>MAPCI;MTC;PM**

and pressing the Enter key.

**2** Post the system-busy HLIU or HSLR by typing

**>POST HLIU SYSB**

and pressing the Enter key.

or

**>POST HSLR SYSB**

and pressing the Enter key.

| If the state of the HLIU or HSLR is | Do |
|---|---|
| SysB (NA) | step 5 |
| SysB | step 3 |

**3** Display the next system-busy HLIU or HSLR by typing

**>NEXT**

and pressing the Enter key.

**4** Repeat step 3 until you find the system-busy (NA) HLIU or HSLR.

**5** Determine the LIM associated with the stuck HLIU or HSLR by typing

**>QUERYPM**

and pressing the Enter key.

```
QueryPM
PM type:  HLIU    PM NO.: 0    Status: SysB
LIM: 0  Shelf: 1  Slot: 8      LIU FTA  4240 1000
Default Load:  HCA11AV
Running Load:  HCA11AV
Potential service affecting conditions:
Msg Channel #1  NA
TAP #0 OOS/NA
```

## Recovering a stuck HLIU or HSLR (continued)

```
TAP #1 OOS/NA
LMS States  :  InSv     InSv
Auditing    :  No       No
Msg Channels:  Acc      No
TAP 0       :  I (NA)   S (NA)
Reserved HLIU forms part of CCS7 Linkset :HSL172001000 SLC:0
LIU is not allocated
```

**6** Post the LIM associated with the stuck HLIU or HSLR by typing

**`>POST LIM lim_no or`**

and pressing the Enter key.

*where*

**lim_no**
is the number of the LIM (0 to 16)

**7** Post the LIS associated with the stuck HLIU or HSLR by typing

**`>POST LIS lis_no`**

and pressing the Enter key.

*where*

**lis_no**
is the number of the shelf (1 to 3)

**8** Determine which F-bus taps are associated with the stuck HLIU or HSLR by typing

**`>TRNSL fbus_no`**

and pressing the Enter key.

*where*

**fbus_no**
is the number of the F-bus (0 or 1)

*Example of a MAP response for HLIU:*

```
LIM 8 LIS 2 FBus 0 Tap 0 is unequipped.
LIM 8 LIS 2 FBus 0 Tap 1 is unequiped
LIM 8 LIS 2 FBus 0 Tap 2 is on HLIU 1
LIM 8 LIS 2 FBus 0 Tap 3 is on HSLR 1
LIM 8 LIS 2 FBus 0 Tap 4 is unequipped
```

**9** Manually busy the F-bus taps associated with the stuck HLIU or HSLR by typing

**`>BSY FBUS fbus_no tap_no`**

and pressing the Enter key.

*where*

**fbus_no**
is the number of the F-bus (0 or 1)

**tap_no**
is the number of the F-bus tap (0 to 11)

## Recovering a stuck HLIU or HSLR (continued)

Perform this step for both F-bus taps associated with the stuck HLIU or HSLR.

**10** Return the F-bus taps associated with the stuck HLIU or HSLR to service by typing

**>RTS FBUS fbus_no tap_no**

and pressing the Enter key.

*where*

**fbus_no**
is the number of the F-bus (0 or 1)

**tap_no**
is the number of the F-bus tap (0 to 11)

Perform this step for both F-bus taps associated with the stuck HLIU or HSLR.

*Example of a MAP response:*

```
LIM lim_no LIS lis_no FBus fbus_no Tap tap_no Return
to Service initiated.
```

| If the RTS command | Do |
|---|---|
| passed | step 28 |
| failed | step 11 |

**11** Access the PM level of the MAP display by typing

**>PM**

and pressing the Enter key.

**12** Post the stuck HLIU or HSLR by typing

**>POST HLIU liu_no**

and pressing the Enter key.

or

**>POST HSLR liu_no**

and pressing the Enter key.

*where*

**liu_no**
is the number of the stuck HLIU or HSLR (0 to 511)

**13** Manually busy the HLIU or HSLR by typing

**>BSY**

and pressing the Enter key.

**14** Confirm the command by typing

**>YES**

and pressing the Enter key.

**15** Prepare to unseat and reseat the cards that belong to the stuck HLIU or HSLR.

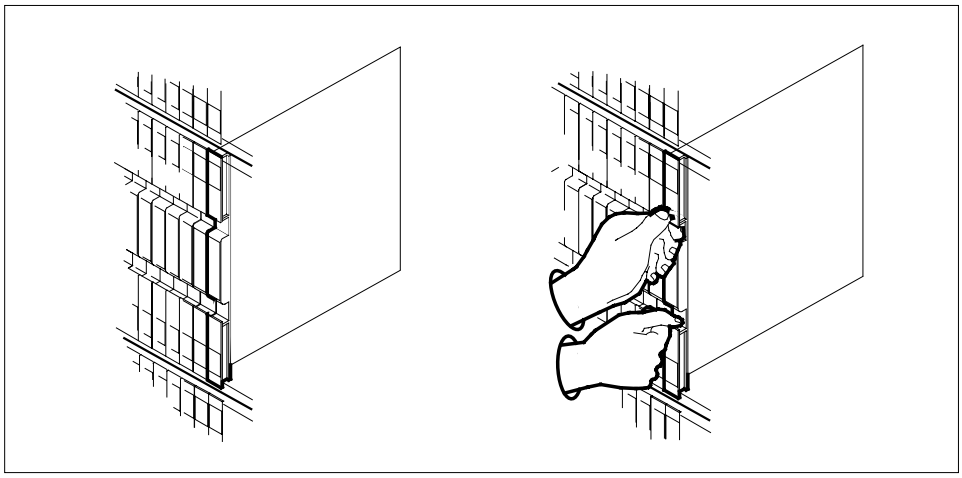
## Recovering a stuck HLIU or HSLR (continued)

***At the ELPP***

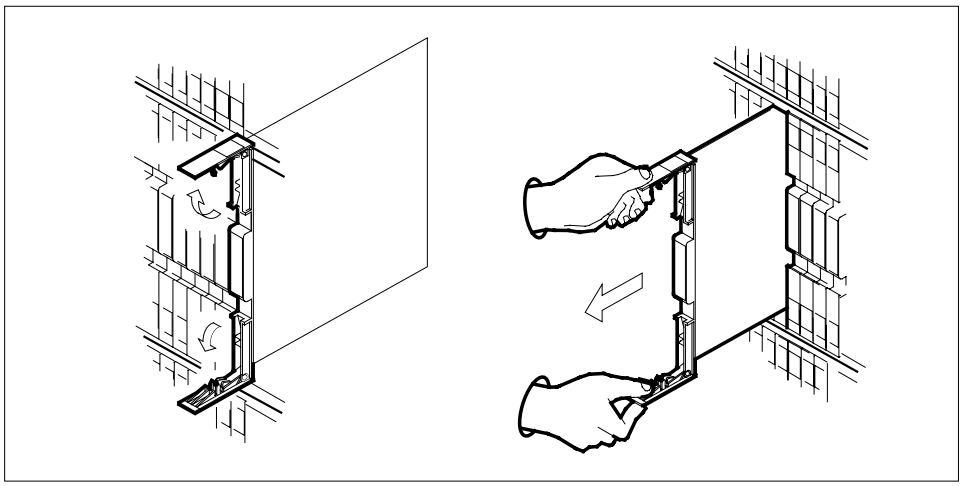
**16**

**WARNING**
**Static electricity damage**
Wear a wrist strap connected to the wrist-strap grounding point of a frame supervisory panel (FSP) while handling cards. This protects the cards against damage caused by static electricity.

Locate the NTEX22 card that belongs to the stuck HLIU or HSLR.



**17** Carefully pull the card 25 mm (1 in.) toward you.



**18** Leave the NTEX22 sitting in its slot on the link interface shelf (LIS).

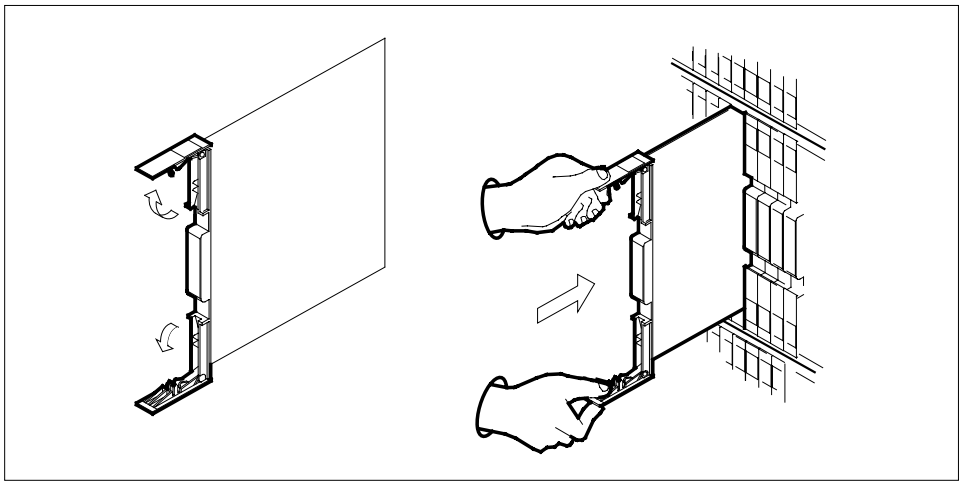
## Recovering a stuck HLIU or HSLR (continued)

**19** Verify the type of PM.

| If the PM is an | Do |
|---|---|
| HLIU | step 20 |
| HSLR | step 21 |

**20** Repeat steps 16, 17, and 18 for the NTEX76 card that belongs to the stuck HLIU.

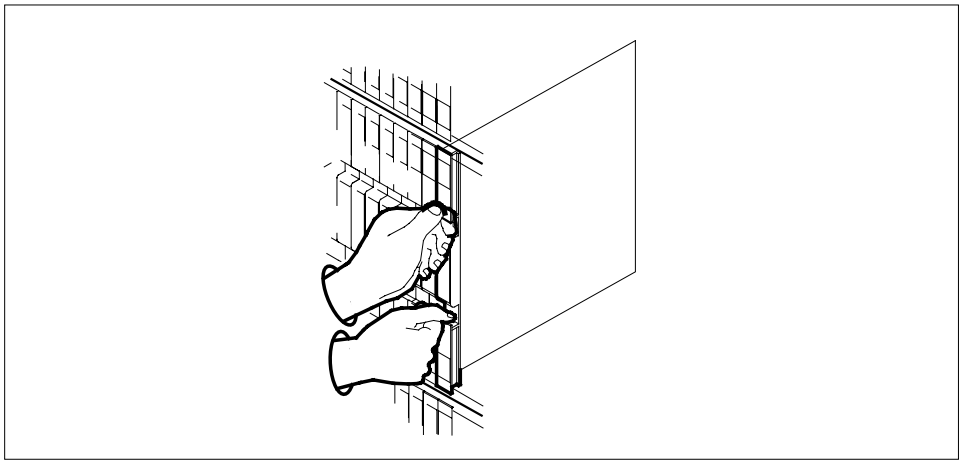
**21** Carefully slide the NTEX22 card back into the LIS.



**22** Seat and lock the card, as follows:

**a** Using your fingers or thumbs, push on the upper and lower edges of the faceplate to ensure that the card is in the shelf.

**b** Close the locking levers.



## Recovering a stuck HLIU or HSLR (end)

**23** Verify the type of PM.

| If the PM is an | Do |
|---|---|
| HLIU | step 24 |
| HSLR | step 25 |

**24** Repeat steps 21 and 22 for the NTEX76 card that belongs to the stuck HLIU.

***At the MAP terminal***

**25** Reload the HLIU or HSLR by typing

**>LOADPM**

and pressing the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 26 |
| failed | step 27 |

**26** Return the HLIU or HSLR to service by typing

**>RTS**

and pressing the Enter key.

| If the RTS command | Do |
|---|---|
| passed | step 28 |
| failed | step 27 |

**27** For further assistance, contact the personnel responsible for the next level of support.

**28** You have completed this procedure.

# Recovering a stuck HLIU under a composite clock failure

## Application

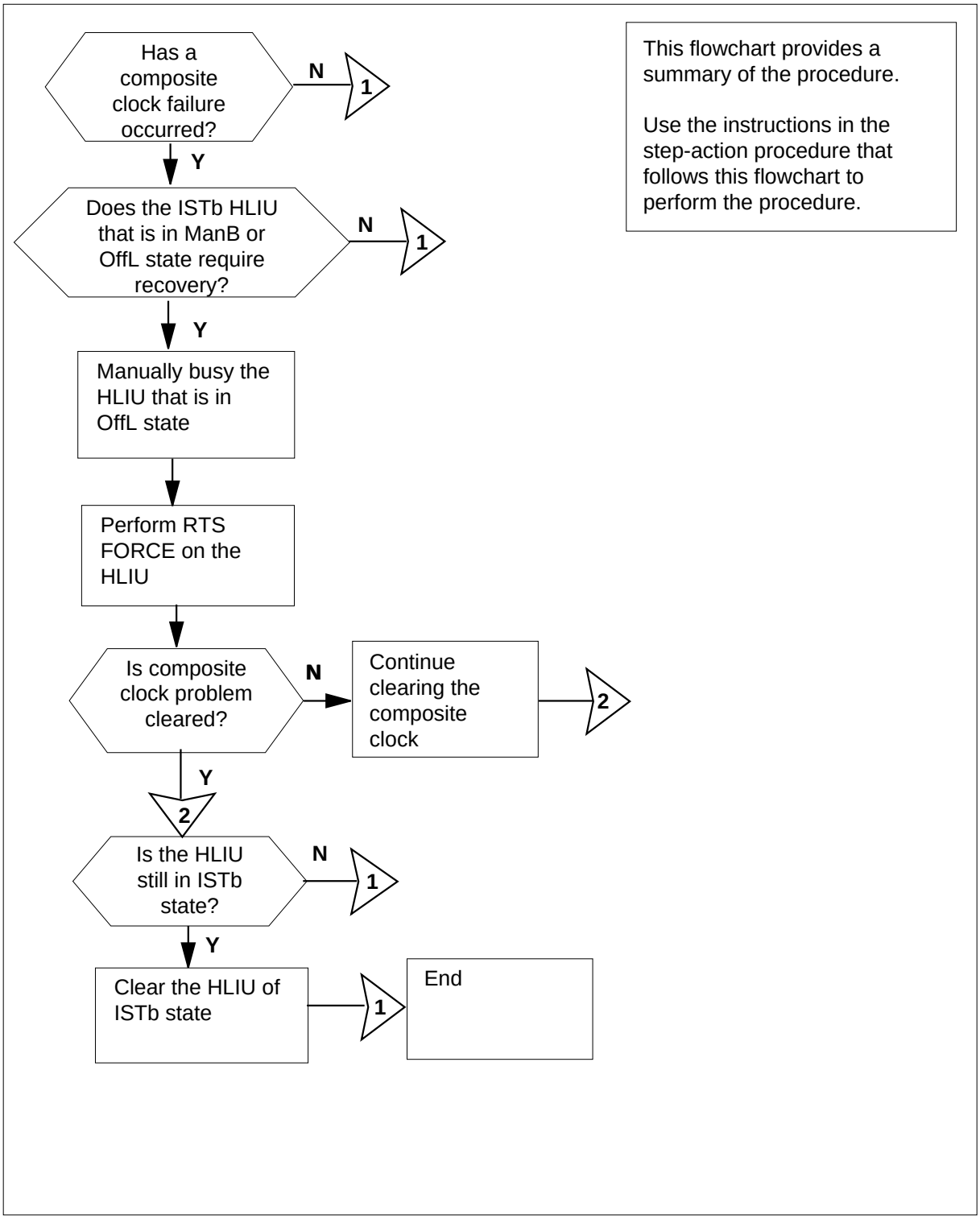
Use this procedure to return a high-speed link interface unit (HLIU) to service when the composite clock is down due to a failure.

## Action

The flowchart that follows provides a summary of this procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery procedure.

# Recovering a stuck HLIU under a composite clock failure (continued)

**Summary of Recovering a stuck HLIU under a composite clock failure**



# Recovering a stuck HLIU under a composite clock failure (continued)

### Recovering a stuck HLIU under a composite clock failure

***At the MAP terminal***

**1** Composite clock problem is associated with problems in the link interface module (LIM). To determine if the LIM has a problem, type

**>MAPCI;MTC**

and press the Enter key.

The following is an example of the MAP display:

```
CM   MS   IOD   Net   PM    CCS    Trks  Ext.   APPL .
       .  pool01  .   1LIMF    .      .     .       .
                       M
                    SysB    ManB   OffL   CBsy  ISTb  INSv
          PM          0       0      0      0     3    24
          HLIU        0       0      0      0     2     2
     HLIU       0 ISTb    Rsvd
```

***Note:*** Value 1LIMF indicates an LIM related problem. Check log PM181 to determine if the problem is related to the composite clock.

**2** Access the LOGUTIL level of the MAP display to check log PM181. At the MAP terminal, type

**>MAPCI;MTC;LOGUTIL**

and press the Enter key.

**3** Log PM181 indicates composite clock problems. To check if log PM181 was generated, type

**>OPEN PM181**

and press the Enter key.

The following is an example of the MAP display:

```
CM         PM181  FEB24    18:55:22  8800   INFO
LIM  2Fbus 1
Non-service affecting faults.
CODE: 00030000020000000000000000000
Fault found against LMS
1. Composite clock failure detected LIS 3SHELFPOS        0).

POSSIBLE CAUSE: FBUS, ST Card, composite
(external)clock cables, composite (external)clock.

POSSIBLE ACTION: Tst the FBUS (insv), BSY/TST/RTS
the FBUS, inspect composite (external) clock cables,then
composite clock generator (TSG), and monitor occurrences.
Site Flr RPos Bay_id Shf  Description  Slot  EqPEC
Host  03  C02 LIM 501 00  FBUS     32 9X79BA BACK
```

## Recovering a stuck HLIU under a composite clock failure (continued)

***Note:*** A composite clock failure causes HLIUs to go into in-service trouble (ISTb) state until the composite clock is recovered.

**4** To access the PM level of the MAP display, type

**>MAPCI;MTC;PM**

and press the Enter key.

**5** To post HLIUs in ISTb state, type

**>POST HLIU ISTb**

and press the Enter key.

**6** To determine the condition of HLIUs in ISTb state, type

**>QUERYPM**

and press the Enter key.

The following is an example of the display for command QUERYPM:

```
querypm
PM type:  HLIU    PM NO.: 0    Status: ISTb
LIM: 1 Shelf: 1  Slot: 8      LIU FTA  4255 1000
Default Load:  HCA78DX
Running Load:  HCA78DX
ISTB conditions:
     Failed  00S Test
     TAP #0 00S/NA


LMS Unit    :  0           1
LMS states  : ISTb        InSv
Auditing    :  Yes         Yes
Msg Channels:  Acc       No
TAP 0       :  I
Reserved HLIU forms  part of CCS7 Linkset :HSL100000 SLC:0
LIU is not allocated
```

***Note:*** Value 00S/NA indicates possible composite clock problem. A failed 00S Test indicates a failed attempt to perform an RTS command on the HLIU.

**7** Determine if the HLIU that is in ISTb state due to the composite clock failure is also in ManB (manual busy) or OffL (offline) state, and if it requires recovery.

| If HLIU | Do |
|---|---|
| is in OffL state and requires recovery, | step 8 |
| is in ManB state, and requires recovery, | step 9 |
| does not require recovery, | step 15 |

## Recovering a stuck HLIU under a composite clock failure (continued)

***Note:*** When the composite clock is down, the HLIU goes into ISTb state. The HLIU in ISTb state returns to in-service state when the composite clock is recovered. Do not attempt to recover the HLIU with the RTS command. Use step 7, 8 and 9 to return a stuck HLIU to service,

**8** Manually busy the HLIU that is in OffL state by typing

```
>BUSY hliu_no
```

*where*

**hliu_no**
is the number of the HLIU

**9** To return an HLIU in ManB state to service, type

```
>RTS FORCE
```

and press the Enter key.

***Note:*** If you have previously attempted an RTS before performing the RTS FORCE command on the HLIU, the HLIU will remain in the ISTb state even after the composite clock is recovered. Refer to Step 11 for information on how to clear an HLIU of ISTb state after the composite clock is recovered.

The following is a description of what happens after you apply the RTS FORCE command to an HLIU:

| If the composite clock | Dothen |
|---|---|
| is the preferred clock for the HLIU, | the HLIU returns to service in an ISTb state. When the composite clock is restored, the system clears the ISTb state from the HLIU and returns it to the InSv (In-service) state. See note in Step 9 for a description of an exception. |
| is not the preferred clock for the HLIU, | the HLIU returns to the ISTb state, and then the InSv state. |

**10** To recover the composite clock, perform the ``Recovering a composite clock'' procedure as described in DMS-100 Family STP Recovery Procedures, 297-8101-545.

**11** For HLIUs that remain in ISTb state after the composite clock is recovered, determine the condition of HLIUs by typing

```
>QUERYFLT
```

and pressing the Enter key.

***Note:*** A failed 00S test indicates that an RTS had been attempted while the composite clock was down. If there is no failed 00S test, follow the "Recovering a stuck HLIU" procedure as described in DMS-100 Family STP Recovery Procedures, 297-8101-545 to clear the HLIU of ISTb state.

## Recovering a stuck HLIU under a composite clock failure (end)

**12** To clear the HLIU of ISTb state after the composite clock is recovered, perform step 13 and step 14 during a scheduled maintenance interval.

**13** To start clearing the HLIU of ISTb state, manually busy the HLIU in ISTb state by typing

**`>BUSY hliu_no`**

and pressing the Enter key.

*where*

**hliu_no**
is the number of the HLIU

**14** To return the ManB HLIU to service, type

**`>RTS hliu_no`**

and press the Enter key.

*where*

**hliu_no**
is the number of the HLIU

**15** You have completed the procedure.

# Recovering a stuck LIU7

## Application

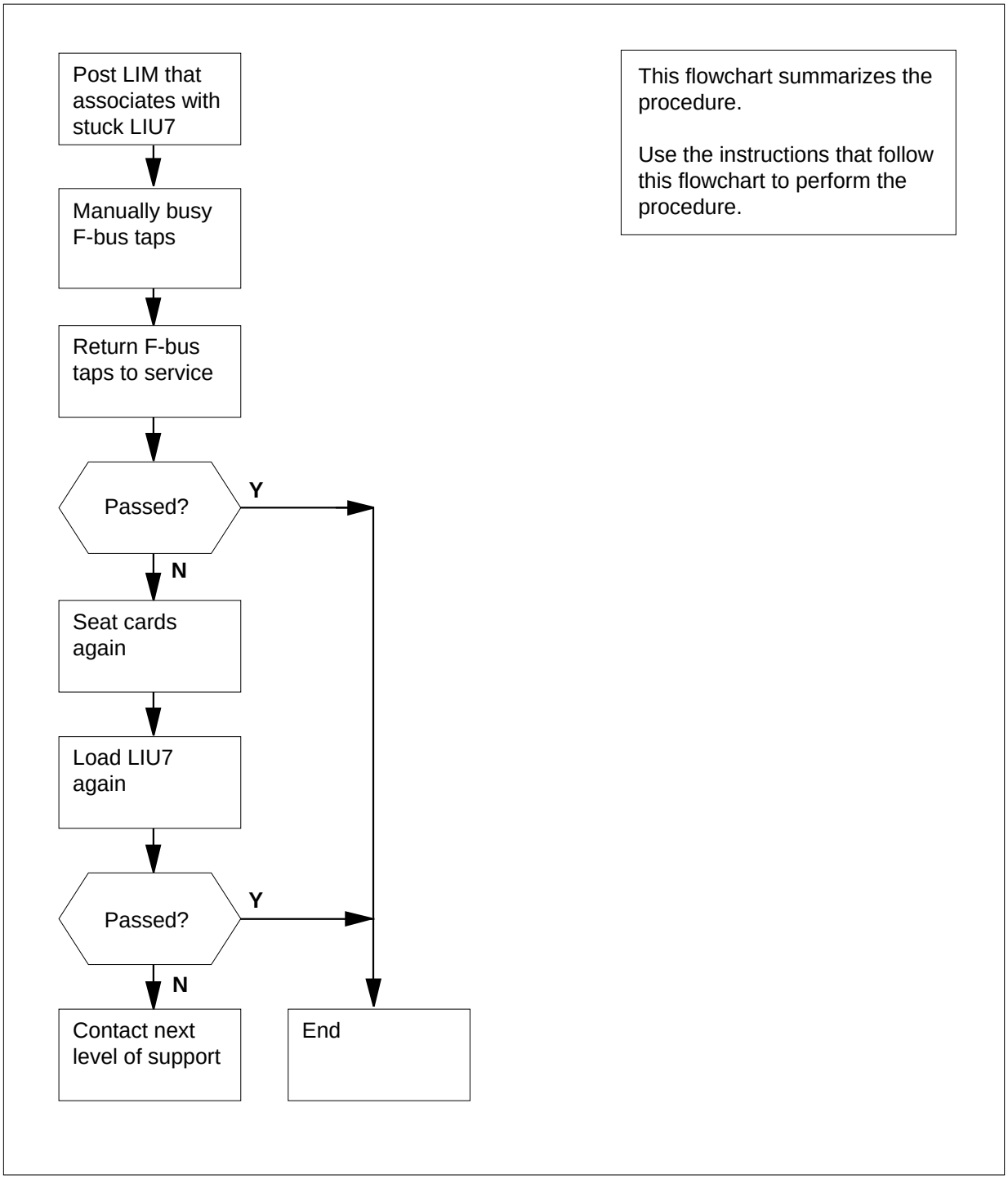
Use this procedure to recover a stuck CCS7 link interface unit (LIU7). An LIU7 is stuck when both F-bus taps of the LIU7 are not accessible (NA). This procedure applies only to three-slot LIU7s.

## Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Recovering a stuck LIU7 (continued)

**Summary of Recovering a stuck LIU7**



## Recovering a stuck LIU7 (continued)

**Recovering a stuck LIU7**

***At the MAP terminal***

**1**

**WARNING**
**Contact the next level of support**
Do not attempt this procedure before you contact the next level of support.

To access the PM level of the MAP display, type

**>MAPCI;MTC;PM**

and press the Enter key.

**2** To post the system-busy LIU7 that is not accessible, type

**>POST LIU7 SYSB**

and press the Enter key.

| If the LIU7 that appears | Do |
|---|---|
| is SysB (NA) | step 9 |
| is SysB | step 3 |

**3** To display the next system busy LIU7, type

**>NEXT**

and press the Enter key.

**4** Repeat step 3 until you find the system-busy LIU7 that is not accessible.

**5** Determine the location of the LIU7.

| If the LIU7 | Do |
|---|---|
| is in an SCC shelf in a SuperNode SE | step 6 |
| is in an LPP | step 9 |

**6** To access the MS CARD level of the MAP display, type

**>MAPCI;MTC;MS:CARD 12**

and press the Enter key.

***Note 1:*** In the example, card 12 is the NT9X73 T-bus to F-bus interface card.

***Note 2:*** In the example, the state of the tap appears under the F-bus Tap: header.

*Example of a MAP response:*

## Recovering a stuck LIU7 (continued)

```
                          1 1 1 1
Card  1 2 3 4 5 6 7 8 9 0 1 2 3
Chain           |
MS 0  . . . . . . – . . . . . .
MS 1  . . . . . . – . . . . . .

Card 12          FBus Tap: 0      11 12   16   20
MS 0  .            .       .      .  S... .... ....
MS 1  .            .       .      .  .... .... ....
```

**7** To manually busy the tap, type

**>BSY ms_num TAP tap_num**

and press the Enter key.

*where*

**ms_num**
is the number of the message switch (0 or 1)

**tap_num**
is the number of the tap (0 to 23)

**8** To return the tap to service, type

**>RTS ms_num TAP tap_num**

and press the Enter key.

*where*

**ms_num**
is the number of the message switch (0 or 1)

**tap_num**
is the number of the tap (0 to 23)

| If the RTS command | Do |
|---|---|
| passed | step 30 |
| failed | step 15 |

**9** To determine the LIM that associates with the LIU7, type

**>QUERYPM**

and press the Enter key.

**10** To post the LIM that associates with the stuck LIU7, type

**>POST LIM lim_no**

and press the Enter key.

*where*

**lim_no**
is the number of the LIM (0 or 1)

## Recovering a stuck LIU7 (continued)

**11** To access the F-bus level of the MAP display, type

**>FBUS**

and press the Enter key.

*Example of a MAP response:*

```
                              11111111112222
                    0123456789012345678901 23
FBus 0 ISTb (NA) ...M....SSSS.............
FBus 1 InSv      ..........S.............
```

***Note:*** In the example, S indicates that F-bus taps are system busy.

**12** To determine the F-bus taps that associate with the stuck LIU7, type

**>TRNSL fbus_no**

and press the Enter key.

*where*

**fbus_no**
is the number of the F-bus (0 or 1)

*Example of a MAP response:*

```
LIM lim_no FBus fbus_no Tap tap_no is unequipped.
LIM lim_no FBus fbus_no Tap tap_no is on LIU7 liu_no.
LIM lim_no FBus fbus_no Tap tap_no is on LIU7 liu_no.
```

**13** To manually busy the F-bus taps that associate with the stuck LIU7, type

**>BSY FBUS fbus_no tap_no**

and press the Enter key.

*where*

**fbus_no**
is the number of the F-bus (0 or 1)

**tap_no**
is the number of the F-bus tap (0 to 23)

**14** To return the F-bus taps that associate with the stuck LIU7 to service, type

**>RTS FBUS fbus_no tap_no**

and press the Enter key.

*where*

**fbus_no**
is the number of the F-bus (0 or 1)

**tap_no**
is the number of the F-bus tap (0 to 23)

*Example of a MAP response:*

## Recovering a stuck LIU7 (continued)

```
LIM lim_no FBus fbus_no Tap tap_no Return to Service
initiated.
```

| If the RTS command | Do |
|---|---|
| passed | step 30 |
| failed | step 15 |

**15** To access the PM level of the MAP display, type

**>PM**

and press the Enter key.

**16** To post the stuck LIU7, type

**>POST LIU7 liu_no**

and press the Enter key.

*where*

**liu_no**
is the number of the stuck LIU7 (0 to 511)

**17** To manually busy the LIU7, type

**>BSY**

and press the Enter key.

| If the response | Do |
|---|---|
| is Busying LIU7 liu_no will take a CCS7 resource out of servicePlease confirm ("YES","Y","NO", or "N"): | step 18 |
| is other than listed here, including additional messages with above response | step 29 |

**18** To confirm the busy command, type

**>YES**

and press the Enter key.

| If the BSY command | Do |
|---|---|
| passed | step 19 |
| failed | step 29 |

**19** Prepare to release and replace the cards that belong to the stuck LIU7.

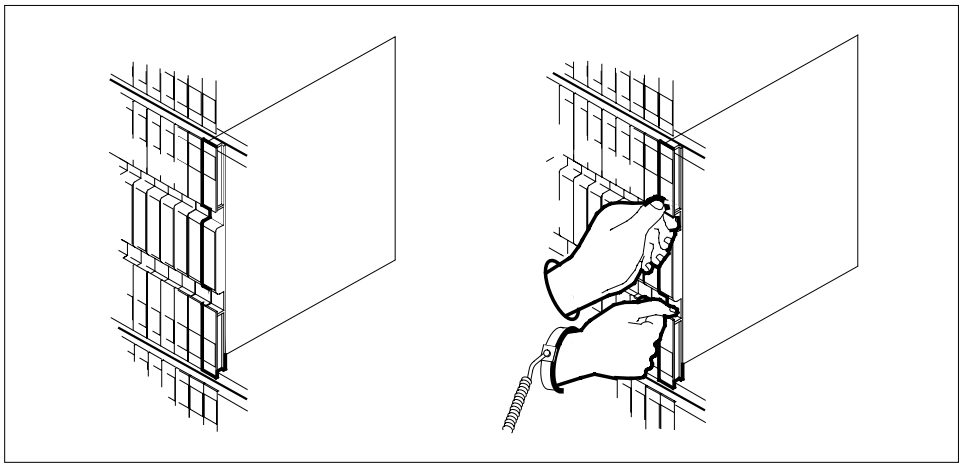
## Recovering a stuck LIU7 (continued)

***At the LPP***

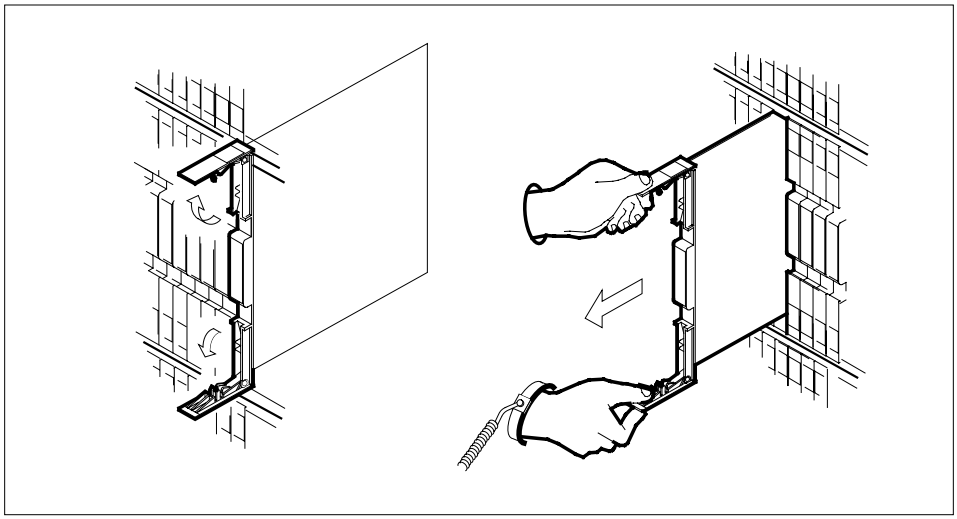
**20**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Locate the NT9X75 card that belongs to the stuck LIU7.



**21** Carefully pull the card toward you 25 mm (1 in.).

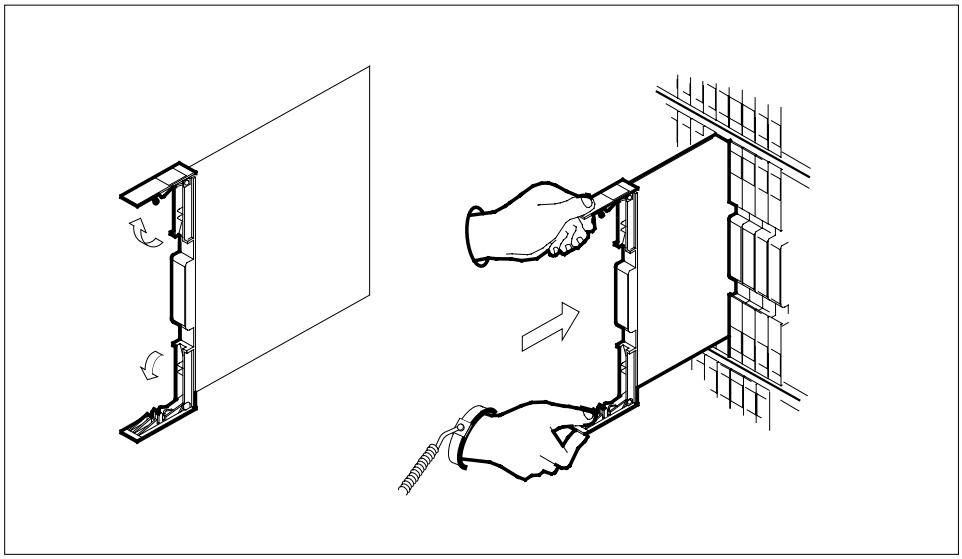


**22** Leave the NT9X75 in the slot on the link interface shelf (LIS).

## Recovering a stuck LIU7 (continued)

**23** Repeat steps 20, 21, and 22 for the NT9X76 and the NT9X13 cards that belong to the stuck LIU7.

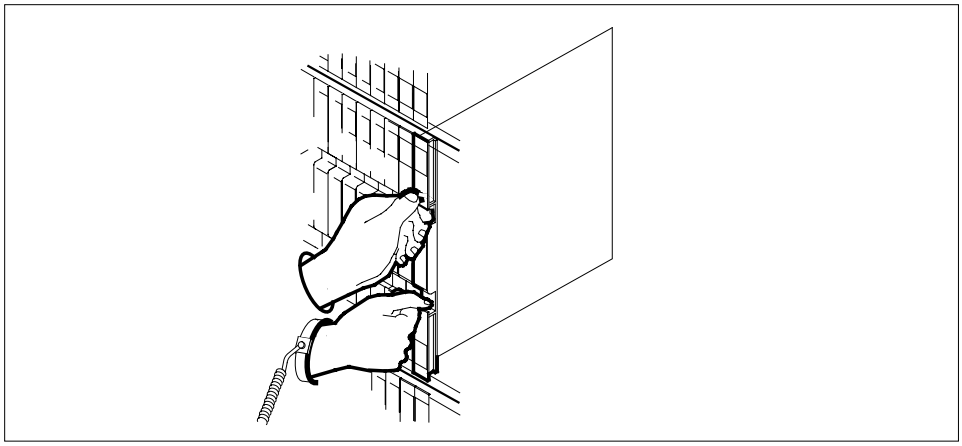
**24** Carefully slide the NT9X13 card back into the LIS.



**25** Replace and lock the card, as follows:

**a** Use your fingers or thumbs to push on the upper and lower edges of the faceplate. Push on the edges of the faceplate to make sure that the card sits completely in the shelf.

