Upgrades

Upgrade strategy

Upgrading the software on all the individual circuit packs will upgrade the SPM. The SPM offers two options for upgrades. Automated SPM upgrades are performed on all the circuit packs at once. Manual SPM upgrades are performed on a circuit pack by circuit pack basis.

Note: An SPM with an SRM configured on it cannot be upgraded using an automated SPM upgrade. The SPM must be upgraded manually.

CAUTION
Possible service interruption
Prior to performing an SPM upgrade, all applicable RM RMIDs and PROTWHOMIDs must be aligned. For details, refer to the “Procedure for modifying a tuple in table MNCKTPAK” in the Supplementary information section of table MNCKTPAK in the *Customer Data Schema Reference Manual*, NTP 297-8001-351.

Before performing an SPM upgrade, each of the following requirements should be met:

- an office image was taken in the last 24 hours
- all peripheral module (PM) logs are enabled
- the circuit pack is in-service and the activity state is inactive

Note: You can view the state and activity of a circuit pack at each circuit pack MAP (maintenance and administration position) level or at the SPM summary MAP level.

- automatic routine exercise (REX) testing is suspended in the office
- perform “Prepare an automated SPM upgrade” on page -3 or “Prepare a manual SPM upgrade” on page -53

Note: When performing an SPM downgrade, perform “Prepare a manual SPM downgrade” on page -137.

CAUTION
Possible service interruption
Nortel Networks strongly recommends completely loading entire SPMs during a single maintenance release or milestone upgrade. Failure to load all RMs and CEMs in an SPM can result in inadvertently running unsupported mixed load SPM configurations. Mixed load configurations can, in turn, result in the reload of modules in an out-of-procedure sequence, which can be potentially service affecting. However, if you cannot complete the loading of all SPMs during the same period, upgrade only a limited number of SPMs during that loading period.

Note: Due to a loadname mismatch in table MNCKTPAK, SPMs not loaded with an upgrade load reflect an ISTB condition. The ISTB condition remains in effect until you have completed the upgrade on all SPMs.

Tools and utilities

SPM upgrades are performed using the MAP display commands.

Upgrade procedures

This document contains the following procedures:

- “Prepare an automated SPM upgrade” on page -3
- “Perform an automated SPM upgrade” on page -31
- “Prepare a manual SPM upgrade” on page -53
- “Perform a manual SPM upgrade” on page -98
- “Prepare a manual SPM downgrade” on page -137
- “Perform a manual SPM downgrade” on page -182
- “In-service loading procedure” on page -233
- “RM-to-RM loading procedure” on page -237

Prepare an automated SPM upgrade

At the CI level of the MAP display

1 Read the “Overview of automated update process” section in the *Peripheral Module Software Release Document*, NTP 297-8981-599.

2 Send the terminal responses to a printer by typing

```
>RECORD START ONTO <printer>
```

and pressing the Enter key.

where

printer
is the name of a printer

3 Access the PMUPGRADE utility by typing

```
>PMUPGRADE
```

and pressing the Enter key.

Example of MAP display

```
This PCL does not contain table CCHINV
This PCL does not contain table CSMINV
This PCL does not contain table DLMINV
This PCL does not contain table MDBSINV
This PCL does not contain table VCHINV
APINV     contains   0 nodes
DCHINV    contains   1 nodes
DCMINV    contains   0 nodes
DPP       contains   0 nodes
ENINV     contains   1 nodes
EXNDINV   contains   0 nodes
IOC       contains   2 nodes
RMPCKT    contains   0 nodes
LCMDRINV  contains   0 nodes
MNCKTPAK  contains  10 nodes
MPC       contains   2 nodes
MSBINV    contains   0 nodes
MSFWLOAD  contains   1 nodes
MSINV     contains   2 nodes
NIUINV    contains   0 nodes
OFCVAR    contains   4 nodes
RCCINV    contains   0 nodes
RMMINV    contains   0 nodes
STINV     contains   0 nodes
TMINV     contains   6 nodes
TPCINV    contains   0 nodes
TSTEQUIP  contains   0 nodes
XESAINV   contains   0 nodes
The current PMUPGRADE settings are:
 Load File Distribution:  S00T
 Load File Destination:   S00DPMLOADS
 Patch File Distribution: S00T
 ISN Patch Destination:   SFDEV
 XPM Patch Destination:   SFDEV
 SPM Patch Destination:   SFDEV
 Confirmation:            OFF
 CarryOver:               ON
 PrimaryCopy:             ON
 IncludeLoads:
 ExcludeLoads:
 WARNING: XPM Patch Destination and Patch Distribution incompatible
```

4 Set confirmation to ON by typing

>SET CONFIRMATION ON

and pressing the Enter key.

Note: The remainder of this procedure assumes this step has been completed.

Example of MAP display

```
The current PMUPGRADE settings are:
 Load File Distribution:  S00T
 Load File Destination:   S00DPMLOADS
 Patch File Distribution: S00T
 ISN Patch Destination:   SFDEV
 XPM Patch Destination:   SFDEV
 SPM Patch Destination:   SFDEV
 Confirmation:            ON
 CarryOver:               OFF
 PrimaryCopy:             ON
 IncludeLoads:
 ExcludeLoads:
 WARNING: XPM Patch Destination and Patch Distribution incompatible
```

5

ATTENTION

Carryover loads are SPM load files on the SPM load tape with the same version of the load currently used in the office. Operating company personnel can issue a SET CARRYOVER ON command to copy all SPM loads for the office. However, this does not result in the update of SPMs that have no SPM load version change. The default is Carryover: OFF.

Check office policy for carryover load requirements.

If the office	Do
requires all SPM loads for the office be copied	Procedure 6
does not require all SPM loads for the office to be copied	Procedure 7

6 Set carryover to ON by typing

`>SET CARRYOVER ON`

and pressing the Enter key.

Note: The remainder of this procedures assumes that CARRYOVER is set to OFF.

Example of MAP display

```
The current PMUPGRADE settings are:
 Load File Distribution:  S00T
 Load File Destination:   S00DPMLOADS
 Patch File Distribution: S00T
 ISN Patch Destination:   SFDEV
 XPM Patch Destination:   SFDEV
 SPM Patch Destination:   SFDEV
 Confirmation:            ON
 CarryOver:               ON
 PrimaryCopy:             ON
 IncludeLoads:
 ExcludeLoads:
 WARNING: XPM Patch Destination and Patch Distribution incompatible
```

7

ATTENTION

Each destination volume must have sufficient free space for the new SPM load or PRSU files and meet all office criteria.

ATTENTION

The XA-Core command syntax for drive_no and disk_no correspond to the following identifiers in the XA-Core command examples:

Shelf position is the front (F) or rear (R) shelf position of the input output processor (IOP).

Slot position is the two-digit number of the slot position for the IOP with the tape device.

Packlet position is the upper (U) or lower (L) packlet position of the IOP with the tape device.

In the command example F17UTAPE, F is the shelf position, 17 is the two-digit slot position, U is the packlet position, and TAPE identifies the software delivery medium.

Review the current PMUPGRADE settings. If necessary, change the settings.

a Confirm the Load File Distribution setting is correct. If necessary, change the setting by typing

`>SET LOADDISTRIB <vol_name>`

and pressing the Enter key.

where

vol_name
is the name of the new Load File Distribution volume

Example of command for SLM tape

```
>SET LOADDISTRIB S01T
```

Note: The Load File Distribution and Load File Destination volumes should reside on the same SLM device.

Example of MAP display for SLM tape

```
The current PMUPGRADE settings are:
 Load File Distribution:  S01T
 Load File Destination:   S00DPMLOADS
 Patch File Distribution: S00T
 ISN Patch Destination:   SFDEV
 XPM Patch Destination:   SFDEV
 SPM Patch Destination:   SFDEV
 Confirmation:            ON
 CarryOver:               ON
 PrimaryCopy:             ON
 IncludeLoads:
 ExcludeLoads:
 WARNING: XPM Patch Destination and Patch Distribution incompatible
```

Example of command for XA-Core

```
>SET LOADDISTRIB F02UTAPE
```

Example of MAP display for XA-Core tape

```
The current PMUPGRADE settings are:
 Load File Distribution:  F02UTAPE
 Load File Destination:   S00DPMLOADS
 Patch File Distribution: S00T
 ISN Patch Destination:   SFDEV
 XPM Patch Destination:   SFDEV
 SPM Patch Destination:   SFDEV
 Confirmation:            ON
 CarryOver:               ON
 PrimaryCopy:             ON
 IncludeLoads:
 ExcludeLoads:
 WARNING: XPM Patch Destination and Patch Distribution incompatible
```

b Confirm the Load File Destination setting is correct. If necessary, change the setting by typing

>SET LOADDEST <vol_name>

and pressing the Enter key.

where

vol_name
is the name of the new Load File Destination volume

Example of command for SLM tape

```
>SET LOADDEST S01DPMLOADS
```

Note: The Load File Distribution and Load File Destination volumes should reside on the same SLM device.

Example of MAP display for SLM tape

```
The current PMUPGRADE settings are:
 Load File Distribution:  S01T
 Load File Destination:   S01DPMLOADS
 Patch File Distribution: S00T
 ISN Patch Destination:   SFDEV
 XPM Patch Destination:   SFDEV
 SPM Patch Destination:   SFDEV
 Confirmation:            ON
 CarryOver:               ON
 PrimaryCopy:             ON
 IncludeLoads:
 ExcludeLoads:
 WARNING: XPM Patch Destination and Patch Distribution incompatible
```

Example of command for XA-Core

```
>SET LOADDEST F02LPMLOADS
```

Example of MAP display for XA-Core tape

```
The current PMUPGRADE settings are:
 Load File Distribution:  F02UTAPE
 Load File Destination:   F02LPMLOADS
 Patch File Distribution: S00T
 ISN Patch Destination:   SFDEV
 XPM Patch Destination:   SFDEV
 SPM Patch Destination:   SFDEV
 Confirmation:            ON
 CarryOver:               ON
 PrimaryCopy:             ON
 IncludeLoads:
 ExcludeLoads:
 WARNING: XPM Patch Destination and Patch Distribution incompatible
```

c Confirm the Patch File Distribution setting is correct. If necessary, change the setting by typing

>SET PATCHDISTRIB <vol_name>

and pressing the Enter key.

where

vol_name
is the name of the new Patch Distribution volume

Example of command for SLM tape

```
>SET PATCHDISTRIB S01T
```

Example of MAP display for SLM tape

```
The current PMUPGRADE settings are:
 Load File Distribution:  S01T
 Load File Destination:   S01DPMLOADS
 Patch File Distribution: S01T
 ISN Patch Destination:   SFDEV
 XPM Patch Destination:   SFDEV
 SPM Patch Destination:   SFDEV
 Confirmation:            ON
 CarryOver:               ON
 PrimaryCopy:             ON
 IncludeLoads:
 ExcludeLoads:
 WARNING: XPM Patch Destination and Patch Distribution incompatible
```

Example of command for XA-Core

```
>SET PATCHDISTRIB F02UTAPE
```

Example of MAP display for XA-Core tape

```
The current PMUPGRADE settings are:
 Load File Distribution:  F02UTAPE
 Load File Destination:   F02LPMLOADS
 Patch File Distribution: F02UTAPE
 ISN Patch Destination:   SFDEV
 XPM Patch Destination:   SFDEV
 SPM Patch Destination:   SFDEV
 Confirmation:            ON
 CarryOver:               ON
 PrimaryCopy:             ON
 IncludeLoads:
 ExcludeLoads:
 WARNING: XPM Patch Destination and Patch Distribution incompatible
```

d The ISN, XPM, and SPM Patch Destination settings must point to the patch file destination volume. Confirm the ISN, XPM, and SPM Patch Destination settings are correct. If necessary, change the setting by entering the following commands

>SET ISNPATCH <vol_name>

>SET XPMPATCH <vol_name>

>SET SPMPATCH <vol_name>

and pressing the Enter key.

where

vol_name
is the name of the new Patch Destination volume.

Example of command for SLM tape

```
>SET ISNPATCH S01DPMLOADS
>SET XPMPATCH S01DPMLOADS
>SET SPMPATCH S01DPMLOADS
```

Example of MAP display for SLM tape

```
The current PMUPGRADE settings are:
 Load File Distribution:  S01T
 Load File Destination:   S01DPMLOADS
 Patch File Distribution: S01T
 ISN Patch Destination:   S01DPMLOADS
 XPM Patch Destination:   S01DPMLOADS
 SPM Patch Destination:   S01DPMLOADS
 Confirmation:            ON
 CarryOver:               ON
 PrimaryCopy:             ON
 IncludeLoads:
 ExcludeLoads:
```

Example of command for XA-Core

```
>SET ISNPATCH F02LPMLOADS
>SET XPMPATCH F02LPMLOADS
>SET SPMPATCH F02LPMLOADS
```

Example of MAP display for XA-Core tape

```
The current PMUPGRADE settings are:
 Load File Distribution:  F02UTAPE
 Load File Destination:   F02LPMLOADS
 Patch File Distribution: F02UTAPE
 ISN Patch Destination:   F02LPMLOADS
 XPM Patch Destination:   F02LPMLOADS
 SPM Patch Destination:   F02LPMLOADS
 Confirmation:            ON
 CarryOver:               ON
 PrimaryCopy:             ON
 IncludeLoads:
 ExcludeLoads:
```

Note: The SPM patch destination volume should be entered in table PADNDEV.

8 Generate a report of the loads in the office by typing

>DISPLAY LOADS

and pressing the Enter key.

Example of MAP display

```
                        PMUPGRADE LOAD REPORT
 ------------------------------------------------------------

 LOADNAME          ACTFILE           ACTVOL        Tables Used
 ------------------------------------------------------------
ARS04AQ           ARS04AQ           ARS_VOL         LIUINV
BLMTB01           BLMTB01           BLM_VOL         LMINV
BRLMVA03          BRLMVA03          BRLM_VOL        LMINV
CEM15BE          CEM15BE_010030    S01DPMLOADS     MNCKTPAK
DLC15BD          DLC15BD_010029    S01DPMLOADS     MNCKTPAK
DSP15BD          DSP15BD_010029    S01DPMLOADS     MNCKTPAK
EDH05AO           EDH05AO           EDH_VOL         DCHINV
ELI05AO           ELI05AO           EL_VOL          LTCINV
ERLMVA02          ERLMVA02          ERLM_VOL        LMINV
ESA05AO           ESA05AO           ESA_VOL         XESAINV
ETC07BM           ETC07BM           ETC_VOL         LIUINV
F8C07BM           F8C07BM           F8C_VOL         LIUINV
LCM01D            LCM01D            LCM_VOL         LCMINV
LCME05AI          LCME05AI          LCME_VOL        LCMINV
LPC07BM           LPC07BM           LPC_VOL         LIMINV
LRS04AQ           LRS04AQ           LRS_VOL         LIUINV
MPC403AD          MPC403AD          MPC_VOL         MPC
MPF36CJ           MPF36CJ           MPF_VOL         MSFWLOAD
MTMKA02           MTMKA02           MTM_VOL         TMINV
MX77NG03          MX77NG03          MX_VOL          LTCINV
OC315BD          0C315BD_010029    S01DPMLOADS     MNCKTPAK
```

Note 1: PMUPGRADE compiles the PMUPGRADE Load Report from table PMLOADS and the SPM inventory tables. This example illustrates a report for a typical office.

Note 2: A load can possibly have no entry under the Tables Used column. Check office policy for this situation. If necessary, perform the following sets to correct the report.

- Exit PMUPGRADE
- Delete the out-dated load from table PMLOADS
- Go to Procedure 3 of this procedure

9 Generate a node report for the office by typing

`>DISPLAY NODES`

and pressing the Enter key.

Example of MAP display

```
PMUPGRADE NODE REPORT
Inventory Table : DCHINV
-----------------------------------------------
Nodename Loads Used
-----------------------------------------------

1 EDH05AO
2 EDH05AO
3 EDH05AO
4 EDH05AO
Inventory Table : LCMINV
-----------------------------------------------
 Nodename Loads Used
 -----------------------------------------------
HOST 04 0 LCM01D
HOST 04 1 LCM01D
HOST 07 0 LCME05AI
Inventory Table : LIUINV
-----------------------------------------------
Nodename Loads Used
-----------------------------------------------
LIU7 101 ARS04AQ
LIU7 102 ARS04AQ
Inventory Table : MNCKTPAK
-----------------------------------------------
Nodename Loads Used
-----------------------------------------------
SPM 23   CEM15BE_010030 OC315BD_010029
         DSP15BD_010029 DLC15BD_010029
```

Note 1: The PMUPGRADE Node Report is compiled from SPM inventory tables. The preceding example illustrates a report for some of the SPM inventory tables.

Note 2: The nodename information for table MNCKTPAK is obtained from table MNNODE.

10 Display the firmware information by typing

`>display fwinfo`

and pressing the Enter key.

Example of MAP display

```
                    PMUPGRADE FIRMWARE INFORMATION
Firmware types in the inventory tables
------------------------------------------------------------------------------
FIRMWARE     TYPE                                      BASELINE    NEW RELEASE
TYPE         DESCRIPTION                                LOAD        LOAD
------------------------------------------------------------------------------
STDMX77      Standard MX77 firmware
STDSX05      Standard SX05 firmware
STDAX74      Standard AX74 firmware
Firmware loads in the inventory tables
------------------------------------------------------------------------------
LOAD      CURRENT      FIRMWARE        BASELINE     NEW RELEASE  PREFERRED
NUMBER     LOAD         TYPE            LOAD         LOAD         LOAD
------------------------------------------------------------------------------
1.         UPFWNR04     STDMX77
2.         SXFWAG04     STDSX05
3.         UPFWNR04     STDAX74
```

11 Set the preferred load to the current load by typing

`>set fwpreferred <load_number> current`

and pressing the Enter key for each load.

where

load_number
is the number of the current load

Note: The preferred load must be equal to the current load.

Example of MAP display

```
                    PMUPGRADE FIRMWARE INFORMATION
  Firmware types in the inventory tables
  ------------------------------------------------------------------------------
  FIRMWARE     TYPE                                        BASELINE    NEW RELEASE
  TYPE         DESCRIPTION                                  LOAD        LOAD
  ------------------------------------------------------------------------------
  STDMX77      Standard MX77 firmware
  STDSX05      Standard SX05 firmware
  STDAX74      Standard AX74 firmware
  Firmware loads in the inventory tables
  ------------------------------------------------------------------------------
  LOAD      CURRENT      FIRMWARE         BASELINE     NEW RELEASE  PREFERRED
  NUMBER     LOAD         TYPE             LOAD         LOAD         LOAD
  ------------------------------------------------------------------------------
  1.         UPFWNR04     STDMX77                                    UPFWNR04
  2.         SXFWAG04     STDSX05
  3.         UPFWNR04     STDAX74                                    -
```

12

ATTENTION

The FILECOPY phase of PMUPGRADE takes about 40 minutes, depending on the number of SPM loads and PRSU files.