**b** Close the locking levers.



**26** Repeat steps 24 and 25 for the NT9X76 and NT9X75 card that belongs to the stuck LIU7.

# Recovering a stuck LIU7 (end)

***At the MAP terminal***

**27** To load the LIU7 again, type

**>LOADPM**

and press the Enter key.

| If the LOADPM command | Do |
|---|---|
| passed | step 28 |
| failed | step 29 |

**28** To return the LIU7 to service, type

**>RTS**

and press the Enter key.

| If the RTS command | Do |
|---|---|
| passed | step 30 |
| failed | step 29 |

**29** For additional help, contact the next level of support.

**30** The procedure is complete.

# Recovering volumes marked INERROR

## Application

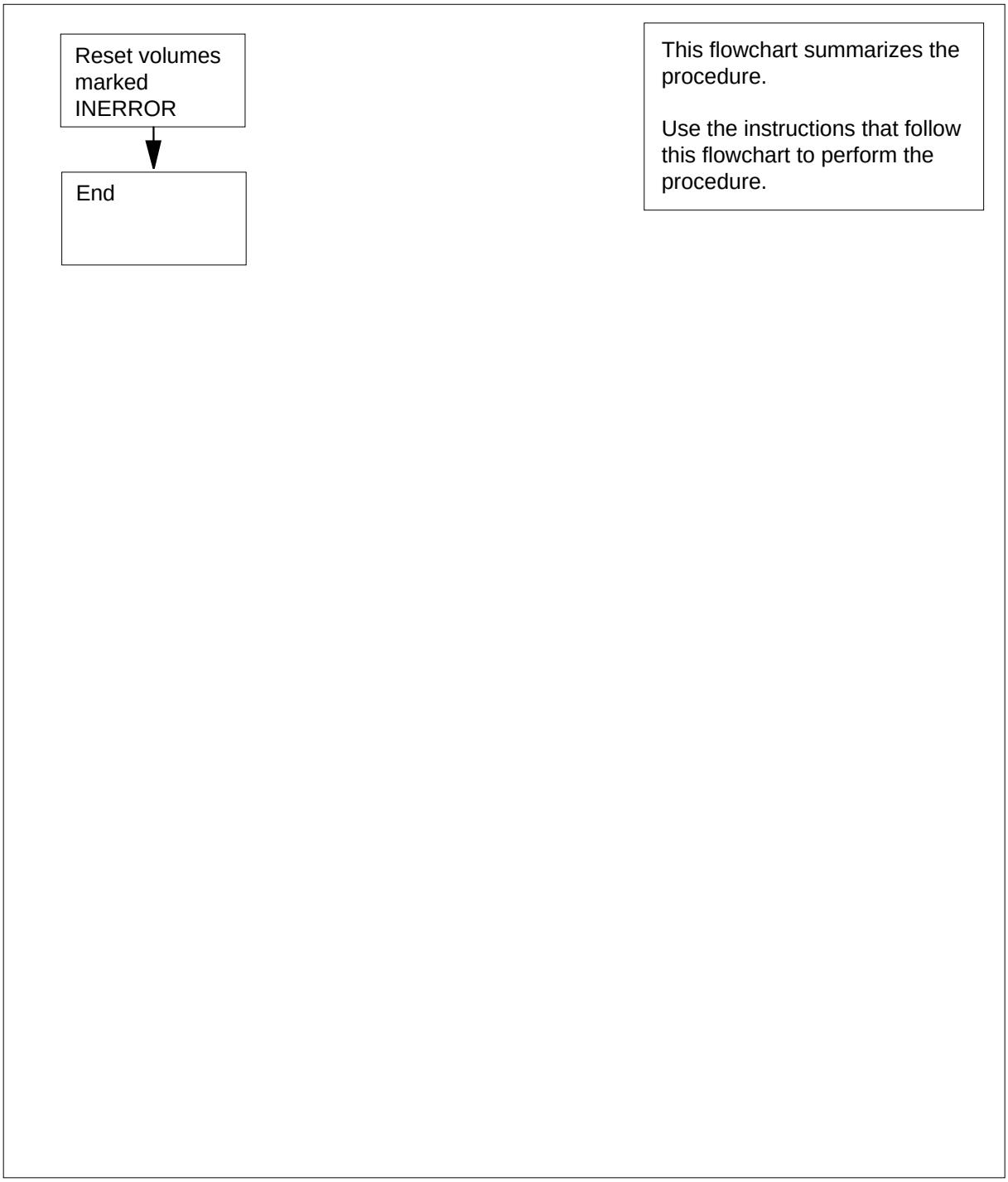
Use this procedure to recover volumes marked INERROR. A restart recovery of the DIRP utility requires a verification of all volumes and files. This verification determines if the volume recovery was successful.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Recovering volumes marked INERROR (continued)

**Summary of Recovering volumes marked INERROR**



**Recovering volumes marked INERROR**

**CAUTION**
**Possible loss or damage of AMA data**
Use this procedure and follow it exactly. Not doing so will lose or corrupt automatic message accounting (AMA) data. The operating company uses AMA data to produce billings. Loss or damage of AMA data results in revenue loss for the operating company.

***At the MAP terminal***

**1** To access the DIRP level of the MAP, type

```
>MAPCI;MTC;IOD;DIRP
```

and press the Enter key.

**2** To access the DIRP logs, type

```
>LOGUTIL;OPEN  DIRP
```

and press the Enter key.

**3** To enable the printer, type

```
>RECORD  START  ONTO  device
```

and press the Enter key.

*where*

**device**
is the printer type

**4** To query the volumes that are now mounted in the subsystem, type

```
>QUERY  ssys  VOLUMES
```

and press the Enter key.

*Example of a MAP:*

**ssys**
is the affected subsystem

## Recovering volumes marked INERROR (continued)

```
SSNAME SSNO SEQNO ROTATES POOLNO PARLPOOL EMERGENCY
AMA       0    1       2      0        6      No

REGULAR
VOL# VOLUMNAME  STATE     IOC  CARD  VOL  FSEG  ROOM  VLID  FILES
22     T0  INERROR      0     0    0   N/A     0   2400
23     T1  INERROR      2     1    0   N/A     0   2400

PARALLEL VOLUMES(S)
PARALLEL          STATE  IOC  CARD  VOL  FSEG  ROOM  VLID  CURR
B910212061307AMA  READY    0     0    0   N/A     1  2400  YES
```

**5** Determine if any INERROR volumes are present.

| If | Do |
|---|---|
| If INERROR volumes | Do |
| are present | step 6 |
| are not present | step 12 |

**6** Note the names of the INERROR volumes.

**7** To reset the INERROR volumes, type

**>RSETVOL vol_name**

and press the Enter key.

*where*

**vol_name**
is the volume name

*Example of a MAP response:*

```
FILE SYSTEM ERRORS HAVE OCCURRED ON THIS VOLUME WHICH MAY AFFECT ITS
ABILITY TO RECORD DATA RELIABILITY OR MAY HAVE CORRUPTED EXISTING DATA ON
THE VOLUME.  THE CAUSE OF THESE ERRORS SHOULD BE INVESTIGATED AND ALL
PROBLEMS SHOULD BE RESOLVED BEFORE RESETTING THIS VOLUME.

Please confirm (”YES” or ”NO”)
```

**8** To confirm the reset command, type

**>YES**

and press the Enter key.

*Example of a MAP response:*

```
REGULAR AMA VOLUME WILL BE MARKED AS ”READY”
vol_name: VOLUME nn IN REGULAR POOL n, pool_name

DONE – AUDITING AFFECTED VOLUME/SUBSYSTEM(S).
```

| If | Do |
|---|---|
| If more INERROR volumes | Do |
| are present | step 7 |
| are not present | step 9 |

**9** To query the subsystem again and verify the status of the reset volumes, type

**>QUERY ssys VOLUMES**

and press the Enter key.

*where*

**ssys**
is the affected subsystem

| If | Do |
|---|---|
| If the INERROR volumes | Do |
| have the label READY | step 12 |
| do not have the label READY | step 11 |

**10** Determine if any other volumes have the label INERROR.

| If | Do |
|---|---|
| If any other volumes | Do |
| have the label INERROR | step 7 |
| do not have the label INERROR | step 12 |

**11** For additional help, contact the next level of support.

**12** The procedure is complete.

# 5 Emergency power conservation recovery procedures

## Introduction to emergency power conservation recovery procedures

This chapter contains procedures for performing emergency power conservation recovery tasks for the DMS-100 switch. For each recovery task, you will find a procedure containing

- explanatory and context-setting information
- information
- step-action instructions

### Explanatory and context-setting information

The first page of each procedure contains the following headings:

- Application (when to use the procedure)
- Action (how to use the flowchart and step-action instructions)

### Summary flowchart

The flowchart is only a summary of the main actions, decision points, and possible paths you may take. Do not use the summary flowchart to perform the procedure. Instead, use it to preview what you will be doing and to prepare for it. For example, if you see that these instructions involve another office, you will know to advise that office before you begin the step-action instructions.

### Step-action instructions

The step-action instructions tell you how to perform the recovery task. Normally you will perform the steps in order, but you may be directed to return to a previous step and repeat a sequence. The successful completion of a step may depend on previous steps; therefore, always perform the steps in the order specified.

The step-action instructions provide the command syntax and system information you use or see while performing the procedure. For help on DMS

commands, see *DMS-100 Family Commands Reference Manual*, 297-10001-822

# Emergency power conservation Restoration

## Application

Perform all or sections of the procedure *Emergency power conservation* to conserve emergency backup power. After you perform all or sections of the procedure, use this procedure to return a DMS SuperNode switch to normal operation.

This procedure consists of a top level procedure and subprocedures. The top level procedure in this document is *Emergency power conservation—Restoration*. This procedure specifies the equipment that you will restore and the order to restore this equipment. The top level procedure refers to subprocedures. The table of contents lists the subprocedures. The subprocedures provide detailed instructions to restore separate elements of the switch.

## Usage notes

This procedure specifies equipment recovery in descending order. The basis of this procedure is the effect of equipment recovery on system reliability. The procedure begins with required equipment like the inactive computing module CM plane. The procedure ends with less required equipment like maintenance trunk modules. You can return switching subsystems to service in an alternate order. This order must be based on the configuration of your office and the priorities of your operating company.

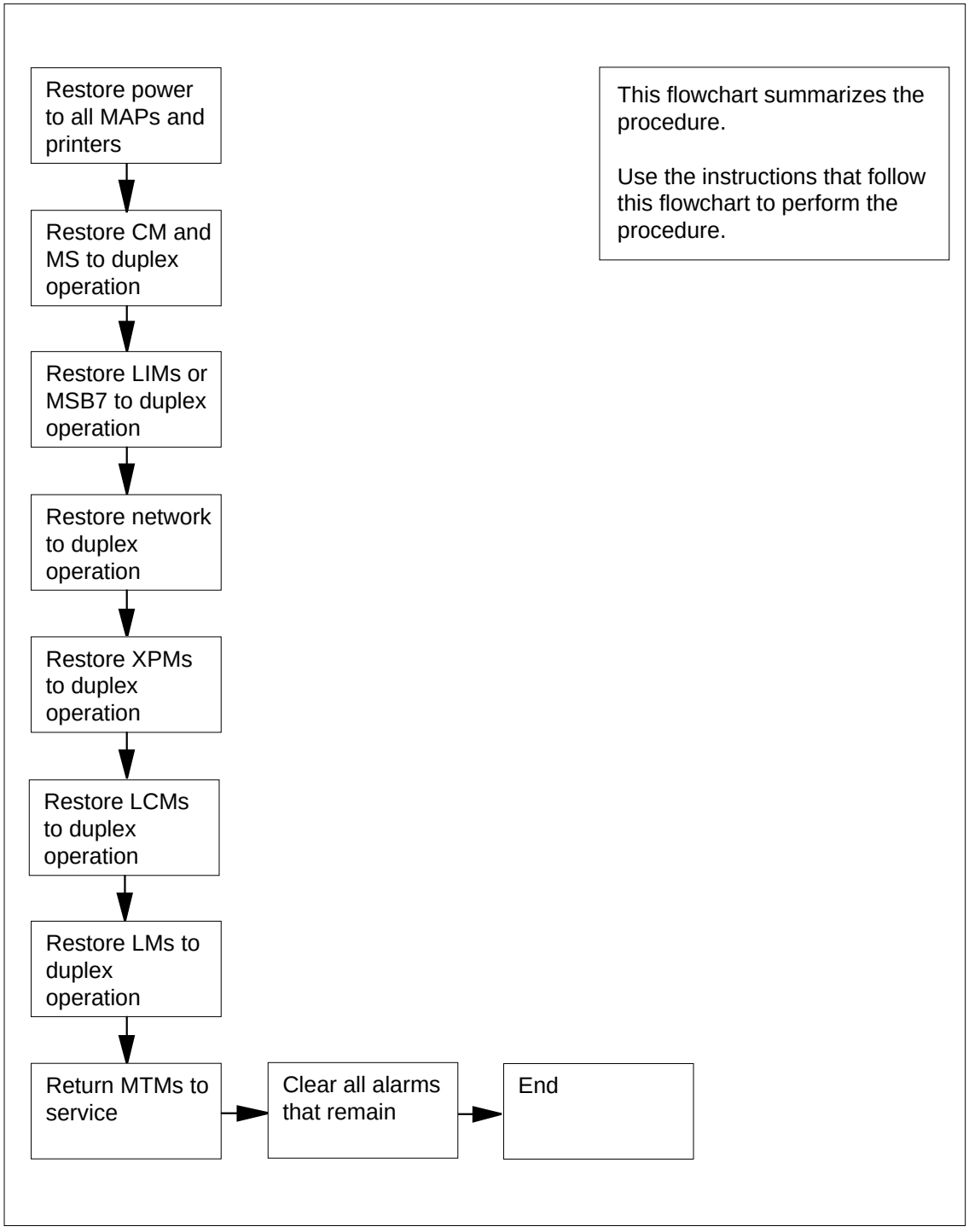
This procedure assumes that you followed the procedure *Emergency power conservation—Shutdown* in this document to remove equipment from service. All equipment must be in-service operation before you perform the procedure for emergency power conservation.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Emergency power conservation
# Restoration (continued)

**Summary of Emergency power conservation - Restoration**



# Emergency power conservation Restoration (continued)

**Emergency power conservation—Restoration**

**WARNING**
**Potential extended equipment outage**
To expedite recovery of equipment, Nortel recommends that you perform this procedure with the help of Emergency Technical Assistance Services (ETAS).

**WARNING**
**Potential loss of service or extended outage**
Use this procedure to restore normal operation after you perform emergency power conservation measures. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

***At the MAP terminal***

**1** Read the section Usage notes at the beginning of this procedure.

**2** Restore power to the inverters that supply printers and spare MAPs.

**3** To recover one plane of the computing module (CM), perform the procedure *Restoring the CM to duplex operation* in this document. To conserve emergency backup power, perform the procedure if you power down one plane of the computing module.

**4** To recover one side of the remote oscillator (Bliley) shelf, perform the procedure *Restoring the remote oscillator shelf to duplex operation* in this document. To conserve emergency backup power, perform the procedure if you power down one side of the Bliley shelf.

**5** To recover one message switch (MS) shelf, perform the procedure *Restoring the MS to duplex operation* in this document. To conserve emergency backup power, perform the procedure if you power down one MS shelf.

**6** To recover one unit of a CCS7 message switch and buffer MSB7, perform the procedure *Restoring the MSB7 to duplex operation* in this document. To conserve emergency backup power, perform the procedure if you power down one unit of a CCS7 MS and buffer MSB7.

**7** To recover one link interface module (LIM) on one or more link peripheral processors (LPP), perform the procedure *Restoring the LPP LIM to duplex operation* in this document. To recover one link interface module (LIM) on one or more enhanced link peripheral processors (ELPP), perform the procedure *Restoring the ELPP LIM to duplex operation* in this document. Perform these procedures only if you powered down one link interface module (LIM) unit on a minimum of one LPP or ELPP to conserve emergency backup power.

**8** Restore power to the affected frames at the power distribution center (PDC) if you power down one or more network frames.

## Emergency power conservation
## Restoration (end)

**9** To recover a minimum of one junctored network (JNET) shelf, perform the procedure *Restoring the junctored network to duplex operation* in this document. If you power down a minimum of one JNET shelf to conserve emergency backup power, perform the procedure.

**10** To recover a minimum of one enhanced network ENET shelf, perform the procedure *Restoring the enhanced network to duplex operation* in this document. If you power down a minimum of one ENET shelf to conserve emergency backup power, perform the procedure .

**11** To recover a minimum of one of the following, perform the procedure *Restoring LGCs, LTCs and DTCs to duplex operation* in this document:

- the line group controller (LGC) unit
- the line trunk controllers (LTC) unit
- the digital trunk controller (DTC) unit

If you power down the LGCs, LTCs or DTCs to conserve emergency power, perform this procedure.

**12** To recover the line concentrating module (LCM) units, perform the procedure *Restoring LCMs to duplex operation* in this document. If you power down a minimum of one LCMs to conserve emergency power, perform this procedure.

**13** To recover the line module (LM) controllers, perform the procedure *Restoring line modules to duplex operation* in this document. If you power down the LM controllers to conserve emergency power, perform this procedure.

**14** To recover a maintenance trunk module (MTM), perform the procedure *Returning maintenance trunk modules to service* in this document. If you power down one or more MTMs to conserve emergency power, perform the procedure.

**15** To clear all the alarms that remain on the MAP display, use the correct alarm clearing NTPs.

**16** The procedure is complete.

# Emergency power conservation
# Restoring the CM to duplex operation in SuperNode

## Application

Use this procedure to restore the computing module (CM) to normal duplex operation. Perform this procedure after you power down one central processing unit (CPU) to conserve emergency backup power.

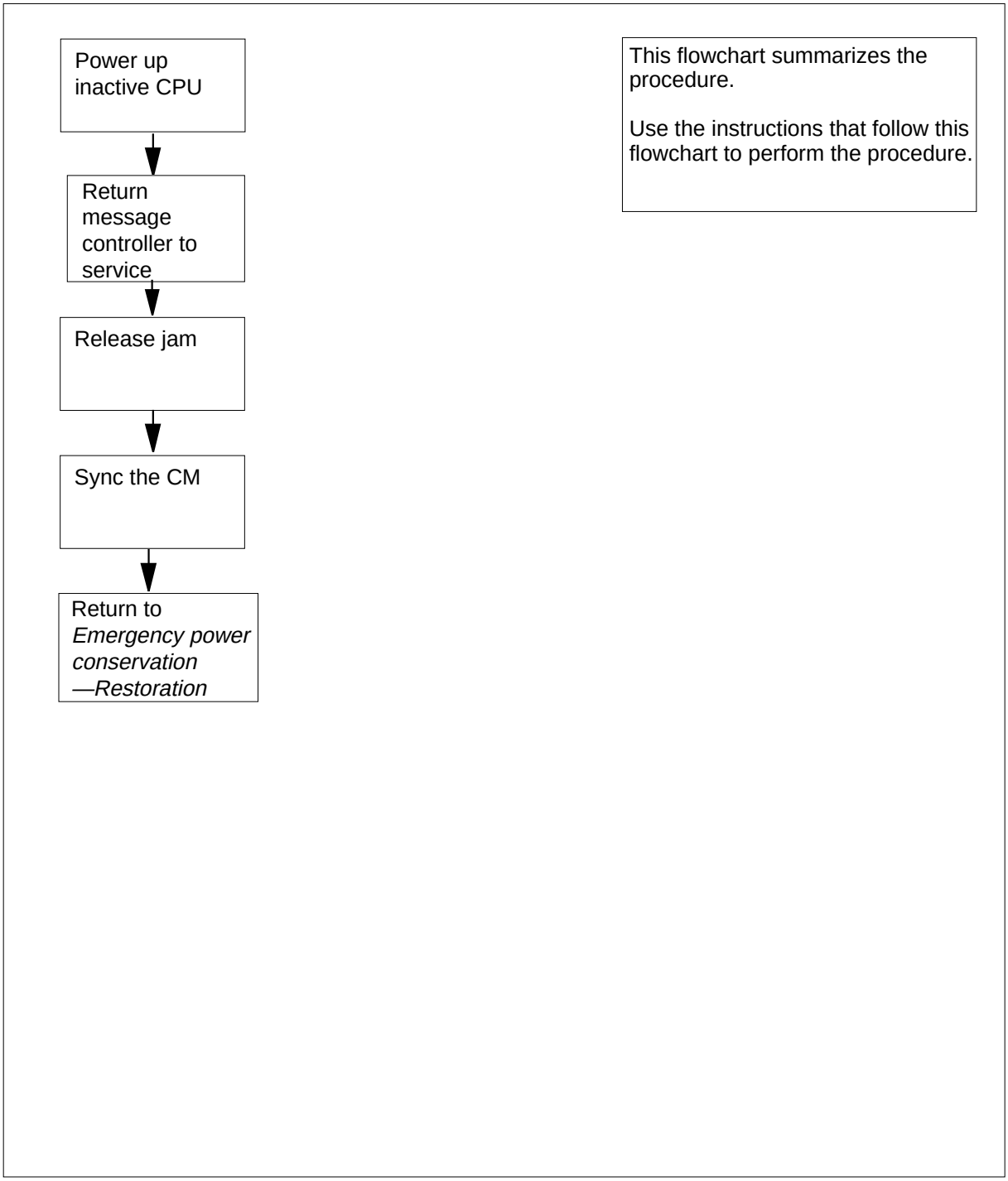
You must follow the procedure *Emergency power conservation—Shutdown* in this document to remove equipment from service. Equipment is in normal in-service operation before you need to perform the procedure for emergency power conservation.

## Action

This procedure contains a flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

# Emergency power conservation
# Restoring the CM to duplex operation in SuperNode (continued)

**Summary of Restoring the CM to duplex operation in SuperNode**



# Emergency power conservation
# Restoring the CM to duplex operation in SuperNode (continued)

**Restoring the CM to duplex operation in SuperNode**

**WARNING**
**Potential extended equipment outage**
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) to expedite recovery of the equipment.

**CAUTION**
**Potential loss of service or extended outage**
This procedure restores normal operation after you perform the emergency power conservation measures. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

***At your CM shelf***

**1** Power up the inactive CPU as follows:

Lift and release the power switch on the faceplate of the NT9X31 power converter. The NT9X31 power converter is on the inactive side of the CM shelf.

Lift and release the power switch on the faceplate of the NT9X30 power converter. The NT9X30 power converter is on the inactive side of the CM shelf.

***Note 1:*** The power converter appears in slots 1F to 3F for CPU 0. The power converter appears in slots 33F to 35F for CPU 1.

***Note 2:*** The power converter appears in slots 4F to 6F for CPU 0. The power converter appears in slots 36F through 38F for CPU 1.

***At the CM reset terminal for the inactive CPU***

**2** After the inactive CPU powers up, wait 3 min for the switch to complete memory card tests.

*Example of an RTIF response:*

## Emergency power conservation
## Restoring the CM to duplex operation in SuperNode (continued)

```
Shelf      Slot
00         12          NT9X14DB...
00         13          NT9X14DB...
Waiting for activity...
```

***Note:*** The Waiting for activity message appears when the CPU powers up completely.

***At the MAP terminal***

**3** To access the CM level of the MAP display, type

**>MAPCI;MTC;CM**

and press the Enter key.

*Example of a MAP display:*

```
CM  Sync  Act  CPU0  CPU1 Jam Memory CMMnt  MC  PMC
 0   no  cpu 1   .     .  yes   .     .    mbsy  .
```

**4** To access the message controller (MC) level of the MAP display, type

**>MC**

and press the Enter key.

**5** To return the manual busy MC to service, type

**>RTS  mc_number**

and press the Enter key.

*where*

**mc_number**
is the number of the manual busy MC (0 or 1)

*Example of a MAP response:*

```
Maintenance action submitted.
MC RTS ok.
```

***At the CM reset terminal for the inactive CPU***

**6** To release the jam on the inactive CPU, type

**>\RELEASE  JAM**

and press the Enter key.

*RTIF response:*

```
JAM RELEASE DONE
```

# Emergency power conservation
# Restoring the CM to duplex operation in SuperNode (end)

***At the MAP terminal***

**7** To synchronize the CM, type

**>SYNC**

and press the Enter key.

*Example of a MAP response:*

```
Maintenance action submitted.
Synchronization successful.
```

**8** Return to the procedure *Emergency power conservation—Restoration* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation
# Restoring the CM duplex operation in SuperNode SE

## Application

Use this procedure to return the computing module (CM) to normal duplex operation. Perform this procedure after you power down one central processing unit (CPU) to conserve emergency backup power.

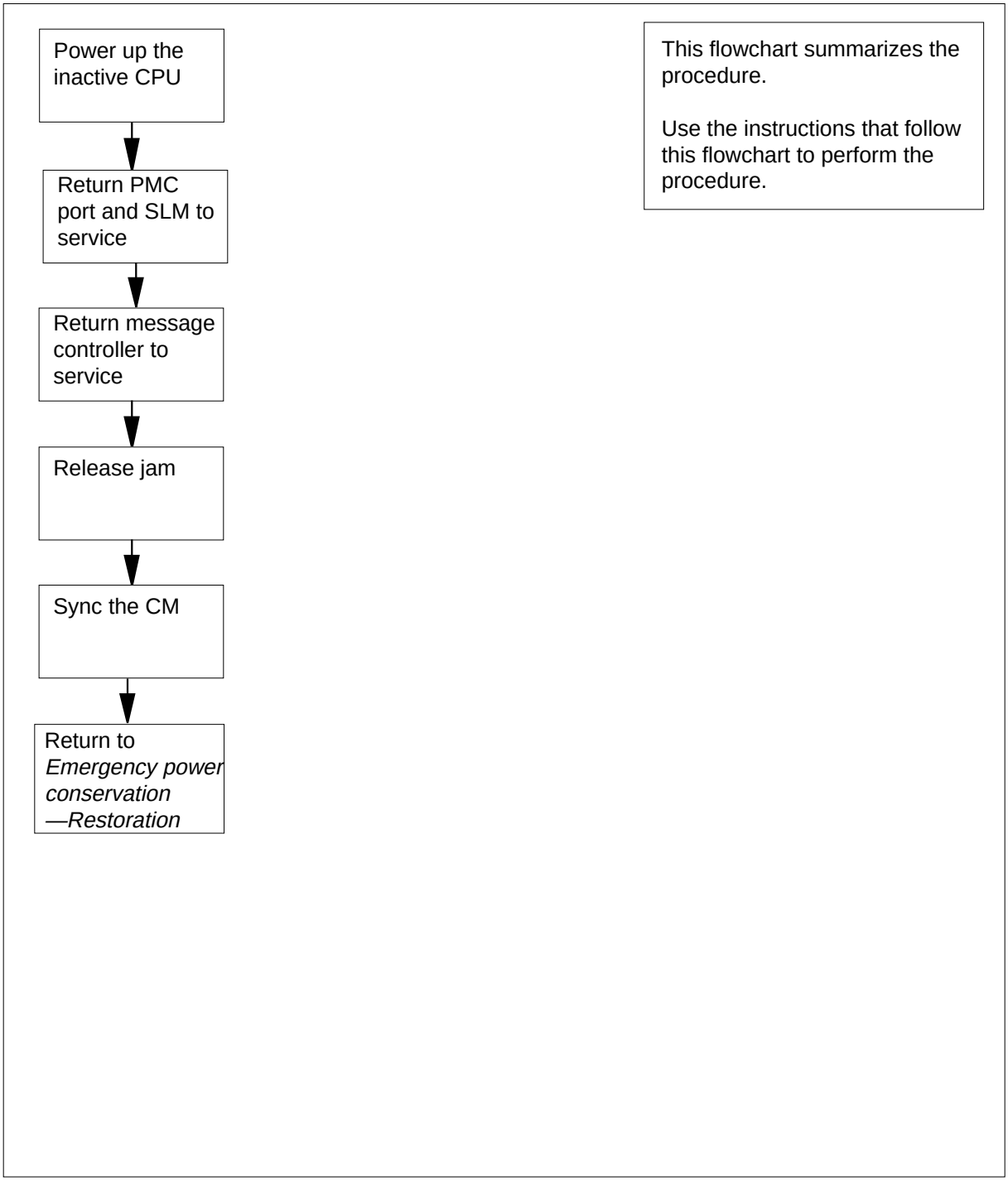
This procedure assumes the *Emergency power conservation—Shutdown* procedure totake down equipment has been followed. Instructions to restore normal operations assumes all equipment is in normal in-service operation before the need for the emergency power conservation procedure arises.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Emergency power conservation
# Restoring the CM duplex operation in SuperNode SE (continued)

**Summary of Restoring the CM to duplex operation in SuperNode SE**



# Emergency power conservation
# Restoring the CM duplex operation in SuperNode SE (continued)

**Restoring the CM to duplex operation in SuperNode SE**

**CAUTION**
**Potential extended equipment outage**
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) to expedite recovery of equipment.

**CAUTION**
**Potential loss of service or extended outage**
This procedure restores normal operation after you perform the emergency power conservation measures. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

***At the CMISLM shelf***

**1** To power up the inactive CPU plane, lift and release the power switch on the faceplate of the NTDX15 power converter.

***Note:*** Slots 4F through 6F contain the power converter for plane 0. Slots 33F through 35F contain the power converter for plane 1.

***At the CM reset terminal for the inactive CPU***

**2** Allow the system to complete memory tests. Continue this procedure when the message Waiting for activity appears.

*Example of an RTIF response:*

## Emergency power conservation
## Restoring the CM duplex operation in SuperNode SE (continued)

```
Testing Memory:
Shelf    Slot         PEC       Modu
le Status
 00       12       NT9X14EA     ...
 00       13       NT9X14EA     ...
Waiting for activity...
```

***At the MAP terminal***

**3** To access the peripheral message controller (PMC) level of the MAP display, type

**>CM;PMC**

and press the Enter key.

*Example of a MAP display:*

```
          PMC 0
           .

PORT0:   mbsy
PORT1:    .
```

**4** To return the manual busy PMC port to service, type

**>RTS pmc_number PORT port_number**

and press the Enter key.

*where*

**pmc_number**
is the PMC number (0 or 1)

**port_number**
is the number of the manual busy port (0 or 1)

**5** To access the MAP display for the manual busy system load module (SLM), type

**>IOD;SLM slm_number**

and press the Enter key.

*where*

**slm_number**
is the number of the manual busy SLM (0 or 1)

**6** To return the manual busy SLM to service, type

**>RTS**

and press the Enter key.

## Emergency power conservation
## Restoring the CM duplex operation in SuperNode SE (continued)

**7** Determine if the autoload route changed when you powered down the inactive CM plane down to conserve emergency backup power.

| If the autoload route | Do |
|---|---|
| changed | step 8 |
| did not change | step 10 |

**8** To access the CMMNT level of the MAP display, type

**>CM;CMMNT**

and press the Enter key.

**9** To reset the primary autoload route to the correct storage device, type

**>AUTOLD SLM slm_number device_type**

and press the Enter key.

*where*

**slm_number**
is the number of the SLM (0 or 1) that was the primary SLM

**device_type**
is the type of SLM device (DISK or TAPE)

**10** To access the MC level of the MAP display, type

**>CM;MC**

and press the Enter key.

**11** To return the manual busy message controller (MC) to service, type

**>RTS mc_ number**

and press the Enter key.

*where*

**mc_number**
is the number of the manual busy MC (0 or 1)

***At the CM reset terminal for the inactive CPU***

**12** To release the jam on the inactive CPU, type

**>\RELEASE JAM**

and press the Enter key.

*RTIF response:*

```
JAM RELEASE DONE
```

# Emergency power conservation
# Restoring the CM duplex operation in SuperNode SE (end)

***At the MAP terminal***

**13** To synchronize the CPUs, type

**>SYNC**

and press the Enter key.

*Example of a MAP response:*
Maintenance action submitted.Synchronization successful.

**14** Return to the procedure *Emergency power conservation—Restoration* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation Restoring the ELPP LIM to duplex operation

## Application

Use this procedure to restore to duplex operation the link interface module (LIM) in each enhanced link peripheral processor (ELPP). Perform this procedure after you power down one unit of the LIM to conserve emergency power.

Use this procedure to restore the ELPP LIM to duplex operation only if the following conditions are met:

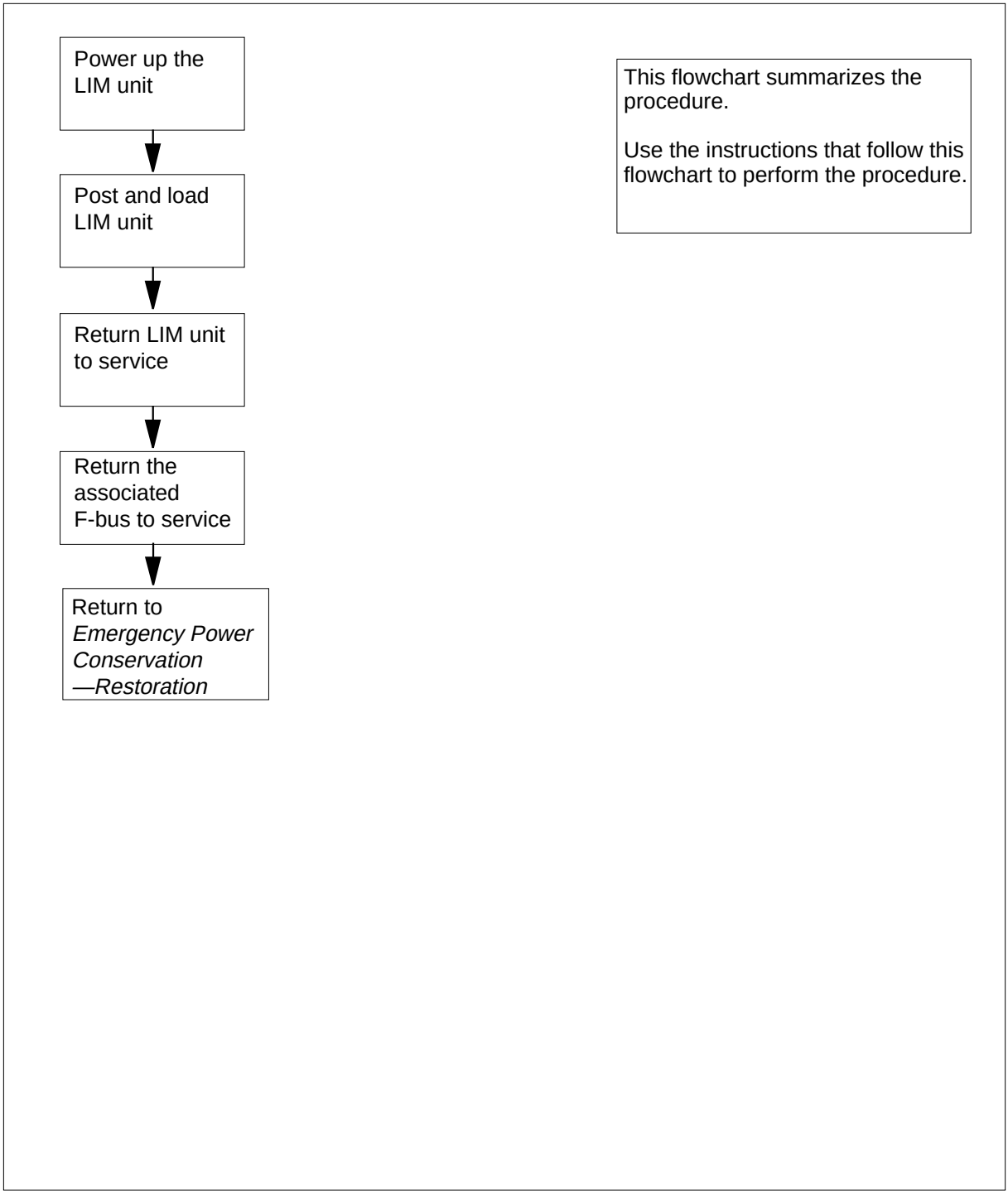
- The equipment was in normal in-service operation before being shutdown.
- Procedure *Emergency power conservation—Shutdown* in this document was used to remove equipment from service.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to clear the alarm.

# Emergency power conservation
# Restoring the ELPP LIM to duplex operation (continued)

**Restoring the ELPP LIM to duplex operation**



# Emergency power conservation
# Restoring the ELPP LIM to duplex operation (continued)

**Restoring the ELPP LIM to duplex operation**

***At the ELPP***

**1**

**WARNING**
**Potential extended equipment outage**
Nortel recommends that you contact the Emergency Technical Assistance Service (ETAS) to expedite the recovery of equipment.

**WARNING**
**Potential loss of service or extended outage**
Use this procedure to restore normal operation after you perform the procedure for emergency power conservation. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

Power up the LIM unit you powered down to conserve emergency power as follows:

- If you powered down unit 0, lift and release the power switch on the faceplate of the NT9X31 power converter. The power switch on the faceplate of the NT9X31 power converter is in slot 1F. Lift and release the power switch on the faceplate of the NT9X30 power converter. The power switch on the faceplate of the NT9X30 power converter is in slot 4F.
- If you powered down unit 1, lift and release the power switch on the faceplate of the NT9X31 power converter. The power switch on the faceplate of the NT9X31 power converter is in slot 33F. Lift and release the power switch on the faceplate of the NT9X30 power converter. The power switch on the faceplate of the NT9X30 power converter is in slot 36F.

***At the MAP terminal***

**2** To access the peripheral module (PM) level of the MAP display, type

**`>MAPCI;MTC;PM`**

and press the Enter key.

*Example of a MAP display:*

```
          SysB   ManB   OffL   CBsy   ISTb   InSv
PM           1     10     12      0      6     49
```

**3** To post the LIM that you wish to restore to duplex operation, type

**`>POST  LIM  lim_no`**

## Emergency power conservation
## Restoring the ELPP LIM to duplex operation (continued)

and press the Enter key.

*where*

**lim_no**
is the number of the LIM that you post (0 to 16)

*Example of a MAP response:*

```
LIM 0  ISTB     OOS     OOS_Taps
                Links  LIS1  LIS2  LIS3
Unit0: ManB      2       12    12    12
Unit1: ISTb      2        .     .     .
```

**4** To load the LIM unit that you powered up in step 1, type

**>LOADPM UNIT unit_no**

and press the Enter key.

*where*

**unit_no**
is the number of the LIM unit (0 or 1)

**5** To return to service the LIM unit that you powered up in step 1 to service, type

**>RTS UNIT unit_no**

and press the Enter key.

*where*

**unit_no**
is the number of the LIM unit (0 or 1)

**6** To access the LIS level of the MAP display, type

**>LIS lis_no**

and press the Enter key.

*where*

**lis_no**
is the number of the LIS (1, 2, or 3)

**7** To return the F-bus to service, type

**>RTS FBUS fbus_no**

and press the Enter key.

*where*

**fbus_no**
is the number of F-bus (0 or 1)

***Note:*** F-bus 0 and F-bus 1 exist for each LIS level (1, 2, and 3).

**8** Repeat steps 6 and 7 for the F-bus on each LIS level (1, 2, and 3). When the F-bus for each LIS has been returned to service, go to step 9.

**9** Repeat steps 1 to 7 for each ELPP that you converted to simplex operation to conserve emergency power. Once all ELPPs have been restored, go to step 10.

## Emergency power conservation
## Restoring the ELPP LIM to duplex operation (end)

**10** Return to the procedure *Emergency power conservation—Restoration* in this document and proceed as directed.

# Emergency power conservation
# Restoring the junctored network to duplex operation

## Application

Use this procedure to restore the junctored network (JNET) to duplex operation. Use this procedure after you power down one JNET plane to conserve emergency power.