When prompted to confirm a tape is in its appropriate drive, confirm the tape is physically inserted in the drive. Do not use the INSERTTAPE or IT commands on the tape.

If the SLM or XA-Core tape cartridge label text indicates Patches:Yes, the tape includes the required PRSUs for SPM load files.

Start the filecopy phase of the utility by typing

>START FILECOPY

and pressing the Enter key.

13 Confirm the PRSU tape is in the specified drive. Continue PMUPGRADE by typing

>Y

and pressing the Enter key.

PMUPGRADE takes about 20 minutes to list the Load Distribution Volume.

14

ATTENTION

Identify and enter the correct replacement loadname. If the user does not enter the correct replacement loadname, PMUPGRADE and SWUPGRADE will use the incorrect information to plan and perform the automated SPM update.

Observe the MAP display as PMUPGRADE selects load files. Watch for a response similar to the following example:

Example of MAP display

```
No replacement loadname found on distribution volume for SM206BH1.
Please enter replacement loadname, or “S” (Same) or “Q” (Quit FILECOPY)
```

If you receive a response similar to the one above, determine why PMUPGRADE cannot find the replacement loadname and identify the replacement loadname. When the replacement loadname is identified, enter the appropriate response and allow PMUPGRADE to continue.

If	Do
A new load type replaces the current load type	Enter the new loadname.
The load is manufacture discontinued	Enter “S”.
The load is a filler SPM loadname, indicating a SPM does not have a load	Enter “S”

Also watch for a response similar to the following example:

Example of MAP display

```
*** Multiple possible replacements found on load distribution volume
    for DLC15BD_010029 load:  DLC15BE_010030  DLC16BD_010029
    Any replacement load name may be chosen from the load distribution
    volume.  If necessary, consult the PM release documentation or
    contact the next level of support.
Please enter the replacement load name, or “S” (Same), or “Q” (Quit FILECOPY)
```

If you receive a response similar to the one above, determine which loadname should be the replacement loadname. When

the replacement loadname is identified, enter the appropriate response and allow PMUPGRADE to continue.

Note: The loadname is the first seven characters of the filename.

15 Wait for PMUPGRADE to generate a report similar to the following example:

Example of MAP display

```
                          LOAD FILE SELECTION REPORT
CURRENT LOAD      FW TYPE        AUTO-SELECTED FILES                EXCLUDED
------------      -------        -------------------                --------
BTMKA02                          Same Load
CEM15BE_010030                   Same Load
CMR10A                           Same Load
DLC15BD_010029                   Same Load
DSP15BD_010029                   DSP16BD_010029
DTUDAA00                         Same Load
DTUDAA01                         Same Load
ECL14BC                          Same Load
ED714BC                          Same Load
EDH14BC                          Same Load
EDRMAD06                         Same Load
ENC16BH                          Same Load
ETC16BH                          Same Load
IOMRAX01                         Same Load
LCME14BA                         Same Load
LPC16BH                          Same Load
LRS16BH                          Same Load
MPC403AC                         Same Load
MPF16BH                          Same Load
MTMKA02                          Same Load
MUC16BH                          Same Load
OC315BD_010029                   OC316CD_010029
ODT14BC                          Same Load
QLI14BC                          Same Load
SXFWAG04          STDSX05        Same Load
UPFWNR04          STDMX77        Same Load
UPFWNR04          STDAX74        Same Load
XLCM14BA                         Same Load
                                 INCLUDED LOADS
                                 --------------
                                 None
Accessing destination volumes: S01T  SFDEV
Ready to continue?
Please confirm ("YES", "Y", "NO", or "N")
```

16 Review the Load File Selection Report and determine if any loads need to be added to the report or removed from the report.

If	Do
one or more loads need to be removed from the report	Procedure 17

If	Do
one or more loads need to be added to the report	Procedure 17
the report is complete and no loads need ot be added or removed	Procedure 22

17 Stop the file copy process by typing

>N

and pressing the Enter key.

If	Do
one or more loads need to be removed from the report	Procedure 18
one or more loads need to be added to the report	Procedure 19

18 Remove the loads from the report by typing

>SET EXCLUDELOADS <load_name_1> <load_name_2> ... <load_name_n>

and pressing the Enter key.

where

load_name_1 load_name_2 load_name_n
are the names of the loads to be excluded (repeat variable as needed)

Note 1: The list of excluded loads is not cumulative; it is reset with each use of the SET EXCLUDELOADS command.

Note 2: Separate the load names with a blank space.

Example

```
>SET EXCLUDELOADS BTMKA02 ECLI4BC
```

Example of MAP display

```
The current PMUPGRADE settings are:
 Load File Distribution:  S01T
 Load File Destination:   S01DPMLOADS
 Patch File Distribution: S01T
 ISN Patch Destination:   SFDEV
 XPM Patch Destination:   SFDEV
 SPM Patch Destination:   S01DPMLOADS
 Confirmation:            ON
 CarryOver:               ON
 PrimaryCopy:             ON
 IncludeLoads:
 ExcludeLoads: BTMKA02 ECLI4BC
```

If	Do
one or more loads need to be added to the report	Procedure 19
the report is complete and no loads need ot be added or removed	Procedure 20

19 Add the loads to the report by typing

`>SET INCLUDELOADS <load_name_1> <load_name_2> ... <load_name_n>`

and pressing the Enter key.

where

load_name_1 load_name_2 load_name_n
are the names of the loads to be included (repeat variable as needed)

Note 1: The list of included loads is not cumulative; it is reset with each use of the SET INCLUDELOADS command.

Note 2: Separate the load names with a blank space.

Example

```
>SET INCLUDELOADS COH16BA
```

Example of MAP display

```
The current PMUPGRADE settings are:
 Load File Distribution:  S01T
 Load File Destination:   S01DPMLOADS
 Patch File Distribution: S01T
 ISN Patch Destination:   SFDEV
 XPM Patch Destination:   SFDEV
 SPM Patch Destination:   S01DPMLOADS
 Confirmation:            ON
 CarryOver:               ON
 PrimaryCopy:             ON
 IncludeLoads:  COH16BA
 ExcludeLoads: BTMKA0
2
```

20 Repeat the file selection phase of the utility by typing

>START FILECOPY

and pressing the Enter key.

Example of MAP display

```
  Listing the distribution volume.
```

Note: PMUPGRADE does not physically list the tape again; it reuses the previous listing of the distribution volume.

Example of MAP display

```
                        LOAD FILE SELECTION REPORT
CURRENT LOAD      FW TYPE        AUTO-SELECTED FILES              EXCLUDED
------------      -------        -------------------              --------
BTMKA02                          Same Load                        EXCLUDED
CEM15BE_010030                   Same Load                        EXCLUDED
CMR10A                           Same Load                        EXCLUDED
DLC15BD_010029                   Same Load                        EXCLUDED
DSP15BD_010029                   DSP16BD_010029
DTUDAA00                         Same Load                        EXCLUDED
DTUDAA01                         Same Load                        EXCLUDED
ECL14BC                          Same Load                        EXCLUDED
ED714BC                          Same Load                        EXCLUDED
EDH14BC                          Same Load                        EXCLUDED
EDRMAD06                         Same Load                        EXCLUDED
ENC16BH                          Same Load                        EXCLUDED
ETC16BH                          Same Load                        EXCLUDED
IOMRAX01                         Same Load                        EXCLUDED
LCME14BA                         Same Load                        EXCLUDED
LPC16BH                          Same Load                        EXCLUDED
LRS16BH                          Same Load                        EXCLUDED
MPC403AC                         Same Load                        EXCLUDED
MPF16BH                          Same Load                        EXCLUDED
MTMKA02                          Same Load                        EXCLUDED
MUC16BH                          Same Load                        EXCLUDED
OC315BD_010029                   OC316BD_010029
ODT14BC                          Same Load                        EXCLUDED
QLI14BC                          Same Load                        EXCLUDED
SXFWAG04          STDSX05        Same Load                        EXCLUDED
UPFWNR04          STDMX77        Same Load                        EXCLUDED
UPFWNR04          STDAX74        Same Load                        EXCLUDED
XLCM14BA                         Same Load                        EXCLUDED
                                 INCLUDED LOADS
                                 --------------
                                  None
Accessing destination volumes: S01T  SFDEV
Ready to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

21 Confirm the Load File Selection Report added or removed the specified load names.

If the Load File Selection Report	Do
does not show the excluded load names	Procedure 17
does not show the included load names	Procedure 17
shows the excluded and/or included load names	Procedure 22

22 Confirm the action by typing

>Y

and pressing the Enter key.

Example of MAP display if a $XREF patch control file is not available

```
Selecting patch files.

WARNING: No Patch Control File Found. No patch files selected.

Do you wish to continue?

Please confirm (“YES”, “Y”, “NO”, or “NO):
```

Example of MAP display if a $XREF patch control file is available

```
Selecting patch files.

Checking for file duplicates and volume free space.

Creating the list of files to copy.

Copying load and patch files to destination volumes.
Continue?
Please confirm (“YES”, “Y”, “NO”, “N”):
```

If a $XREF patch control file	Do
is not available	Procedure 23
is available	Procedure 25

23

ATTENTION

PMUPGRADE uses the $XREF patch control files to select PRSUs for copying. Depending on the method of PRSU delivery, this file may not be available. If the file is not available, PMUPGRADE generates a warning that no patch control file has been found. Contact your next level of support for instruction on how to proceed with the upgrade and a list of required PRSUs to be manually applied.

Determine the status of the PRSU files.

If PRSU files	Do
do not need to be manually copied to the destination volumes	Procedure 24
are not applicable to this release	Procedure 24

Note: If no $XREF file is available, patching must be performed manually.

From the terminal where PMUPGRADE is active

24 Confirm the action by typing

>Y

and pressing the Enter key.

Example of MAP display

```
Checking for file duplicates and volume free space.

Creating the list of files to copy.

Do you wish to continue?

Please confirm ("YES", "Y", "NO", "N"):
```

25

ATTENTION

This portion of the FILECOPY phase takes about 20 minutes depending on the number of SPM load and PRSU files.

Confirm the action by typing

>Y

and pressing the Enter key.

Example of MAP display

```
Adding new loads to PMLOADS table.


The FILECOPY phase is complete.
```

26 Generate a PMUPGRADE load report for the office by typing

>DISPLAY LOADS

and pressing the Enter key.

Example of MAP display

```
                    PMUPGRADE LOAD REPORT
-------------------------------------------------------------------------
LOADNAME               ACTFILE           ACTVOL        Tables Used
-------------------------------------------------------------------------
DSP17BD             DSP17BD_010029       S01PMLOADS     MNCKTPAK
OC317BD             OC317BD_010029       S01PMLOADS     MNCKTPAK
```

27 Review the load report and confirm the selected new loads have been added to the report.

28

ATTENTION

The office's PMUPGRADE settings can require changes to this step.

Confirm PMUPGRADE copied the SPM load and PRSU files to the correct destination volume by performing the following steps.

a From a separate terminal window, access the disk utility by typing

>DISKUT

and pressing the Enter key.

b List the files on the Load File Destination Volume by typing

>LISTFL <vol_name>

and pressing the Enter key.

where

vol_name
is the name of the Load File Destination Volume

c If necessary repeat Procedure 28b for each Patch Destination volume.

d Confirm each new file had been copied to the volume.

e Exit the utility by typing

>QUIT

and pressing the Enter key.

29 Start the generation of the PM upgrade plan by typing

>START PLAN

and pressing the Enter key.

Example of MAP display

```
Generating the PM Upgrade Plan.
Using results from primary FILECOPY generated on 2002/02/23 03:08:15 THU.
(and possibly results from secondary FILECOPY)
The PLAN phase is complete.
```

30 Display the PM upgrade plan by typing

>DISPLAY PLAN

and pressing the Enter key.

The PMUPGRADE Plan Report organizes the SPM update by tasks and layers. A task is a set of SPMs of the same type at the same site with the same load requirements. A layer is a grouping of tasks.

Example of MAP display

```
                    PMUPGRADE PLAN REPORT
Upgrade Layer: 1
-----------------
TASK 1:
SITE:
LOADS:              FROM DSP16BD_010029 TO DSP17BD_010029
                    FROM OC316BD_010029 TO OC317BD_010029
NODES:              SPM 0
                    SPM 1
                    SPM 2
                    SPM 3
                    SPM 4
                    SPM 5
                    SPM 6
                    SPM 7

REQUIRES:           none
LOADED FROM FLASH: NO
AUTOMATED:          YES
```

31 Review the PMUPGRADE report.

- Confirm all SPMs that require upgrading are included in the plan report

  Note: For loads added to the Loadfile Selection Report with the SET INCLUDELOADS command, the associated SPMs must be manually updated.

- Confirm the correct SPM loads are included with each task in the plan report.

- Confirm that the sequence of tasks in the plan report conforms to office policy.

  Note: If the sequence of tasks does not comply, use the RUNSTEP command during the automated SPM upgrade to change the order of tasks.

- Confirm offline SPMs that are being installed or commissioned in the office are not included in the plan report. If an offline SPM is included in the plan report

  — update the appropriate SPM inventory table. Change the loadname field for that SPM to the new loadname from the loadfile selection report.

  — Repeat Steps 29 and 30. Ensure the offline SPMs are not included in the new plan report.

32 Exit the PMUPGRADE utility by typing

`>QUIT`

and pressing the Enter key.

33 Stop the terminal responses from printing by typing

`>RECORD STOP ONTO <printer_name>`

and pressing the Enter key.

where

printer_name
is the name of the printer

34

ATTENTION
Check office policy concerning additional copies of SPM load and PRSU files. Some offices require additional copies of SPM load and PRSU files on a parallel device.

Remove the SPM load tape from the tape drive.

At your desk

35 Confirm each SPM to be updated has any required gating hardware. Gating hardware is a specific Product Engineering Code (PEC) required by a SPM to support this release.

Note: All SPMs do not have gating hardware.

If each SPM	Do
has the required hardware	Procedure 36
does not have the required hardware	Contact your next level of support. This office is not prepared for a SPM software update.

36 You have completed this procedure and prepared the office for a SPM update.

Perform an automated SPM upgrade

At the CI level of the MAP display

1 Send the terminal responses to a printer by typing

`>RECORD START ONTO <printer>`

and pressing the Enter key.

where

printer
is the name of the printer

2 Enter the SWUPGRADE PM increment for automated SPM upgrades by typing

`>SWUPGRADE PM`

and pressing the Enter key.

Example of MAP display

```
Generating the SWUPGRADE step list.
Using the PM Upgrade Plan generated by PMUPGRADE on 2001/08/23 03:09:51 THU.

Total of 2 SWUPGRADE steps were generated from the PM Upgrade Plan.

SWUPGRADE:
```

Note: SWUPGRADE PM displays a message similar to the previous example when the SWUPGRADE PM increment is first entered. SWUPGRADE PM displays only the SWUPGRADE prompt on later entries, such as the next SPM update shift.

3

ATTENTION

Use at least two devices with the procedure. Use one device to perform the automated SPM update. Use the second device as a trace device to monitor the progress of the automated SPM update.

Some offices use a third device during the automated SPM update. Use the third device as a MAP terminal. Post the SPMs and monitor SPM loading, patching, and service status.

Send the output of each device to a printer for record keeping.

Establish a second device as a trace device by typing

>SET TRACE_DEVICE <dev_name>

and pressing the Enter key.

where

dev_name
is the name of the trace device

The second device records SWUPGRADE PM operations during the automated SPM update.

4 Confirm the trace device displays the following message

Example of MAP display

```
This device is selected for TRACEing.
```

If the device	Do
displays the previous message	Procedure 5
does not display the previous message	Confirm the correct device is selected as the trace device. If necessary, repeat Procedure 3.

5 Start the SPM update shift by typing

>SET SHIFT STARTED

and pressing the Enter key.

SWUPGRADE PM checks for the availability of a $XREF patch cross-reference file and processes patch cross-reference information.

Example of MAP display

```
************************************************************
**                          NOTE                          **
**                          ----                          **
**  You are starting a shift to upgrade PMs in the office.  **
**  If you have not already done so, perform the procedure  **
**  "Starting a PM update shift" in the Peripheral Module   **
**  Software Release Document at this point.                **
**                                                          **
************************************************************
```

6 Display the SWUPGRADE PM environment variables by typing

>DISPLAY VAR ALL

and pressing the Enter key.

Example of MAP display

```
SWUPGRADE variables for target PM:

Variable Name                                        Value
-------------------------------------------------------------------------
TRACE_DEVICE                          =              TTYO
SHIFT                                 =              STARTED
CONCURRENCY                           =              UNLIMITED
```

The displayed variables control SWUPGRADE PM for the current SPM update shift. TRACE_DEVICE is the trace device established in Procedure 3. SHIFT displays the status of the current SPM update shift.

7 Display HELP for the CONCURRENCY variable by typing

>HELP VAR CONCURRENCY

and pressing the Enter key.

8 Review the HELP information for the CONCURRENCY variable. Check office policy to determine the maximum number of SPMs to update concurrently.

If the value in CONCURENCY	Do
needs to be changed	Procedure 9
does not need to be changed	Procedure 10

9

CAUTION

Possible service interruption

A concurrency value set to UNLIMITED can exceed the maintenance window for the SPM update shift in large scale offices. Check office policy.

Change the concurrency value by performing the following steps.

a Set the concurrency value by typing

>SET CONCURRENCY <max_no>

and pressing the Enter key.

where

max_no
is UNLIMITED or the maximum number of SPMs the system updates concurrently

b Display the environment variables and confirm the change by typing

>DISPLAY VAR ALL

and pressing the Enter key.

Example of MAP display

```
SWUPGRADE variables for target PM:

Variable Name                                          Value
-------------------------------------------------------------------------
TRACE_DEVICE                          =            TTYO
SHIFT                                 =            STARTED
CONCURRENCY                           =            2
```

10 Set prompting to on by typing

>PROMPTING ON

and pressing the Enter key.

Example of MAP display

```
Prompting turned on.
```

PROMPTING ON is the recommended method of operation. Set PROMPTING ON to force the DMS switch to pause after each automated step. This allows user intervention for the next required step. The remainder of this procedure assumes prompting is enabled.

11 Before performing the upgrade, check for alarms on the SPM by performing the following steps:

a From separate device, use the NO DISPLAY mode to post the SPM by typing

```
>MAPCI NODISP;MTC;PM;POST SPM spm_no
```

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

```
>MAPCI NODISP;MTC;PM;POST SPM 23
```

b Display alarms on the RMs on the SPM by typing

```
>QUERYPM FLT
```

and pressing the Enter key.

c Display alarms on the SPM by typing