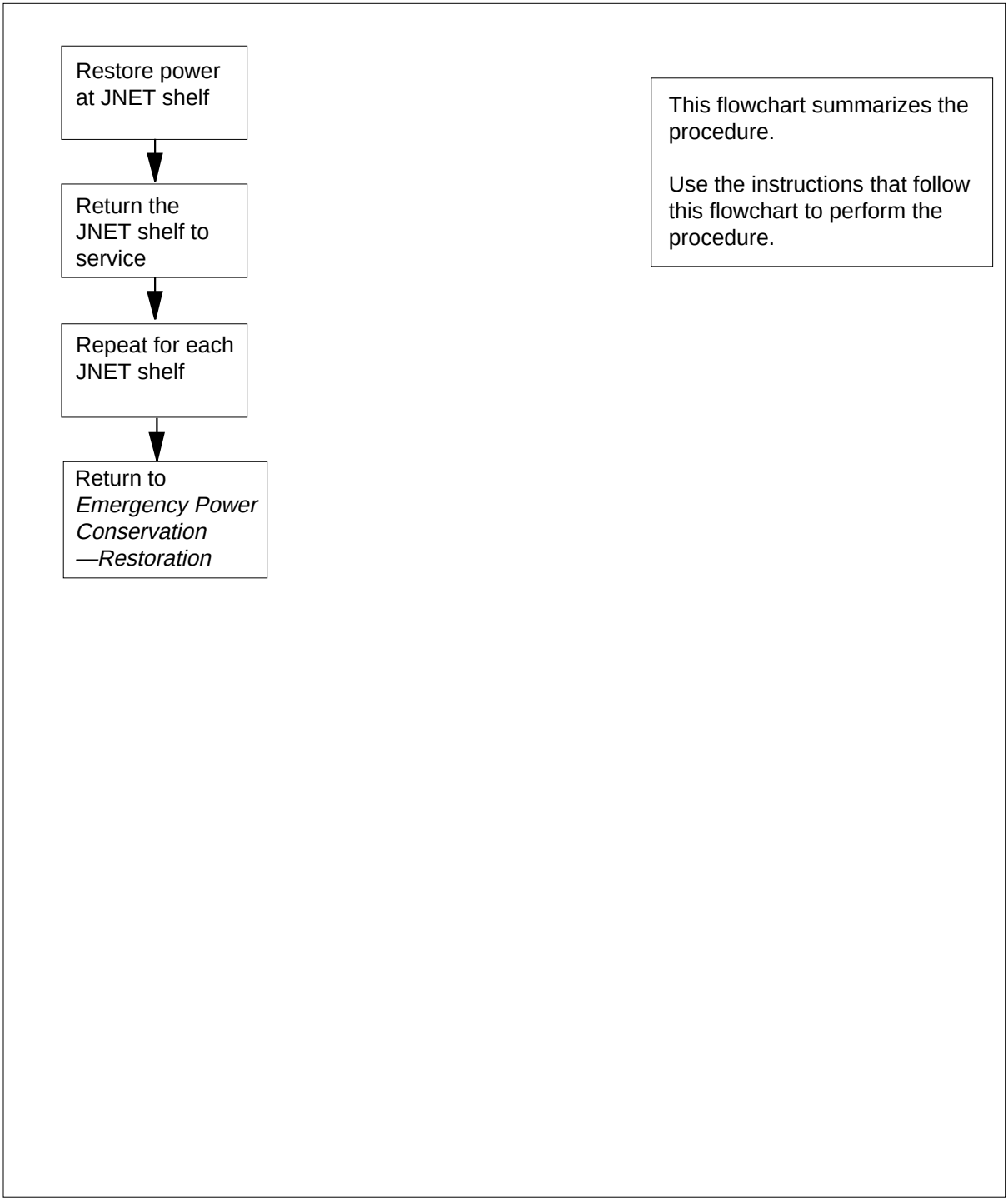
This procedure assumes that you followed the *Emergency power conservation—Shutdown* procedure in this document to remove equipment from service. Instructions to restore normal operation assumes all equipment is in normal in-service operation before the need for the emergency power conservation procedure arises.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to perform the recovery task.

# Emergency power conservation
# Restoring the junctored network to duplex operation (continued)

**Summary of Restoring the junctored network to duplex operation**



# Emergency power conservation
# Restoring the junctored network to duplex operation (continued)

**Restoring the junctored network to duplex operation**

***At the JNET shelf***

**1**

**WARNING**
**Potential extended equipment outage**
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) to expedite recovery of equipment.

**WARNING**
**Potential loss of service or extended outage**
This procedure restores normal operation after you performed the emergency power conservation measures. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) or a modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Determine if the power converter is an NT2X70AE card.

| If the power converter | Do |
|---|---|
| is an NT2X70AE card | step 2 |
| is not an NT2X70AE card | step 5 |

**2** Determine if the frame supervisory panel (FSP) or modular supervisory panel (MSP) has circuit breakers.

| If the FSP or MSP | Do |
|---|---|
| has circuit breakers | step 3 |
| does not have circuit breakers | step 4 |

**3** Power up the converter as follows:

# Emergency power conservation
# Restoring the junctored network to duplex operation (continued)

**a** Pull up and set the handle of the POWER switch to the RESET position and hold.

**b** Set the handle of the converter circuit breaker on the FSP or MSP up until it clicks into place.

**c** Release the handle.

Go to step 8.

**4** Power up the converter as follows:

**a** Pull up and set the handle of the POWER switch to the RESET position and hold until the CONVERTER FAIL LED turns off.

**b** Release the handle.

Go to step 8.

**5** Determine if the FSP or MSP has circuit breakers.

| If the FSP or MSP | Do |
|---|---|
| has circuit breakers | step 6 |
| does not have circuit breakers | step 7 |

**6** Power up the converter as follows:

**a** Pull up and set the handle of the POWER switch to the ON position.

**b** Press and hold the RESET button on the power converter.

**c** Set the handle of the converter circuit breaker on the FSP or MSP up until it clicks into place.

**d** Release the RESET button.

Go to step 8.

**7** Power up the converter as follows:

**a** Pull up and set the handle of the POWER switch to the ON position.

**b** Press the RESET button on the power converter until the CONVERTER FAIL LED turns off.

**c** Release the RESET button.

***At the MAP display***

**8** To access the NET level of the MAP display, type

```
>MAPCI;MTC;NET
```

and press the Enter key.

Example of a MAP response:

# Emergency power conservation
# Restoring the junctored network to duplex operation (end)

```
Net
            11111   11111   22222   22222   33
Plane   01234   56789   01234   56789       01234   56
789 01
  0     0000
  1     0000
JNET:
```

**9** To return the network module to service, type

**>RTS plane_no pair_no**

and press the Enter key.

*where*

**plane_no**
is the network plane number (0 or 1)

**pair_no**
is the network plane pair number (0 to 31)

**10** Repeat steps 1 to 9 for each plane pair that you remove from service to conserve emergency power.

**11** Return to the procedure *Emergency power conservation—Restoration* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation Restoring the LCMs to duplex operation

## Application

Use this procedure to restore line concentrating modules (LCM) to duplex operation. Perform this procedure after you powered down one unit of each LCM to conserve emergency power.

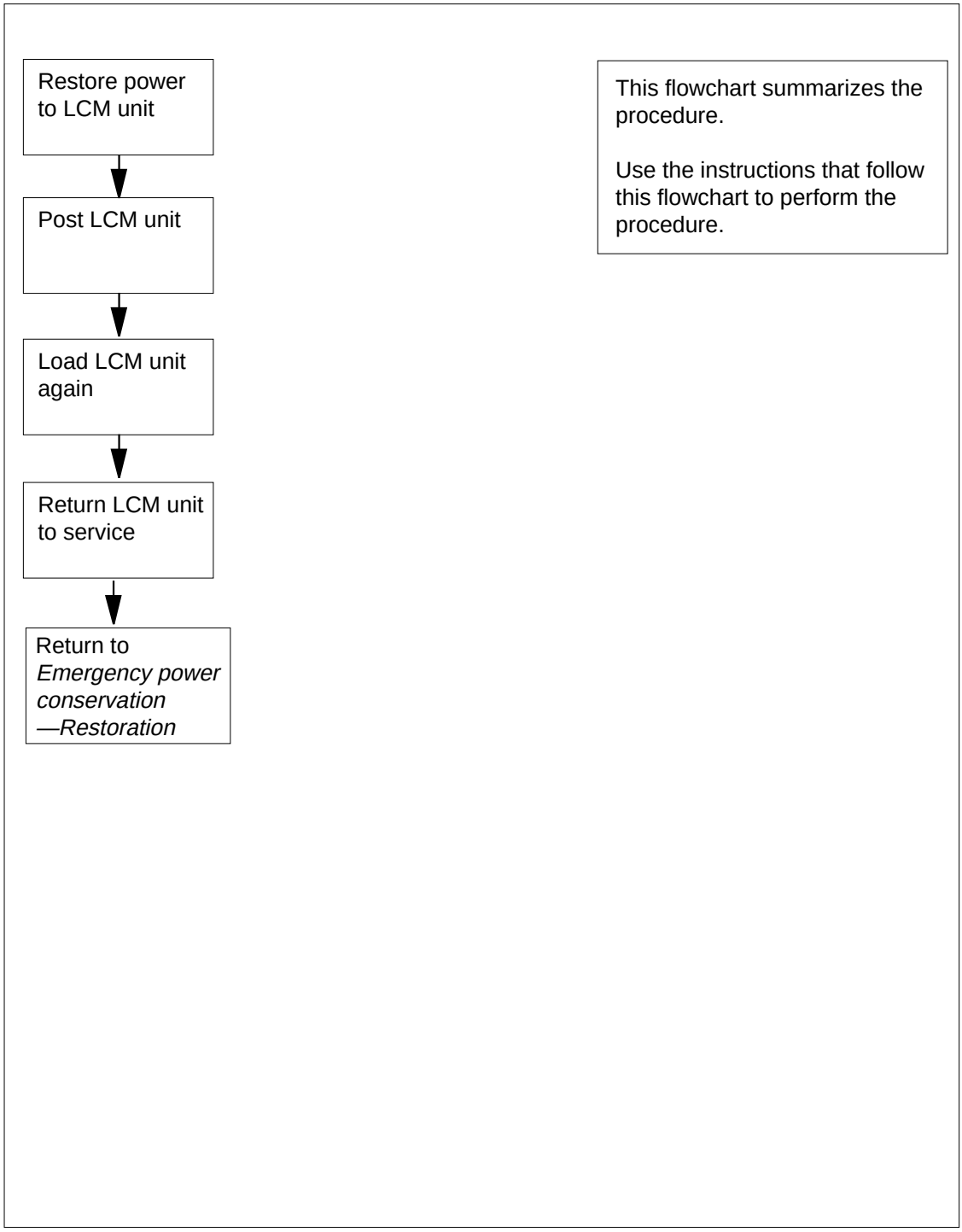
This procedure assumes that you followed the *Emergency power conservation—Shutdown* procedure in this document to remove equipment from service. Instructions to restore normal operation assumes all equipment is in normal in-service operation before the need for the emergency power conservation procedure arises.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to perform the recovery task.

# Emergency power conservation
# Restoring the LCMs to duplex operation (continued)

**Summary of Restoring the LCMs to duplex operation**



# Emergency power conservation
# Restoring the LCMs to duplex operation (continued)

**Restoring the LCMs to duplex operation**

***At the LCM***

**1**

**WARNING**
**Potential extended equipment outage**
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) to expedite recovery of equipment.

**WARNING**
**Potential loss of service or extended outage**
This procedure restores normal operation after you performed emergency power conservation measures. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) or a modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Turn on the appropriate circuit breakers at the FSP or MSP.

***At the MAP terminal***

**2** To access the peripheral module (PM) level of the MAP display, type

```
>MAPCI; MTC;PM
```

and press the Enter key.

**3** To post the LCM , type

```
>POST  LCM  HOST  frame  pair
```

and press the Enter key.

*where*

**frame**
is the frame number (00 to 99)

**pair**
is the frame pair number (0 to 1)

# Emergency power conservation
# Restoring the LCMs to duplex operation (end)

*Example of a MAP response:*

```
LCM HOST 00 0 InSv Links  OOS: Cside 0 Pside 0
Unit 0: InSv        /RG:0
Unit 1: InSv    /RG:1
                      11 11 11 11 11
Drwr:   01 23 45 67 89 01 23 45 67 89   RG:Pref 0 InSv
                                         Stby 1 InSv
```

**4** To load the LCM unit, type

**>LOADPM UNIT unit_no**

and press the Enter key.

*where*

**unit_no**
is the PM unit number (0 or 1)

**5** To return the LCM to service, type

**>RTS UNIT unit_no**

and press the Enter key.

*where*

**unit_no**
is the PM unit number (0 or 1)

**6** Repeat steps 1 to 5 for each LCM unit that you powered down to conserve emergency power.

**7** Return to the procedure *Emergency power conservation—Restoration* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation measures
# Restoring the LGCs, LTCs, and DTCs to duplex operation

## Application

Use this procedure to restore the following controllers to duplex operation:

- a line group controller (LGC)
- a line trunk controller (LTC)
- a digital trunk controller (DTC)

Perform this procedure after you power down one unit of each XPM to conserve emergency power.

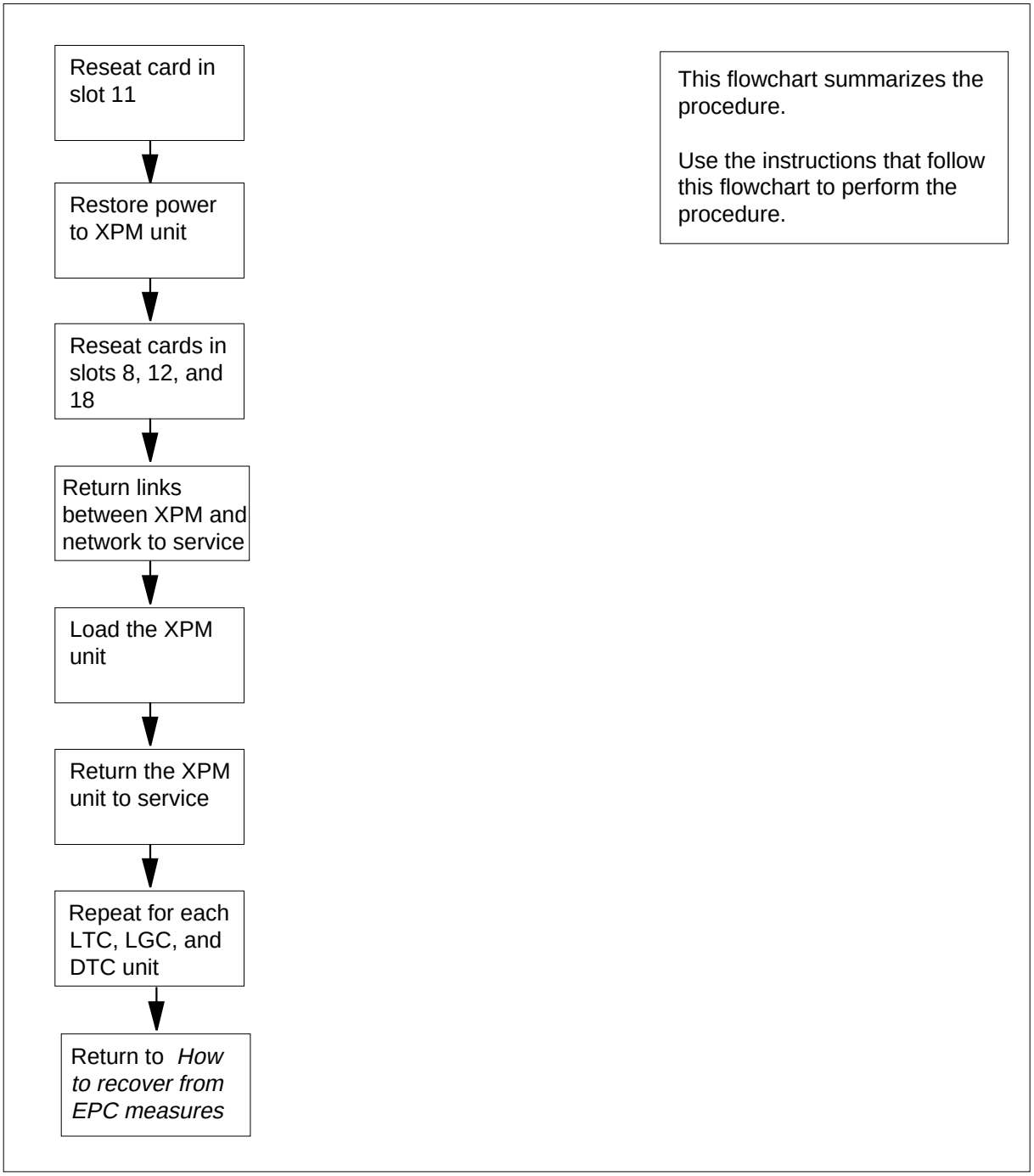
This procedure assumes that you follow the procedure *Emergency power conservation* procedure in this document to remove equipment from service. Equipment must be in normal in-service operation before the need to perform the procedure for emergency power conservation arises.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Emergency power conservation measures
# Restoring the LGCs, LTCs, and DTCs to duplex operation (continued)

**Restoring the LGCs, LTCs, and DTCs to duplex operation**



# Emergency power conservation measures
# Restoring the LGCs, LTCs, and DTCs to duplex operation (continued)

**Restoring the LGCs, LTCs, and DTCs to duplex operation**

***At the shelf***

**1**

**WARNING**
**Potential extended equipment outage**
Nortel recommends that you contact the Emergency Technical Assistance Service (ETAS) before you expedite recovery of equipment.

**WARNING**
**Potential loss of service or extended outage**
Use this procedure only to restore normal operation after you perform the procedure for emergency power conservation. Do not use this procedure or sections of this procedure for equipment maintenance purposes

**WARNING**
**Static electricity damage**
When you handle circuit cards, wear a wrist strap that connects to the wrist-strap grounding point. A grounding point is on the frame supervisory panel (FSP) or the modular supervisory panel (MSP). The wrist strap protects the cards against static electricity damage.

**WARNING**
**Briefly state reasons for the ESDS caution**
Enter the reasons for the electro-static discharge caution: an ESDS caution informs the reader to observe precautions for handling an electrostatically sensitive device.

Reseat the NT6X46 signaling processor memory card in slot 11.

**2** Determine if the power converter is a NT2X70AE card.

| If the power converter | Do |
|---|---|
| is a NT2X70AE card | step 3 |

# Emergency power conservation measures
## Restoring the LGCs, LTCs, and DTCs to duplex operation (continued)

| If the power converter | Do |
|---|---|
| is not a NT2X70AE card | step 6 |

**3** Determine if the FSP or MSP has circuit breakers.

| If the FSP or MSP | Do |
|---|---|
| has circuit breakers | step 4 |
| does not have circuit breakers | step 5 |

**4** Power up the converter as follows

**a** Pull and set the handle of the POWER switch up to the RESET position and hold.

**b** Set the handle of the converter circuit breaker on the FSP or MSP up until the handle clicks into place.

**c** Release the handle.

**d** Go to step 9.

**5** Power up the converter in slot 25 as follows:

**a** Pull and set the handle of the POWER switch up to the RESET position. Hold the handle of the POWER switch up until the CONVERTER FAIL LED turns off.

**b** Release the handle.

**c** Go to step 9.

**6** Determine if the FSP or MSP has circuit breakers.

| If the FSP or MSP | Do |
|---|---|
| has circuit breakers | step 7 |
| does not have circuit breakers | step 8 |

**7** Power up the converter in slot 25 as follows

**a** Pull and set the handle of the POWER switch up to the ON position.

**b** Press and hold the RESET button on the power converter.

**c** Set the handle of the converter circuit breaker on the FSP or MSP up until the handle clicks into place.

**d** Release the RESET button.

**e** Go to step 9.

**8** Power up the converter in slot 25 as follows:

**a** Pull and set the handle of the POWER switch up to the ON position.

**b** Press the RESET button on the power converter until the CONVERTER FAIL LED goes off.

# Emergency power conservation measures
# Restoring the LGCs, LTCs, and DTCs to duplex operation (continued)

**c** Release the RESET button.

**9** Reseat the NT6X45 master processor card in slot 8.

**10** Reseat the NT6X45 signaling processor card in slot 12.

**11** Reseat the NT6X69 message protocol card or the NT6X43 message interface card in slot 18.

***At the MAP terminal***

**12** To access the peripheral module (PM) level of the MAP display, type

**>MAPCI;MTC;PM**

and press the Enter key.

**13** To post the XPM, type

**>POST pm_type pm_no**

and press the Enter key.

*where*

**pm_type**
is the PM type (LGC, DTC, or LTC)

**pm_no**
is the PM identification number (0 to 999)

*Example of a MAP response:*

```
DTC    0 ISTb  Links_OOS: CSide  0 , PSide  0
Unit0:          Act     InSv
Unit1:          Inact       ManB
```

**14** To identify the network type and network links associated with the manual busy XPM unit, type

**>TRNSL C**

and press the Enter key.

*Example of a MAP response for JNET:*

```
LINK 0: NET 0 1 0;CAP MS;Status:OK
LINK 1: NET 1 1 0;CAP MS;Status:MBsy
LINK 2: NET 0 1 4;CAP MS;Status:OK
LINK 3: NET 1 1 4;CAP MS;Status:MBsy
LINK 4: NET 0 1 8;CAP MS;Status:OK
...
LINK 31 NET 1 1 60;CAP MS;Status:MBsy
```

***Note:*** Links 5 to 30 do not appear.

*Example of a MAP response for ENET:*

## Emergency power conservation measures
## Restoring the LGCs, LTCs, and DTCs to duplex operation (continued)

```
LINK 0: ENET 0  0 14 01 0;CAP MS;Status:OK
LINK 1: ENET 1  0 24 01 0;CAP MS;Status:MBsy
LINK 2: ENET 0  0 14 01 1;CAP MS;Status:OK
LINK 3: ENET 1  0 24 01 1;CAP MS;Status:MBsy
LINK 4: ENET 0  0 14 01 2;CAP MS;Status:OK
LINK 5: ENET 1  0 24 01 2;CAP MS;Status:MBsy
LINK 6: ENET 0  0 14 01 3;CAP MS;Status:OK
LINK 7: ENET 1  0 24 01 3;CAP MS;Status:MBsy
```

**15** Determine if the network on your switch is a junctored network (JNET) or enhanced network (ENET).

| If the network | Do |
|---|---|
| is JNET | step 16 |
| is ENET | step 22 |

**16** Determine the XPM unit that is manual busy (0 or 1). Record the speech link numbers (0 to 31) associated with the XPM. Even numbered speech links (0, 2, 4 ... 30) associate with XPM unit 0. Odd numbered speech links (1, 3, 5 ... 31) associate with XPM unit 1.

***Note:*** Speech link numbers 5 to 30 do not appear in the example in step 14. The links associated with XPM unit 1 are manual busy.

**17** Record the network plane number, network module (pair) number, and network link number for each speech link recorded in step 16.

***Note:*** A JNET example response appears in step 14. In this example, speech link 2 associates with network plane 0, network module number 1, and network link number 4.

**18** To access the NET level of the MAP display, type

```
>NET
```

and press the Enter key.

**19** To access the network link level for the first network link that you return to service, type

```
>LINKS  n
```

and press the Enter key.

*where*

**n**
is the network module number recorded in step 17

**20** To return the first network link to service, type

```
>RTS  plane_no  link_no
```

and press the Enter key.

*where*

## Emergency power conservation measures
## Restoring the LGCs, LTCs, and DTCs to duplex operation (continued)

**plane_no**
is the network plane (0 or 1)

**link_no**
is the network link number

**21** Repeat steps 19 and 20 until all links between the manual busy XPM unit and network return to service. Go to step 29.

**22** Determine the speech link numbers associated with the manual busy XPM unit. Even numbered speech links associate with unit 0. Odd numbered speech links associate with unit 1.

***Note:*** Speech links 0, 2, 4 and 6 associate with XPM unit 0 in the ENET example response in step 14. Speech links 1, 3, 5, and 7 associate with XPM unit 1. The speech links associated with XPM unit 1 are manual busy.

**23** Record the ENET plane number, shelf number, card number, and network link number associated with the speech link. Perform this procedure for each speech link recorded in step 22.

***Note:*** An ENET example response appears in step 14. In this example, speech link 3 associates with ENET plane 1, shelf 0, card 24, and network link number 01.

**24** To access the NET level of the MAP display, type

```
>NET
```

and press the Enter key.

**25** To access the MAP display for the associated ENET card of the first speech link, type

```
>SHELF  shelf_no;  CARD  card_no
```

and press the Enter key.

*where*

**shelf_no**
is the ENET shelf number

**card_no**
is the ENET card number

**26** To return the first link recorded in step 22 to service, type

```
>RTS   plane_no  LINK  link_no
```

and press the Enter key.

*where*

**plane_no**
is the ENET plane number, recorded in step 23

**link_no**
is the network link number, recorded in step 23

**27** To remove the deload status from the ENET card, type

```
>DELOAD   plane_no  CLEAR
```

and press the Enter key.

# Emergency power conservation measures
# Restoring the LGCs, LTCs, and DTCs to duplex operation (end)

*where*

**plane_no**
is the ENET plane number

**28** Repeat steps 25 to 27 for each speech link recorded in step 22. Continue the procedure.

**29** To reload the manual busy XPM unit, type

```
>PM;LOADPM  UNIT  unit_no
```

and press the Enter key.

*where*

**unit_no**
is the number of the manual-busy unit (0 or 1)

**30** To return the XPM unit to service, type

```
>RTS  UNIT  unit_no
```

and press the Enter key.

**31** Repeat steps 1 to 30 for each LGC, LTC, and DTC unit that you power down to conserve emergency power.

**32** Return to the procedure *Recovering from emergency power conservation measures* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation
# Restoring the line modules to duplex operation

## Application

Use this procedure to restore line modules (LM) to duplex operation. Perform this procedure after you power down one unit of each LM controller to conserve emergency power.

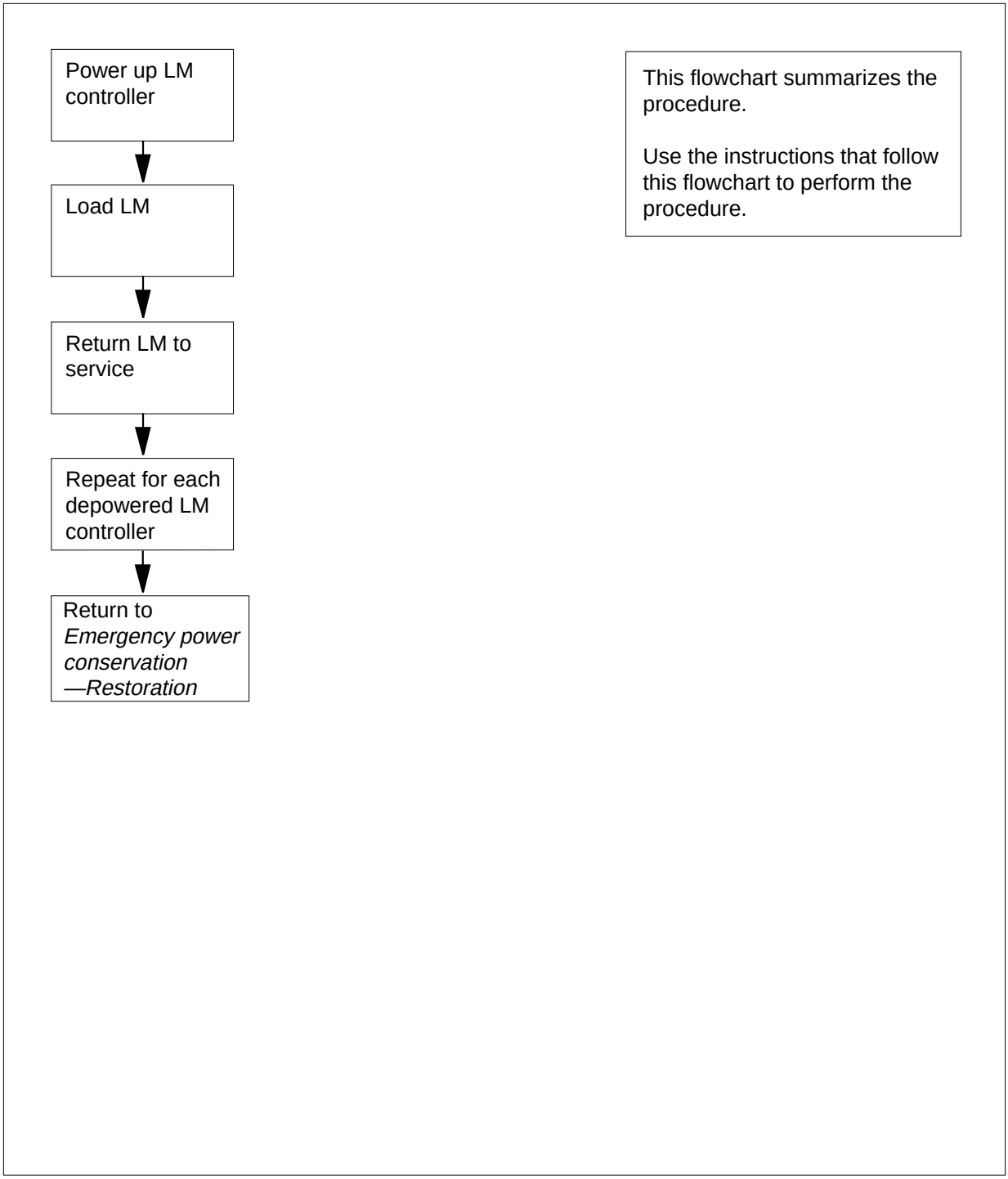
This procedure assumes that you followed the *Emergency power conservation—Shutdown* procedure in this document to remove equipment from service. Equipment must be in normal in-service operation before the need to perform the procedure for emergency power conservation arises.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to perform the recovery task.

# Emergency power conservation
# Restoring the line modules to duplex operation (continued)

**Summary of Restoring the line modules to duplex operationss**



# Emergency power conservation
# Restoring the line modules to duplex operation (continued)

**Restoring the line modules to duplex operation**

***At the LM controller shelf***

**1**

**WARNING**
**Potential extended equipment outage**
Nortel recommends that you contact the Emergency Technical Assistance Service (ETAS) to expedite recovery of equipment.

**WARNING**
**Potential loss of service or extended outage**
Use this procedure to restore normal operation after you perform the procedure for emergency power conservation. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Determine if the power converter is a NT2X70AE card.

| If the power converter | Do |
|---|---|
| is a NT2X70AE card | step 2 |
| is not a NT2X70AE card | step 5 |

**2** Determine if the FSP or MSP has circuit breakers.

| If the FSP or MSP | Do |
|---|---|
| has circuit breakers | step 3 |
| does not have circuit breakers | step 4 |

**3** Power up the converter in slot 20 as follows:

## Emergency power conservation
## Restoring the line modules to duplex operation (continued)

**a** Pull up and set the handle of the POWER switch to the RESET position and hold.

**b** Set the handle of the converter circuit breaker on the FSP or MSP up until the handle clicks into place.

**c** Release the handle.

Go to step 8.

**4** Power up the converter in slot 20 as follows:

**a** Pull up and set the handle of the POWER switch to the RESET position. Hold the handle in the RESET position until the CONVERTER FAIL LED goes off.

**b** Release the handle.

Go to step 8.

**5** Determine if the FSP or MSP has circuit breakers.

| If the FSP or MSP | Do |
|---|---|
| has circuit breakers | step 6 |
| does not have circuit breakers | step 7 |

**6** Power up the converter in slot 20 as follows:

**a** Pull up and set the handle of the POWER switch to the ON position.

**b** Press and hold the RESET button on the power converter.

**c** Set the handle of the converter circuit breaker on the FSP or MSP up until it clicks into place.

**d** Release the RESET button.

Go to step 8.

**7** Power up the converter in slot 20 as follows:

**a** Pull up and set the handle of the POWER switch to the ON position.

**b** Press the RESET button on the power converter until the CONVERTER FAIL LED goes off.

**c** Release the RESET button.

***At the MAP terminal***

**8** To access the peripheral module (PM) level of the MAP display, type

```
>MAPCI;MTC;PM
```

and press the Enter key.

**9** To post the affected LM, type

```
>POST  LM  HOST  frame  pair
```

and press the Enter key.

*where*

# Emergency power conservation
# Restoring the line modules to duplex operation (end)

**frame**
is the frame number (00 to 99)

**pair**
is the frame pair number (0 to 1)

*Example of a MAP response:*

```
LM  HOST 00 0  ManB
```

**10** To load the PM, type

**>LOADPM**

and press the Enter key.

**11** To return the PM to service, type

**>RTS**

and press the Enter key.

**12** Repeat steps 1 to 11 for each line module controller that you power down to conserve emergency power.

**13** Return to the procedure *Emergency power conservation—Restoration* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation
# Restoring the LPP LIM to duplex operation

## Application

Use this procedure to restore the link interface module (LIM) in each link peripheral processor (LPP) to duplex operation. Perform this procedure after you power down one unit of the LIM to conserve emergency power.

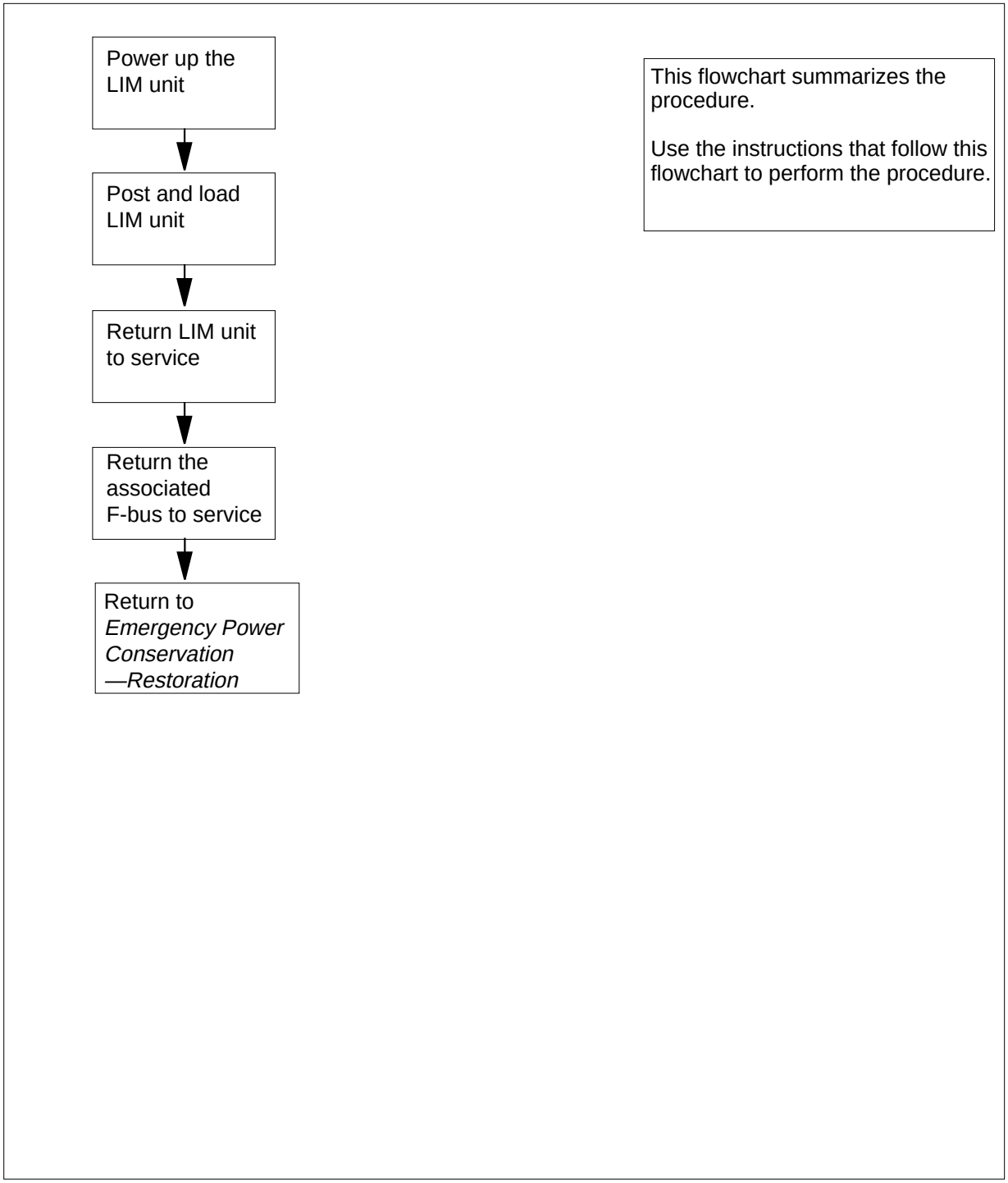
You must follow the procedure *Emergency power conservation—Shutdown* in this document to remove equipment from service. Equipment must be in normal in-service operation before the need to perform the procedure for emergency power conservation arises.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to clear the alarm.

# Emergency power conservation
# Restoring the LPP LIM to duplex operation (continued)

**Restoring the LPP LIM to duplex operation**



# Emergency power conservation
# Restoring the LPP LIM to duplex operation (continued)

**Restoring the LPP LIM to duplex operation**

***At the LPP***

**1**

**WARNING**
**Potential extended equipment outage**
Nortel recommends that you contact the Emergency Technical Assistance Service (ETAS) to expedite the recovery of equipment.

**WARNING**
**Potential loss of service or extended outage**
Use this procedure to restore normal operation after you perform the procedure for emergency power conservation. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

Power up the LIM unit you powered down to conserve emergency power as follows:

- If you powered down unit 0, lift and release the power switch on the faceplate of the NT9X30 power converter. The power switch on the faceplate of the NT9X30 power converter is in slot 4F.
- If you powered down unit 1, lift and release the power switch on the faceplate of the NT9X30 power converter. The power switch on the faceplate of the NT9X30 power converter is in slot 36F.

***At the MAP terminal***

**2** To access the peripheral module (PM) level of the MAP display, type

**`>MAPCI;MTC;PM`**

and press the Enter key.

*Example of a MAP display:*

```
          SysB   ManB   OffL   CBsy   ISTb   InSv
PM           1      10     12      0      6     49
```

**3** To post the LIM that you restore to duplex operation, type

**`>POST  LIM  lim_no`**

and press the Enter key.

*where*

# Emergency power conservation
# Restoring the LPP LIM to duplex operation (end)

**lim_no**
is the number of the LIM that you post (0 to 16)

*Example of a MAP response:*

```
LIM  1  ISTB
                Links_OOS Taps_OOS
    Unit0: ManB      2       16
    Unit1: InSv      .       .
```

**4** To load the LIM unit that you powered up in step 1, type

**>LOADPM UNIT unit_no**

and press the Enter key.

*where*

**unit_no**
is the number of the LIM unit (0 or 1)

**5** To return the LIM unit that you powered up in step 1 to service, type

**>RTS UNIT unit_no**

and press the Enter key.

*where*

**unit_no**
is the number of the LIM unit (0 or 1)

**6** To access the F-bus level of the MAP display, type

**>FBUS**

and press the Enter key.

***At the MAP***

**7** To return the F-bus to service, type

**>RTS FBUS fbus_no**

and press the Enter key.

*where*

**fbus_no**
is the number of F-bus (0 or 1)

***Note:*** F-bus 0 associates with LIM unit 0 and F-bus 1 associates with LIM unit 1.

**8** Repeat steps 1 to 7 for each LPP that you converted to simplex operation to conserve emergency power.

**9** Return to the procedure *Emergency power conservation—Restoration* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation
# Restoring the maintenance trunk modules to service

## Application

Use this procedure to recover maintenance trunk modules that you power down to conserve emergency power.