```
>LISTALM
```

and pressing the Enter key.

d Use the following work sheet to record the alarms raised on the SPM. Duplicate the work sheet as needed.

Alarms on an SPM work sheet

Node ID (SPM no.)	Alarm	Object (the alarm is raised against)	Note

where

Node ID
is the SPM number

Alarm
is the name of the alarm

Object
is the object against which the alarm is raised

Note
is any note you feel may help you

The following work sheet provides a sample of a completed Alarms on an SPM work sheet for SPM 23.

Sample alarms on an SPM work sheet

Node ID (SPM no.)	Alarm	Object (the alarm is raised against)	Note
23	ISTB	SPM 23	
	ISTB	CEM 0	
	ISTB	CEM 1	
	ISTB	OC3 1	
	ISTB	VSP 0	
	ISTB	DSP 0	
	ISTB	DSP 1	

e Use the map to display the SPM Carriers by typing

`>MAPCI;MTC;TRKS;CARRIER;POST SPM spm_no 1`

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

f Use the following worksheet to record the status of any SPM carriers not in an INSV or OFFL state.

SPM carrier status worksheet

Node ID (SPM no.)	Carrier	Carrier state	Reason

where

Carrier
is the SPM carrier not INSV or OFFL

Carrier state
is the state of the carrier, i.e. SYSB, MANB

Reason
is the cause of the carrier state

The following work sheet provides a sample of a completed SPM carrier status work sheet for SPM 23.

Sample SPM carrier status work sheet

Node ID (SPM no.)	Carrier	Carrier state	Reason
14	108	MANB	Maintenance
22	116	SYSB	RAI

12 Determine the impact of the current alarm status on the SPM upgrade.

If there are	Do
alarms	Procedure 13
no alarms	Procedure 15

13 Determine the alarm types.

If	Do
there is an alarm other than ISTB alarm	Procedure 14
all alarms are ISTB alarms	Procedure 15

14 Perform the appropriate alarm clearing procedure. After you complete the alarm clearing procedure, return to this point.

15

ATTENTION

SWUPGRADE PM will disable the Spectrum Patching After RTS (SPARTS) tool during the automated upgrade. When SWUPGRADE PM is completed or aborted, SPARTS is automatically re-enabled.

The SPM601 log will be generated when SPARTS is disabled and will again be generated when SPARTS is enabled. No action is required when this log is generated.

Begin the automated SPM update by typing

>START

and pressing the Enter key.

Example of MAP display

```
Setup completed.
Enter GO to begin the execution of steps.
```

or

Example of MAP display

```
START has already been issued and the SETUP is completed.
```

16 Display the steps of the automated SPM update by typing

>DISPLAY STEPS

and pressing the Enter key.

Example of MAP display

```
SWUPGRADE steps for target PM:

    1_A_SPM                   Needed         Perm  Act   Proc
    UPGRADE_COMPLETE          Needed         Perm  Act   Proc
```

SWUPGRADE converts the tasks in the SPM Upgrade Plan to steps in the automated update. An "_A_" in the step name identifies the step as an automated step. An "_M_" in the step name identifies the step as a manual step. NEEDED changes to COMPLETED when SWUPGRADE PM completes the step. UPGRADE_COMPLETE closes SWUPGRADE PM.

Note: SWUPGRADE PM does not use the columns with the values of PERM, ACT, and PROC during an automated SPM update. Other SWUPGRADE platforms use the columns in this report for other automated updates.

17 Review the steps of the automated SPM update and identify the next step to be performed as part of this automated SPM update. SWUPGRADE PM selects the next step in the plan. The user can select another step if required.

18 Display HELP on the step you wish to execute by typing

>HELP STEP <step_name>

and pressing the Enter key.

where

step_name
is the name of the step

SWUPGRADE PM displays a brief description of the step including

- the nodes affected by the step
- the SPM load(s) and PRSU(s) required by the step
- the steps required prior to the step

Example of MAP display

```
PMUPGRADE task:    1
Node type:         SPM
Loaded from flash: NO
Automated:         YES
Concurrency:       UNLIMITED

           Nodes:
                   SPM  0
                   SPM  1
                   SPM  2
                   SPM  3
                   SPM  4
                   SPM  5
                   SPM  6
                   SPM  7
           Loads:
                   DSP16CP
                   OC316CQ
```

19 Execute the step using one of the following commands:

If you wish to	Do
execute the next step	Type **>GO** and press the Enter key.
execute another step	Type **>RUNSTEP <step_name>** and press the Enter key.

This command can generate the PM701 log that indicated the start of a SPM update task. No action is required for this log.

If the step is	Do
a manual step (contains “_M_” in the name)	Procedure 20
an automated step (contains “_A_” in the name)	Procedure 22

20 Observe the trace device response for the manual step.

Example of MAP display

```
Starting step 2_M_SPM
This device is selected for TRACEing

PMUPGRADE task:         1
Node type:              SPM
Automated:              NO
Concurrency:            2

   Nodes:
                        SPM 8
                        SPM 9
                        SPM 10
                        SPM 11
                        SPM 12
                        SPM 13
   Loads:
                        DSP16CP
                        OC316CQ
```

21 Perform the task manually by performing the following steps:

a Update all nodes manually using the following procedures: and .

- “Prepare a manual SPM upgrade” on page 53
- “Perform a manual SPM upgrade” on page 98

b Override the SWUPGRADE PM utility by typing

>OVERRIDE <step_name>

and pressing the Enter key.

where

step_name
is the name of the step

c Confirm the action by typing

>Y

and pressing the Enter key.

If you want to	Do
continue the SPM update shift	Procedure 16
finish the SPM update shift	Procedure 24

22

ATTENTION

Some offices use a third device during the automated SPM update. use the third device as a MAP terminal to post the SPMs and monitor SPM loading, patching, and service status.

Use the SET SHIFT FINISHED or SET SHIFT ABORTED commands to stop a currently executing automated step.

The SET SHIFT FINISHED command stops the step after completing the full update for the SPM or SPMs. The SET SHIFT ABORTED command stops the step after the current maintenance action for the SPM or SPMs completes. Maintenance action refers to BSY or LOADPM.

Observe the trace device response for the automated step. SWUPGRADE PM confirms the following to ensure the SPM is ready for the update:

- CM central processing unit (CPU) occupancy is less than some threshold
- SPM is in-service
- SPM's C-side node is not in overload

Example of MAP display

```
PMUPGRADE task:    1
Node type:         SPM
Loaded from flash: NO
Automated:         YES
Concurrency:       UNLIMITED

           Nodes:
                   SPM  0
                   SPM  1
                   SPM  2
                   SPM  3
                   SPM  4
                   SPM  5
                   SPM  6
                   SPM  7
           Loads:
                   DSP16CP
                   OC316CQ
```

After the initial trace device reponse for the automated step, the trace device displays the status of each node in the automated step.

Example of MAP display

```
No new load detected for circuit pack type DLC on SPM 0.
Circuit pack type not included as part of upgrade.
No new load detected for circuit pack type DLC on SPM 1.
Circuit pack type not included as part of upgrade.
No new load detected for circuit pack type DLC on SPM 3.
Circuit pack type not included as part of upgrade.
No new load detected for circuit pack type CEM on SPM 0.
Circuit pack type not included as part of upgrade.
No new load detected for circuit pack type CEM on SPM 1.
Circuit pack type not included as part of upgrade.
No new load detected for circuit pack type CEM on SPM 2.
Circuit pack type not included as part of upgrade.
No new load detected for circuit pack type CEM on SPM 3.
Circuit pack type not included as part of upgrade.
No new load detected for circuit pack type CEM on SPM 4.
Circuit pack type not included as part of upgrade.
No new load detected for circuit pack type CEM on SPM 5.
Circuit pack type not included as part of upgrade.
No new load detected for circuit pack type CEM on SPM 6.
Circuit pack type not included as part of upgrade.
No new load detected for circuit pack type CEM on SPM 7.
Circuit pack type not included as part of upgrade.

SPM Upgrade Progressing
03:11:39 Updating MNCKTPAK Table SPM 0
03:11:39 Updating MNCKTPAK Table SPM 1
03:11:39 Updating MNCKTPAK Table SPM 2
03:11:39 Updating MNCKTPAK Table SPM 3

SPM 0 OC3 1  running in new load

SPM 1 OC3 1  running in new load


03:11:52 Loading (INSV) SPM 2  OC3 1
03:11:55 Loading (INSV) SPM 3  OC3 1
03:11:58 Loading (INSV) SPM 0  DSP 4
03:12:01 Loading (INSV) SPM 1  DSP 2
```

This step can generate the following logs:

- PM702 - No action required
- PM703 - A node in the step failed to update. Determine why the node failed.

A SWUPGRADE PM step stops executing when:

- There are nodes in the step that are not ready to be updated.
- Every node in the step updates successfully.
- The SET SHIFT FINISHED or SET SHIFT ABORTED command is entered.
- A SPM update failure occurs. The first failure stops the step after the update completes for the SPMs or the SPM unit. The next failure stops the step immediately.

  Note: SWUPGRADE will attempt to protection switch the RMs. It is normal for the first attempt to protection switch a CEM to fail. After three attempts, the step will abort automatically. No manual intervention is necessary.

- The SWUPGRADE PM shift exceeds the 14 hour time limit.

After SWUPGRADE PM completes a step, the trace device displays an update status report for each node.

Example of MAP display

```
Overall upgrade result: PASSED

SPM  0 : PASSED
SPM  1 : PASSED
SPM  2 : PASSED
SPM  3 : PASSED
SPM  4 : PASSED
SPM  5 : PASSED
SPM  6 : PASSED
SPM  7 : PASSED