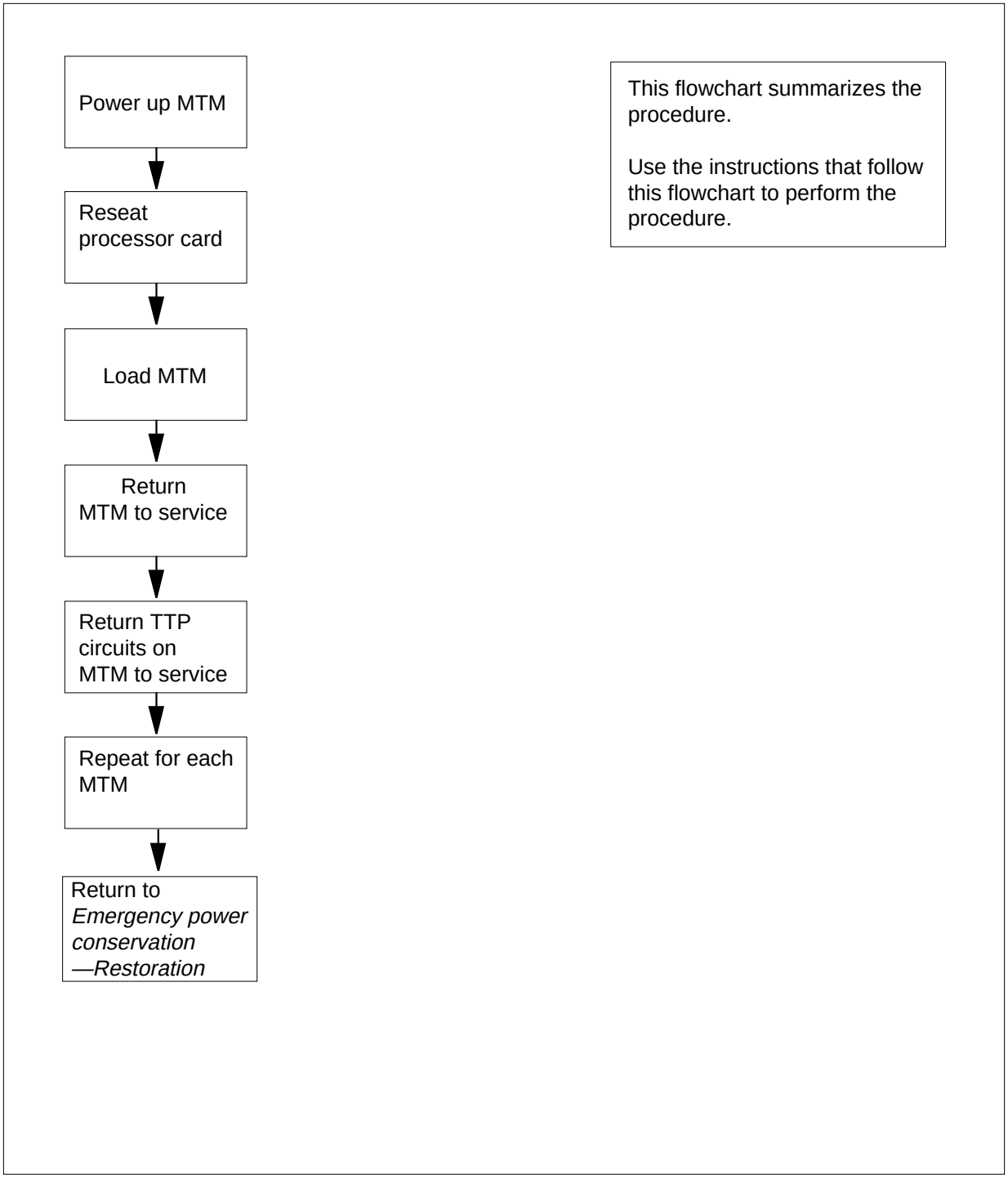
The procedures assumes that you followed the *Emergency power conservation—Shutdown* in this document to remove equipment from service. Equipment must be in normal in-service operation before the need to perform the procedure for emergency power conservation arises.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to perform the recovery task.

# Emergency power conservation
# Restoring the maintenance trunk modules to service (continued)

**Summary of Restoring the maintenance trunk modules to service**



# Emergency power conservation
# Restoring the maintenance trunk modules to service (continued)

**Restoring the maintenance trunk modules to service**

***At the MTM***

**1**

**CAUTION**
**Potential extended equipment outage**
Nortel recommends that you contact the Emergency Technical Assistance Service (ETAS) to expedite recovery of equipment.

**CAUTION**
**Potential loss of service or extended outage**
Use this procedure to restore normal operation after you perform the procedure for emergency power conservation. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

**CAUTION**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) or a modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Determine if the FSP or MSP has circuit breakers.

| If the FSP or MSP | Do |
|---|---|
| has circuit breakers | step 2 |
| does not have circuit breakers | step 4 |

**2** Power up the NT2X09 power converter in slot 20 as follows:

**a** Pull up and set the handle of the POWER switch to the ON position.

**b** Press and hold the RESET button on the power converter.

**c** Set the handle of the converter circuit breaker on the FSP or MSP up until the handle clicks into place.

**d** Release the RESET button.

**3** Go to step 5.

# Emergency power conservation
# Restoring the maintenance trunk modules to service (end)

**4** Power up the NT2X09 power converter in slot 20 as follows:

**a** Pull up and set the handle of the POWER switch to the ON position.

**b** Press the RESET button on the power converter until the CONVERTER FAIL LED goes off.

**c** Release the RESET button.

**5** Replace the NT0X70 processor and memory card.

***At the MAP terminal***

**6** To post the maintenance trunk module (MTM), type

**`>POST MTM pm_no`**

and press the Enter key.

*where*

**pm_no**
is the peripheral module (PM) identification number (0 to 999)

**7** To load the PM, type

**`>LOADPM`**

and press the Enter key.

**8** To return the PM to service, type

**`>RTS`**

and press the Enter key.

**9** To access the trunk test position (TTP) level of the MAP display, type

**`>TRKS;TTP`**

and press the Enter key.

**10** To post the TTP circuits that associate with the MTM, type

**`>POST P MTM pm_no`**

and press the Enter key.

*where*

**pm_no**
is the PM identification number (0 to 999)

**11** To return the circuits that you busy in step 10 to service, type

**`>RTS ALL`**

and press the Enter key.

**12** Repeat steps 1 to 11 for each MTM that you powered down to conserve emergency power.

**13** The procedure is complete.

# Emergency power conservation
# Restoring the MS to duplex operation

## Application

Use this procedure to restore the message switch (MS) to duplex operation. Perform this procedure to conserve emergency power after you power down one plane of the MS.

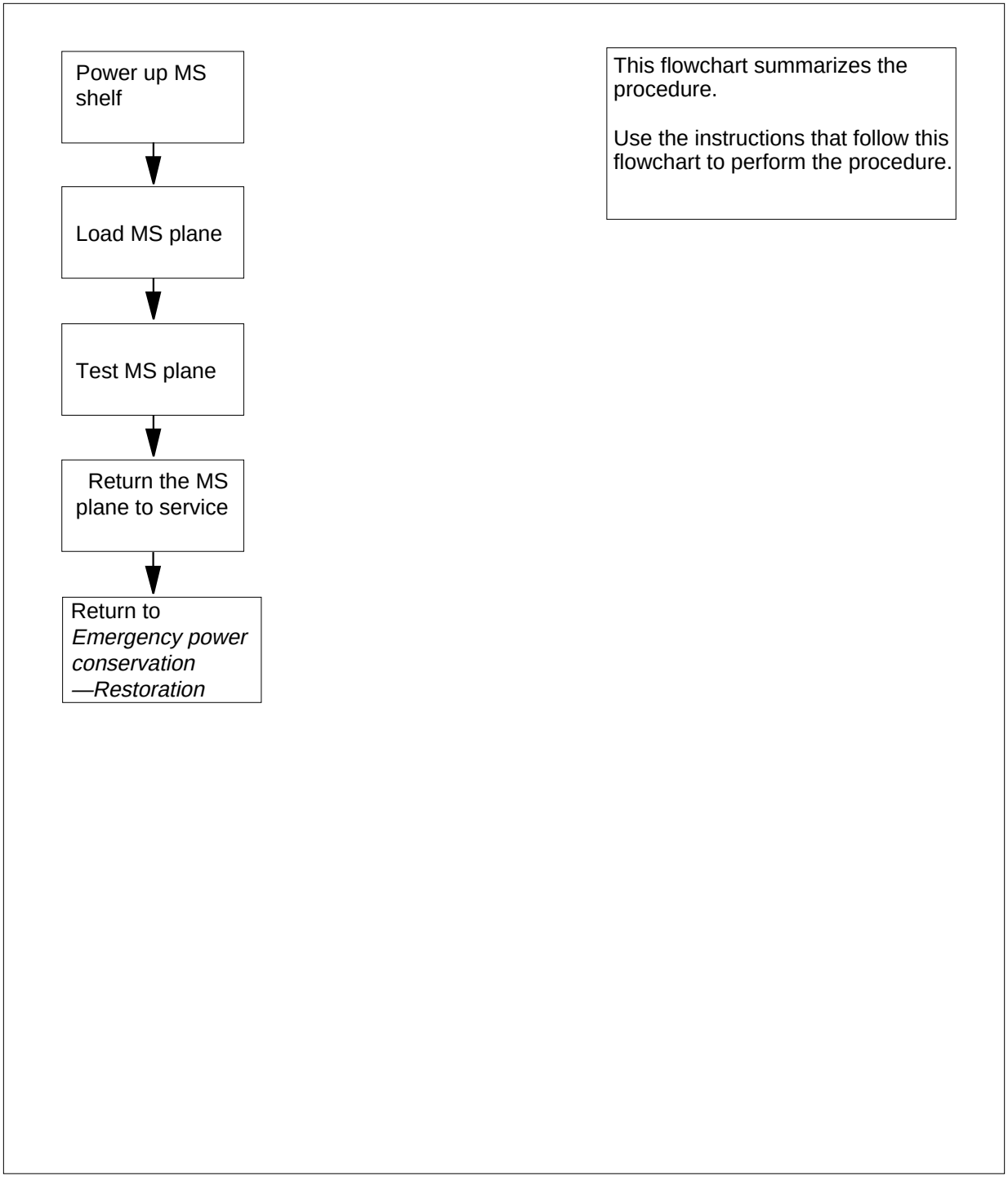
The procedure assumes *Emergency power conservation—Shutdown* in this document to remove equipment from service. Equipment must be in normal in-service operation before the need to perform the procedure for emergency power conservation arises.

## Action

The procedure contains a flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

# Emergency power conservation
# Restoring the MS to duplex operation (continued)

**Summary of Restoring the MS to duplex operation**



# Emergency power conservation
# Restoring the MS to duplex operation (continued)

**Restoring the MS to duplex operation**

***At your Current Location***

**1**

**WARNING**
**Potential extended equipment outage**
Nortel recommends that you contact the Emergency Technical Assistance Service (ETAS) to expedite recovery of equipment.

**WARNING**
**Potential loss of service or extended outage**
Use this procedure to restore normal operation after you perform the procedure for emergency power conservation. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

If you power down half of the remote oscillator (Bliley) shelf (ROS) to conserve emergency power, restore the ROS to duplex operation. Restore the ROS to duplex operation before you restore the MS. Perform the procedure *Restoring the remote oscillator shelf to duplex operation* in this document. Power up both halves of the ROS and continue this procedure.

***At the MS shelf***

**2**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Power up the slave MS as follows:

**a** At the same time, lift and release the switches on the faceplates of the power converters in slots 33 and 36.

**b** Lift and release the switch on the faceplate of the NT9X31 -5V power converter in slot 1.

**c** Lift and release the switch on the faceplate of the NT9X30 +5V power converter in slot 4.

# Emergency power conservation
# Restoring the MS to duplex operation (continued)

***At the MAP terminal***

**3** To access the MS level of the MAP display, type

**`>MAPCI;MTC;MS`**

and press the Enter key.

**4** To reload the latest MS image file, type

**`>LOADMS ms_number`**

and press the Enter key.

*where*

**ms_number**
is the number of the manual busy MS (0 or 1)

*Example of a MAP response:*

```
Request to Load MS: 0 submitted.
Request to Load MS: 0 passed.
Loading completed, entry point is #06045FCO
```

**5** To perform an out-of-service test on the manual busy MS, type

**`>TST ms_number`**

and press the Enter key.

*where*

**ms_number**
is the number of the manual busy MS (0 or 1)

*Example of a MAP response:*

```
Request to TEST OOS MS: 0 submitted.
Request to TEST OOS MS: 0 passed.
No node faults were found on MS 0.
No cards were found to be faulty on MS0.
Request to TEST VIA MATE MS: 0 submitted.
Request to TEST VIA MATE MS: 0 passed.
No node faults were found on MS 0.
No cards were found to be faulty on MS 0.
```

**6** To return the manual busy MS to service, type

**`>RTS ms_number`**

and press the Enter key.

*where*

**ms_number**
is the number of the manual busy MS (0 or 1)

*Example of a MAP response:*

## Emergency power conservation
## Restoring the MS to duplex operation (end)

```
Request to RTS MS: 0 submitted.
Request to RTS MS: 0 passed.
No node faults were found on MS 0.
No cards were found to be faulty on MS 0.
```

**7** Return to the procedure *Emergency power conservation—Restoration* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation Restoring the MSB7 to duplex operation

## Application

Use this procedure to restore the CCS7 message switch and buffer (MSB7) to duplex operation. Perform this procedure to conserve emergency backup power after you power down one plane of the MSB7.

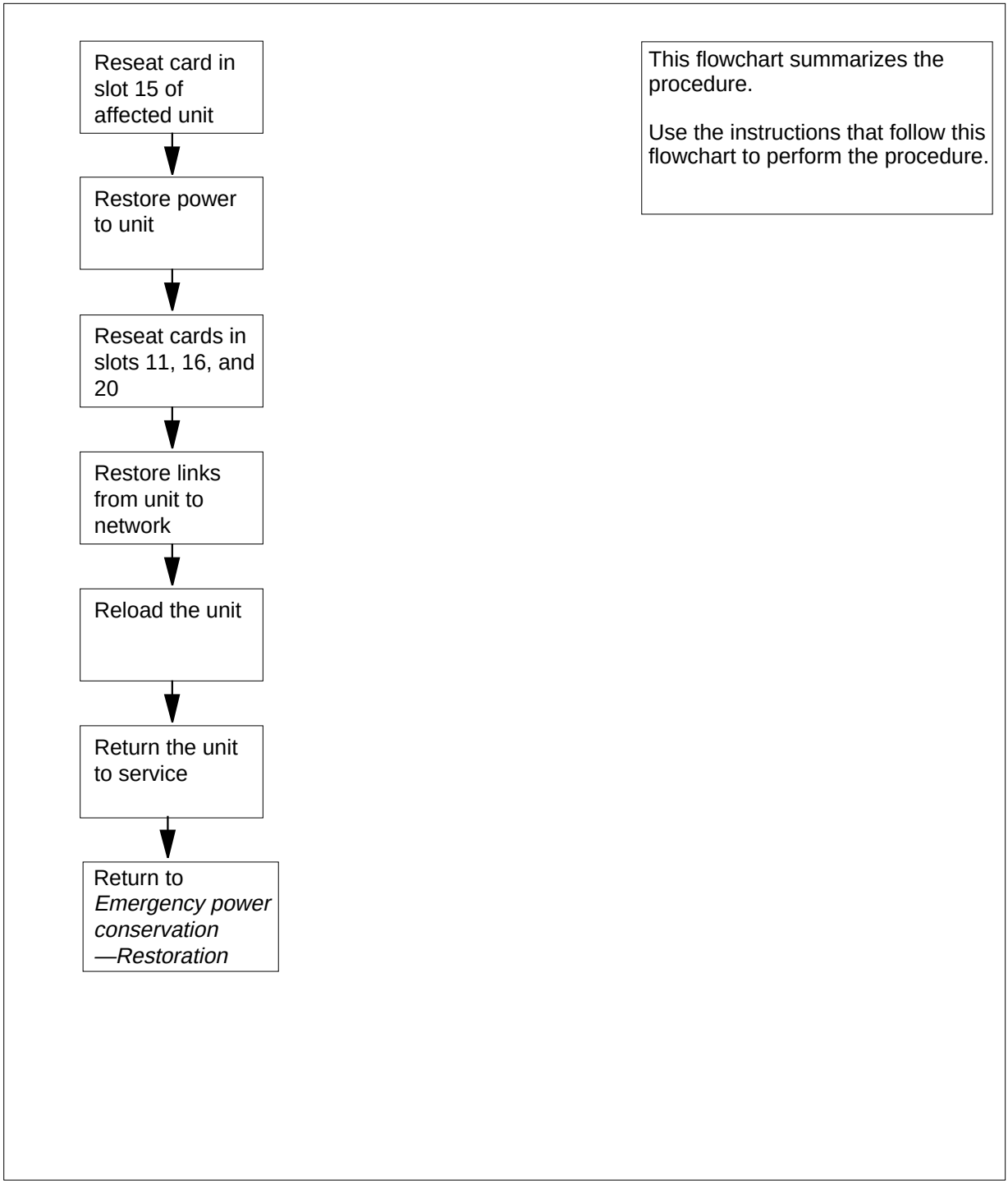
The procedure assumes that you followed the *Emergency power conservation—Shutdown* procedure in this document to remove equipment from service. Equipment must be in normal in-service operation before the need to perform the procedure for emergency power conservation arises.

## Action

The procedure contains a flowchart and a list of steps. Use the flowchart to review the procedure. Follow the steps to perform the procedure.

# Emergency power conservation
# Restoring the MSB7 to duplex operation (continued)

**Summary of Restoring the MSB7 to duplex operation**



# Emergency power conservation
# Restoring the MSB7 to duplex operation (continued)

**Restoring the MSB7 to duplex operation**

***At the MSB7 shelf***

**1**

**WARNING**
**Potential extended equipment outage**
Nortel recommends that you contact the Emergency Technical Assistance Service (ETAS) before you expedite recovery of equipment.

**WARNING**
**Potential loss of service or extended outage**
Use this procedure to restore normal operation after you perform the procedure for emergency power conservation. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

Reseat the memory card for the NT6X46 signaling processor in slot 15.

**2** Determine if the FSP or MSP has circuit breakers

| If the FSP or MSP | Do |
|---|---|
| has circuit breakers | step 3 |
| does not have circuit breakers | step 5 |

**3** Power up the converter in the following order:

**a** Pull up and set the handle of the POWER switch to the RESET position and hold.

**b** Set the handle of the converter circuit breaker on the FSP or MSP up until the handle clicks into place.

**c** Release the handle.

***Note:*** The power converter appears in slot 25.

**4** Go to step 6.

**5** Power up the converter as follows:

**a** Pull up and set the handle of the POWER switch to the RESET position. Hold the handle in the RESET position until the CONVERTER FAIL LED goes off.

**b** Release the handle.

**6** Reseat the NT6X45 master processor card in slot 11.

## Emergency power conservation
## Restoring the MSB7 to duplex operation (continued)

**7** Reseat the NT6X45 signaling processor card in slot 16.

**8** Reseat the NT6X69 message protocol card in slot 20.

***At the MAP terminal***

**9** To access the peripheral module (PM) level of the MAP display, type

**>MAPCI;MTC;PM**

and press the Enter key.

**10** To post the MSB7, type

**>POST MSB7 pm_no**

and press the Enter key.

*where*

**pm_no**
is the PM identification number (0 to 999)

*Example of a MAP response:*

```
MSB7    0 ISTb  Links_OOS: CSide  0
, PSide  0

Unit0:           ManB  Mtce
Unit1:           Insv
```

**11** To identify the network type and network links that associate with the manual busy MSB7 unit, type

**>TRNSL C**

and press the Enter key.

*Example of a MAP response for JNET:*

```
LINK 0: NET 0 3 12;CAP MS;Status:OK
LINK 1: NET 1 3 12;CAP MS;Status:MBsy
LINK 2: NET 0 3 28;CAP MS;Status:OK
LINK 3: NET 1 3 28;CAP MS;Status:MBsy
LINK 4: NET 0 3 44;CAP MS;Status:OK
...
LINK 31 NET 1 3 63;CAP MS;Status:MBsy
```

***Note:*** Links 5 to 30 do not appear.

*Example of a MAP response for ENET:*

# Emergency power conservation
## Restoring the MSB7 to duplex operation (continued)

```
LINK 0: ENET 0  0 13 00;CAP MS;Status:OK
LINK 1: ENET 1  0 23 00;CAP MS;Status:MBsy
LINK 2: ENET 0  0 13 01;CAP MS;Status:OK
LINK 3: ENET 1  0 23 01;CAP MS;Status:MBsy
LINK 4: ENET 0  0 13 02;CAP MS;Status:OK
LINK 5: ENET 1  0 23 02;CAP MS;Status:MBsy
LINK 6: ENET 0  0 13 03;CAP MS;Status:OK
LINK 7: ENET 1  0 23 03;CAP MS;Status:MBsy
```

**12** Determine if the network on your switch is a junctored network (JNET) or enhanced network (ENET).

| If the network | Do |
|---|---|
| is JNET | step 13 |
| is ENET | step 19 |

**13** Determine the MSB7 unit that is manual busy (0 or 1). Note the manual busy speech link numbers (0 to 31) that associate with the MSB7 unit. Even numbered speech links (0, 2, 4 ... 30) associate with MSB7 unit 0. Odd numbered spee[Ach links (1, 3, 5 ... 31) associate with MSB7 unit 1.

***Note:*** Speech link numbers 5 to 30 do not appear in the example in step 11. The speech links that associate with MSB7 unit 1 are manual busy.

**14** Record the network plane number, network module (pair) number, and network link number for each speech link recorded in step 13.

***Note:*** A JNET example response appears in step 11. In this example, speech link 2 associates with network plane 0, network module number 3, and network link number 28.

**15** To access the NET level of the MAP display, type

**`>NET`**

and press the Enter key.

**16** To access the network link level for the first network link that you return to service, type

**`>LINKS n`**

and press the Enter key.

*where*

**n**
is the network module number recorded in step 12

**17** To return the first network link to service, type

**`>RTS plane_no link_no`**

and press the Enter key.

*where*

## Emergency power conservation
## Restoring the MSB7 to duplex operation (continued)

**plane_no**
is the network plane (0 or 1)

**link_no**
is the network link number

**18** Repeat steps 16 and 17 until all the links between the manual busy MSB7 unit and the network return to service. Go to step 26.

**19** Determine the speech link numbers associated with the manual busy MSB7 unit. Even numbered speech links associate with unit 0. Odd numbered speech links associate with unit 1.

***Note:*** Speech links 0, 2, 4 and 6 associate with MSB7 unit 0 in the ENET example response in step 11. Speech links 1, 3, 5, and 7 associate with MSB7 unit 1. The speech links associated with MSB7 unit 1 are manual busy.

**20** Record the ENET plane number, shelf number, card number, and network link number associated with the speech link. Perform this procedure for each speech link recorded in step 19.

***Note:*** An ENET example response appears in step 11. In this example, speech link 3 associates with ENET plane 1, shelf 0, card 23, and network link number 01.

**21** To access the NET level of the MAP display, type

```
>NET
```

and press the Enter key.

**22** To access the MAP display for the ENET card that associates with the first link that you return to service, type

```
>SHELF  shelf_no;  CARD  card_no
```

and press the Enter key.

*where*

**shelf_no**
is the ENET shelf number recorded in step 20

**card_no**
is the ENET card number recorded in step 20

**23** To return the first link recorded in step 19 to service, type

```
>RTS   plane_no  LINK  link_no
```

and press the Enter key.

*where*

**plane_no**
is the ENET plane number recorded in step 20

**link_no**
is the network link number recorded in step 20

**24** To remove the deload status from the ENET card, type

```
>DELOAD  plane_no  CLEAR
```

and press the Enter key.

## Emergency power conservation
## Restoring the MSB7 to duplex operation (end)

*where*

**plane_no**
is the ENET plane number

**25** Repeat steps 22 to 24 for each speech link recorded in step 19. Continue this procedure.

**26** To reload the manual busy MSB7 unit, type

```
>PM;LOADPM UNIT  unit_no
```

and press the Enter key.

*where*

**unit_no**
is the number of the manual busy unit (0 or 1)

**27** To return the manual busy MSB7 unit to service, type

```
>RTS  UNIT  unit_no
```

and press the Enter key.

*where*

**unit_no**
is the number of the manual busy unit (0 or 1)

**28** Return to the procedure *Emergency power conservation—Restoration* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation
# Restoring the remote oscillator shelf to duplex operation

## Application

Use this procedure to restore the remote oscillator shelf (ROS) to duplex operation. Perform this procedure to conserve emergency power after you power down one plane of the ROS.

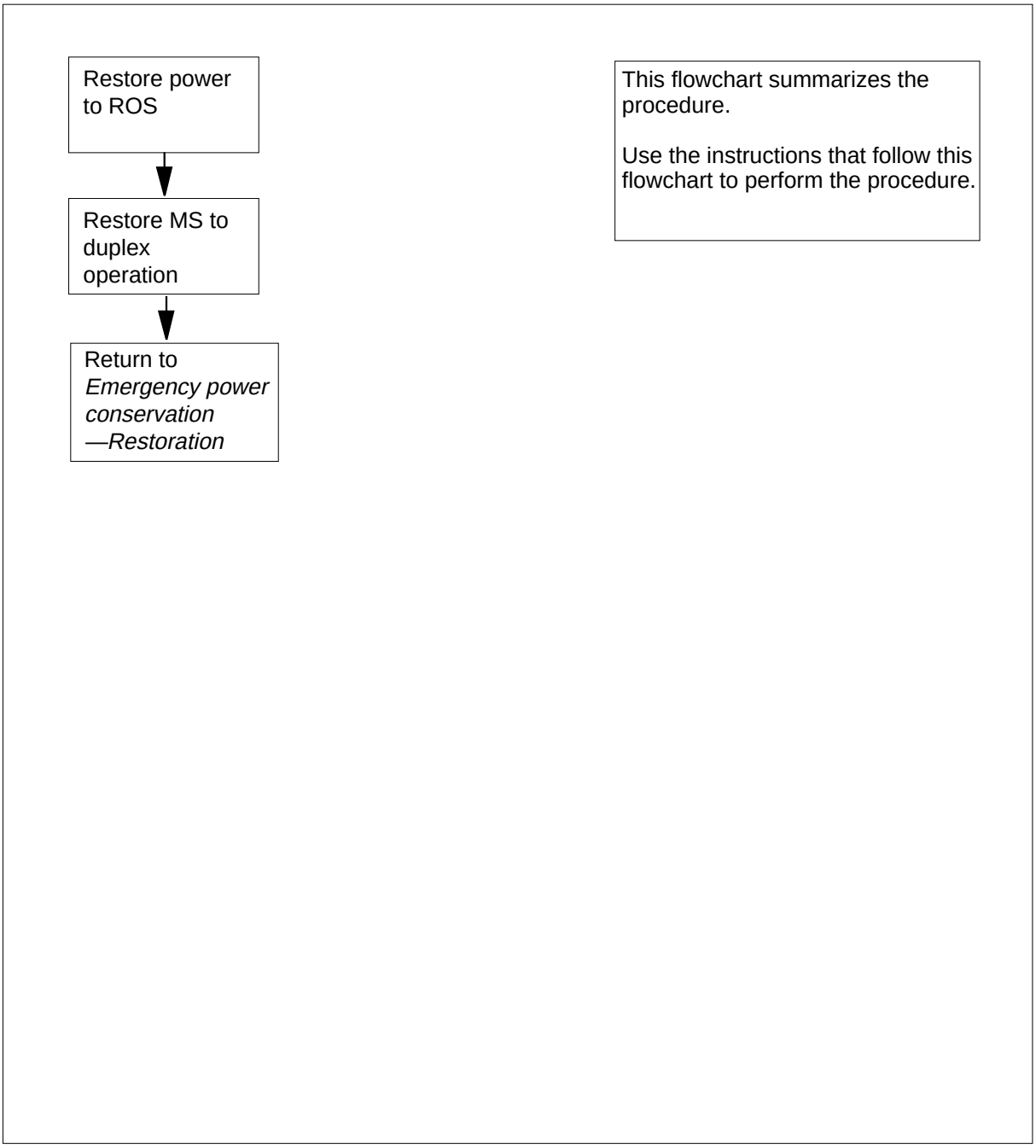
This procedure assumes that you follow the *Emergency power conservation—Shutdown* in this document to remove equipment from service. Equipment must be in normal in-service operation before the need to perform the procedure for emergency power conservation arises.

## Action

The following flowchart provides a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to perform the recovery task.

# Emergency power conservation
# Restoring the remote oscillator shelf to duplex operation (continued)

**Summary of Restoring the remote oscillator shelf to duplex operation**



# Emergency power conservation
# Restoring the remote oscillator shelf to duplex operation (end)

**Restoring the remote oscillator shelf to duplex operation**

**CAUTION**
**Potential service interruption or extended outage**
Nortel recommends that you contact the Emergency Technical Assistance Service (ETAS) or the next level of support before you perform this procedure.

**CAUTION**
**Potential loss of service or extended outage**
Use this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

***At the ROS***

**1** Power up the half of the remote oscillator shelf that you powered down to conserve emergency backup power.

***Note:*** Slots 1 to 13 associate with message switch (MS) 0. Slots 14 to 26 associate with MS 1.

**2** Restore service to the MS that associates with the half of the remote oscillator shelf that you powered up in step 1. Perform the procedure *Restoring the MS to duplex operation* in this document to restore service to the MS.

# Emergency power conservation Restoring a SuperNode ENET to duplex operation

## Application

Use this procedure to restore a SuperNode enhanced network (ENET) to duplex operation. Perform this procedure after you power down one ENET plane to conserve emergency power.

This procedure assumes that you followed the procedure *Emergency power conservation—Shutdown* to take equipment out of service. This procedure also assumes that all equipment was in normal in-service operation before the need to perform the emergency power conservation procedure occurred.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to perform the recovery task.

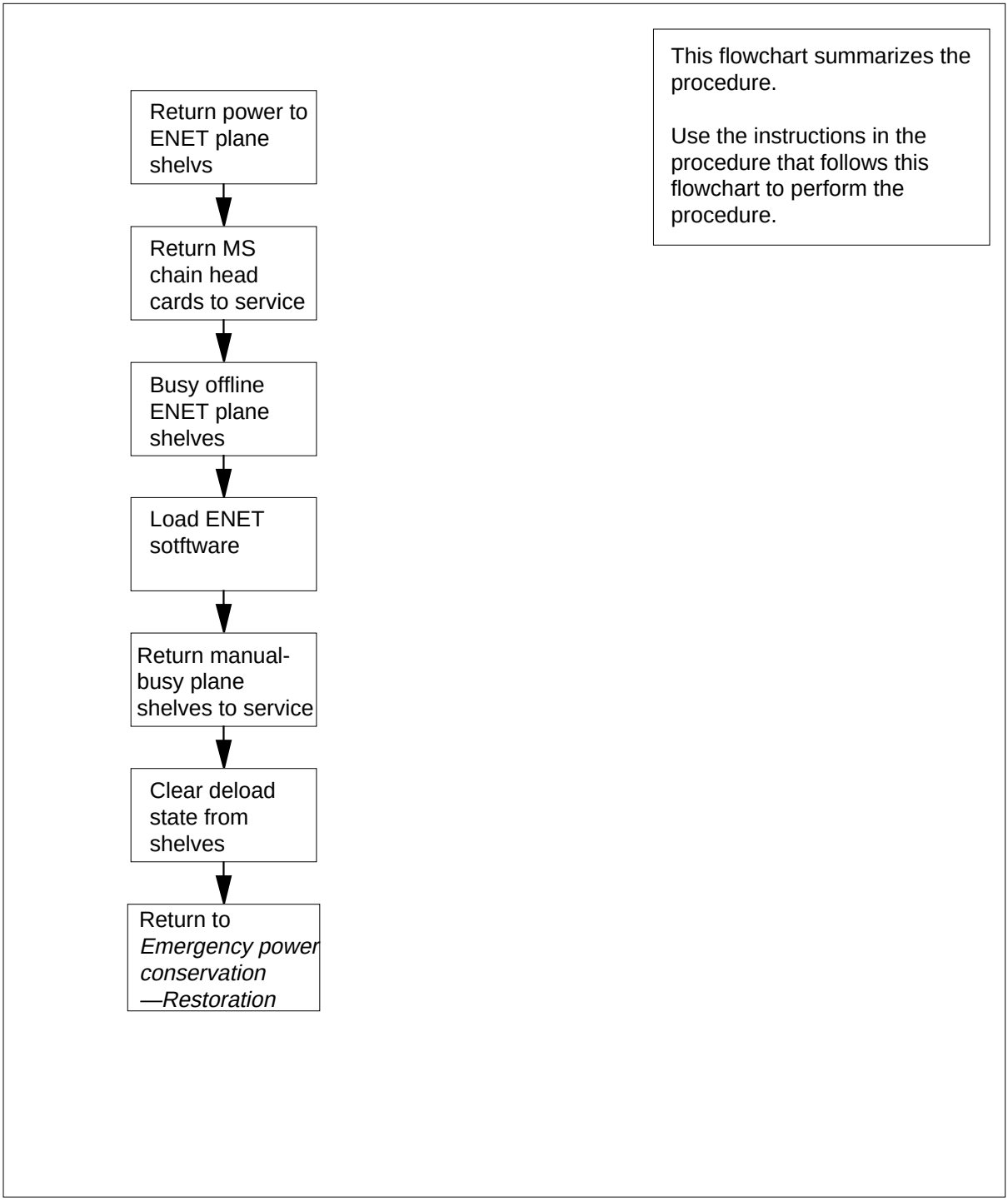
***Note:*** MAP displays in this procedure are for the 128k ENET. Displays for the 64k ENET are identical to the 128k ENET display, shelves 2 and 3 are shown as unequipped (-), as shown in the following example:

*Example of a 64k ENET MAP display:*

```
ENET     SystemMatrixShelf          0 1 2 3
Plane0Fault .  C . - -
Plane1   .  .  . .- -
```

# Emergency power conservation
# Restoring a SuperNode ENET to duplex operation (continued)

**Summary of Restoring a SuperNode ENET to duplex operation**



# Emergency power conservation
## Restoring a SuperNode ENET to duplex operation (continued)

**Restoring a SuperNode ENET to duplex operation**

***At the ENET cabinet***

**1**

**WARNING**
**Potential extended equipment outage**
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) to expedite recovery of equipment.

**WARNING**
**Potential loss of service or extended outage**
This procedure restores normal operation after you perform emergency power conservation measures. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory (FSP) or a modular supervisory panel (MSP) to handle circuit cards. The strap protects the cards against static electricity damage.

Make sure that the cooling fans for the ENET cabinets operate.

**2** Restore power to each ENET plane shelf that you powered down to conserve emergency power. Power up each of the offline plane shelves as follows:

**a** At the same time, press up the switches on the faceplates of the power converters in slots 1 and 4.

***Note:*** The LED with a label CONVERTER OFF goes out when you power up each converter.

**b** At the same time, press up the switches on the faceplates of the power converters in slots 33 and 36.

***At the MAP terminal***

**3** To access the ENET system level, type

```
>MAPCI;MTC;NET;SYSTEM
```

and press the Enter key.

*Example of a MAP display*

## Emergency power conservation
## Restoring a SuperNode ENET to duplex operation (continued)

```
SYSTEM
 Shelf    Plane 0                  Plane 1
   00        .                        .
```

**4** To identify the message switch card chain that connects to each shelf that was powered down to conserve emergency power, type

**>TRNSL plane_no shelf_no**

and press the Enter key.

*where*

**plane_no**
is the ENET plane number (0 or 1)

**shelf_no**
is the ENET shelf number (0 to 7)

*Example of a MAP response:*

```
Request to TRNSL ENET Plane:0 Shelf:00 passed.
ENET Plane:0 Shelf:00 MS:0 and 1 Card:20 Link:00
Port:00
```

**5** Note the card number and link number.

**6** To access the MS Shelf level of the MAP display, type

**>MS;SHELF;CHAIN card_no**

and press the Enter key.

*where*

**card_no**
is the card number you noted in step 5

**7** To return the head card in the associated chain on MS 0 to service, type

**>RTS 0 LINK link_no**

and press the Enter key.

*where*

**link_no**
is the link number you noted in step 5

**8** To return the head card in the associated chain on MS 1 to service, type

**>RTS 1 LINK link_no**

and press the Enter key.

*where*

**link_no**
is the link number you noted in step 5

**9** Repeat steps 4 to 8 for each plane shelf you powered down to conserve power. When you have finished, return to this point and continue the procedure.

## Emergency power conservation
## Restoring a SuperNode ENET to duplex operation (continued)

**10** To access the network System level of the MAP display, type

**>NET;SYSTEM**

and press the Enter key.

*Example of a MAP display:*
SYSTEM
ShelfPlane 0Plane 1
00 O
01 O

**11** Determine the reason the ENET shelves are offline.

| If | Do |
|---|---|
| you powered down all the offline ENET plane shelves to conserve emergency power | step 14 |
| any ENET shelves are offline for reasons other than to conserve emergency power | step 12 |

**12** To manually busy the first offline plane shelf, type

**>BSY plane_no shelf_no**

and press the Enter key.

*where*

**plane_no**
is the ENET plane number (0 or 1)

**shelf_no**
is the ENET shelf number (0 to 7)

*MAP response:*
Request to MAN BUSY ENET Plane:0 Shelf:00 submitted.
Request to MAN BUSY ENET Plane:0 Shelf:00 passed.

**13** Repeat step 12 for each plane shelf that you powered down to conserve emergency power. Go to step 15.

**14** To manually busy all offline shelves, type

**>BSY ALL OFFL**

and press the Enter key.

**15** Determine if you manually busied all ENET plane shelves when you powered down the shelves to conserve emergency power. Load the shelves as a

## Emergency power conservation
## Restoring a SuperNode ENET to duplex operation (continued)

group if you powered down all plane shelves to conserve emergency power. Load the shelves separately if the shelves are manual busy for other reasons.

| If you want to load | Do |
|---|---|
| ENET shelves separately | step 16 |
| all ENET plane shelves at the same time | step 19 |

**16** To load software into the selected shelf, type

**>LOADEN plane_no shelf_no**

and press the Enter key.

*where*

**plane_no**
is the ENET plane number (0 or 1)

**shelf_no**
is the ENET shelf number (0 to 7)

*MAP response:*
WARNING Any software load in the ENET will be destroyed.
Please confirm ("YES" or "NO"):

Load software into the selected plane shelf by typing

**17** To confirm the command type

**>YES**

and press the Enter key.

**18** Repeat steps 16 and 17 for each shelf that you powered down to conserve emergency power. Go to step 20.

**19** To load software into all manual busy plane shelves, type

**>LOADENALL NOPROMPT NOWAIT**

and press the Enter key.

**20** Determine if you manually busied all ENET plane shelves when you powered down the shelves to conserve emergency power. Load the shelves as a group if you powered down all plane shelves to conserve emergency power. Load the shelves separately if the shelves are manual busy for other reasons.

| If you want to return to service | Do |
|---|---|
| all ENET plane shelves at the same time | step 21 |
| shelves separately | step 25 |

**21** To return all manual busy plane shelves on the plane to service, type

**>RTS plane_no ALL**

## Emergency power conservation
## Restoring a SuperNode ENET to duplex operation (continued)

and press the Enter key.