Step 1_A_SPM PASSED.
The SWUPGRADE process has paused.
```

If	Do
every node in the step passed and you want to continue the SPM update shift	Procedure 16
every node in the step passed and you want to finish the SPM update shift	Procedure 24
a node in the step failed	Procedure 23

Note: Use the QUERYPM FILES command from the MAP display to confirm each node is correctly loaded, patched, and in-service. Office policy can require confirmation that the SWUPGRADE PM utility updated each node.

23

ATTENTION
Office policy determines the level of possible troubleshooting for this step.

Determine why the node failed. Possible reasons why a node can fail an automated update are

- The SPM status, or one of its units, changed due to a maintenance problem not related to the automated update.
- The SPM load file or required PRSU files are not in the Destination Volume.
- The node encountered a hardware problem.

Review log PM703, related logs, and the trace device output to determine why the node failed the automated update.

If you can	Do
determine why the node failed	Correct the problem and return to Procedure 19
not determine why the node failed	Contact your next level of support. You may have to correct this problem before you continue the SPM update shift, skip this problem and continue the update shift, or finish the SPM update shift.

24

CAUTION
Possible service interruption
Finish the SPM update shift before proceeding to Procedure 25. Failure to finish the update shift could affect office operations after the SPM update shift.

Finish the automated SPM update shift by typing

`>SET SHIFT FINISHED`

and pressing the Enter key.

Example of MAP display

```
                SUMMARY REPORT FOR PM SOFTWARE UPGRADE
               =======================================
      Description of the report columns:
      Step name: The name of the step.
      Since Last: Elapsed time between the previous step and this step.
      Start: Start time of this step.
      Elapsed: The time it took to execute this step.
      Result: The final status of this step after completion.

Step name           Since Last  Start       Elapsed      Result
------------------- ---------- ---------- ----------- ------------------
1_A_SPM                        16:43:03   00:00:16.475  STEP NOT COMPLETE


************************************************************
**                          NOTE                          **
**                          ----                          **
** You are finishing a shift to upgrade PMs in the office.  **
** If you have not already done so, perform the procedure   **
** "Finish a PM update shift" in the Peripheral Module      **
** Software Release Document at this point.                 **
************************************************************
```

Note 1: STEP NOT COMPLETE indicates SWUPGRADE PM did not perform the step. The step could have been overridden and performed manually.

Note 2: The SET SHIFT FINISHED command can generate a PM700 log that indicates the SPM update shift has finished. No action is required for this log.

If the SPM update shift has	Do
been finished	Procedure 25
not been finished	Perform the appropriate procedure and go to Procedure 25.

25 Display the step of the automated SPM update by typing

`>DISPLAY STEPS`

and pressing the Enter key.

Example of MAP display

```
SWUPGRADE steps for target PM:

    1_A_SPM                  Completed        Perm  Act   Proc
    UPGRADE_COMPLETE          Needed          Perm  Act   Proc
```

26 Review the steps generated in Procedure 25 for the automated SPM update.

If all steps	Do
except UPGRADE_COMPLETE are complete are overridden	Procedure 27
are not complete or overridden	Procedure 28

27

CAUTION
Possible service interruption
The UPGRADE_COMPLETE step must be executed to complete the SPM update. Otherwise, the SWUPGRADE CM tool does not function.

Execute the UPGRADE_COMPLETE step by performing the following steps.

a Type

>GO

and press the Enter key.

Example of MAP display

```
Starting step UPGRADE_COMPLETE.
This device is selected for TRACEing
PM upgrade complete – all steps have been executed.
NOTE: Upon issuing the next GO, SWUPGRADE PM will be reset.
Step UPGRADE_COMPLETE is not complete.
The SWUPGRADE process has paused.
```

b Obtain the final record of all completed steps by typing

>DISPLAY STEPS

and pressing the Enter key.

c Complete the UPGRADE_COMPLETE step by typing

>GO

and pressing the Enter key.

Example of MAP display

```
Starting step UPGRADE_COMPLETE.
This device is selected for TRACEing
PM upgrade complete. You may now QUIT out of the SWUPGRADE increment
Finished step UPGRADE_COMPLETE.
SWUPGRADE Process complete – all steps have been executed.
```

28 Quit the SWUPGRADE PM utility by typing

>QUIT

and pressing the Enter key.

Example of MAP display if all steps in the PM Upgrade Plan are completed

```
The S/W upgrade is complete or CANCEL has been issued.
Exiting the SWUPGRADE increment...
```

Example of MAP display if all steps in the PM Upgrade Plan are not completed

```
CI:
>
```

29 Stop the terminal responses from printing by typing

>RECORD STOP ONTO <printer>

and pressing the Enter key.

where

printer
is the name of the printer

30 You have completed this procedure.

ATTENTION
Follow your company policy for soaking selected circuit packs before upgrading the rest of your office.

Prepare a manual SPM upgrade

At the CI level of the MAP display

1 Review the introductory material to this procedure.

2 Send the terminal response to a printer by typing

`>RECORD START ONTO <printer>`

and pressing the Enter key.

where

printer
is the name of the printer

Example

`>RECORD START ONTO printer1`

3 Print the contents of table PMLOADS by performing the following steps.

a Access table PMLOADS by typing

`>TABLE PMLOADS`

and pressing the Enter key.

b List the load file contents of table PMLOADS by typing

`>LIST ALL`

and pressing the Enter key.

c Exit table PMLOADS by typing

`>QUIT`

and pressing the Enter key.

4 Identify the SPM loads you need to update by performing the following steps.

a Compare the load file names on the SPM load tape to the active load file names in table PMLOADS. To determine the load file names on a SPM load tape, refer to Procedure 8e.To determine the load file names on an XA-Core tape, refer to Procedure 19e. To determine the load file names in table PMLOADS, refer to step 3b.

b Use the following table to determine if you need to update the SPM load name in table PMLOADS.

SPM load release types and actions

Milestone release number, current release vs. new release	Postfix index number, current release vs. new release	PPSL index number, current release vs. new release	Upgrade type	Action
New release number is greater than the current release number (See note.)	does not matter	does not matter	milestone	update
New release number and current release number are the same (See note.)	changed	does not matter	maintenance	update
New release number and current release number are the same (See note.)	changed	does not matter	emergency	update
New release number is greater than the current release number (See note.)	does not matter	does not matter	PPSL milestone	update
New release number and current release number are the same (See note.)	unchanged	changed	PPSL maintenance	update PMLOADS only
New release number and current release number are the same (See note.)	unchanged	unchanged	not applicable	do not update
New release number is less than the current release number (See note.)	does not matter	does not matter	error	contact next level of support

Note: Current release number refers to the number shown in table PMLOADS. New release number refers to the number shown on the SPM load tape.

c

ATTENTION

Respond correctly to the decision box in this step. Your response is critical for you to prepare for the SPM upgrade successfully. Be sure that you follow the steps that apply to the type of release upgrade for which you are preparing.

Determine if you need to update the SPM load name in table PMLOADS.

If you are preparing for a	Do
milestone release	Procedure 4d
maintenance or emergency release	Procedure 4e
PPSL milestone release	Procedure 4f
PPSL maintenance release	Procedure 4g

d You must update table PMLOADS if the following conditions exist for a milestone release:

- The new release number of an SPM load name on the SPM load tape is greater than the current release number in table PMLOADS. (The load file contents of the SPM load tape shows the new release number. The active file in table PMLOADS shows current release number.)
- The six-digit postfix index of the SPM load file name increases or remains the same.

Go to Procedure 5.

e You must update table PMLOADS if the following conditions exist for a maintenance or emergency release:

- The new release number of an SPM load name on the SPM load tape is identical to the current release number in table PMLOADS. (The load file contents of the SPM load tape shows the new release number. The active file in table PMLOADS shows the current release number.)
- The six-digit postfix index of the SPM load file name changes from the current release to the new release.

Go to Procedure 5.

f You must update table PMLOADS if the following conditions exist for a PPSL milestone release:

- The new release number of an SPM load name on the SPM load tape is greater than the current release number in table PMLOADS. (The load file contents of the SPM load tape shows the new release number. The active file in table PMLOADS shows current release number.)
- The six-digit postfix index of the SPM load file name increases or remains the same.
- The two-digit PPSL index changes.

g You must update table PMLOADS if the following conditions exist for a PPSL maintenance release:

- The new release number of an SPM load name on the SPM load tape is identical to the current release number in table PMLOADS. (The load file contents of the SPM load tape shows the new release number. The active file in table PMLOADS shows the current release number.)
- The six-digit postfix index of the SPM load file name remains the same.
- The two-digit PPSL index changes.

Go to Procedure 5.

Note: For a PPSL maintenance release, it is unnecessary to perform the Procedure , "Perform a manual SPM upgrade," on page -98. Updating the file names in table PMLOADS is all that is required to upgrade the SPM.

5 Determine if you need to access table PMLOADS to update the load file names.

If you	Do
need to update the load file names in table PMLOADS	Procedure 6
do not need to update the load file names in table PMLOADS	Procedure 36

6

ATTENTION

The DSP load contains the LX66 VSP, as well as the DSP upgrade software.

Use the following work sheet to record the load in table PMLOADS that you need to update.

Load update work sheet

Current load name in PMLOADS	Current active load file name in PMLOADS	New load name from SPM load tape contents	New active load file name from SPM load tape contents	Upgrade procedure to perform

The following work sheet provides a sample of a completed Load update work sheet for a milestone release.

Sample load update work sheet for a milestone release

Current load name in PMLOADS	Current active load file name in PMLOADS	New load name from SPM load tape contents	New active load file name from SPM load tape contents	Upgrade procedure to perform
OC316AF	OC316AF_010005	OC317AE	OC317AE_010010	"Upgrade an OC3 protection group"
DSP16AF	DSP16AF_010005	DSP17AE	DSP17AE_010010	"Upgrade a DSP or VSP protection group"
DLC16AF	DLC16AF_010005	DLC17AE	DLC17AE_010010	"Upgrade a DLC protection group"
CEM16AF	CEM16AF_010005	CEM17AE	CEM17AE_010010	"Upgrade the CEMs"

The following work sheet provides a sample of a completed Load update work sheet for a maintenance or emergency release.

Sample load update work sheet for a maintenance or emergency release

Current load name in PMLOADS	Current active load file name in PMLOADS	New load name from SPM load tape contents	New active load file name from SPM load tape contents	Upgrade procedure to perform
OC317AE	OC317AE_010010	OC317AF	OC317AF_010005	"Upgrade an OC3 protection group"
DSP17AE	DSP17AE_010010	DSP17AF	DSP17AF_010005	"Upgrade a DSP or VSP protection group"
DLC17AE	DLC17AE_010010	DLC17AF	DLC17AF_010005	"Upgrade a DLC protection group"
CEM17AE	CEM17AE_010010	CEM17AF	CEM17AF_010005	"Upgrade the CEMs"

The following work sheet provides a sample of a completed Load update work sheet for a PPSL milestone release.

Sample load update work sheet for a PPSL milestone release

Current load name in PMLOADS	Current active load file name in PMLOADS	New load name from SPM load tape contents	New active load file name from SPM load tape contents	Upgrade procedure to perform
OC316AE	OC316AE_010010	OC317AF	OC317AF_010005A1	"Upgrade an OC3 protection group"
DSP16AE	DSP16AE_010010	DSP17AF	DSP17AF_010005A1	"Upgrade a DSP or VSP protection group"
DLC16AE	DLC16AE_010010	DLC17AF	DLC17AF_010005A1	"Upgrade a DLC protection group"
CEM16AE	CEM16AE_010010	CEM17AF	CEM17AF_010005A1	"Upgrade the CEMs"

The following work sheet provides a sample of a completed Load update work sheet for a PPSL maintenance release.

Sample load update work sheet for a PPSL maintenance release

Current load name in PMLOADS	Current active load file name in PMLOADS	New load name from SPM load tape contents	New active load file name from SPM load tape contents	Upgrade procedure to perform
OC317AE	OC317AE_010010A1	OC317AF	OC317AF_010005B1	None
DSP17AE	DSP17AE_010010A1	DSP17AF	DSP17AF_010005B1	None
DLC17AE	DLC17AE_010010A1	DLC17AF	DLC17AF_010005B1	None
CEM17AE	CEM17AE_010010A1	CEM17AF	CEM17AF_010005B1	None

Note 1: The tables above are meant as a guide only. Do not perform the upgrade procedures until you are instructed to do so in the Procedure , "Perform a manual SPM upgrade," on page -98.

Note 2: For a PPSL maintenance release, it is unnecessary to perform the Procedure , "Perform a manual SPM upgrade," on page -98. Updating the file names in table PMLOADS is all that is required to upgrade the SPM.

7

If PRSU files are on	Do
an SLM cartridge tape	Procedure 8
an XA-Core cartridge tape	Procedure 19

At the SLM tape drive

8 List the content of the SPM load tape by performing the following steps.

a Select a system load module (SLM) disk volume as the volume for the new loads and PRSU files.

b Place the SPM load tape into the SLM tape drive of the selected SLM disk volume.

At the MAP display

c Access the disk utility by typing