*where*

**plane_no**
is the network plane number (0 or 1)

*MAP response:*
Request to RTS ENET Plane:0 Shelf:00 submitted.
Request to RTS ENET Plane:0 Shelf:00 passed.

**22** To manually busy all matrix cards in one plane, type

```
>MATRIX;BSY  plane_no  ALL
```

and press the Enter key.

*where*

**plane_no**
is the ENET plane number (0 or 1)

**23** To return all matrix cards in one plane to service, type

```
>RTS  plane_no  ALL
```

and press the Enter key.

*where*

**plane_no**
is the ENET plane number (0 or 1)

**24** Go to step 31.

**25** To return a single shelf to service, type

```
>RTS  plane_no  shelf_no
```

and press the Enter key.

*where*

**plane_no**
is the ENET plane number (0 or 1)

**shelf_no**
is the ENET shelf number (0 to 7)

*MAP response:*
Request to RTS ENET Plane:0 Shelf:00 submitted.
Request to RTS ENET Plane:0 Shelf:00 passed.

**26** Repeat step 25 for each plane shelf powered down to conserve power. When you have finished, continue this procedure.

**27** To access the Shelf level for the first ENET shelf you returned to service, type

```
>SHELF  shelf_no
```

and press the Enter key.

*where*

**shelf_no**
is the ENET shelf number (0 to 7)

## Emergency power conservation
## Restoring a SuperNode ENET to duplex operation (continued)

**28** To manually busy all matrix cards in the shelf, type

**>BSY plane_no ALL**

and press the Enter key.

*where*

**plane_no**
is the ENET plane number (0 or 1)

**29** To return to service all matrix cards in the shelf, type

**>RTS plane_no ALL**

and press the Enter key.

*where*

**plane_no**
is the ENET plane number (0 or 1)

**30** Repeat steps 27 to 29 for each ENET shelf you powered down to conserve power. When you have finished, continue this procedure.

**31** To access the network System level of the MAP display, type

**>NET;SYSTEM**

and press the Enter key.

**32** The next action depends on how you want to clear the deload condition.

| If you want to clear the deload condition on | Do |
|---|---|
| ENET shelves separately | step 33 |
| all ENET plane shelves at the same time | step 35 |

**33** To clear the deload condition on one ENET plane shelf, type

**>DELOAD plane_no shelf_no CLEAR**

and press the Enter key.

*where*

**plane_no**
is the ENET plane number (0 or 1)

**shelf_no**
is the ENET shelf number (0 to 7)

*MAP response:*
Request to CLEAR DELOAD ENET Plane:0 Shelf:00 submitted.
Request to CLEAR DELOAD ENET Plane:0 Shelf:00 passed.

**34** Repeat step 33 for each plane shelf powered down to conserve emergency backup power.

# Emergency power conservation
## Restoring a SuperNode ENET to duplex operation (end)

**35** To clear the deload condition on cards in the plane that you powered down to conserve emergency power, type

**`>DELOAD plane_no CLEAR`**

and press the Enter key.

*where*

**plane_no**
is the ENET plane number (0 or 1)

*MAP response:*
Request to CLEAR DELOAD ENET Plane:0 submitted.
Request to CLEAR DELOAD ENET Plane:0 passed.

**36** Return to the procedure *Emergency power conservation—Restoration* in this document and proceed as directed.

# Emergency power conservation
# Restoring a SuperNode SE ENET to duplex operation

## Application

Use this procedure to restore a SuperNode SE enhanced network (ENET) to duplex operation. This procedure applies to SuperNode SE 16k and 32k ENET. Perform this procedure after you power down one ENET plane to conserve emergency power.

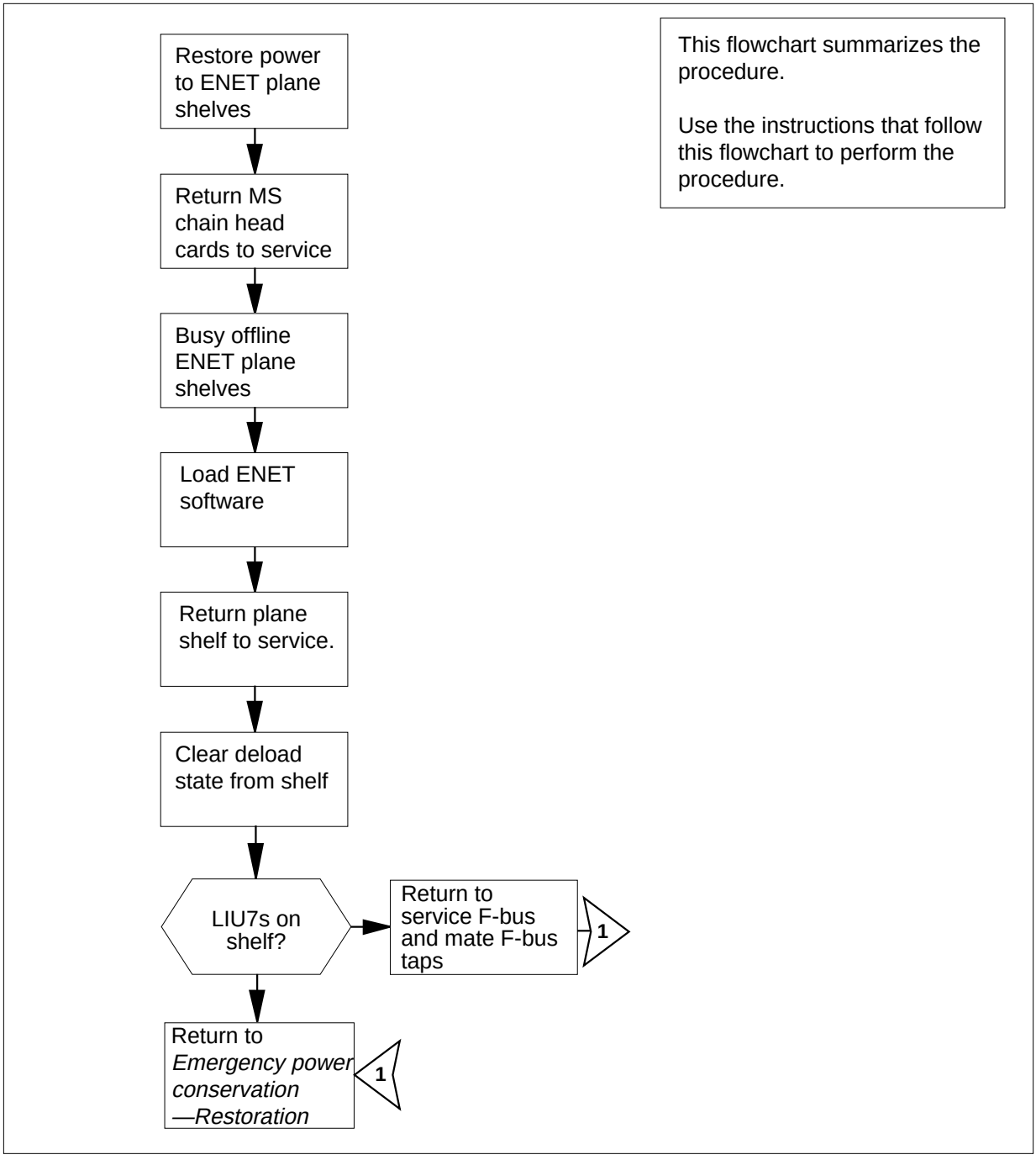
This procedure assumes that you followed the procedure *Emergency power conservation—Shutdown* to take equipment out of service. This procedure also assumes that all equipment was in normal in-service operation before the need to perform the emergency power conservation procedure occurred.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to perform the recovery task.

# Emergency power conservation
# Restoring a SuperNode SE ENET to duplex operation (continued)

**Summary of Restoring a SuperNode SE ENET to duplex operation**



# Emergency power conservation
# Restoring a SuperNode SE ENET to duplex operation (continued)

**Restoring a SuperNode SE ENET to duplex operation**

***At the ENET shelf***

**1**

**WARNING**
**Potential extended equipment outage**
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) to expedite recovery of equipment.

**WARNING**
**Potential loss of service or extended outage**
This procedure restores normal operation after you perform emergency power conservation measures. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory (FSP) or a modular supervisory panel (MSP) to handle circuit cards. The strap protects the cards against static electricity damage.

Make sure that the cooling fans for the ENET cabinet operate.

**2** The next action depends on which ENET plane you powered down to conserve power.

| If you shut down | Do |
|---|---|
| plane 0 of a 16k ENET | step 3 |
| plane 1 of a 16k ENET | step 5 |
| Either plane of a 32K ENET | step 7 |

# Emergency power conservation
# Restoring a SuperNode SE ENET to duplex operation (continued)

***At the ENET shelf***

**3** At the same time, press up the switches on the faceplates of the power converters in slots 1 and 4.

***Note:*** The LED with a label CONVERTER OFF goes out when you power up each converter.

**4** Go to step 8.

***At the ENET shelf***

**5** At the same time, press up the switches on the faceplates of the power converters in slots 33 and 36.

***Note:*** The LED with a label CONVERTER OFF goes out when you power up each converter.

**6** Go to step 8.

***At the ENET shelf***

**7** Restore power to the ENET shelf you powered down to conserve emergency power. Power up the offline plane shelf as follows:

**a** At the same time, press up the switches on the faceplates of the power converters in slots 1 and 4.

***Note:*** The LED with a label CONVERTER OFF goes out when you power up each converter.

**b** At the same time, press up the switches on the faceplates of the power converters in slots 33 and 36.

***At the MAP terminal***

**8** To access the ENET system level, type

**`>MAPCI;MTC;NET;SYSTEM`**

and press the Enter key.

*Example of a MAP display*

```
SYSTEM
 Shelf    Plane 0                  Plane 1
   00        .                        .
```

**9** To identify the message switch card chain that connects to the shelf that was powered down to conserve emergency power, type

**`>TRNSL  plane_no  shelf_no`**

and press the Enter key.

*where*

**plane_no**
is the ENET plane number (0 or 1)

**shelf_no**
is the ENET shelf number (0 to 1)

## Emergency power conservation
## Restoring a SuperNode SE ENET to duplex operation (continued)

*Example of a MAP response:*
Request to TRNSL ENET Plane:0 Shelf:00 submitted.
Request to TRNSL ENET Plane:0 Shelf:00 passed.
ENET Plane:0 Shelf:00 MS:0 and 1 Card:05 Link:00 Port:000

**10** Note the card number and link number.

**11** To access the MS Shelf level of the MAP display, type

**`>MS;SHELF;CHAIN card_no`**

and press the Enter key.

*where*

**card_no**
is the card number you noted in step 10

**12** To return the head card in the associated chain on MS 0 to service, type

**`>RTS 0 LINK link_no`**

and press the Enter key.

*where*

**link_no**
is the link number you noted in step 10

**13** To return the head card in the associated chain on MS 1 to service, type

**`>RTS 1 LINK link_no`**

and press the Enter key.

*where*

**link_no**
is the link number you noted in step 10

**14** To access the network System level of the MAP display, type

**`>NET;SYSTEM`**

and press the Enter key.

*Example of a MAP display:*
SYSTEM
ShelfPlane 0Plane 1
00 O

**15** To manually busy the shelf that you powered down to conserve power, type

**`>BSY plane_no shelf_no`**

and press the Enter key.

*where*

**plane_no**
is the ENET plane number (0 or 1)

**shelf_no**
is the ENET shelf number (0 or 1)

*MAP response:*

## Emergency power conservation
## Restoring a SuperNode SE ENET to duplex operation (continued)

Request to MAN BUSY ENET Plane:0 Shelf:00 submitted.
Request to MAN BUSY ENET Plane:0 Shelf:00 passed.

**16** To load software into the shelf, type

**`>LOADEN plane_no shelf_no`**

and press the Enter key.

*where*

**plane_no**
is the ENET plane number (0 or 1)

**shelf_no**
is the ENET shelf number (0 to 7)

*MAP response:*
WARNING Any software load in the ENET will be destroyed.
Please confirm ("YES" or "NO"):

**17** To confirm the command, type

**`>YES`**

and press the Enter key.

**18** To return the shelf to service, type

**`>RTS plane_no shelf_no`**

and press the Enter key.

*where*

**plane_no**
is the network plane number (0 or 1)

**shelf_no**
is the ENET shelf number (0 or 1)

*MAP response:*
Request to RTS ENET Plane:0 Shelf:00 submitted.
Request to RTS ENET Plane:0 Shelf:00 passed.

**19** To access the ENET shelf level, type

**`>SHELF shelf_no`**

and press the Enter key.

*where*

**shelf_no**
is the ENET shelf number (0 or 1)

*MAP response:*
Request to RTS ENET Plane:0 Shelf:00 submitted.
Request to RTS ENET Plane:0 Shelf:00 passed.

**20** To manually busy all matrix cards, type

**`>BSY plane_no ALL`**

and press the Enter key.

## Emergency power conservation
## Restoring a SuperNode SE ENET to duplex operation (continued)

*where*

**plane_no**
is the network plane number (0 or 1)

**21** To return all matrix cards to service, type

**>RTS plane_no ALL**

and press the Enter key.

*where*

**plane_no**
is the network plane number (0 or 1)

**22** To access the Network level, type

**>NET**

and press the Enter key.

**23** To clear the deload condition on cards on the shelf that you powered down to conserve emergency power, type

**>DELOAD plane_no CLEAR**

and press the Enter key.

*where*

**plane_no**
is the ENET plane number (0 or 1)

*MAP response:*
Request to CLEAR DELOAD ENET Plane:0 Shelf:00 submitted.
Request to CLEAR DELOAD ENET Plane:0 Shelf:00 passed.

**24** Determine if a link interface unit (LIU) is present on the enhance network and Interface (ENI) shelf in the single core cabinet (SCC). If an LIU is present, the LIUs reside in ENI shelf slots 7 to 9, and 30 to 32.

| If an LIU is | Do |
|---|---|
| present | step 26 |
| not present | step 28 |

**25** To access the F-bus level, type

**>MS;SHELF;CARD 12**

and press the Enter key.

**26** To return to service the F-bus connected the ENET plane that you powered down, type

**>RTS ms_no FBUS**

and press the Enter key.

*where*

## Emergency power conservation
## Restoring a SuperNode SE ENET to duplex operation (end)

**ms_no**
is the MS number (0 or 1). Enter 0 if you powered down plane 0 of the ENI shelf. Enter 1 if you powered down plane 1 of the ENI shelf.

**27** To return the tap on the mate F-bus to service, type

```
>RTS  ms_no  TAP  tap_no
```

and press the Enter key.

*where*

**ms_no**
is number of the MS (0 or 1) that controls the mate F-bus. MS 0 controls the F-bus for plane 0. MS 1 controls the F-bus for plane 1.

**tap_no**
is the F-bus tap number. If the mate F-bus is controlled by MS 0, enter a tap number of 0. If the mate F-bus is controlled by MS 1, enter a tap number of 11.

**28** Return to the procedure *Emergency power conservation—Restoration* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation Shutdown

## Application

Use this procedure to conserve emergency backup power on a Digital Multiplex System (DMS) SuperNode switch without loss of subscriber service. Perform this procedure during an extended commercial power outage.

This procedure reduces the loss of power on emergency batteries to a minimum. The procedure shuts down equipment that you do not require to maintain subscriber service. The procedure specifies equipment shutdown in ascending order based on how the shutdown affects system reliability. Equipment shutdown can begin with the spare printers that are not as necessary. Equipment shutdown can end with the inactive computing module (CM) plane that is necessary.

The procedure consists of a top-level procedure and a number of subprocedures. The top-level procedure in this document is *Emergency power conservation—shutdown.* This procedure specifies the equipment and the order of the equipment that you power down without the loss of service. The top-level procedure refers to the subprocedures that provide instructions to power down separate elements of the switch. The table of contents lists the subprocedures.

## Usage notes

Note the configuration and condition of your switch and the expected duration of the power outage. Note the quantity of reserve power available during this procedure. Proceed as follows:

Complete as much of this procedure as necessary. For example, if you anticipate a restoration of power, you can leave major subsystems that operate in duplex mode. Major subsystems include the message switch (MS) and the CM. For system

reliability, you can leave both units in service on peripheral modules required for emergency service lines.

This procedure can instruct you to busy and power down one plane or unit of a subsystem. The mate plane or unit you leave in service must be problem free and must operate normally.

Take the same unit or plane number out of service on each subsystem. For example, remove enhanced network (ENET) plane 0, link interface module (LIM) unit 0, MS 0, and unit 0 of XPMs from service.

**Warning:**
**Loss of service**
Internal network blockages between XPMs will occur if the XPMs have different units (unit 0 or unit 1) powered down.

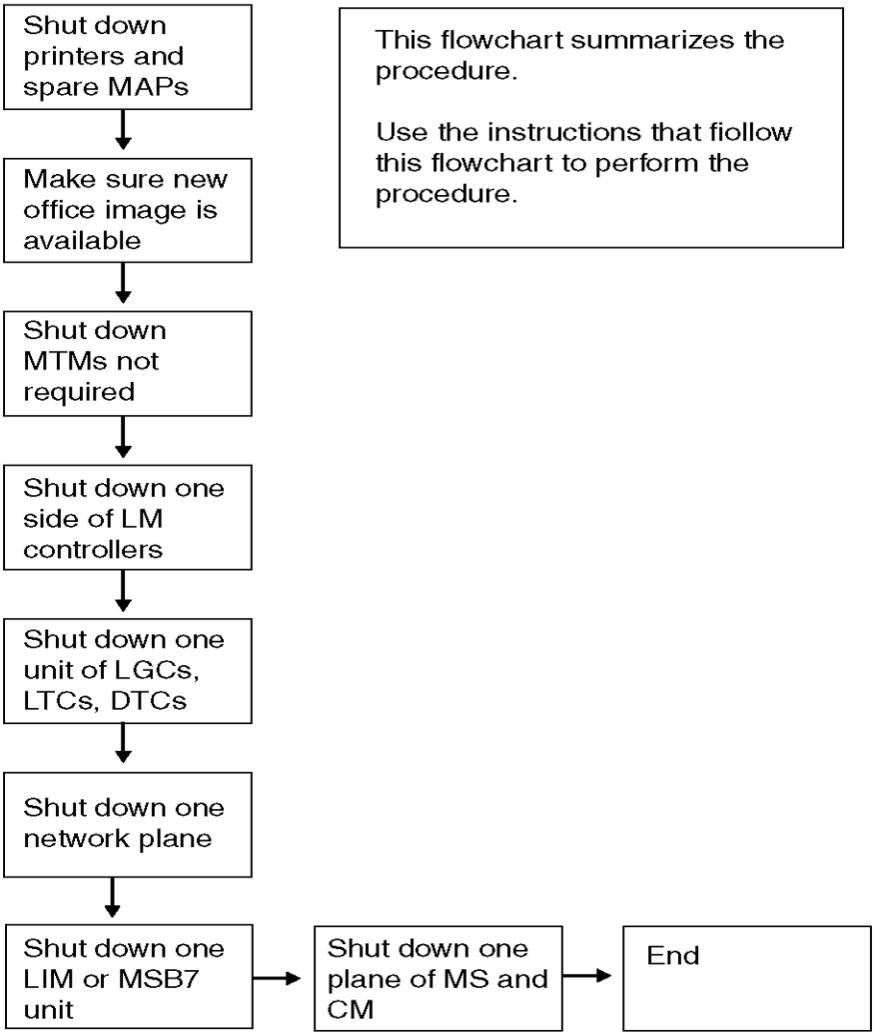
**Warning:**
**Loss of service**
Loss of communication to XPMs from the network will occur if the ENET or JNET plane that is powered down is not the same number as the unit that is powered down in the XPMs. This will result in loss of service to those XPMs.

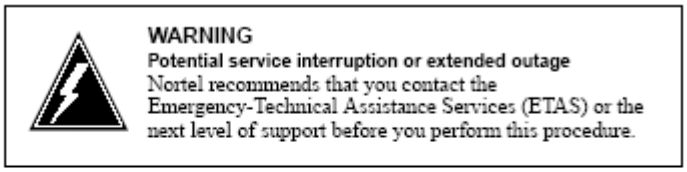
***Note:*** A warning prompt indicates a loss of service when you attempt to busy a subsystem unit or plane. Do not proceed if you receive this prompt. Clear the problem. Busy the mate unit or plane, or leave both planes or units of that subsystem in service.

## Action

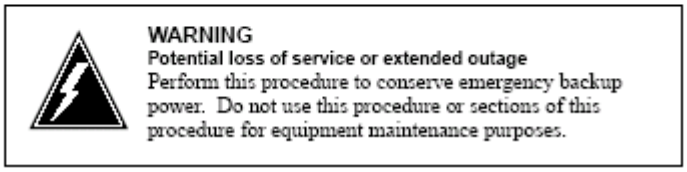
The following flowchart provides a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

**Summary of Emergency power conservation - Shutdown**





**WARNING**
**Potential service interruption or extended outage**
Nortel recommends that you contact the Emergency-Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.



**WARNING**
**Potential loss of service or extended outage**
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

## At your current location

1 Read the section Usage notes in this document.

2 Use office records to identify the power inverters that supply the MAPs and printers for the switch.

3 Power off the inverters identified in step 2. Do not power down the inverter that supplies the operator MAP terminal and one printer connected to IOC 0.

## At the MAP terminal

4 If a total shutdown is necessary, confirm that a new office image is available to reload the switch. To confirm that a new office image is available to reload the switch, type

**>AUTODUMP STATUS**

and press the Enter key.

*Example of a MAP response:*

```
Successful Image: S990218220590_CM
Taken: 1999/02/18 22:05:08.952 THU.
On Volume: S00DIMAGE

Last Image: S990218220590_CM
Taken: 1999/02/18 22:05:08.952 THU.
On Volume: S00DIMAGE

ISN Auto Imaging was last run on 1999/02/18
23:22:10.619 THU.
0 images were requested by PRSM.
0 images were taken successfully.
0 images failed.
0 images were aborted.


The latest ISN Auto Imaging history file is
S990218232HISISN on
S00DIMAGE.

SCHEDULEDñImage Dump is ON.
```

```
RETAIN option is OFF.

Next scheduled dump is FRIDAY at 22:00 hours.
Next image to be dumped S01DIMAGE.
```

| If a recent office image | Do |
|---|---|
| is available | step 6 |
| is not available | step 5 |

5 Use the procedure Recording an office image on an SLM diskin Routine Maintenance Procedures to take an office image.

6 Power down all maintenance trunk modules in the office. Do not power down maintenance trunk modules that contain cards that affect service. To power down all maintenance trunk modules, perform the procedure

**Note:** Cards that affect service include digitone receiver cards (NT2X48), and centralized-automatic message accounting (CAMA) cards(NT2X66 and NT2X66). Cards that affect service also include digital-recorded announcement machine (DRAM) cards.

7 Power down one line module controller (NT2X14 shelf) in each double-bay line module pair in the office. To power down a NT2X14 shelf, perform the procedure *Emergency shutdown of one half a line module pair* in this document.

8 Do not power down any LCMs as both units are designed to draw power from either the unit 0 or the unit 1 power converter and no power savings will be realized by powering down one power converter of a LCM.

9 Determine which plane of the ENET or JNET is to be powered down and power down the same unit number of the LGC, LTC, or DTC.

| If the plane to be powered down is | Do |
|---|---|
| Plane 0 | Power down unit 0 of each of the following:<br>• all line group controllers (LGC)<br>• all line trunk controllers (LTC)<br>• all digital trunk controllers (DTC) |
| Plane 1 | Power down unit 1 of each of the following:<br>• all line group controllers (LGC)<br>• all line trunk controllers (LTC)<br>• all digital trunk controllers (DTC) |

To power down one LGC, LTC and DTC unit, perform the procedure *Emergency shutdown of one LGC, LTC and DTC unit* in this document.

**Warning:**
**Loss of service**
Internal network blockages will occur if LGCs, LTCs, or DTCs have different units (unit 0 or unit 1) powered down.

10 Power down one plane of all the network shelves in the office

| If the LGCs, LTCs, & DTCs have | Do |
|---|---|
| Unit 0 powered down | Power down plane 0 |
| Unit 1 powered down | Power down plane 1 |

as follows:

For ENET, perform the procedure *Emergency shutdown of one enhanced network plane* in this document

For JNET, perform the procedure *Emergency shutdown of one junctored network plane* in this document

**Warning:**
**Loss of service**
Loss of service to LGCs, LTCs, or DTCs will occur if the ENET or JNET plane that is powered down is not the same number as the unit that is powered down in the LGCs, LTCs, or DTCs.

11 If you remove power from the whole network frame in step 10 perform the following procedure. To remove the appropriate power fuses from the PDC, power down the cooling fans for the frame.

12 Busy and power down one local message switch in the link peripheral processor (LPP) or enhanced link peripheral processor (ELPP). To busy and power down an LPP, perform the procedure *Emergency shutdown of one LIM unit on each LPP* in this document. To busy and power down an ELPP, perform the procedure *Emergency shutdown of one LIM unit on each ELPP* in this document.

13 Power down one unit of all CCS7 message switch and buffers (MSB7) in the office. To power down an MSB7, perform the procedure *Emergency shutdown of one unit of MSB7s* in this document.

14 Power down one message switch plane. To power down one message switch plane, perform the procedure *Emergency shutdown of one DMS SuperNode MS plane* in this document.

15 If your office has a remote oscillator (Bliley) shelf (NT3X9507), perform this procedure. Busy the clock that associates with the MS number you powered down in step 14. To busy the MS clock, perform the procedure *Emergency shutdown of one remote oscillator shelf plane* in this document.

16 To power down one plane of the CM, perform the procedure *Emergency shutdown of one DMS SuperNode CM plane* in this document.

17 The procedure is complete.

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# Emergency shutdown of DMS system

## Application

Use this procedure to power down a DMS SuperNode switch as follows:

- in the event of an emergency, for example flooding or fire
- to protect equipment if the available functioning voltage at the power distribution center (PDC) falls below -43.75 V dc
- when instructed by the next level of support

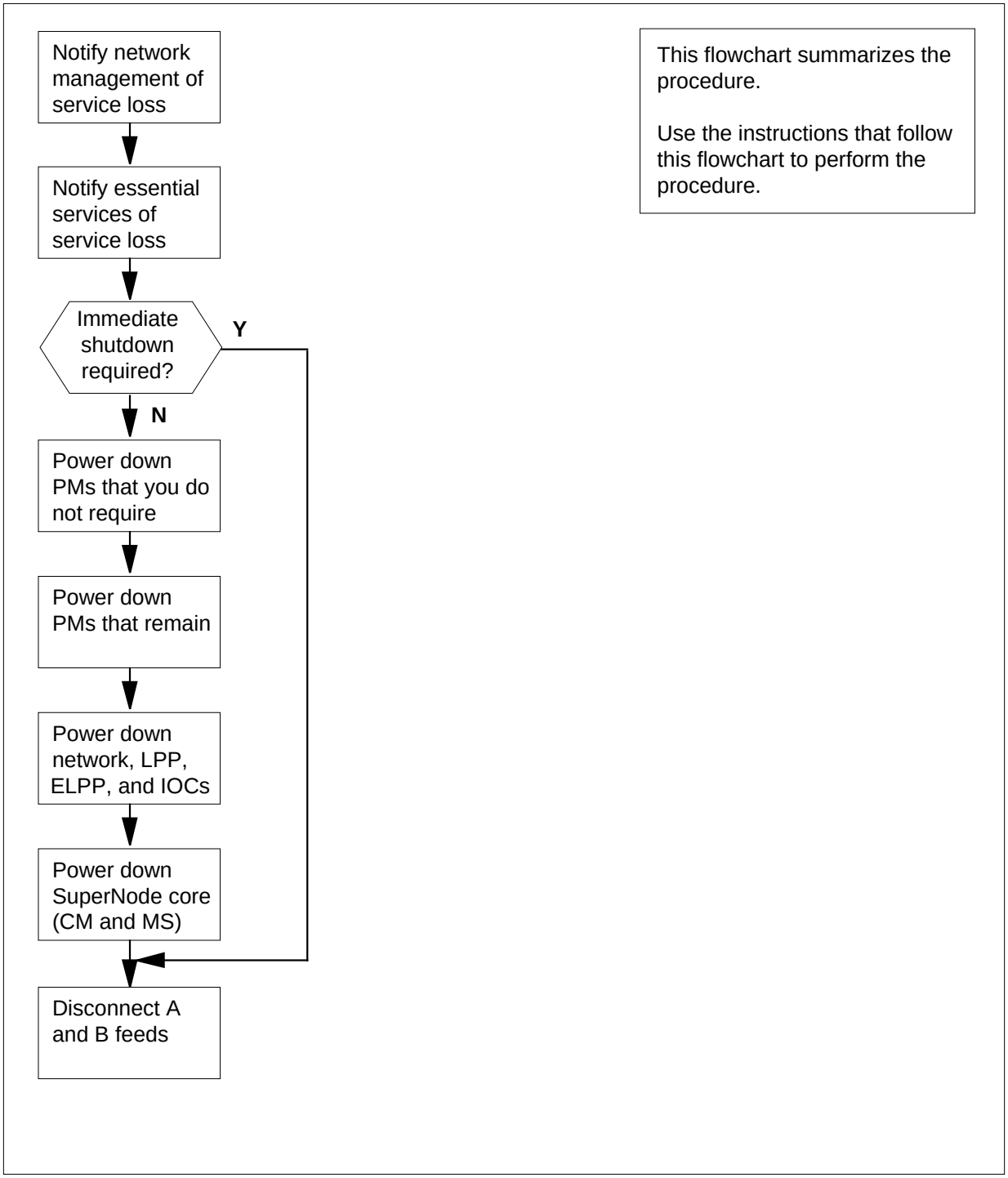
Do not use this procedure to conserve emergency backup power. To conserve emergency backup power, perform the procedure *Emergency power conservation—shutdown* in this document. That procedure powers down elements of the switch that you do not require.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Emergency shutdown of DMS system (continued)

**Summary of Emergency shutdown of DMS system**



# Emergency shutdown of DMS system (continued)

**Emergency shutdown of DMS system**

***At your Current Location***

**1**

**WARNING**
**This procedure results in a complete loss of subscriber service**
Nortel recommends that you contact Emergency-Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

Notify network management personnel of the service interruption that will occur.

**2** Notify emergency services of the service interruption that will occur. Emergency services include police, fire, and ambulance.

**3** Proceed as follows:

| If | Do |
|---|---|
| dangerous environmental conditions cause you to power down the switch immediately | step 4 |
| you have a minimum of 30 min to power down the switch in the correct order | step 6 |

**4** To power off the PDCs, disconnect the A and B feeds at the power room.

***Note:*** Perform the procedure in step 4 to power down the switch only if necessary. Electricity can arc when you perform this procedure.

**5** Go to step 18.

**6** Use office records to identify the peripheral modules that host emergency services like fire, police and medical assistance. Perform this procedure to power down these peripherals last.

**7** Power down the power converter for each maintenance trunk module shelf. Do not power down the power converters required for emergency service lines. You identified the power converters for emergency service lines in step 6.

***Note:*** The line modules and digital carrier modules are older peripheral modules. These older peripherals use universal tone receivers. The universal tone receivers are in the maintenance trunk modules.

**8** Power down the inverters for all MAPs and printers, except the operator MAP terminal and one printer.

**9** Power down the power converters on all digital trunk controllers and trunk modules, except the power converters for emergency service

## Emergency shutdown of DMS system (end)

communications. You identified the power converters for emergency service lines in step 6.

**10** Power down the power converters on each line module shelf, except those identified in step 6 that host emergency service lines.

**11** Power down the power converters on all line concentrating modules, except those identified in step 6 that host emergency service lines.

**12** Power down the power converters on all line group controllers and line trunk controllers, except the power converters for emergency service communications. You identified the power converters for emergency service lines in step 6.

**13** Power down all the peripheral modules that remain. Power down the required service PMs last.

**14** Power down each network module (NM), link peripheral processor (LPP), enhanced link peripheral processor (ELPP), and input/output controller (IOC).

***Note:*** Unseat and reseat the power converters to power down the ENET, LPP, and ELPP.

**15** Power down all the devices that remain. Power down the inverter that supplies the operator MAP terminal, external printers, tape drives, or disk drives.

**16** Power down the computing module (CM) and message switch (MS). Power down the power converters to power down one plane. Unseat and reseat the power converters to power down the second plane.

**17** Disconnect the A and B feeds at the power room to power down each power distribution center (PDC).

**18** The procedure is complete.

# Emergency power conservation
# Emergency shutdown of maintenance trunk modules

## Application

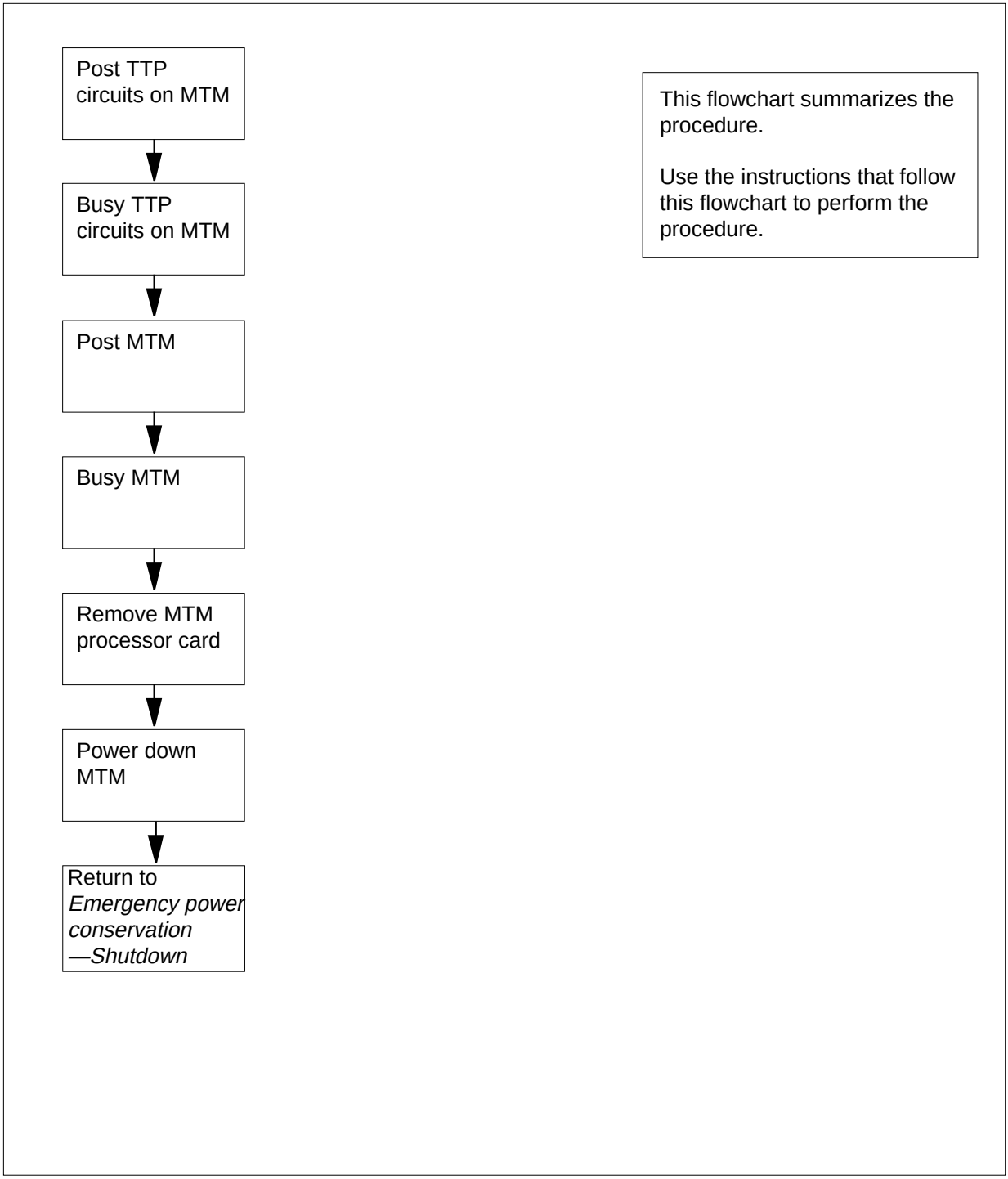
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down maintenance trunk modules (MTM) that do not contain circuits that affect service.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Emergency power conservation
# Emergency shutdown of maintenance trunk modules (continued)

**Summary of Emergency shutdown of maintenance trunk modules**



# Emergency power conservation
# Emergency shutdown of maintenance trunk modules (continued)

### Emergency shutdown of maintenance trunk modules

***At the MAP terminal***

**1**

**WARNING**
**Potential service interruption or extended outage**
Nortel recommends that you contact Emergency Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

**WARNING**
**Potential loss of service or extended outage**
Use this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the TTP level of the MAP display, type

**>MAPCI;MTC;TRKS;TTP**

and press the Enter key.

**2** To post the circuits that associate with the MTM that will shut down, type

**>POST P MTM pm_no**

and press the Enter key.

*where*

**pm_no**
is the PM identification number (0 to 999)

*Example of a MAP response:*

```
   LAST CKT = 27
   POST CKT IDLED
   SHORT CLLI IS: OTDA00
   OK, CKT POSTED

POST    20  DELQ        BUSY Q      DIG
TTP 6-006
CKT TYPE    PM NO.  COM LANG    STA S R DOT TE R
OG  MF TM8 1 0  OTWAON23DA00 2001   LO
                        P_IDL
```

**3** To manually busy all circuits that associate with the MTM, type

**>BSY ALL**

# Emergency power conservation
# Emergency shutdown of maintenance trunk modules (continued)

and press the Enter key.

**4** To access the PM level of the MAP display, type

**>PM;POST MTM pm_no**

and press the Enter key.

*where*

**pm_no**
is the PM identification number (0 to 999)

```
         SysB     ManB     OffL     CBsy     ISTb     InSv
PM         0        2        2        0        7       21
MTM        0        0        1        0        0        6

MTM     0     InSv
```

**5** To manually busy the MTM, type

**>BSY**

and press the Enter key.

***At the shelf***

**6**

**WARNING**
**Static electricity damage**
When you handle circuits cards, wear a wrist strap that connects to a wrist-strap grounding point. A grounding point is on the frame supervisory panel (FSP) or the modular supervisory panel (MSP). The wrist strap protects the cards against static electricity damage.

**WARNING**
**PM shelf failure**
Unseat the NT0X70 processor and memory circuit card before you power down the PM shelf. A firmware error will occur if you do not unseat the NT0X70 processor and memory circuit card.

Unseat the NT0X70 processor card.

**7** Set the handle of the PWR switch in a downward position on the NT2X09 power converter in slot 17.

**8** Set the handle of the PWR switch in a downward position on the NT2X70 power converter in slot 20.

## Emergency power conservation
## Emergency shutdown of maintenance trunk modules (end)

**9** Repeat steps 1 to 8 to power down each MTM.

**10** Return to the *Emergency power conservation—Shutdown* procedure in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation
# Emergency shutdown of one DMS SuperNode CM plane

## Application

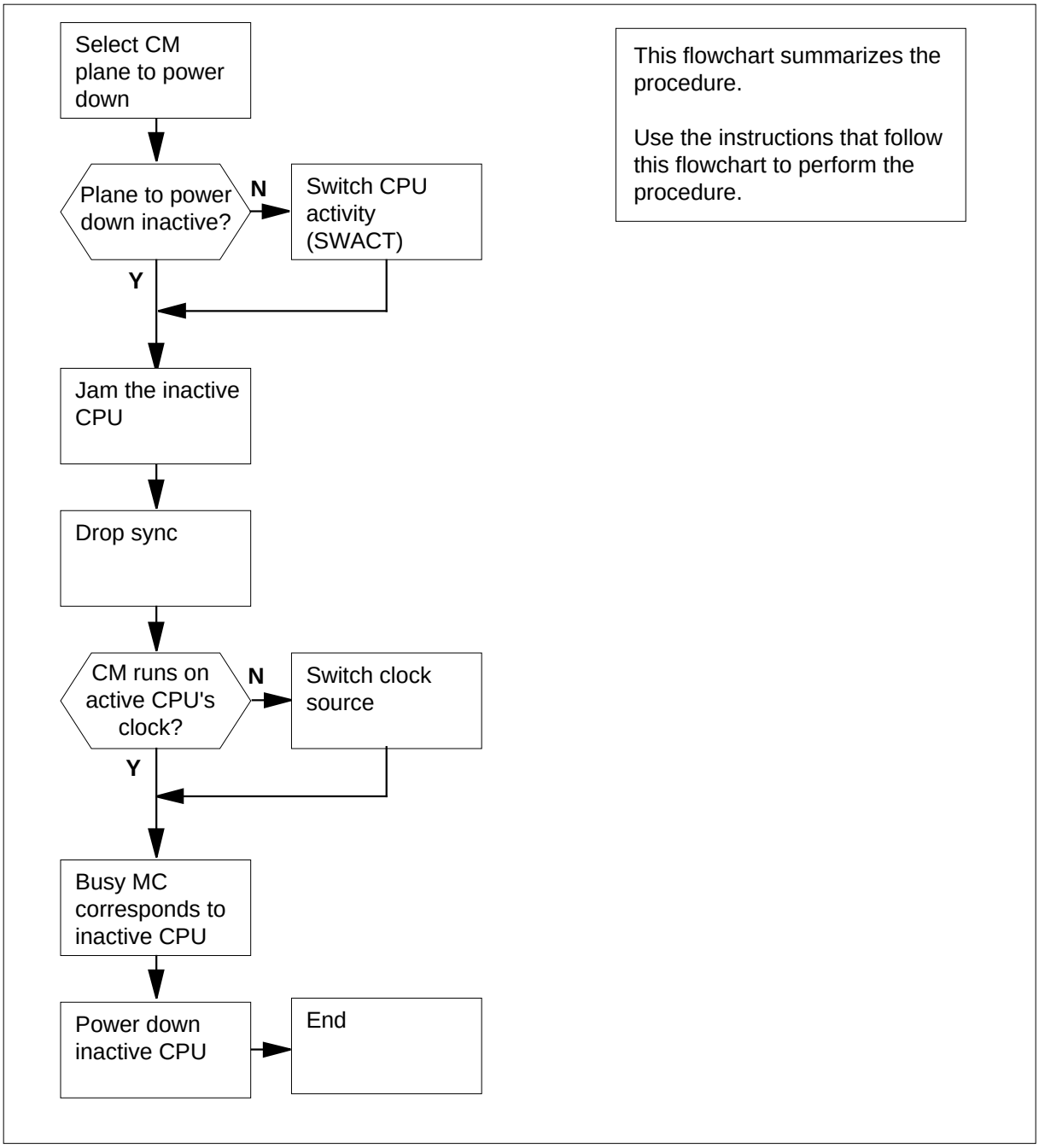
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one computing module (CM) plane.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Emergency power conservation
# Emergency shutdown of one DMS SuperNode CM plane (continued)

**Summary of Emergency shutdown of one DMS SuperNode CM plane**



# Emergency power conservation
# Emergency shutdown of one DMS SuperNode CM plane (continued)

**Emergency shutdown of one DMS SuperNode CM plane**

**CAUTION**
**Potential service interruption or extended outage**
Nortel recommends that you contact Emergency Technical Assistance Services (ETAS) or your next level of support before you perform this procedure.

**CAUTION**
**Potential loss of service or extended outage**
Perform this procedure only to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

***At the MAP terminal***

**1** To access the CM level of the MAP display, type

**`>MAPCI;MTC;CM`**

and press the Enter key.

*Example of a MAP diaplay*

```
CM  Sync  Act  CPU0  CPU1 Jam Memory CMMnt  MC  PMC
 0   no  cpu 1   .     .   no   .     .      .   .
```

**2** Determine the central processing unit (CPU) that is active. The active CPU appears under the header Act on the MAP display.

**3** Determine the state of the computing module planes (cpu 0 and cpu1) before you proceed. (A dot (•) under the corresponding CPU header on the MAP display indicates a fault free CPU.)

| If | Do |
|---|---|
| both CPU planes are fault free | step 7 |
| the inactive CPU has a fault, and the active CPU is fault free | step 7 |
| the active CPU has a fault, and the inactive CPU is fault free | step 5 |

# Emergency power conservation
# Emergency shutdown of one DMS SuperNode CM plane (continued)

| If | Do |
|---|---|
| both CPU 0 and CPU 1 have faults | step 4 |

**4** Do not continue this procedure until you clear the faults on a minimum of one of the CPUs. To clear the faults you must clear the correct CM alarms. Go to step 2 when a minimum of one of the CPUs is fault free.

**5** To switch activity, type

**>SWACT**

and press the Enter key.

*Example of a MAP display*

```
Switch of activity will cause the CM to be running on
the inactive CPU's processor clock. System will drop
SYNC and then re-SYNC in order to switch to the active
CPU's clock.
Do you wish to continue?
Please confirm (”YES”, ”Y”, ”NO”, or ”N”):
```

**6** To confirm the command, type

**>YES**

and press the Enter key.

***At the CM reset terminal for the inactive CPU***

**7**

**WARNING**
**Loss of service**
Make sure that you do not jam the active CPU. A cold restart occurs if you jam the active CPU while the CM is out of sync. The word Active on the top banner of the display identifies the reset terminal for the active CPU.

To jam the inactive CPU, type

**>\JAM**

and press the Enter key.

*RTIF response*

```
Please confirm: (YES/NO)
```

**8** To confirm the command, type

**>YES**

and press the Enter key.

# Emergency power conservation
# Emergency shutdown of one DMS SuperNode CM plane (continued)

*RTIF response*

```
JAM DONE
```

***At the MAP terminal***

**9** To drop synchronization, type

**>DPSYNC**

and press the Enter key.

*Example of a MAP display*

```
About to drop sync with CPU n active.
The inactive CPU is JAMMED.
Do you want to continue?
Please confirm (”YES”, ”Y”, ”NO”, or ”N”):
```

**10** To confirm the command, type

**>YES**

**and press the Enter key.**

**11** Wait until A1 flashes on the reset terminal for the inactive CPU.

***Note:*** Allow 5 min for A1 to begin to flash.

**12** To determine if the CM runs on the clock of the active CPU

**>INSYNC**

and press the Enter key.

*Example of a MAP display:*

```
CPU pair is NOT insync, CPU 0 is active.
CM is running on active CPU clock.

Memory Error Correction is ENABLED.

The inactive CPU IS Jammed.
```

| If the CM | Do |
|---|---|
| runs on the inactive clock | step 13 |
| runs on the active clock | step 14 |

**13** To run the CM on the clock of the active CPU, perform the procedure *Switching the clock source* in *Card Replacement Procedures*. Complete the procedure and return to this point.

**14** To access the MC level of the MAP display, type

**>MC**

## Emergency power conservation
## Emergency shutdown of one DMS SuperNode CM plane (continued)

and press the Enter key.

*Example of a MAP display*

```
MC 0    MC 1
 .       .
```

**15**

**WARNING**
**Loss of service**
Make sure that you busy the message controller that corresponds to the inactive CPU. A warm restart occurs if you power down the plane with the wrong MC busied.

To manually busy the MC that corresponds to the inactive CPU, type

**>BSY mc_number**

**and press the Enter key.**

*where*

**mc_number**
is the number of the MC (0 or 1) on the inactive side

*Example of a MAP display:*

```
Maintenance action submitted.
MC busied OK.
```

# Emergency power conservation
# Emergency shutdown of one DMS SuperNode CM plane (end)

***At the CM shelf***

**16**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

**WARNING**
**Possible loss of service**
Make sure that the CM runs on the active CPU clock. A cold restart or a system image reload can occur if you power down the inactive side of the CM while the CM runs on the clock of the inactive CPU.

Power down the inactive CPU as follows:

- Press down and release the power switch on the faceplate of the NT9X30 power converter. The faceplate of the NT9X30 power converter is on the inactive side of the CM shelf.

  ***Note:*** Slots 4F to 6F contain the power converter for CPU 0. Slots 36F to 38F contain the power converter for CPU 1.

- Press down and release the power switch on the faceplate of the NT9X31 power converter. The faceplate of the NT9X31 power converter is on the inactive side of the CM shelf.

  ***Note:*** Slots 1F to 3F contain the power converter for CPU 0. Slots 33F to 35F contain the power converter for CPU 1.

**17** The procedure is complete.

# Emergency power conservation
# Emergency shutdown of one DMS SuperNode MS plane

## Application

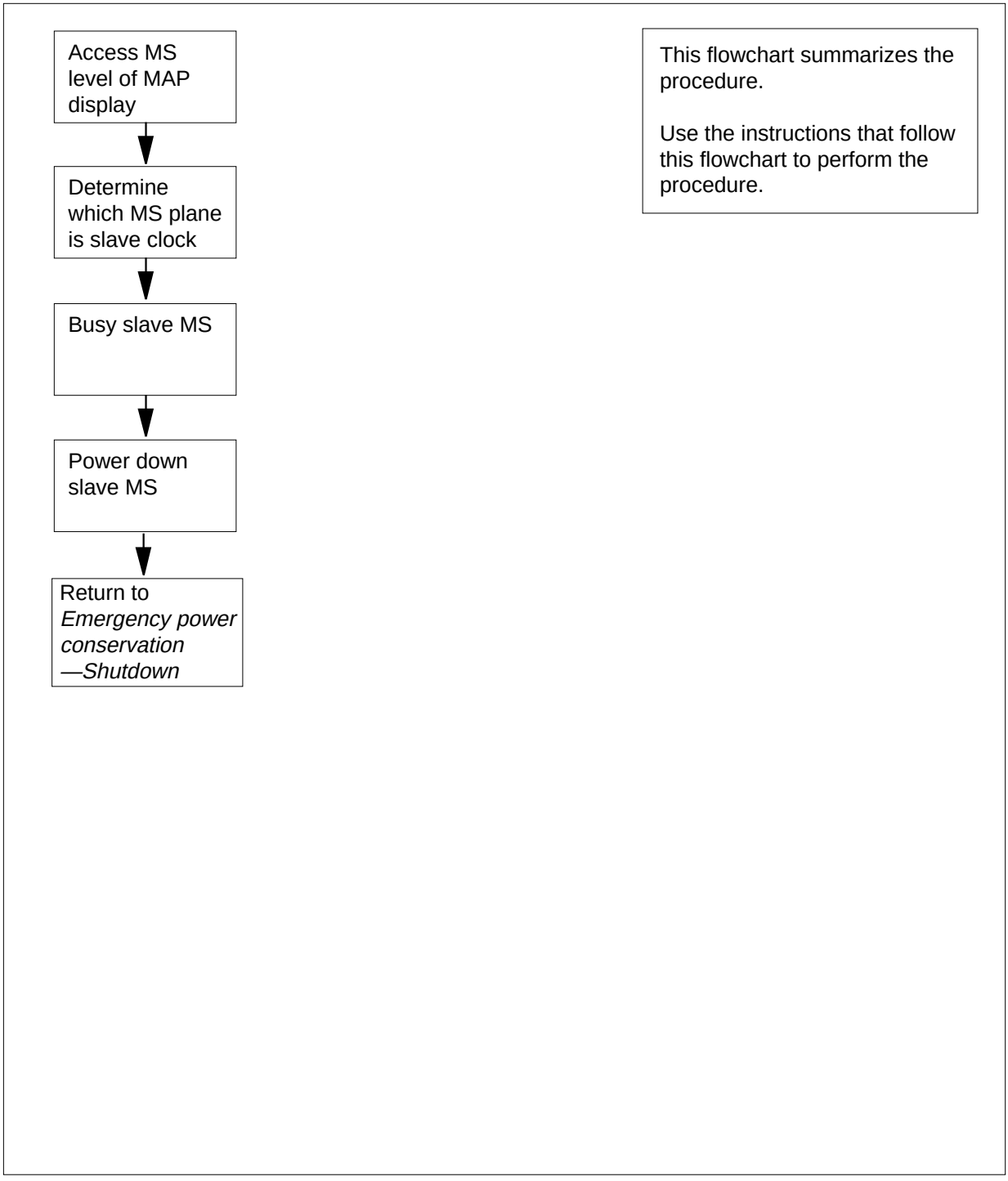
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one message switch (MS) shelf.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Emergency power conservation
# Emergency shutdown of one DMS SuperNode MS plane (continued)

**Summary of Emergency shutdown of one DMS SuperNode MS plane**



# Emergency power conservation
# Emergency shutdown of one DMS SuperNode MS plane (continued)

**Emergency shutdown of one DMS SuperNode MS plane**

***At the MAP terminal***

**1**

**WARNING**
**Potential service interruption or extended outage**
Nortel recommends that you contact Emergency Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

**WARNING**
**Potential loss of service or extended outage**
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the MS level of the MAP display, type

**>MAPCI;MTC;MS**

and press the Enter key.

*Example of a MAP display:*

```
Message Switch   Clock  Shelf 0  Inter-MS Link 0 1
MS 0        .          M Free     .                R .
MS 1        .          Slave      F                S .
```

**2** Determine the MS that is the clock slave. The clock slave appears under the header Clock.

**3** Determine the state of the message switch planes.

| If | Do |
|---|---|
| both MS planes are fault free | step 8 |
| the slave MS has a fault, and the master MS plane is fault free | step 8 |
| the master MS has a fault, but the slave MS is fault free | step 5 |
| both MS planes have faults | step 4 |

## Emergency power conservation
## Emergency shutdown of one DMS SuperNode MS plane (continued)

**4** Do not continue this procedure until you clear the faults on a minimum of one MS. To clear the faults, clear the correct MS. When a minimum of one MS is fault free, go to step 2.

**5** To switch clock mastership, type

**>SWMAST**

and press the Enter key.

*Example of a MAP response:*

```
Request to Switch Clock Mastership MS: 0 submitted.
Request to Switch Clock Mastership MS: 0 passed.
```

| If the SWMAST command | Do |
|---|---|
| passed | step 7 |
| failed | step 6 |

**6** Do not continue this procedure until you clear any faults that can prevent the switch of mastership. To clear the faults, clear the correct MS alarms. When the faults are clear, go to step 2.

**7** Wait 10 min to make sure the MS has stability. Verify MS stability and continue this procedure.

**8** To manually busy the slave MS, type

**>BSY ms_number**

and press the Enter key.

*where*

**ms_number**
is the number of the slave MS (0 or 1)

*Example of a MAP response:*

```
Request to MAN BUSY MS: 0 submitted.
Request to MAN BUSY MS: 0 passed.
```

# Emergency power conservation
# Emergency shutdown of one DMS SuperNode MS plane (end)

***At the MS shelf***

**9**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

**WARNING**
**Possible loss of service**
Make sure that you power down the slave MS. If you power down the MS that contains the master clock, the system shuts down.

Power down the slave MS as follows:

**a** Press down and release the switch on the faceplate of the NT9X30 +5V power converter in slot 4.

**b** Press down and release the switch on the faceplate of the NT9X31 -5V power converter in slot 1.

**c** At the same time, press down and release the switches on the faceplates of both power converters in slots 33 and 36.

**10** Return to the procedure *Emergency power conservation-Shutdown* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation
# Emergency shutdown of one enhanced network plane

## Application

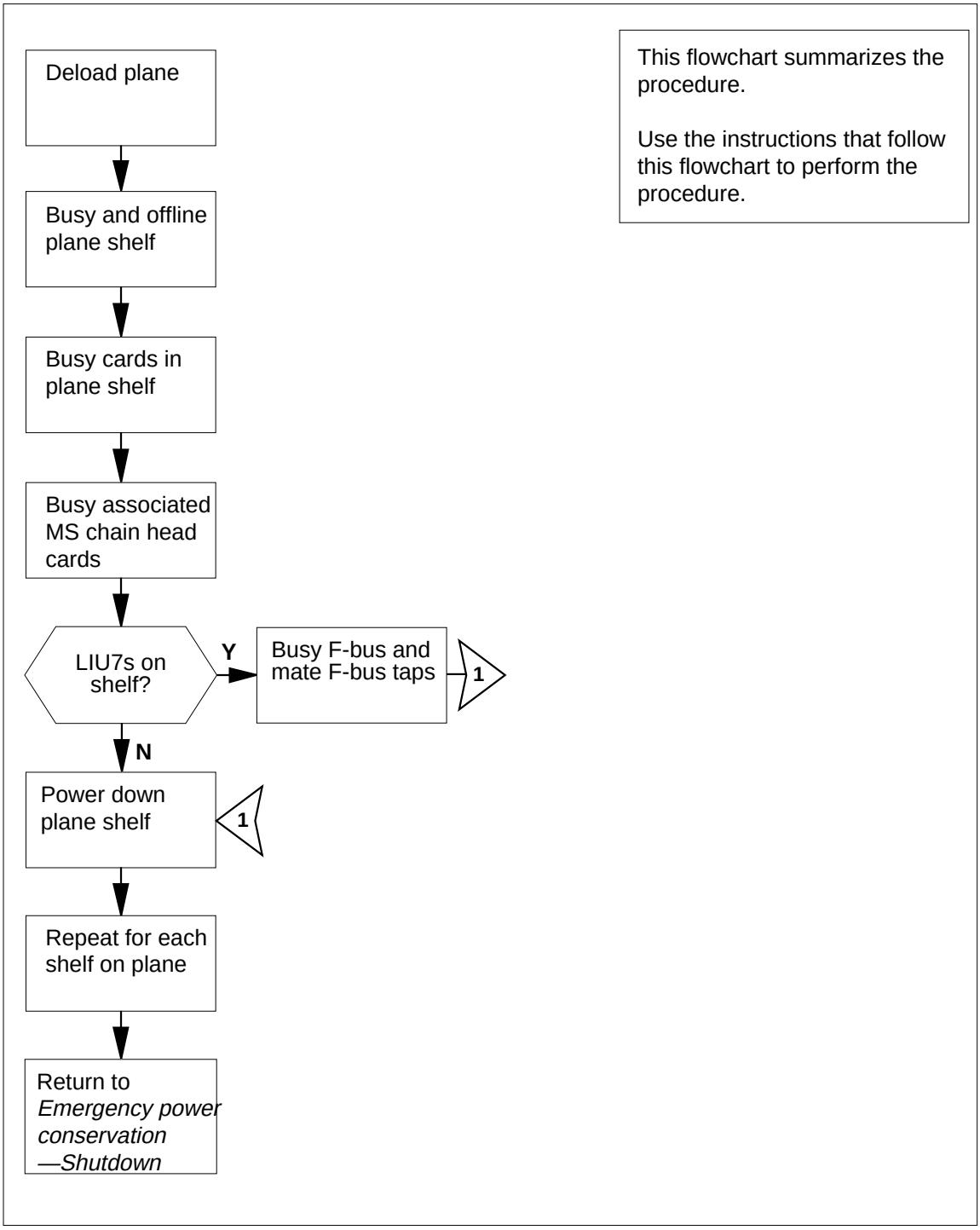
Use this procedure to shut down one plane of the enhanced network (ENET) to conserve emergency backup power.

## Action

The following flowchart is a summary of this procedure. Use the instructions in the step-action table that follows the flowchart to perform the procedure.

# Emergency power conservation
# Emergency shutdown of one enhanced network plane (continued)

**Summary of Emergency shutdown of one enhanced network plane**



# Emergency power conservation
# Emergency shutdown of one enhanced network plane (continued)

**Emergency shutdown of one enhanced network plane**

***At the MAP terminal***

**1**

**WARNING**
**Potential service interruption or extended outage**
Nortel recommends that you contact the Emergency Assistance Service (ETAS) or the next level of support before you perform this procedure.

**WARNING**
**Potential loss of service or extended outage**
Use this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the Network level of the MAP display, type

**>MAPCI;MTC;NET**

and press the Enter key.

*Example of a MAP display*

```
ENET     System   Matrix  Shelf 0 1 2 3
  Plane 0 CSLink     .          F – – –
  Plane 1 CSLink     .          F – – –
```

**2** Select a plane to remove from service. Note the plane number.

**3** To deload the plane you selected in step 2, type

**>DELOAD plane_no SET**

and press the Enter key.

*where*

**plane_no**
is the network plane number (0 or 1)

*Example of a MAP response*

```
Request to SET DELOAD ENET Plane:0 submitted.
Request to SET DELOAD ENET Plane:0 passed.
```

**4** Allow 30 min for traffic to clear on the plane shelf. To monitor the deload status of the plane shelf, type

**>DELOAD plane_no QUERY**

and press the Enter key.

*where*

**plane_no**
is the network plane number (0 or 1)

*Example of a MAP display*

```
Request to QUERY DELOAD ENET   Plane:0 submitted
Request to QUERY DELOAD ENET   Plane:0 passed
                    1111111111222222222333
                   901234567890123456789012
Plane:0 Shelf:00  -----------YYYYYYYYY--YY
```

***Note:*** A Y under the slot number indicates a deloaded crosspoint card in the MAP display.

**5** Proceed to the next step when you confirm that you deloaded all crosspoint cards on the plane shelf.

**6** To access the System level of the MAP display, type

**>SYSTEM**

and press the Enter key

*Example of a MAP display*

```
SYSTEM
 Shelf    Plane 0                  Plane 1
   00        .                        .
```

**7** Select a shelf to remove from service.

**8** To identify the message switch (MS) card chain connected to the shelf you selected, type

**>TRNSL plane_no shelf_no**

and press the Enter key.

*where*

**plane_no**
is the network plane number (0 or 1)

**shelf_no**
is the network shelf number (0 to 7)

*Example of a MAP display*

```
Request to TRNSL ENET Plane:0 Shelf:00 submitted.
Request to TRNSL ENET Plane:0 Shelf:00 passed.
ENET Plane:0 Shelf:00 MS:0 and 1 Card:20 Link:00 Port:00
```

**9** Note the card number and link number.

**10** To manually busy the plane shelf, type

**>BSY plane_no shelf_no**

## Emergency power conservation
## Emergency shutdown of one enhanced network plane (continued)

and press the Enter key

*where*

**plane_no**
is the network plane number (0 or 1)

**shelf_no**
is the network shelf number (0 to 7)

*Example of a MAP display*

```
Request to MAN BUSY ENET Plane:0 Shelf:00 submitted.
Request to MAN BUSY ENET Plane:0 Shelf:00 passed.
```

**11** To offline the plane shelf, type

**>OFFL plane_no shelf_no**

and press the Enter key

*where*

**plane_no**
is the network plane number (0 or 1)

**shelf_no**
is the network shelf number (0 to 7)

*Example of a MAP response*

```
Request to OFFL ENET Plane:0 Shelf:00 submitted.
Request to OFFL ENET Plane:0 Shelf:00 passed.
```

**12** To access the Shelf level for the ENET shelf you want to remove from service, type

**>SHELF shelf_no**

and press the Enter key

*where*

**shelf_no**
is the network shelf number (0 to 7)

**13** To manually busy all the cards on the shelf, type

**>BSY shelf_no ALL**

and press the Enter key

*where*

**shelf_no**
is the network shelf number (0 to 7)

**14** To offline all the cards on the plane, type

**>OFFL shelf_no ALL**

and press the Enter key

*where*

# Emergency power conservation
# Emergency shutdown of one enhanced network plane (continued)

**shelf_no**
is the network shelf number (0 to 7)

**15** To access the MS Shelf level of the MAP display, type

```
>MS;SHELF;CHAIN  card_no
```

and press the Enter key.

*where*

**card_no**
is the card number you noted in step 9

**16** To manually busy the head card in the chain on MS 0, type

```
>BSY  0  LINK  link_no
```

and press the Enter key.

*where*

**link_no**
is the link number you noted in step 9

**17** To manually busy the head card in the chain on MS 1, type

```
>BSY  1  LINK  link_no
```

and press the Enter key.

*where*

**link_no**
is the link number you noted in step 9

**18** Repeat steps 6 to 17 for each of the ENET plane shelves you have not removed from service.

**19** Before you proceed, wait 20 min to allow distribution of network traffic and completion of maintenance activities on peripheral module (PM) links.

**20** Determine the location of the ENET plane shelf that you want to power down.

| If the ENET plane shelf is in | Do |
|---|---|
| a SuperNode Combined Core (SCC) cabinet | step 21 |
| an external ENET cabinet | step 31 |

**21** Determine if the ENET Interface (ENI) shelf in the SCC cabinet contains a link interface unit (LIU). If the ENI shelf contains LIUs, the location of the LIUs is in shelf slots 7 to 9, and 30 to 32.

| If the ENI shelf | Do |
|---|---|
| contains LIUs | step 22 |
| does not contain LIUs | step 25 |

# Emergency power conservation
# Emergency shutdown of one enhanced network plane (continued)

**22** To access the F-bus level, type

**`>MS;SHELF;CARD 12`**

and press the Enter key.

**23**

**WARNING**
**Potential loss of service**
To avoid service interruptions, make sure the proper F-bus and F-bus taps for the LIU cards, powered by the NT9X30 card, are busied out.

To busy the F-bus connected the ENET plane that you want to power down, type

**`>BSY ms_no FBUS`**

and press the Enter key.

*where*

**ms_no**
is the message switch number. Enter 0 for ENET plane 0, or 1 for ENET plane 1.

**24** To busy the associated F-bus taps for the other F-bus, type

**`>BSY ms_no TAP tap_no`**

and press the Enter key.

*where*

**fbus_no**
is the message switch number NOT entered in step 23

**tap_no**
is the tap number. Enter 0 for ENET plane 0, or 11 for ENET plane 1.

# Emergency power conservation
# Emergency shutdown of one enhanced network plane (continued)

***At the ENET shelf***

**25**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of the frame supervisory panel (FSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Make sure that the LED on the NT9X13 card is lit. The light indicates that the power interlock on the power converter cards is unlocked. This procedure can take 3 min.

**26**

**WARNING**
**Possible loss of service**
Make sure that you power down the correct side of the ENET shelf. If you power down an in-service node, calls in progress can drop or network blockage can occur.

The next action depends on which ENET plane you want to shut down.

| If you want to shut down | Do |
|---|---|
| plane 0 | step 27 |
| plane 1 | step 29 |

***At the ENET shelf***

**27** At the same time, press down and release the switches on the faceplates of the power converters in slots 1 and 4.

**28** Go to step 33.

***At the ENET shelf***

**29** At the same time, press down and release the switches on the faceplates of the power converters in slots 33 and36.

**30** Go to step 33.

# Emergency power conservation
# Emergency shutdown of one enhanced network plane (end)

***At the ENET cabinet***

**31**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of the frame supervisory panel (FSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

**WARNING**
**Possible loss of service**
Make sure that you power down the correct side of the ENET shelf. If you power down an in-service node, calls in progress can drop or network blockage can occur.

Power down the offline plane shelf as follows:

**a** At the same time, press down and release the switches on the faceplates of the power converters in slots 1 and 4.

**b** At the same time, press down and release the switches on the faceplates of the power converters in slots 33 and 36.

**32** Repeat step 31 for each of the ENET plane shelves you have not powered down.

**33** Return to the procedure *Emergency power conservation—Shutdown* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation
# Emergency shutdown of one half of a line module pair

## Application

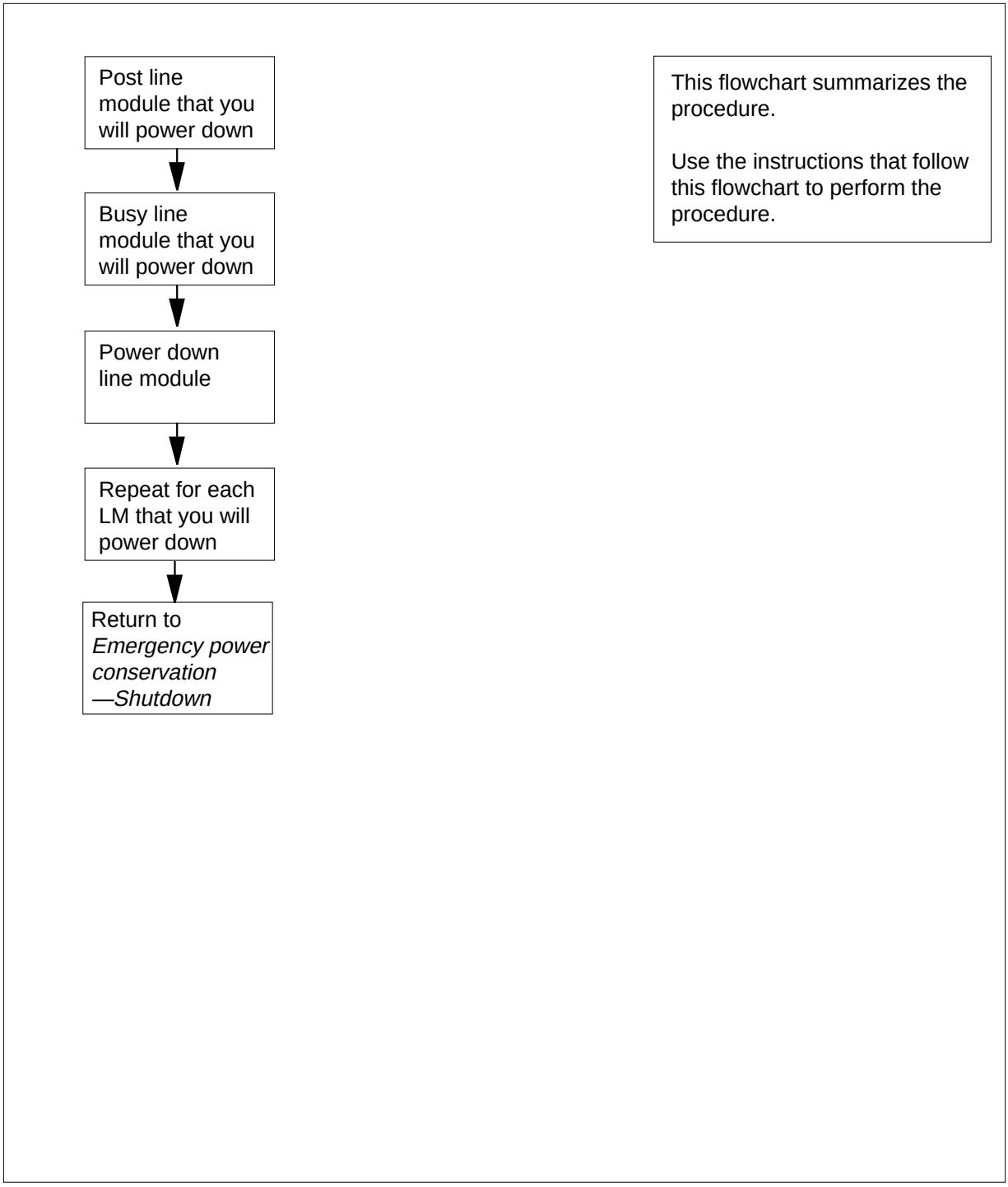
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one half of a line module pair.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Emergency power conservation
# Emergency shutdown of one half of a line module pair (continued)

**Summary of Emergency shutdown of one half of a line module pair**



# Emergency power conservation
# Emergency shutdown of one half of a line module pair (continued)

**Emergency shutdown of one half of a line module pair**

***At the MAP terminal***

**1**

**WARNING**
**Potential service interruption or extended outage**
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

**WARNING**
**Potential loss of service or extended outage**
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the PM level of the MAP display, type

**>MAPCI;MTC;PM**

and press the Enter key.

**2** To post the LM that you will power down, type

**>POST LM HOST frame pair**

and press the Enter key.

*where*

**frame**
is the frame number (00 to 99)

**pair**
is the frame pair number (0 to 1)

*Example of a MAP response:*

```
LM  HOST 00 0  Insv
```

**3** To manually busy the LM, type

**>BSY**

and press the Enter key.

*Example of a MAP response:*

```
LM 0 Bsy
OK.
```

# Emergency power conservation
# Emergency shutdown of one half of a line module pair (end)

**4**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to a wrist-strap grounding point on the frame supervisory panel (FSP) or a modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Pull down and set the handle of the POWER switch for the NT2X70 power converter in slot 20 to the OFF position.

**5** Repeat steps 2 to 4 to power down each LM .

**6** Return to the procedure *Emergency power conservation—Shutdown* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation
# Emergency shutdown of one junctored network plane

## Application

Use this procedure to conserve emergency backup power. To conserve backup power, shut down one plane of the junctored network (JNET). This procedure applies to the following JNET types:

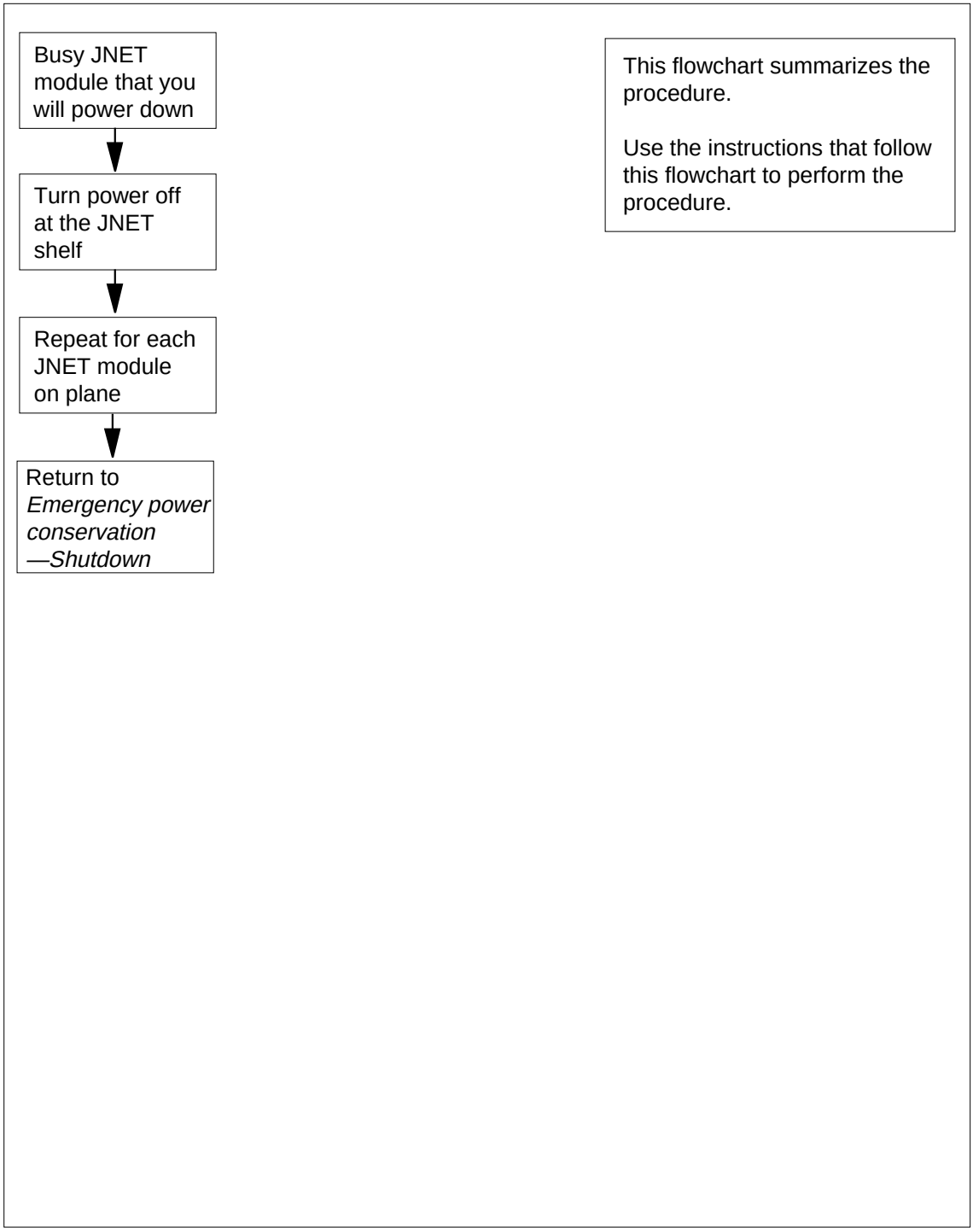
- NT0X48
- NT5X13
- NT8X10

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Emergency power conservation
# Emergency shutdown of one junctored network plane (continued)

**Summary of Emergency shutdown of one junctored network plane**



# Emergency power conservation
# Emergency shutdown of one junctored network plane (continued)

**Emergency shutdown of one junctored network plane**

***At the MAP terminal***

**1**

**WARNING**
**Potential service interruption or extended outage**
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) or next level of support before you perform this procedure.

**WARNING**
**Potential loss of service or extended outage**
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the NET level of the MAP display, type

**>MAPCI;MTC;NET**

and press the Enter key.

*Example of a MAP response:*

```
Net
            11111   11111   22222   22222   33
Plane   01234   56789   01234   56789       01234   56789   01
  0     ....
  1     ....
JNET:
```

**2** Select a network plane pair to power down.

**3** To manually busy the network module that you will power down, type

**>BSY plane_no pair_no**

and press the Enter key.

*where*

**plane_no**
is the network plane number (0 to 1)

**pair_no**
is the network plane pair number (0 to 31)

# Emergency power conservation
# Emergency shutdown of one junctored network plane (end)

**4** To determine the location of the network module that you will power down, type

**`>LOC  plane_no  pair_no`**

and press the Enter key.

*where*

**plane_no**
is the network plane number (0 to 1)

**pair_no**
is the network plane pair number (0 to 31)

***At the network cabinet***

**5**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to a wrist-strap grounding point on the frame supervisory panel (FSP) or the modular supervisory panel (MSP) while you handle circuit cards. The wrist strap protects the cards against static electricity damage.

**WARNING**
**Potential loss of service**
Make sure that you only power down the shelves that you busied in step 3.

At the shelves you busied in step 3, locate the handle of the PWR switch that is on the power converters. Move down the handle of the PWR switch to the OFF position.