```
>DISKUT
```

and pressing the Enter key.

d Insert the SLM load tape into the SLM tape drive by typing

```
>IT drive_name
```

and pressing the Enter key.

where

drive_name
is the name of the SLM tape drive

Example

```
>IT S00T
```

e List the load file contents of the SLM tape by typing

```
>LF drive_name
```

and pressing the Enter key.

where

drive_name
is the name of the SLM tape drive

Example

```
>LF S00T
```

9 Identify the PRSUs for the SPM load files.

a Verify that the tape contains the $XREF patch control file.

If the SLM tape cartridge label text indicates	Do
"Patches: Yes"	Procedure 9b
"Patches: No"	Procedure 10

b Copy the $XREF tile to the SLM disk volume by typing

```
>MFR STDVOL disk_vol drive_name tape_vol
$XREF_file
```

and pressing the Enter key.

where

disk_vol
is the name of the selected SLM disk volume

drive_name
is the name of the SLM tape drive

tape_vol
is the name of the PCL-specific SLM tape cartridge volume

$XREF_file
is the name of the $XREF patch control file

Example

```
>MFR STDVOL S00DPMLOADS S00T SPM00035
XPM35RTP$XREF
```

c Print the $XREF file to identify the PRSUs for the SPM load files by typing

```
>PRINT $XREF_file
```

and pressing the Enter key.

where

$XREF_file
is the name of the $XREF patch control file

Example

```
>PRINT XPM35RTP$XREF
```

10

ATTENTION
Do not modify the SPM external load file name when copying from the SLM tape to the disk volume.

Copy all new required load files by performing the following steps.

a Copy one required load file from the SLM tape to a disk volume by typing

```
>MFR STDVOL disk_vol drive_name tape_vol
new_load_file
```

and pressing the Enter key.

where

disk_vol
is the name of the selected SLM disk volume

drive_name
is the name of the SLM tape drive

tape_vol
is the name of the PCL-specific SLM tape cartridge volume

new_load_file
is the name of the new load file required to update the current load

Example for base loads

```
>MFR STDVOL S00DPMLOADS S00T SPM00035
CEM15AF_010005
```

Example for PPSLs

```
>MFR STDVOL S00DPMLOADS S00T SPM00035
CEM15AF_010005A1
```

b Copy the remaining load files from the SLM tape to a disk volume.

If	Do
there are required load files that you have not copied from the SLM tape to a disk volume	Procedure 10a
you have copied all required load files from the SLM tape to a disk volume	Procedure 11

11 Make sure that all required load files have been correctly copied on the disk volume by performing the following steps.

a List the contents of the disk volume that contains the new loads by typing

```
>LF disk_vol
```

and pressing the Enter key.

where

disk_vol
is the name of the selected SLM disk volume

Example

```
>LF S00DPMLOADS
```

Example of MAP display

FILE NAME	O R I O O FILE R E T P L CODE G C O E D C N		MAX REC LEN	NUM OF RECORDS IN FILE	FILE SIZE IN BLOCKS	LAST MODIFY DATE
CEM15AB_010005	O F	0	1536	10103	30341	990518
MPF15BG	O F	0	138	514	191	990209
MTMKA02	O F	0	76	302	63	980826
ENX12AU	O F	0	1020	3642	7289	990512
ENX11BA	O F	0	1020	3707	7410	990414
LRS15BJ	O F	0	1020	3707	7417	990512
LRS15BJ	I F	0	1020	3707	7414	990302
MPC403AD	O F	9	2048	162	703	980826
ERS11BA	O F	0	1020	4812	9646	990414
ED715BC	O F	0	1024	2740	5499	990209
ERS12AU	O F	0	1020	4812	9646	990512
ED715BC	O F	0	1024	2754	5558	990512
DSP15AF_010005	O V	0	256	18331	8926	990518
MPF15BG	O F	0	138	514	914	990512
OC315AF_010005	O V	0	256	19942	9754	990518

b Compare the results of the LF disk_vol command to the entries you made on the Load update work sheet in step 6.

If	Do
you discover required load files that were not copied on the disk volume	Procedure 10a
all required load files have been copied onto the disk volume	Procedure 12

12 Copy the SPM load files from the active SLM disk volume to a backup SLM disk volume.

a List the active SPM load file SLM disk volume contents by typing

```
>LF disk_vol
```

and pressing the Enter key.

where

disk_vol
is the SPM disk volume name

Example

```
>LF S00DPMLOADS
```

b Select a different SLM disk volume to store the backup SPM load files.

c

> **ATTENTION**
> Do not modify the SPM external load file name when copying from the disk volume to the backup disk volume.

Copy one SPM load file by typing

>COPY new_load disk_vol

and pressing the Enter key.

where

new_load
is the new SPM load file name

disk_vol
is the backup SLM disk volume name

Example

>COPY LPC08BC S01DPMLOADS

d Create backup SPM load files for the remaining SPM load files.

If a backup SPM load file	Do
has not been created for all SPM load files	Step 12c
has been created for all SPM load files	Step 12e

e List the backup SPM load file SLM disk volume by typing

>LF disk_vol

and pressing the Enter key.

where

disk_vol
is the backup SPM disk volume name

Example

>LF S01DPMLOADS

f Compare the results of the LF disk_vol command to the entries you made on the Load update worksheet in step 6.

If all SPM load files	Do
are in the backup volume	Procedure 13

If all SPM load files	Do
are not in the backup volume	Procedure 12c

13 Use the list printed in Procedure 9c to identify any PRSU files you need to copy.

14 Eject the load tape by typing

>ET <drive_name>

and pressing the Enter key.

where

drive_name
is the name of the SLM tape drive

Example

>ET S00T

15 Remove the SPM load tape from the SLM tape drive.

16 Quit the disk utility by typing

>QUIT

and pressing the Enter key.

17 Store the SPM load tape in an available on-site location for future use.

18 Proceed to Procedure 25.

At the MAP level

19

ATTENTION

The XA-Core command syntax for drive_no and disk_no correspond to the following identifiers in the XA-Core command examples:

Shelf position is the front (F) or rear (R) shelf position of the input output processor (IOP).

Slot position is the two-digit number of the slot position for the IOP with the tape device.

Packlet position is the upper (U) or lower (L) packlet position of the IOP with the tape device.

In the command example F17UTAPE, F is the shelf position, 17 is the two-digit slot position, U is the packlet position, and TAPE identifies the software delivery medium.

Begin copying the necessary SPM load and PRSU files to an XA-Core disk volume by performing the following steps.

a Access the disk utility by typing