**6** Repeat steps 2 to 5 for one plane of each network plane pair.

**7** Return to the procedure *Emergency power conservation—Shutdown* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation
# Emergency shutdown of one LGC, LTC, and DTC unit

## Application

Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one unit of the following extended peripheral modules (XPM):

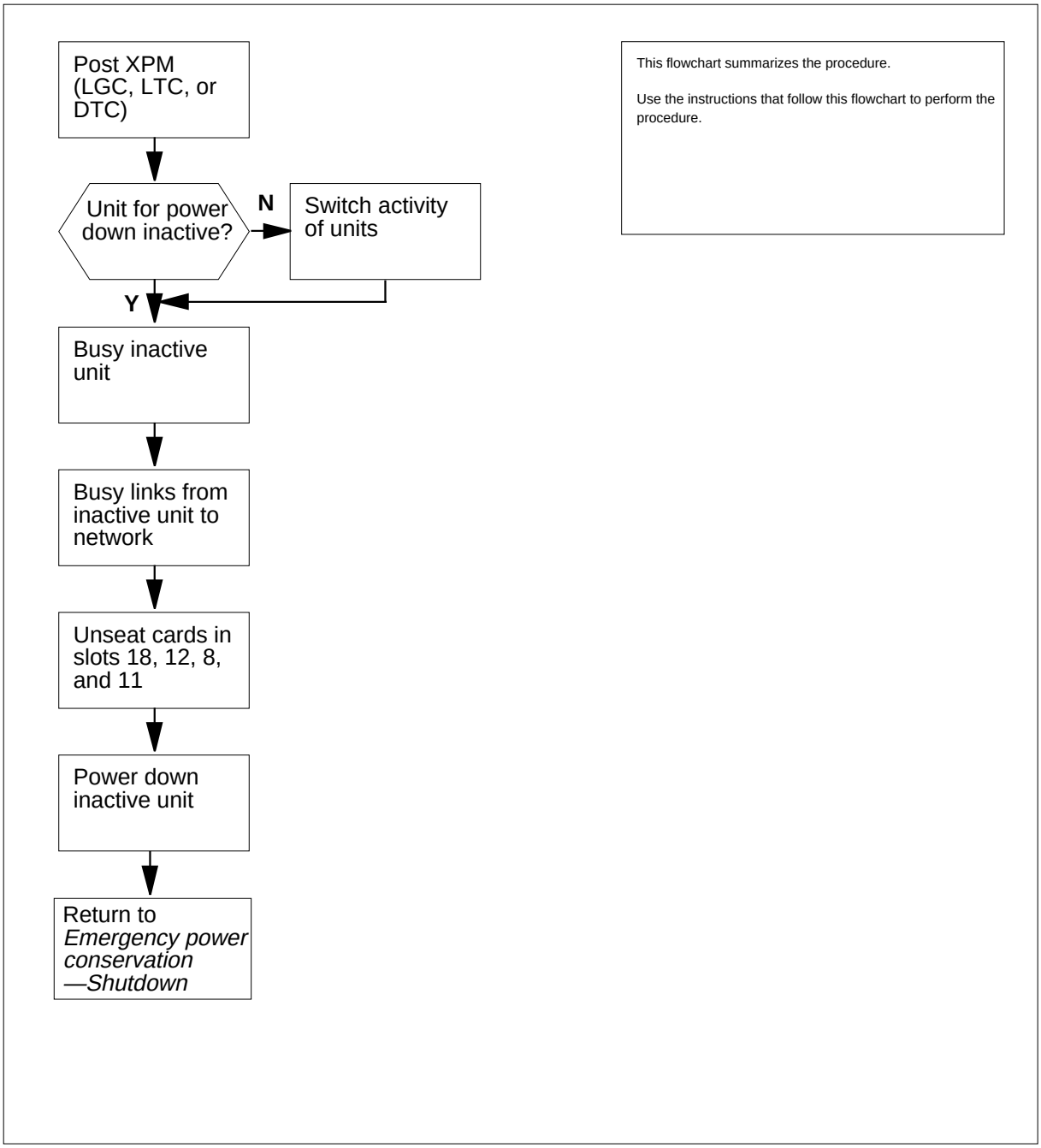
- digital trunk controllers (DTC)
- line group controllers (LGC)
- line trunk controllers (LTC)

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Emergency power conservation
# Emergency shutdown of one LGC, LTC, and DTC unit (continued)

**Summary of Emergency shutdown of one LGC, LTC, and DTC unit**



# Emergency power conservation
# Emergency shutdown of one LGC, LTC, and DTC unit (continued)

**Emergency shutdown of one LGC, LTC, and DTC unit**

**CAUTION**
**Potential service interruption or extended outage**
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

**CAUTION**
**Potential loss of service or extended outage**
Perform this procedure only to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

***At the MAP terminal***

**1** To access the PM level of the MAP display, type

**`>MAPCI;MTC;PM`**

**and press the Enter key.**

**2** To post the PM for the unit that you will power down, type

**`>POST pm_type pm_no`**

and press the Enter key.

*where*

**pm_type**
is the PM type (LGC, LTC, or DTC)

**pm_no**
is the PM identification number (0 to 999)

*Example of a MAP response:*

```
DTC    0 ISTb  Links_OOS: CSide  0 , PSide  0
Unit0:          Act     InSv
Unit1:          Inact       InSv
```

# Emergency power conservation
# Emergency shutdown of one LGC, LTC, and DTC unit (continued)

**3**

**CAUTION**
**Loss of service**
You will lose service if you power down the active unit of the PM.

Determine if the XPM unit that you will power down is the active (Act) or inactive (Inact) unit from the MAP display.

| If the unit | Do |
|---|---|
| is active | step 4 |
| is inactive | step 8 |

**4** To switch the activity of the units, type

**>SWACT**

and press the Enter key.

The system determines the type of SWACT that the system can perform. The system can perform a warm or a cold SWACT. The system displays a confirmation prompt for the selected SWACT.

*Example of a MAP response:*

```
LGC 2       A Warm SwAct will be performed after
            data sync of active terminals
Please confirm (”YES”, ”Y”, ”NO” or ”N”):
```

| If MAP response | Do |
|---|---|
| indicates a cold SwAct | step 5 |
| indicates a warm SwAct | step 7 |

**5** To cancel the activity switch, type

**>NO**

and press the Enter key.

**6** You cannot switch activity on the XPM at this time. Proceed as follows:

| If to | Do |
|---|---|
| power down the inactive unit | step 8 |

# Emergency power conservation
## Emergency shutdown of one LGC, LTC, and DTC unit (continued)

| If to | Do |
|---|---|
| leave both units of this XPM in service and proceed to the next XPM | step 2 |

**7** To confirm the prompt to switch the activity of the unit, type

**>YES**

and press the Enter key.

The system runs an audit before the SWACT to determine the ability of the inactive unit to accept activity correctly.

***Note:*** A maintenance flag (“Mtce" in the following example) appears when maintenance tasks are in progress. Wait until the flag disappears before you proceed with the next maintenance action.

*Example of a MAP response:*

```
XPM 0 ISTb  Links_OOS:  CSide 0, PSide 0
Unit0:  Act   ISTb     Mtce
Unit1:  Inact InSv     Mtce
```

**8** To manually busy the inactive unit of the XPM, type

**>BSY UNIT unit_no**

and press the Enter key.

*where*

**unit_no**
is the PM unit number (0 or 1)

**9** To identify the network type and network links that associate with the manual busy XPM unit, type

**>TRNSL C**

and press the Enter key.

*Example of a MAP response:*

```
LINK 0: NET 0 1 0;CAP MS;Status:OK
LINK 1: NET 1 1 0;CAP MS;Status:OK
LINK 2: NET 0 1 4;CAP MS;Status:OK
LINK 3: NET 1 1 4;CAP MS;Status:OK
LINK 4: NET 0 1 8;CAP MS;Status:OK
...
LINK 31 NET 1 1 60;CAP MS;Status:OK
```

***Note:*** Links 5 to 30 do not appear.

*Example of a MAP response:*

## Emergency power conservation
## Emergency shutdown of one LGC, LTC, and DTC unit (continued)

```
LINK 0: ENET 0  0 14 01 0;CAP MS;Status:OK
LINK 1: ENET 1  0 24 01 0;CAP MS;Status:OK
LINK 2: ENET 0  0 14 01 1;CAP MS;Status:OK
LINK 3: ENET 1  0 24 01 1;CAP MS;Status:OK
LINK 4: ENET 0  0 14 01 2;CAP MS;Status:OK
LINK 5: ENET 1  0 24 01 2;CAP MS;Status:OK...
LINK 6: ENET 0  0 14 01 3;CAP MS;Status:OK
LINK 7: ENET 1  0 24 01 3;CAP MS;Status:OK
```

**10** Determine if the network on your switch is a junctored network (JNET) or enhanced network (ENET).

| If the network | Do |
|---|---|
| is JNET | step 11 |
| is ENET | step 18 |

**11** Determine the XPM unit that is manual busy (0 or 1) . Note the speech link numbers (0 to 31) that associate with the manual busy XPM. Even numbered speech links (0, 2, 4 ... 30) associate with XPM unit 0. Odd numbered speech links (1, 3, 5 ... 31) associate with XPM unit 1.

***Note:*** Speech link numbers 5 to 30 do not appear in the example in step 9.

**12** Record the network plane number, network module (pair) number, and the network link number. Record these numbers for each speech link recorded in step 11.

***Note:*** Speech link 2 associates with the network plane 0, network module number 1, and network link number 4. The association appears in the JNET example in step 9.

**13** To access the NET level of the MAP display, type

```
>NET
```

and press the Enter key.

**14** To access the network link level for the first network link that you will busy, type

```
>LINKS  n
```

and press the Enter key.

*where*

**n**
is the network module number recorded in step 12

**15** To manually busy the first network link, type

```
>BSY  plane_no  link_no
```

and press the Enter key.

*where*

## Emergency power conservation
## Emergency shutdown of one LGC, LTC, and DTC unit (continued)

**plane_no**
is the network plane (0 or 1)

**link_no**
is the network link number

**16** Repeat steps 14 and 15 until all links between the manual busy XPM unit and the network are manual busy. Complete the procedure and proceed to step 17.

**17** Wait 2 min. Go to step 25.

**18** Determine the speech link numbers that associate with the manual busy XPM unit. Even numbered speech links associate with unit 0. Odd numbered speech links associate with unit 1.

***Note:*** Speech links 0, 2, 4 and 6 associate with XPM unit 0 in the ENET example in step 9. Speech links 1, 3, 5, and 7 associate with XPM unit 1.

**19** Record the ENET plane number, shelf number, card number, and network link number that associate with each speech link recorded in step 18.

***Note:*** Speech link 3 associates with ENET plane 1, shelf 0, card 24, and network link number 01. The association appears in the ENET example in step 9.

**20** To access the NET level of the MAP display, type

```
>NET
```

and press the Enter key.

**21** To access the MAP display for the ENET card that associates with the first speech link, type

```
>SHELF  shelf_no;  CARD  card_no
```

and press the Enter key.

*where*

**shelf_no**
is the ENET shelf number

**card_no**
is the ENET card number

**22** To deload traffic from the ENET card, type

```
>DELOAD   plane_no  SET
```

and press the Enter key.

*where*

**plane_no**
is the ENET plane number

**23** To busy the first link recorded in step 18 from the ENET card to the XPM unit, type

```
>BSY   plane_no  LINK  link_no
```

and press the Enter key.

*where*

# Emergency power conservation
# Emergency shutdown of one LGC, LTC, and DTC unit (end)

**plane_no**
is the ENET plane number recorded in step 19

**link_no**
is the network link number recorded in step 19

**24** Repeat steps 21 to 23 for each speech link recorded in step 18. Continue the procedure.

***At the shelf***

**25**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to a wrist-strap grounding point on the frame supervisory panel (FSP) or the modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

The next step depends on the configuration of your unit. Unseat the NT6X43 message interface card or the NT6X69 message protocol card from slot 18.

**26** Unseat the NT6X45 signaling processor card from slot 12.

**27** Unseat the NT6X45 master processor card from slot 8.

**28** Unseat the NT6X46 signaling processor memory card from slot 11.

**29** Pull down and set the handle of the power converter POWER switch to the OFF position.

**30** Repeat steps 2 to 29 for each LGC, DTC, and LTC.

***Note:*** The power converter is in slot 20.

**31** Return to the procedure *Emergency power conservation—Shutdown* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation
# Emergency shutdown of one LIM unit on each ELPP

## Application

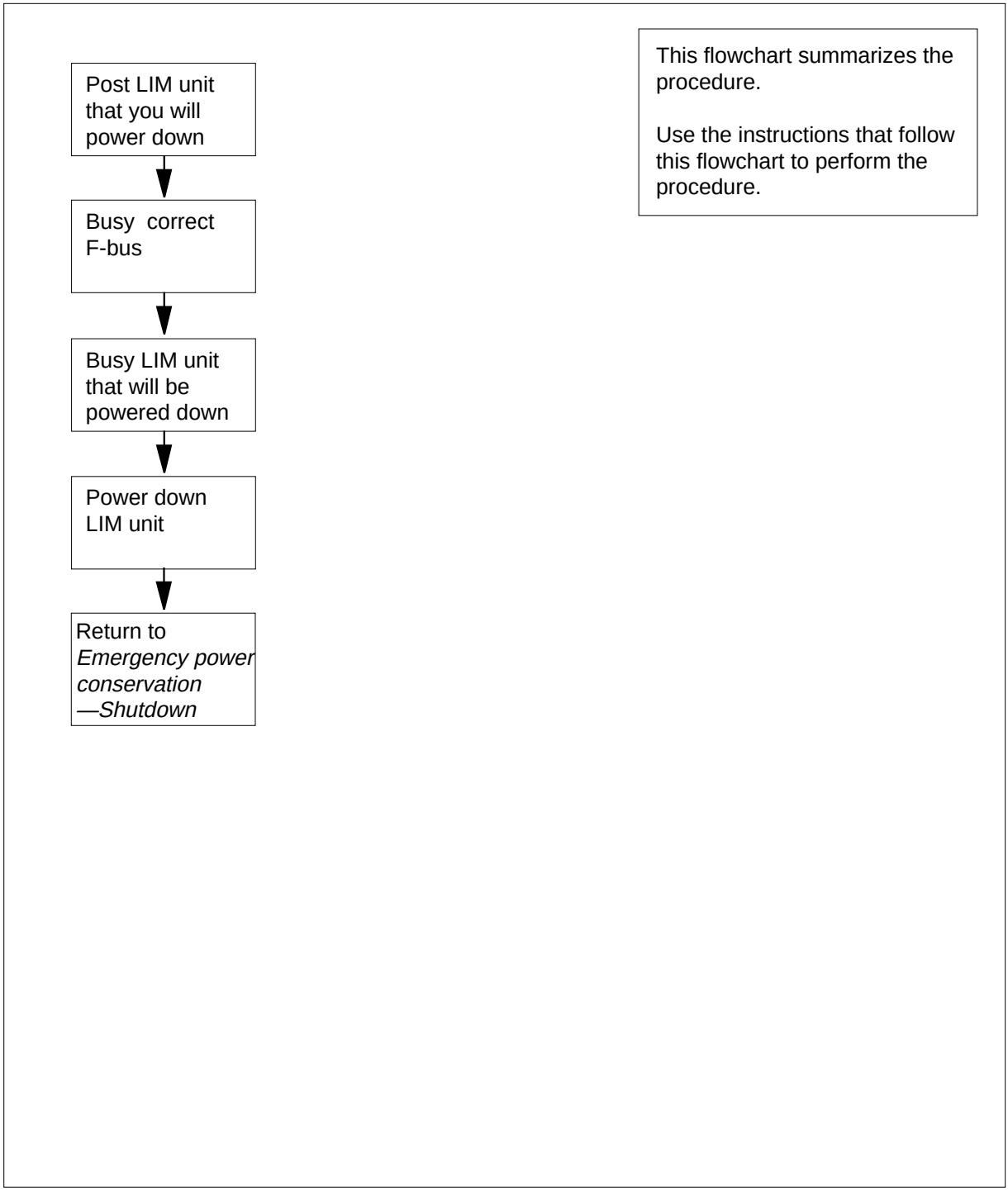
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one link interface module (LIM) unit in each enhanced link peripheral processor (ELPP) cabinet.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the shutdown task.

# Emergency power conservation
# Emergency shutdown of one LIM unit on each ELPP (continued)

**Summary of Emergency shutdown of one LIM unit on each ELPP**



# Emergency power conservation
# Emergency shutdown of one LIM unit on each ELPP (continued)

**Emergency shutdown of one LIM unit on each ELPP**

***At the MAP terminal***

**1**

**WARNING**
**Potential service interruption or extended outage**
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

**WARNING**
**Potential loss of service or extended outage**
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the PM level of the MAP display, type

**>MAPCI;MTC;PM**

and press the Enter key.

*Example of a MAP display:*

```
         SysB   ManB   OffL   CBsy   ISTb   InSv
 PM         1     10     12      0      6     49
```

**2** To post the LIM that contains the unit that you will power down, type

**>POST LIM lim_no**

and press the Enter key.

*where*

**lim_no**
is the number of the LIM that you will post (0 to 16)

*Example of a MAP response*

```
LIM 0  InSv     OOS     OOS_Taps
                Links  LIS1  LIS2  LIS3
Unit0: InSv     .       .     .     .
Unit1: InSv     .       .     .     .
```

## Emergency power conservation
## Emergency shutdown of one LIM unit on each ELPP (continued)

**3**

**WARNING**
**Possible loss of service**
Make sure that the mate LIM unit is in service before you busy the LIM unit that you will power down. Failure to follow this procedure can isolate nodes on link interface shelves (LIS) 1, 2, and 3.

To access the LIS level of the MAP display, type

**>LIS lis_no**

and press the Enter key.

*where*

**lis_no**
is the number of the LIS (1, 2 or 3)

*Example of a MAP display:*

```
          Tap: 0    4    8
LIS 1
FBus0: InSv    ..-- ---- --..
FBus1: InSv    ..-- ---- --..
```

**4**

**WARNING**
**Possible loss of service**
Make sure that the mate F-bus and its equipped taps are in service. Complete this procedure before you busy the F-bus that associates with the LIM unit that you will power down. Failure to follow this procedure will isolate application specific units (ASU) on LIS 1, 2, and 3.

To manually busy the F-bus associated with the LIM unit that you will power down, type

**>BSY FBUS fbus_no**

and press the Enter key.

*where*

**fbus_no**
is the number of the F-bus (0 or 1)

# Emergency power conservation
## Emergency shutdown of one LIM unit on each ELPP (continued)

***Note:*** For ELPPs F-bus 0 and F-bus 1 exist for each LIS level (1, 2, and 3).

| If the response | Do |
|---|---|
| the command passed | step 6 |
| you are asked to confirm the command | step 5 |

**5** To confirm the command, type

**>YES**

and press the Enter key.

**6** To access the next LIS level type

**>NEXT**

and press the Enter key.

**7** Determine if the F-bus has been busied on each LIS levels (1, 2, and 3).

| If | Do |
|---|---|
| the F-bus has been busied on each LIS level (1, 2, and 3) | step 8 |
| the F-bus has not been busied on each LIS level (1, 2, and 3) | step 4 |

**8** To quit the F-bus or LIS level of the MAP display, type

**>QUIT**

and press the Enter key.

**9**

**WARNING**
**Possible loss of service**
Make sure that the mate LIM unit is in service before you manually busy the LIM unit that you will power down. Failure to follow this procedure can isolate nodes on LIS 1, 2, and 3.

To manually busy the LIM unit that you will power down, type

**>BSY UNIT unit_no**

and press the Enter key.

*where*

**unit_no**
is the number of the LIM unit (0 or 1)

# Emergency power conservation
# Emergency shutdown of one LIM unit on each ELPP (end)

***At the ELPP***

**10**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to a wrist-strap grounding point on the frame supervisory panel (FSP) or the modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Press down and release the power switch on the faceplate of the NT9X30 and NT9X31 power converters. Slot 4 for LIM unit 0 and slot 36 for LIM unit 1 contain the NT9X30 power converter. Slot 1 for LIM unit 0 and slot 33 for LIM unit1 contain the NT9X31 power converter. This procedure powers down the LIM unit busied in step 9.

***Note:*** The CONVERTER OFF LED goes on when you power down the NT9X30 or NT9X31 power converter. Ensure that both the NT9X30 and NT9X31 power converters for the LIM unit busied in step 9 are powered down.

**11** Return to the procedure *Emergency power conservation—Shutdown* in this document and proceed as directed.

# Emergency power conservation
# Emergency shutdown of one LIM unit on each LPP

## Application

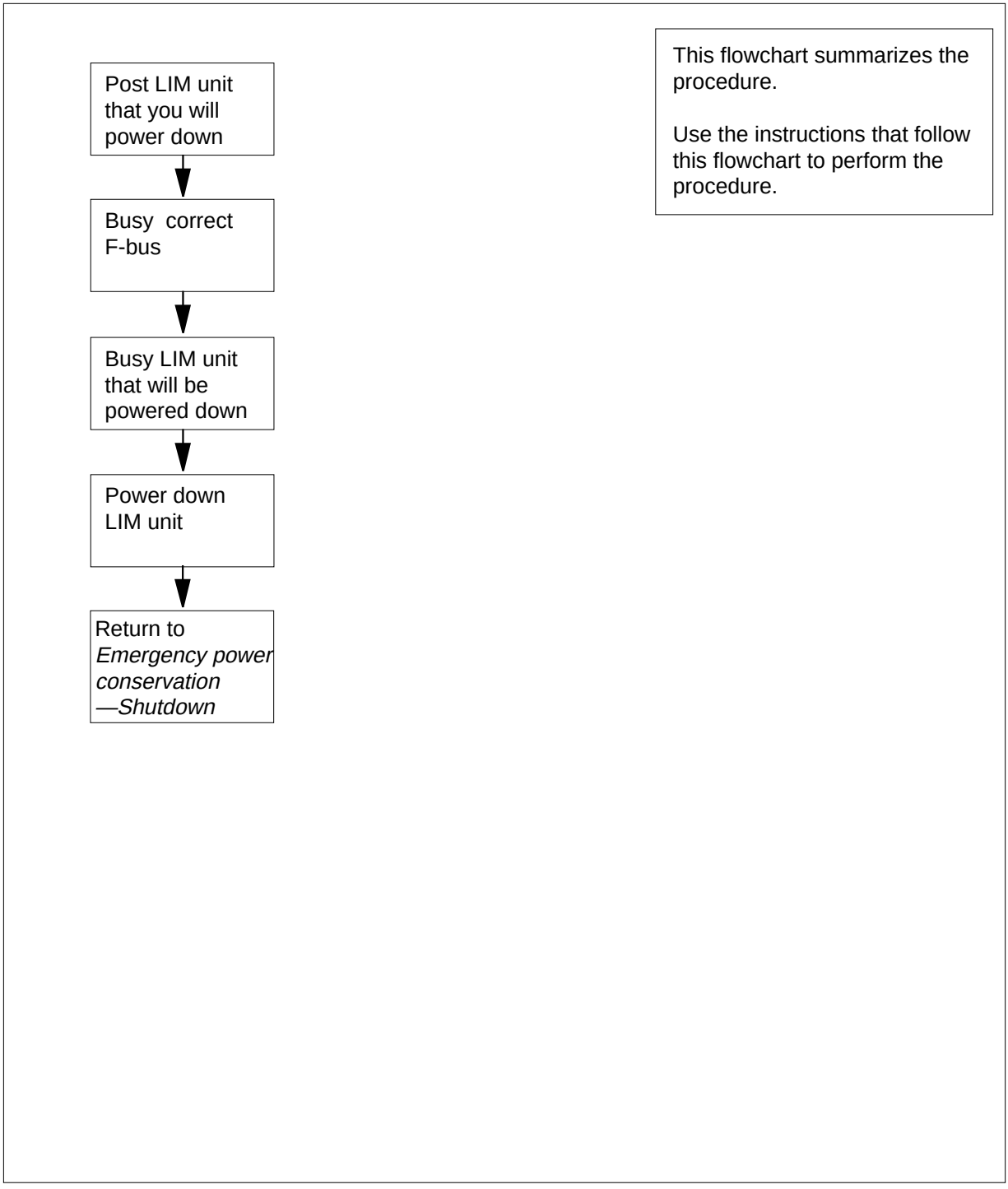
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one link interface module (LIM) unit in each link peripheral processor (LPP) cabinet.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Emergency power conservation
# Emergency shutdown of one LIM unit on each LPP (continued)

**Summary of Emergency shutdown of one LIM unit on each LPP**



# Emergency power conservation
# Emergency shutdown of one LIM unit on each LPP (continued)

**Emergency shutdown of one LIM unit on each LPP**

***At the MAP terminal***

**1**

**WARNING**
**Potential service interruption or extended outage**
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

**WARNING**
**Potential loss of service or extended outage**
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the PM level of the MAP display, type

**>MAPCI;MTC;PM**

and press the Enter key.

*Example of a MAP display:*

```
         SysB   ManB   OffL   CBsy   ISTb   InSv
PM          1     10     12      0      6     49
```

**2** To post the LIM that contains the unit that you will power down, type

**>POST LIM lim_no**

and press the Enter key.

*where*

**lim_no**
is the number of the LIM that you will post (0 to 16)

*Example of a MAP response:*

```
LIM 1  ISTB
                  Links_OOS Taps_OOS
Unit0: ManB            2       16
Unit1:  .              .        .
```

# Emergency power conservation
# Emergency shutdown of one LIM unit on each LPP (continued)

**3**

**WARNING**
**Possible loss of service**
Make sure that the mate LIM unit is in service before you busy the LIM unit that you will power down. Failure to follow this procedure can isolate nodes on link interface shelves (LIS) 1, 2, and 3.

To access the F-bus level of the MAP display, type

**>FBUS**

and press the Enter key.

*Example of a MAP display:*

```
          Tap: 0   4   8   12  16  20      24  28  32
FBus0: InSv    .... .... .... .... ----  ----      ----  ----  ....
FBus1: InSv    .... .... .... .... ----  ----      ----  ----  ....
```

**4**

**WARNING**
**Possible loss of service**
Make sure that the mate F-bus and its equipped taps are in service. Complete this procedure before you busy the F-bus that associates with the LIM unit that you will power down. Failure to follow this procedure will isolate application specific units (ASU) on LIS 1, 2, and 3.

To manually busy the F-bus associated with the LIM unit that you will power down, type

**>BSY FBUS fbus_no**

and press the Enter key.

*where*

**fbus_no**
is the number of the F-bus (0 or 1)

## Emergency power conservation
## Emergency shutdown of one LIM unit on each LPP (continued)

***Note:*** F-bus 0 associates with LIM unit 0. F-bus 1 associates with LIM unit 1.

| If the response | Do |
|---|---|
| is `LIM x FBus y Busy initiated.` `LIM x FBus y Busy passed.` | step 6 |
| is `LIM x FBus y Busy requires confirmation because the following NIUs may be active on this bus...` `NIU xx unit 0` `NIU xx unit 1` `Please confirm (YES, Y, NO, or N)` | step 5 |

**5** To confirm the command , type

**>YES**

and press the Enter key.

**6** To quit the F-bus level of the MAP display, type

**>QUIT**

and press the Enter key.

**7**

**WARNING**
**Possible loss of service**
Make sure that the mate LIM unit is in service before you manually busy the LIM unit that you will power down. Failure to follow this procedure can isolate nodes on LIS 1, 2, and 3.

To manually busy the LIM unit that you will power down, type

**>BSY UNIT unit_no**

and press the Enter key.

*where*

# Emergency power conservation
# Emergency shutdown of one LIM unit on each LPP (end)

**unit_no**
is the number of the LIM unit (0 or 1)

***At the LPP***

**8**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to a wrist-strap grounding point on the frame supervisory panel (FSP) or the modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Press down and release the power switch on the faceplate of the NT9X30 power converter. Slot 4 for LIM unit 0 and slot 36 for LIM unit1 contain the NT9X30 power converter. This procedure powers down the LIM unit busied in step 7.

***Note:*** The CONVERTER OFF LED goes on when you power down the NT9X30 power converter.

**9** Return to the procedure *Emergency power conservation—Shutdown* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation
# Emergency shutdown of one MS plane

## Application

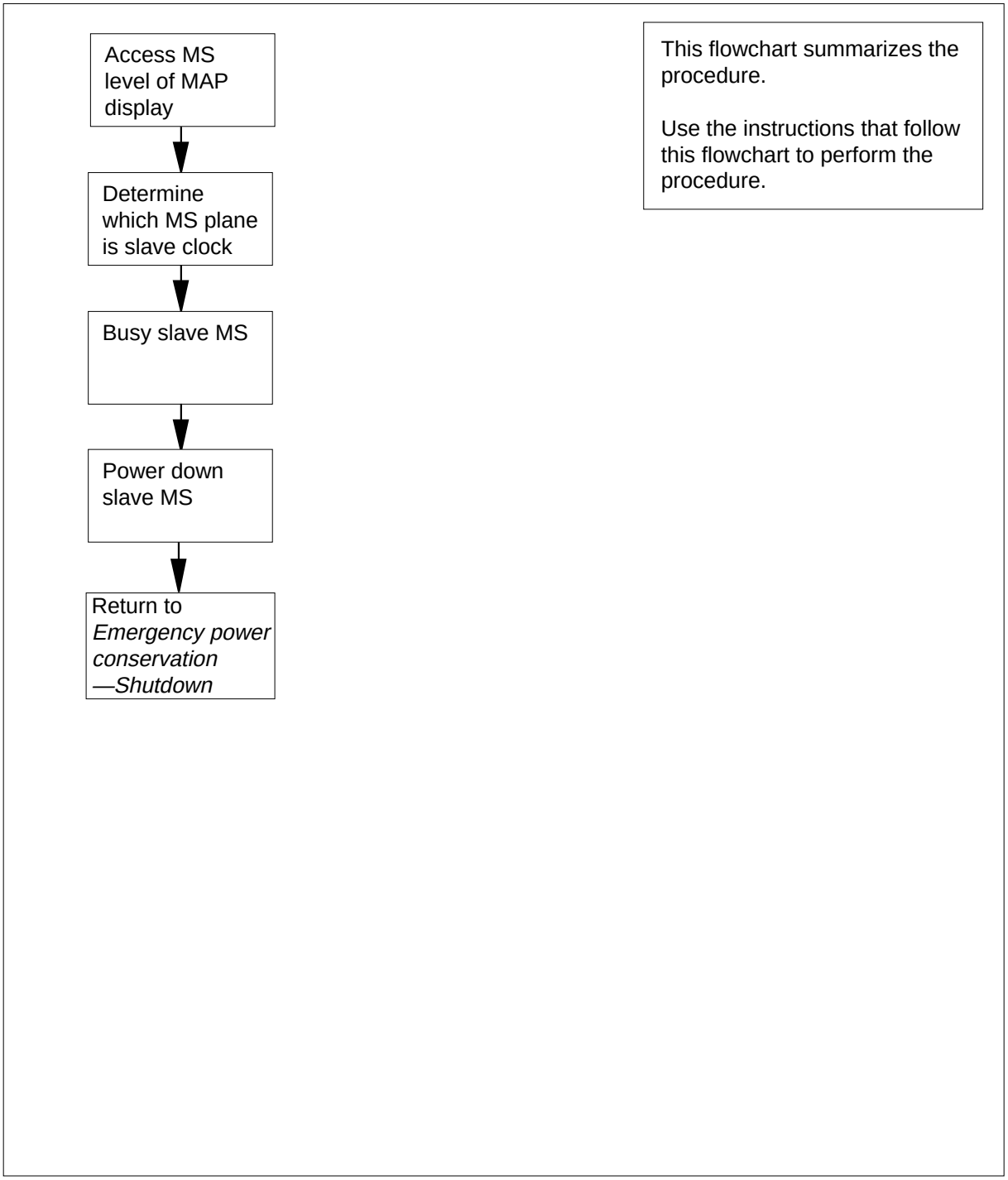
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one message switch (MS) shelf.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to perform the recovery task.

# Emergency power conservation
# Emergency shutdown of one MS plane (continued)

**Summary of Emergency shutdown of one MS plane**



# Emergency power conservation
# Emergency shutdown of one MS plane (continued)

**Emergency shutdown of one MS plane**

**CAUTION**
**Potential service interruption or extended outage**
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) or your next level of support before you perform this procedure.

**CAUTION**
**Potential service interruption or extended outage**
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

***At the MAP terminal***

**1** To access the MS level of the MAP display, type

**`>MAPCI;MTC;MS`**

and press the Enter key.

**2** Determine which MS is the clock slave. The clock slave is under the header Clock.

*Example of a MAP display:*

```
Message Switch   Clock  Shelf 0  Inter-MS Link 0 1
MS 0        .    M Free      .               R .
MS 1        .    Slave        F                 S .
```

**3** Determine the state of the message switch planes.

| If | Do |
|---|---|
| both MS planes are fault free | step 8 |
| the slave MS has a fault, and the master MS plane is fault free | step 8 |
| the master MS has a fault, but the slave MS is fault free | step 5 |
| both MS planes have faults | step 4 |

# Emergency power conservation
# Emergency shutdown of one MS plane (continued)

**4** Clear the faults on a minimum of one MS before you continue this procedure. Clear the correct MS alarms to clear the faults on a minimum of one MS. Proceed to step 2 when a minimum of one MS is fault free.

**5** To switch clock mastership, type

**>SWMAST**

and press the Enter key.

*Example of a MAP response:*

```
Request to Switch Clock Mastership MS: 0 submitted.
Request to Switch Clock Mastership MS: 0 passed.
```

| If the SWMAST command | Do |
|---|---|
| passed | step 7 |
| failed | step 6 |

**6** Do not continue this procedure until you clear the faults that can prevent the switch of mastership. To clear the faults preventing the switch of mastership, clear the correct MS alarms. When you clear the faults, go to step 2.

**7** Wait 10 min to make sure the MS has stability. Verify MS and continue this procedure.

**8** To manually busy the slave MS, type

**>BSY ms_number**

and press the Enter key.

*where*

**ms_number**
is the number of the slave MS (0 or 1)

*Example of a MAP response:*

```
Request to MAN BUSY MS: 0 submitted.
Request to MAN BUSY MS: 0 passed.
```

# Emergency power conservation
# Emergency shutdown of one MS plane (continued)

***At the MS shelf***

**9**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

**WARNING**
**Possible loss of service**
Make sure that you power down the slave MS. If you power down the MS that contains the master clock, the system will shut down.

Verify the type of switch that you are working on.

| If you | Do |
|---|---|
| are working on a SuperNode switch | step 10 |
| are working on a SuperNode SE switch | step 11 |

**10** Power down the slave MS as follows:

**a** Press down and release the switch on the faceplate of the NT9X30 power converter in slot 4F.

**b** Press down and release the switch on the faceplate of the NT9X31 power converter in slot 1F.

**c** At the same time, press down and release the switches on the faceplates of the power converters in slots 33F and 36F.

**d** Go to step 14.

**11** Use the information in step 1 to determine the MS that is the slave MS.

| If the slave MS | Do |
|---|---|
| is MS 0 | step 12 |
| is MS 1 | step 13 |

**12** Power down the slave MS as follows:

**a** Press down and release the switch on the faceplate of the NT9X30 power converter in slot 4F.

## Emergency power conservation
## Emergency shutdown of one MS plane (end)

**b** Press down and release the switch on the faceplate of the NT9X31 power converter in slot 1F.

**c** Go to step 14.

**13** Power down the slave MS as follows:

**a** Press down and release the switch on the faceplate of the NT9X30 power converter in slot 36F.

**b** Press down and release the switch on the faceplate of the NT9X30 power converter in slot 33F.

**14** Return to the procedure *Emergency power conservation—Shutdown* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation
# Emergency shutdown of one remote oscillator shelf plane

## Application

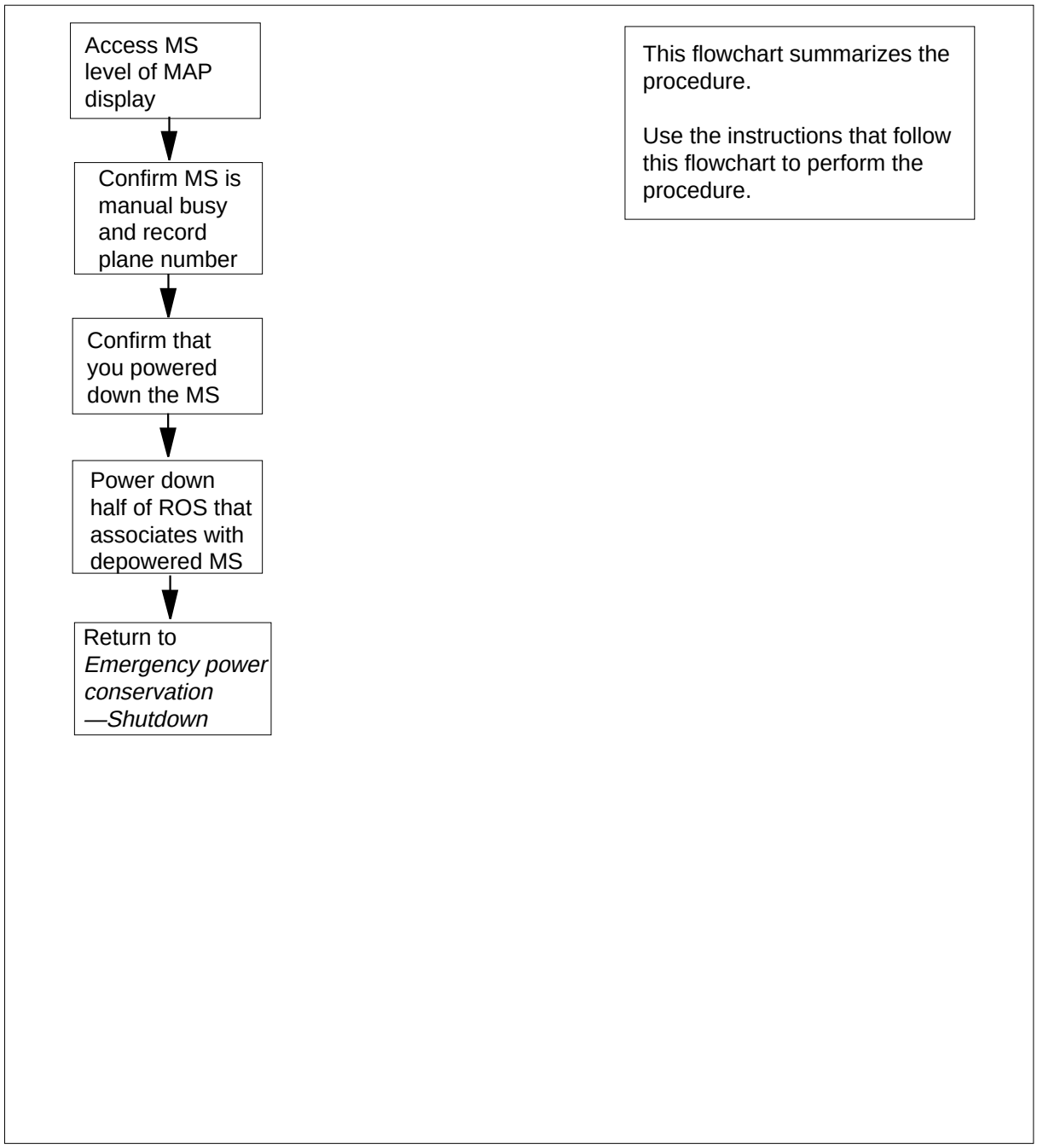
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one plane of a remote oscillator shelf (ROS). Remove power from the associated message switch plane before you perform this procedure. Follow the procedure *Emergency power conservation—Emergency shutdown of one DMS SuperNode MS plane* in this document.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follow the flowchart to perform the recovery task.

# Emergency power conservation
# Emergency shutdown of one remote oscillator shelf plane (continued)

**Summary of Emergency shutdown of one remote oscillator shelf plane**



# Emergency power conservation
# Emergency shutdown of one remote oscillator shelf plane (continued)

**Emergency shutdown of one remote oscillator shelf plane**

**CAUTION**
**Potential service interruption or extended outage**
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

**CAUTION**
**Potential loss of service or extended outage**
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

***At the MAP***

**1** To access the MS level of the MAP display, type

**>MAPCI;MTC;MS**

and press the Enter key.

*Example of a MAP display:*

```
Message Switch   Clock  Shelf 0  Inter-MS Link 0 1
MS 0        .          M Free     .                R .
MS 1        .          Slave      F                S .
```

**2** Confirm that one message plane is manual busy. The M under the message header indicates that one message plane is manual busy. Note if the message plane is plane 0 or 1.

***At the message switch***

**3** Confirm that you powered down the manual busy MS. Note that a power interlock protects the remote oscillator shelf. Power down the associated MS before you power down one half of the ROS.

# Emergency power conservation
# Emergency shutdown of one remote oscillator shelf plane (end)

***At the ROS***

**4**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Power down the half of the ROS that associates with the depowered MS plane

.

***Note:*** Slots 1 to 13 associate with MS 0. Slots 14 to 26 associate1 with MS 1.

**5** Return to the procedure *Emergency power conservation—Shutdown* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation
# Emergency shutdown of one SuperNode SE CM plane

## Application

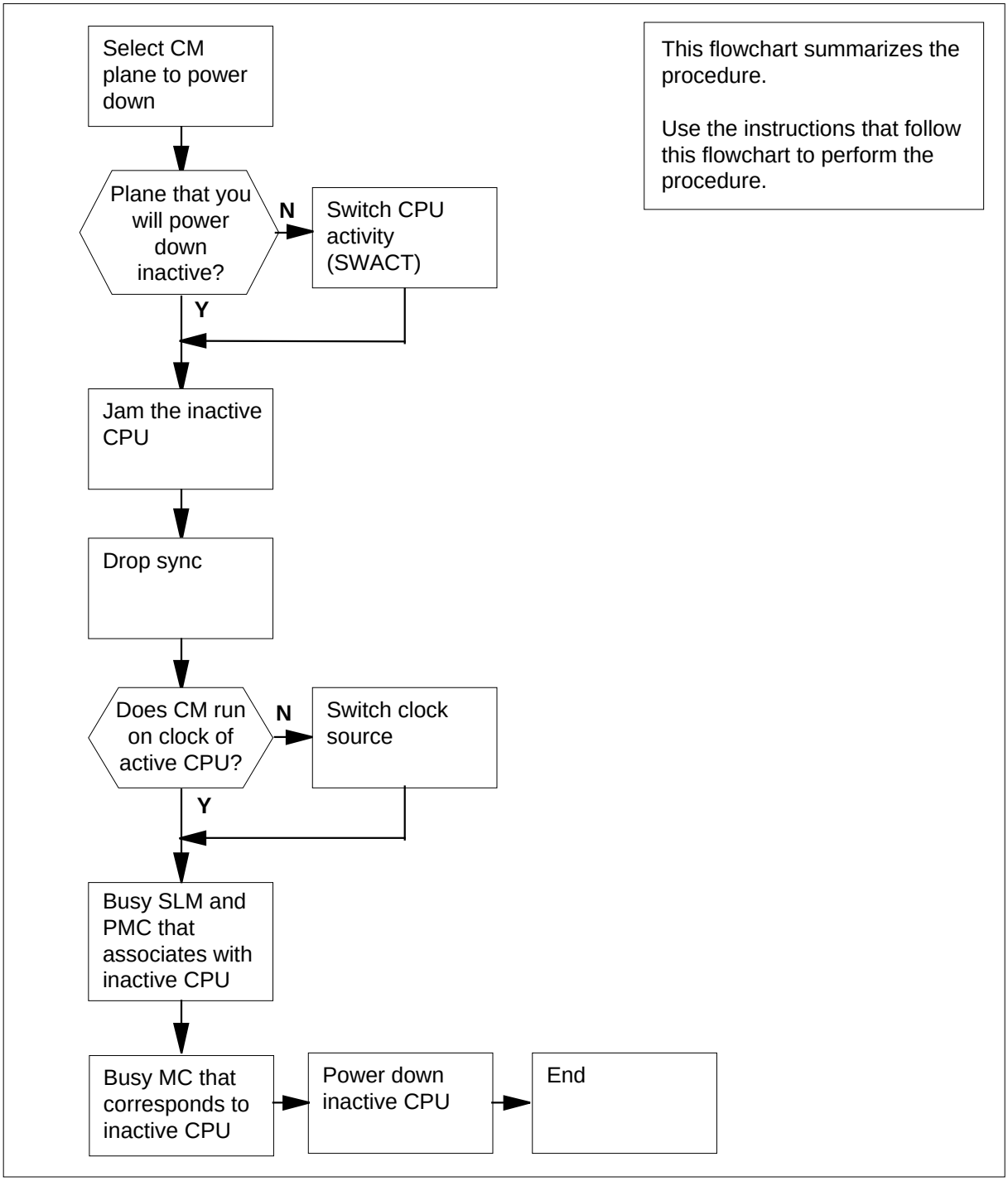
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one computing module (CM) plane.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Emergency power conservation
# Emergency shutdown of one SuperNode SE CM plane (continued)

**Summary of Emergency shutdown of one SuperNode SE CM plane**



# Emergency power conservation
# Emergency shutdown of one SuperNode SE CM plane (continued)

### Emergency shutdown of one SuperNode SE CM plane

***At the MAP terminal***

**1**

**CAUTION**
**Potential service interruption or extended outage**
Nortel recommends that you contact the Emergency Technical Assistance Service (ETAS) or the next level of support before you perform this procedure.

**CAUTION**
**Potential loss of service or extended outage**
Use this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the CM level of the MAP display, type

**`>MAPCI;MTC;CM`**

and press the Enter key.

*Example of a MAP display:*

```
CM  Sync  Act  CPU0  CPU1 Jam Memory CMMnt  MC  PMC
 0   no  cpu 1   .     .   no   .     .      .   .
```

**2** Determine the central processing unit (CPU) that is active. The active CPU appears under the header Act of the MAP display.

**3** Determine the state of the CPU 0 and CPU 1 computing module planes before you proceed. A dot (.) under the correct CPU header on the MAP display indicates a fault free CPU.

| If | Do |
|---|---|
| both CPU planes are fault free | step 7 |
| the inactive CPU has a fault, and the active CPU is fault free | step 7 |
| the active CPU has a fault, and the inactive CPU is fault free | step 5 |

# Emergency power conservation
# Emergency shutdown of one SuperNode SE CM plane (continued)

| If | Do |
|---|---|
| both CPU 0 and CPU 1 have faults | step 4 |

**4** Clear the faults on a minimum of one CPU before you continue this procedure. To clear the faults on a minimum of one CPU, clear the correct CM alarms. When a minimum of one CPU is fault free, go to step 2.

**5** To switch activity, type

**>SWACT**

and press the Enter key.

*Example of a MAP response:*

```
Switch of activity will cause the CM to be running on the
inactive CPU's processor clock. System will drop SYNC and
then re–SYNC in order to switch to the active CPU's
clock.
Do you wish to continue?
Please confirm (”YES”, ”Y”, ”NO”, or ”N”):
```

**6** To confirm the command, type

**>YES**

and press the Enter key.

***At the CM reset terminal for the inactive CPU***

**7**

**WARNING**
**Loss of service**
Make sure that you do not jam the active CPU. A cold restart will occur if you jam the active CPU while the CM is out of sync. The word Active on the top banner of the display identifies the reset terminal for the active CPU.

To jam the inactive CPU, type

**>\JAM**

and press the Enter key.

*RTIF response:*

```
Please confirm: (YES/NO)
```

**8** To confirm the command, type

**>YES**

## Emergency power conservation
## Emergency shutdown of one SuperNode SE CM plane (continued)

and press the Enter key.

*RTIF response:*

```
JAM DONE
```

***At the MAP terminal***

**9** To drop synchronization, type

**>DPSYNC**

and press the Enter key.

*Example of MAP display response:*

```
About to drop sync with CPU n active.
The inactive CPU is JAMMED.
Do you want to continue?
Please confirm ("YES","Y", "NO", or "N")
```

**10** To confirm the command, type

**>YES**

and press the Enter key.

***At the CM reset terminal for the inactive CPU***

**11** Wait until A1 flashes on the reset terminal for the inactive CPU.

***Note:*** Allow 5 min for A1 to begin to flash.

***At the MAP terminal***

**12**

**WARNING**
**Possible loss of service**
Make sure that the CM runs on the active CPU clock. Do not power down the inactive side of the CM while the CM runs on the inactive CPU clock. Failure to follow this procedure can cause a cold restart or a system image reload.

To determine if the CM runs on the active CPU clock, type

**>INSYNC**

and press the Enter key.

*Example of a MAP response:*

## Emergency power conservation
## Emergency shutdown of one SuperNode SE CM plane (continued)

```
CPU pair is NOT insync, CUP O is active.
CM is running on active CPU clock
Memory Error Correction is ENABLED.
The inactive CPU is jammed.
```

| If the CM runs | Do |
|---|---|
| on the inactive clock | step 13 |
| on the active clock | step 14 |

**13** To run the CM on the active CPU clock, perform the procedure *Switching the clock source* in *Card Replacement Procedures*. Complete the procedure and return to this point.

**14** To access the CMMNT level of the MAP display, type

**>CMMNT**

and press the Enter key.

*Example of a MAP display:*

```
CM  Sync  Act  CPU1  CPU1  Jam  Memory  CMMnt   MC   PMC
 0    no  cpu 0  .     .    yes    .       .     .     .

Traps:         Per minute =    0      Total =        5

AutoLdev:      Primary = SLM 0 DISK Secondary = SLM 1
DISK

Image Restartable = No image test since last restart

Next image restart type = WARM

Last CM REXTST executed

System memory in kbytes as of 14:39:07
Memory(kbytes): Used = 105984 Avail = 12800 Total =
118784
```

**15** Record the primary autoload device.

***Note:*** The primary autoload device appears on the right side of the Primary header. The primary autoload device is the disk of SLM 0 in the example that appears in step 14.

# Emergency power conservation
# Emergency shutdown of one SuperNode SE CM plane (continued)

**16** Determine if the primary autoload device is on the active CPU or inactive CPU side of the switch.

| If the primary autoload device | Do |
|---|---|
| is on the same plane with the active CPU | step 18 |
| is on the same plane with the inactive CPU | step 17 |

**17** To change the primary autoload device to a device on the same side of the switch as the active CPU, type

**>AUTOLD SLM slm_number device_type**

and press the Enter key.

*where*

**slm_number**
is the number of the active CPU (0 or 1)

**device_type**
is the number of SLM device (DISK or TAPE)

*Example of a MAP response:*

```
New autoload route has been set.
```

**18** To access the SLM that corresponds to the inactive CPU, type

**>IOD;SLM slm_number**

and press the Enter key.

*where*

**slm_number**
is the number of the inactive CPU (0 or 1)

*Example of a MAP display:*

## Emergency power conservation
## Emergency shutdown of one SuperNode SE CM plane (continued)

```
IOD

IOC  0  1  2  3

STAT .  .  .  .

DIRP:   .    XFER:   .   DVI :   .    DPPP:   .   DPPU:
.
NOP :   .    SLM :   .   NX25:   .    MLP :   .   SCAI:
.

SLM  0  1

Stat .  1

SLM 0               device         TAPE         DISK
                    status           .           .
                     drive          idle        on line
                    user
```

***Note:*** The dots on the right side of the SLM Stat header indicate that SLM 0 and SLM 1 are in service.

**19**

**WARNING**
**Possible loss of data recording services**
The following step removes the SLM from service on the inactive plane. Before you manually busy the inactive plane, make sure that the SLM assumes the data recording services on the active plane. The SLM provides the data recording services on the inactive plane.

To manually busy the SLM, type

**>BSY**

and press the Enter key.

*Example of a MAP response:*

```
SLM 0 busy passed.
```

***Note:*** The letter M on the right side of the SLM Stat header indicates that the associated SLM is manually busy.

**20** To access the PMC level of the MAP display, type

**>CM;PMC**

## Emergency power conservation
## Emergency shutdown of one SuperNode SE CM plane (continued)

and press the Enter key.

*Example of a MAP display:*

```
            PMC 0

              .

PORT0:      pbsy
PORT1:
```

**21**

**WARNING**
**Possible loss of service**
Make sure that you busy the MC that corresponds to the inactive CPU. If you power down the plane with the wrong MC busied you will cause a warm restart.

To manually busy the port that corresponds to the inactive CPU, type

**>BSY pmc_number PORT port_number**

and press the Enter key.

*where*

**pmc_number**
is the number of the peripheral message controller (PMC) (0 or 1)

**port_number**
is the number of the inactive CPU (0 or 1)

*Example input:*

**>BSY 0 PORT 0**

and press the Enter key.

*Example of a MAP response:*

```
Maintenance action submitted.Passed.
```

*Example of a MAP display:*

```
            PMC 0
            istb
              .

 PORT0:     mbsy
 PORT1:
```

# Emergency power conservation
# Emergency shutdown of one SuperNode SE CM plane (end)

**22** To access the MC level of the MAP display, type

**>MC**

and press the Enter key.

*Example of a MAP response:*

```
CM 0
 MC 0 MC 1
   .    .
```

**23** To manually busy the MC that corresponds to the inactive CPU, type

**>BSY mc_number**

and press the Enter key.

*where*

**mc_number**
is the number of the inactive CPU (0 or 1)

*Example of a MAP response:*

```
Maintenance action submitted.
MC busied OK.
```

***At the CM/SLM shelf***

**24**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of a frame supervisory panel (FSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Press down and release the power switch to power down the inactive CPU plane. The power switch is on the faceplate of the NTDX15 power converter.

***Note:*** The power converter appears in slots 4F through 6F for plane 0. The power converter is in slots 33F through 35F for plane 1.

**25** The procedure is complete.

# Emergency power conservation
# Emergency shutdown of one SuperNode SE MS plane

## Application

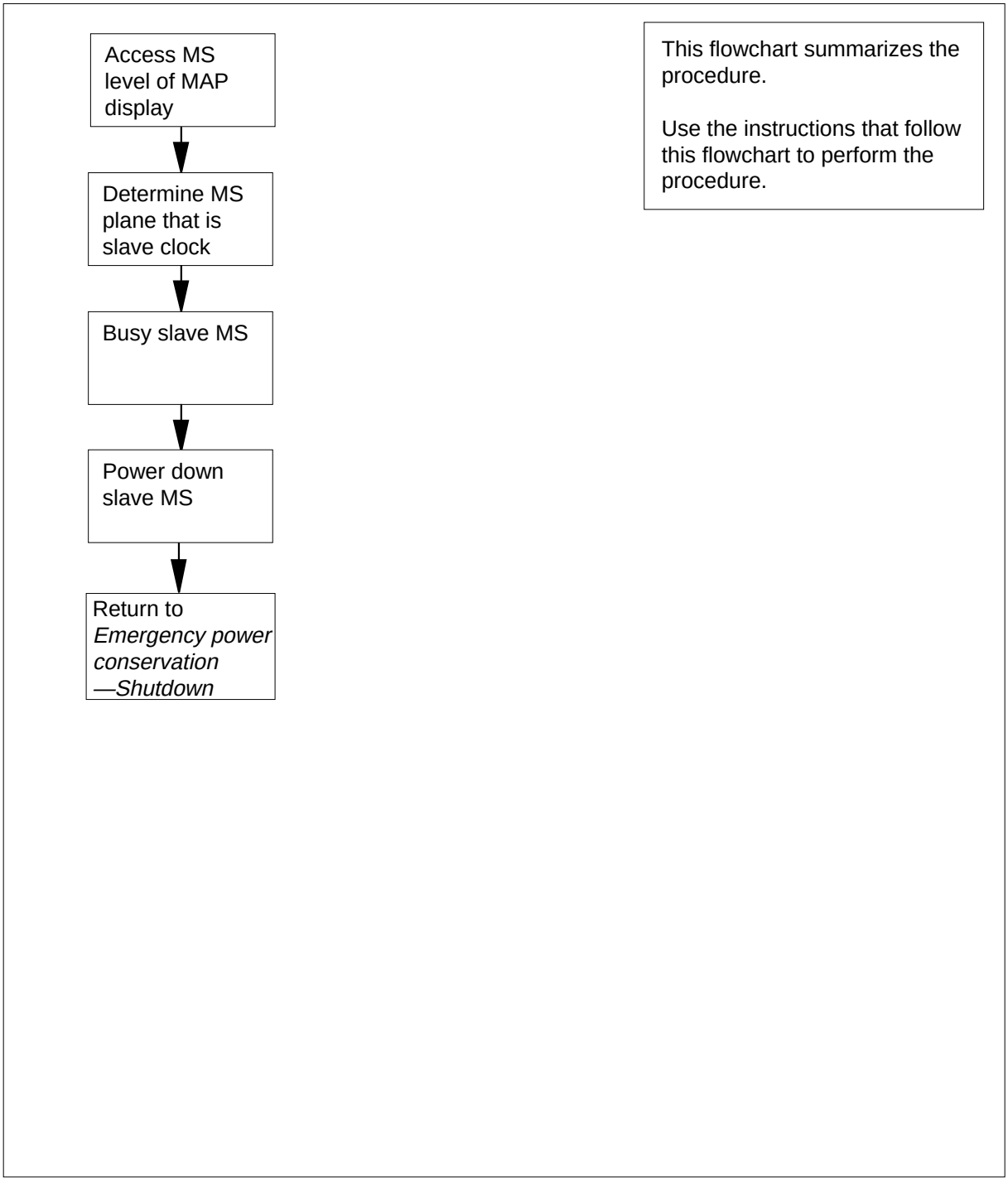
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one message switch (MS) shelf.

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Emergency power conservation
# Emergency shutdown of one SuperNode SE MS plane (continued)

**Summary of Emergency shutdown of one SuperNode SE MS plane**



# Emergency power conservation
# Emergency shutdown of one SuperNode SE MS plane (continued)

### Emergency shutdown of one SuperNode SE MS plane

***At the MAP terminal***

**1**

**CAUTION**
**Potential service interruption or extended outage**
Nortel recommends that you contact the Emergency Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

**CAUTION**
**Potential loss of service or extended outage**
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the MS level of the MAP display, type

**>MAPCI;MTC;MS**

and press the Enter key.

*Example of a MAP display:*

```
Message Switch   Clock  Shelf 0  Inter-MS Link 0 1
MS 0        .    M Free       .                R .
MS 1        .    Slave        F                S .
```

**2** Determine the MS that is the clock slave. The slave clock appears under the header Clock.

**3** Determine the state of the message switch planes.

| If | Do |
|---|---|
| both MS planes are fault free | step 8 |
| the slave MS has a fault, and the master MS plane is fault free | step 8 |
| the master MS has a fault, but the slave MS is fault free | step 5 |

# Emergency power conservation
# Emergency shutdown of one SuperNode SE MS plane (continued)

| If | Do |
|---|---|
| both MS planes have faults | step 4 |

**4** Do not continue this procedure until you clear the faults on a minimum of one or more MS. To clear the the faults on a minimum of one MS, clear the correct MS alarms. When a minimum of one MS is fault free, go to step 2.

**5** To switch clock mastership, type

**>SWMAST**

and press the Enter key.

*Example of a MAP response:*

```
Request to Switch Clock Mastership MS: 0 submitted.
Request to Switch Clock Mastership MS: 0 passed.
```

| If the SWMAST command | Do |
|---|---|
| passed | step 7 |
| failed | step 6 |

**6** Do not continue this procedure until you clear any faults that can prevent the switch of mastership. To clear the faults, clear the correct MS alarms. Go to step 2.

**7** Wait 10 min to make sure the MS has stability. When you verify the MS has stability, continue the procedure.

**8** To manually busy the slave MS, type

**>BSY ms_number**

and press the Enter key.

*where*

**ms_number**
is the number of the slave MS (0 or 1)

*Example of a MAP response:*

```
Request to MAN BUSY MS: 0 submitted.
Request to MAN BUSY MS: 0 passed.
```

# Emergency power conservation
# Emergency shutdown of one SuperNode SE MS plane (end)

***At the MS shelf***

**9**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to the wrist-strap grounding point of the frame supervisory panel (FSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

**WARNING**
**Possible loss of service**
Make sure that you power down the slave MS. If you power down the MS that contains the master clock, the system will shut down.

Power down the slave MS as follows:

**a** Press down and release the switch on the faceplate of the NT9X30 power converter.

**b** Press down and release the switch on the faceplate of the NT9X31 power converter.

***Note:*** Turn off the converters in slots 1 and 4 if MS 0 is the slave MS. Turn off the converters in slots 33 and 36 if MS 1 is the slave MS.

**10** Return to the procedure *Emergency power conservation—Shutdown* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation
# Emergency shutdown of one unit of LCMs

## Application

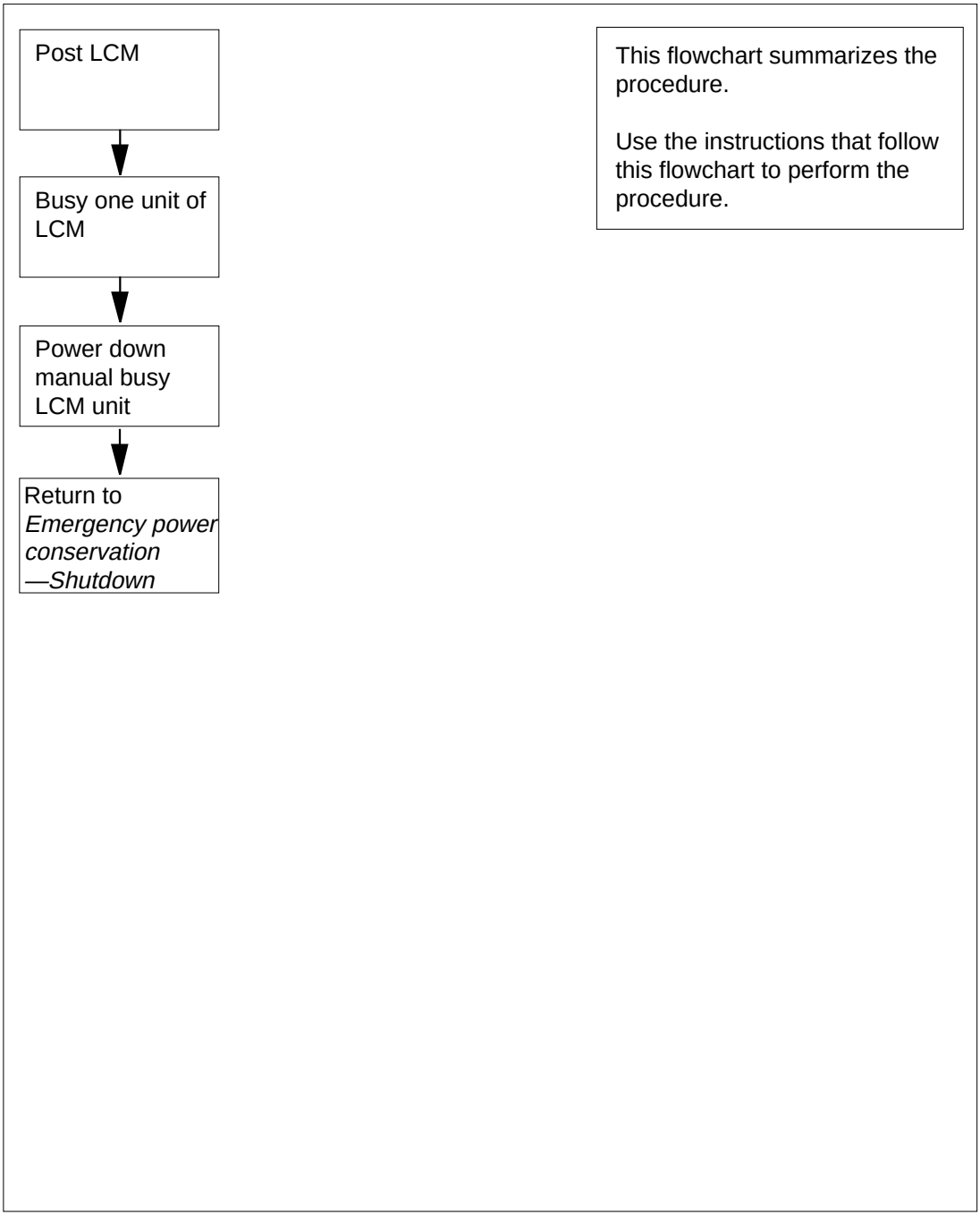
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one unit of line concentrating modules (LCM).

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Emergency power conservation
# Emergency shutdown of one unit of LCMs (continued)

**Summary of Emergency shutdown of one unit of LCMs**



# Emergency power conservation
# Emergency shutdown of one unit of LCMs (continued)

**Emergency shutdown of one unit of LCMs**

***At the MAP terminal***

**1**

**WARNING**
**Potential service interruption or extended outage**
Nortel recommends that you contact the Emergency-Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

**WARNING**
**Potential loss of service or extended outage**
Perform this procedure only to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the PM level of the MAP display, type

**>MAPCI;MTC;PM**

and press the Enter key.

**2** To post the LCM for the unit that you will power down, type

**>POST LCM HOST frame pair**

and press the Enter key.

*where*

**frame**
is the frame number (00 to 99)

**pair**
is the frame pair number (0 to 1)

*Example of a MAP response:*

```
LCM HOST 00 0 InSv Links  OOS: Cside 0 Pside 0
Unit 0: InSv        /RG:0
Unit 1: InSv    /RG:1
                     11 11 11 11 11
Drwr:   01 23 45 67 89 01 23 45 67 89   RG:Pref 0 InSv
                                         Stby 1 InSv
```

**3** To manually busy the LCM unit, type

**>BSY UNIT unit_no**

and press the Enter key.

# Emergency power conservation
# Emergency shutdown of one unit of LCMs (end)

*where*

**unit_no**
is the unit of the PM to be busied (0 or 1)

**4**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to a wrist-strap grounding point on the frame supervisory panel (FSP) or the modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Turn off the appropriate circuit breakers for the LCM unit at the FSP or MSP.

***Note:*** Shelf location labels the circuit breakers.

**5** Repeat steps 2 to 5 for one unit of each LCM in the office.

**6** Return to the procedure *Emergency power conservation-Shutdown* in this document. Proceed when the step-action procedure directs you to go.

# Emergency power conservation
# Emergency shutdown of one unit of MSB7s

## Application

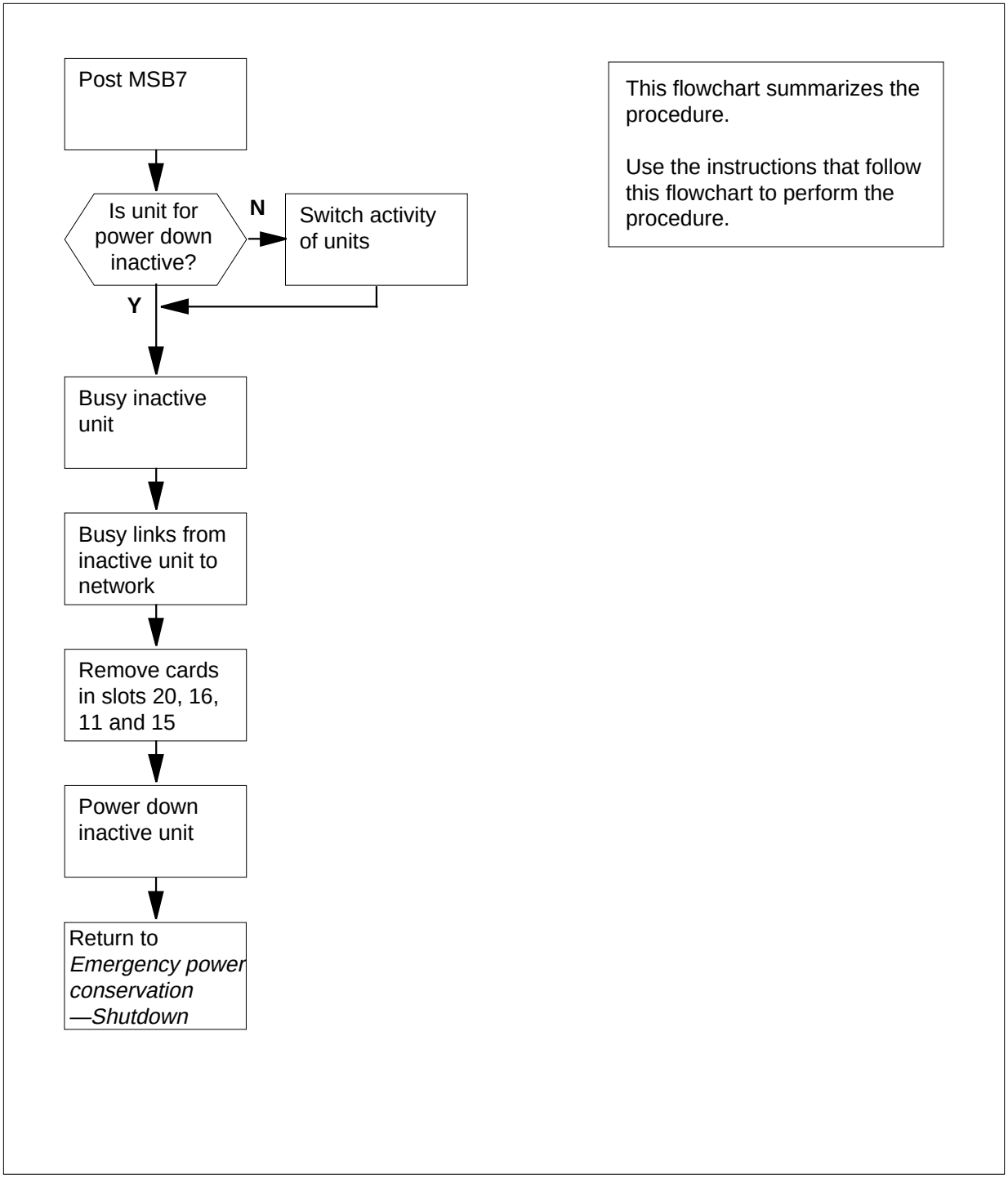
Use this procedure to conserve emergency backup power. To conserve emergency backup power, shut down one unit of CCS7 message switch and buffers (MSB7).

## Action

The following flowchart is a summary of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the recovery task.

# Emergency power conservation
# Emergency shutdown of one unit of MSB7s (continued)

**Summary of Emergency shutdown of one unit MSB7s**



# Emergency power conservation
# Emergency shutdown of one unit of MSB7s (continued)

**Emergency shutdown of one unit of MSB7s**

***At the MAP terminal***

**1**

**WARNING**
**Potential service interruption or extended outage**
Nortel recommends that you contact the Emergency-Technical Assistance Services (ETAS) or the next level of support before you perform this procedure.

**WARNING**
**Potential loss of service or extended outage**
Perform this procedure to conserve emergency backup power. Do not use this procedure or sections of this procedure for equipment maintenance purposes.

To access the PM level of the MAP display, type

**>MAPCI;MTC;PM**

and press the Enter key.

**2** To post the PM for the unit that you will power down, type

**>POST MSB7 pm_no**

and press the Enter key.

*where*

**pm_no**
is the PM identification number (0 to 999)

*Example of a MAP response:*

```
MSB7    0 InSv  Links_OOS: CSide  0 , PSide  0
Unit0:          Act     InSv
Unit1:          Inact       InSv
```

**3** Determine from the MAP display if the MSB7 unit that you will power down is the active (Act) or inactive (Inact) unit.

| If the unit | Do |
|---|---|
| is active | step 4 |
| is inactive | step 8 |

## Emergency power conservation
## Emergency shutdown of one unit of MSB7s (continued)

**4** To switch the activity of the units, type

**>SWACT**

and press the Enter key.

*Example of a MAP display:*

```
MSB7 0      A Warm SwAct will immediately be performed
Please confirm (”YES”, ”Y”, ”NO” or ”N”):
```

| If the MAP response | Do |
|---|---|
| indicates a warm SwAct | step 7 |
| indicates other than listed here | step 5 |

**5** To cancel the switch of activity, type

**>NO**

and press the Enter key.

**6** Activity on the PM cannot switch at this time. Proceed as follows:

| If you | Do |
|---|---|
| want to power down the inactive unit | step 8 |
| want to leave both units of this MSB7 in service and work on the next MSB7 | step 2 |

**7** To confirm the prompt to switch the activity of the units, type

**>YES**

and press the Enter key.

**8** To manually busy the inactive unit of the MSB7, type

**>BSY UNIT unit_no**

and press the Enter key.

*where*

**unit_no**
is the PM unit number (0 or 1)

**9** To identify the network type and network links that associate with the manual busy MSB7 unit, type

**>TRNSL C**

and press the Enter key.

*Example of a MAP response for JNET:*

## Emergency power conservation
## Emergency shutdown of one unit of MSB7s (continued)

```
LINK 0: NET 0 3 12;CAP MS;Status:OK
LINK 1: NET 1 3 12;CAP MS;Status:OK
LINK 2: NET 0 3 28;CAP MS;Status:OK
LINK 3: NET 1 3 28;CAP MS;Status:OK
LINK 4: NET 0 3 44;CAP MS;Status:OK
...
LINK 31 NET 1 3 63;CAP MS;Status:OK
```

***Note:*** Links 5 to 30 do not appear.

*Example of a MAP response for ENET:*

```
LINK 0: ENET 0  0 13 00;CAP MS;Status:OK
LINK 1: ENET 1  0 23 00;CAP MS;Status:OK
LINK 2: ENET 0  0 13 01;CAP MS;Status:OK
LINK 3: ENET 1  0 23 01;CAP MS;Status:OK
LINK 4: ENET 0  0 13 02;CAP MS;Status:OK
LINK 5: ENET 1  0 23 02;CAP MS;Status:OK
LINK 6: ENET 0  0 13 03;CAP MS;Status:OK
LINK 7: ENET 1  0 23 03;CAP MS;Status:OK
```

**10** Determine if the network on your switch is a junctored network (JNET) or enhanced network (ENET).

| If the network | Do |
|---|---|
| is JNET | step 11 |
| is ENET | step 18 |

**11** Determine the MSB7 unit that is manual busy (0 or 1). Record the speech link numbers (0 to 31) that associate with the MSB7 unit. Even numbered speech links (0, 2, 4 ... 30) associate with MSB7 unit 0. Odd numbered speech links (1, 3, 5 ... 31) associate with MSB7 unit 1.

***Note:*** Speech link numbers 5 to 30 do not appear in the example in step 9.

**12** Record the network plane number, network module (pair) number, and network link number for each speech link recorded in step 11.

***Note:*** Speech link 2 associates with network plane 0, network module number 3, and network link number 28. This association appears in the JNET example response in step 9.

**13** To access the NET level of the MAP display, type

**`>NET`**

and press the Enter key.

**14** To access the network link level for the first network link that you will busy, type

**`>LINKS n`**

and press the Enter key.

# Emergency power conservation
# Emergency shutdown of one unit of MSB7s (continued)

*where*

**n**
is the network module number recorded in step 12

**15** To manually busy the first network link, type

```
>BSY  plane_no  link_no
```

and press the Enter key.

*where*

**plane_no**
is the network plane (0 or 1)

**link_no**
is the network link number

**16** Repeat steps 14 and 15 until all links between the manual busy MSB7 unit and the network are manual busy. Go to step 17.

**17** Wait 2 min. Go to step 25.

**18** Determine the speech link numbers that associate with the manual busy MSB7 unit. Even numbered speech links associate with unit 0. Odd numbered speech links associate with unit 1.

***Note:*** Speech links 0, 2, 4 and 6 associate with unit 0 in the ENET example response in step 9. Speech links 1, 3, 5, and 7 associate with MSB7 unit 1.

**19** Record the ENET plane number, shelf number, card number, and network link number that associate with the ENET. Perform this procedure for each speech link recorded in step 18.

***Note:*** Speech link 3 associates with ENET plane 1, shelf 0, card 23, and network link number 01. This association appears in the ENET example response in step 9.

**20** To access the NET level of the MAP display, type

```
>NET
```

and press the Enter key.

**21** To access the MAP display for the first speech link and the ENET card that associates with this link, type

```
>SHELF  shelf_no;  CARD  card_no
```

and press the Enter key.

*where*

**shelf_no**
is the ENET shelf number

**card_no**
is the ENET card number

**22** To deload traffic from the ENET card, type

```
>DELOAD   plane_no  SET
```

and press the Enter key.

# Emergency power conservation
# Emergency shutdown of one unit of MSB7s (continued)

*where*

**plane_no**
is the ENET plane number

**23** To busy the first link recorded in step 18 from the ENET card to the PM unit, type

```
>BSY   plane_no  LINK  link_no
```

and press the Enter key.

*where*

**plane_no**
is the ENET plane number, recorded in step 19link_nois the network link number, recorded in step 19

**24** Repeat steps 21 to 23 for each speech link recorded in step 18. Continue the procedure.

***At the shelf that contains the inactive MSB7***

**25**

**WARNING**
**Static electricity damage**
Wear a wrist strap that connects to a wrist-strap grounding point on the frame supervisory panel (FSP) or the modular supervisory panel (MSP) to handle circuit cards. The wrist strap protects the cards against static electricity damage.

Unseat the NT6X69 message protocol card from slot 20.

**26** Unseat the NT6X45 signaling processor card from slot 16.

**27** Unseat the NT6X45 master processor card from slot 11.

**28** Unseat the NT6X46 signaling-processor memory card from slot 15.

**29**

**WARNING**
**Loss of service**
If you power down the active unit of the MSB7 or the power converter in slot 1, service loss occurs.

Pull down and set the handle of the NT2X70 power converter in slot 25 POWER switch to the OFF position.

**30** Repeat steps 2 to 29 for one unit of each MSB7.

## Emergency power conservation
## Emergency shutdown of one unit of MSB7s (end)

**31** Return to the procedure *Emergency power conservation—Shutdown* in this document. Proceed when the step-action procedure directs you to go.

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# X

DMS-100 Family

# North American DMS-100

Recovery Procedures

Product Documentation - Dept. 3423
Nortel Networks
P.O. Box 13010
RTP, NC 27709-3010
Telephone: 1-877-662-5669
email: cits@nortelnetworks.com

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Publication number: 297-8021-545
Product release: LET0015 and up
Document release: Standard 14.02
Date: May 2001
Printed in the United States of America

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