```
>DISKUT
```

and pressing the Enter key.

b Select an XA-Core disk volume for the new SPM load and PRSU files.

At the XA-core tape drive

c Place the XA-Core tape cartridge into the XA-Core tape drive for the selected XA-Core disk volume.

At the MAP level

d Mount the XA-core tape cartridge in the XA-Core tape drive by typing

```
>IT <drive_no>
```

and pressing the Enter key.

where

drive_no
is the XA-Core tape drive number

e List the contents of the tape by typing

>LF <drive_no>

and pressing the Enter key.

where

drive_no
is the XA-Core tape drive number

f Verify the tape contains each required SPM load file.

If each required load file	Do
is on the tape	Procedure 19g
is not on the tape	Contact your next level of support. the tape could be missing load files critical to the upgrade.

g Verify the tape contains the $XREF patch control file.

If the XA-Core tape cartridge label text	Do
indicates Patches: Yes	Procedure 19h
indicates Patches: No	Procedure 20

h Copy the $XREF file to the XA-Core disk volume by typing

>RE FILE <disk_vol> <drive_no> <$XREF_file>

and pressing the Enter key.

where

disk_vol
is the XA-Core disk volume

drive_no
is the XA-Core tape drive number

$XREF_file
is the $XREF file name

i Print the $XREF file to identify the PRSUs for the SPM load files by typing

>PRINT $XREF_file

and pressing the Enter key.

where

$XREF_file
is the XPMxxRTP$XREF patch control file name

j

ATTENTION
Do not modify the SPM external load file name when copying from the XA-Core tape to the disk volume.

Copy the SPM load files by typing

>RE FILE <disk_vol> <drive_no> <new_load>

and pressing the Enter key for each required SPM load file.

where

disk_vol
is the XA-Core disk volume name

drive_no
is the XA-Core tape drive number

new_load
is the new SPM load file

k List the XA-core disk volume contents to verify all SPM load files are in the volume by typing

>LF <disk_vol>

and pressing the Enter key.

where

disk_vol
is the XA-Core disk volume

If all SPM load files	Do
are in the volume	Procedure 20
are not in the volume	Procedure 19j

20 Copy the SPM load files from the active XA-Core disk volume to a backup XA-Core disk volume by performing the following steps.

a List the active SPM load load file XA-Core disk volume contents by typing

>LF <disk_vol>

and pressing the Enter key.

where

disk_vol
is the XA-Core disk volume name

b Select a different XA-Core disk volume to store the backup SPM load files.

c

ATTENTION
Do not modify the SPM external load file name when copying from the disk volume to the backup disk volume.

Copy the SPM load files by typing

>COPY <new_load> <disk_vol>

and pressing the Enter key for each SPM load file.

where

new_load
is the new SPM load file name

disk_vol
is the backup XA-Core disk volume name

d List the backup SPM load file XA-Core disk volume contents to verify all SPM load files are in the volume by typing

>LF disk_vol

and pressing the Enter key.

where

disk_vol
is the backup XA-Core disk volume name

If all SPM load files	Do
are in the backup volume	Procedure 21
are not in the backup volume	Procedure 20c

21 Identify and copy the PRSU files by performing the following steps:

a Copy the PRSU files by typing

>RE FILE <disk_vol> <drive_no> <prsu_id>

and pressing the Enter key for each PRSU file.

where

disk_vol
is the XA-Core disk volume name

drive_no
is the XA-Core tape drive number

prsu_id
is the PRSU file name

b List the XA-Core disk volume contents to verify all PRSU files are in the volume by typing

>LF <disk_vol>

and pressing the Enter key.

where

disk_vol
is the XA-Core disk volume name

If all PRSU files	Do
are in the volume	Procedure 21c
are not in the volume	Procedure 21a

c Eject the XA-Core tape cartridge by typing

>ET <drive_no>

and pressing the Enter key.

where

drive_no
is the XA-Core tape drive number

At the XA-Core tape drive

d Remove the XA-Core tape cartridge

Note: If there are no PRSUs to copy, proceed to Procedure 23

22 Copy the PRSU files from the active XA-Core disk volume to a backup XA-Core disk volume by performing the following steps.

a List the active PRSU file XA-Core disk volume contents by typing

>LF <disk_vol>

and pressing the Enter key.

where

disk_vol
is the XA-Core disk volume name

b Select a different XA-Core disk volume to store the backup PRSU files.

c Copy the PRSU files to the backup disk volume by typing

>COPY <prsu_id> <disk_vol>

and pressing the Enter key.

where

prsu_id
is the PRSU file name

disk_vol
is the backup XA-Core disk volume name

d List the backup PRSU file XA-Core disk volume contents to verify all PRSU files are in the volume by typing

>LF <disk_vol>

and pressing the Enter key.

where

disk_vol
is the backup XA-Core disk volume name

If all PRSU files	Do
are in the backup volume	Procedure 23
are not in the backup volume	Procedure 22c

23 Quit the utility by typing

>QUIT

and pressing the Enter key.

24

If you are performing	Do
PPSL maintenance release	Procedure 28
any release type other than a PPSL maintenance release	Procedure 25

25 Identify the SPM circuit packs to be upgraded by performing the following steps. Match the load of an SPM circuit pack in table MNCKTPAK against the current load in table PMLOADS.

Note: For the current load in table PMLOADS, see the Load update work sheet that you completed in Step 6. If you need to update the current load in table PMLOADS, you must upgrade the SPM circuit packs.

a Access table MNCKTPAK by typing

```
>TABLE MNCKTPAK
```

and pressing the Enter key.

b List the corresponding circuit packs to be upgraded by typing

```
>LIST ALL ('LOAD' EQ the_load_to_update)
```

and pressing the Enter key.

where

the_load_to_update
is the load name of a load in table PMLOADS that you need to upgrade

Note: You must include the ' immediately before and after the key word LOAD, and the key word must be in upper case.

Examples

```
>LIST ALL ('LOAD' EQ OC316AF)
>LIST ALL ('LOAD' EQ DSP16AF)
>LIST ALL ('LOAD' EQ CEM16AF)
```

Example of MAP display for load name DSP16AF

```
      CPKKEY                                                    CPKINFO
                              PEC    RELEASE          LOAD
-------------------------------------------------------------------------

SPM 23 1 1          VSP 0 1 WORKING (ECAN 12) $ (SYSB CR RPT) (MANB MJ RPT)
                    (ISTB MN RPT) (PROTFAIL CR RPT) $
                    NTLX66AA          01      DSP16AF

SPM 23 1 2          VSP 1 1 SPARE (SYSB CR RPT) (MANB MJ RPT) (ISTB MN RPT)
                    (PROTFAIL CR RPT) $
                    NTLX66AA          01      DSP16AF

SPM 23 1 7          DSP 0 1 WORKING (COT 12) (DTMF 12) (TONESYN 12) $
                    (SYSB CR RPT) (MAN MJ RPT) (ISTB MN RPT)
                    (PROTFAIL CR RPT) $
                    NTLX65AA          01      DSP16AF

SPM 23 1 8          DSP 1 1 SPARE (SYSB CR RPT) (MANB MJ RPT) (ISTB MN PRT)
                    (PROTFAIL CR RPT) $
                    NTLX65AA          01      DSP16AF

SPM 40 1 1          VSP 0 1 WORKING (ECAN 12) $ (SYSB CR RPT) (MANB MJ RPT)
                    (ISTB MN RPT) (PROTFAIL CR RPT) $
                    NTLX66AA          01      DSP16AF

SPM 40 1 2          VSP 1 1 SPARE (SYSB CR RPT) (MANB MJ RPT) (ISTB MN RPT)
                    (PROTFAIL CR RPT) $
                    NTLX66AA          01      DSP16AF

SPM 40 1 7          DSP 0 1 WORKING (COT 80) (DTMF 64) (TONESYN 255)
                    (ABBIT 7) (MF 10) $ (SYSB CR RPT) (MANB MJ RPT)
                    (ISTB MN RPT) (PROTFAIL CR RPT) $
                    NTLX65AA          01      DSP16AF

SPM 40 1 8          DSP 1 1 SPARE (SYSB CR RPT) (MANB MJ RPT) (ISTB MN PRT)
                    (PROTFAIL CR RPT) $
                    NTLX65AA          01      DSP16AF
```

26 Use the following work sheet to record the circuit packs you must upgrade. Duplicate the work sheet as needed so you can use a separate work sheet for each SPM.

Circuit pack upgrade work sheet

Node ID (SPM no.)	Shelf ID	Slot no.	Circuit pack type	Unit no.	Circuit pack protection group ID
	0	1			
		2			
		3			
		4			
		5			
		6			
		7	CEM		NA
		8	CEM		NA
		9			
		10			
		11			
		12			
		13			
		14			
	1	1			
		2			
		3			
		4			
		5			
		6			
		7			
		8			
		9			
		10			
		11			
		12			
		13			
		14			

where

Node ID
is the SPM number

Shelf ID
is the shelf ID of the circuit pack

Slot no.
is the slot number of the circuit pack

Circuit pack type
is the type of the circuit pack

Unit no.
is the unit number of the circuit pack

Circuit pack protection group ID
is the ID of the corresponding protection group where the circuit pack belongs

The following illustration shows sample datafill for table MNCKTPAK. For the purposes of this illustration, it shows only one example for each circuit pack type.

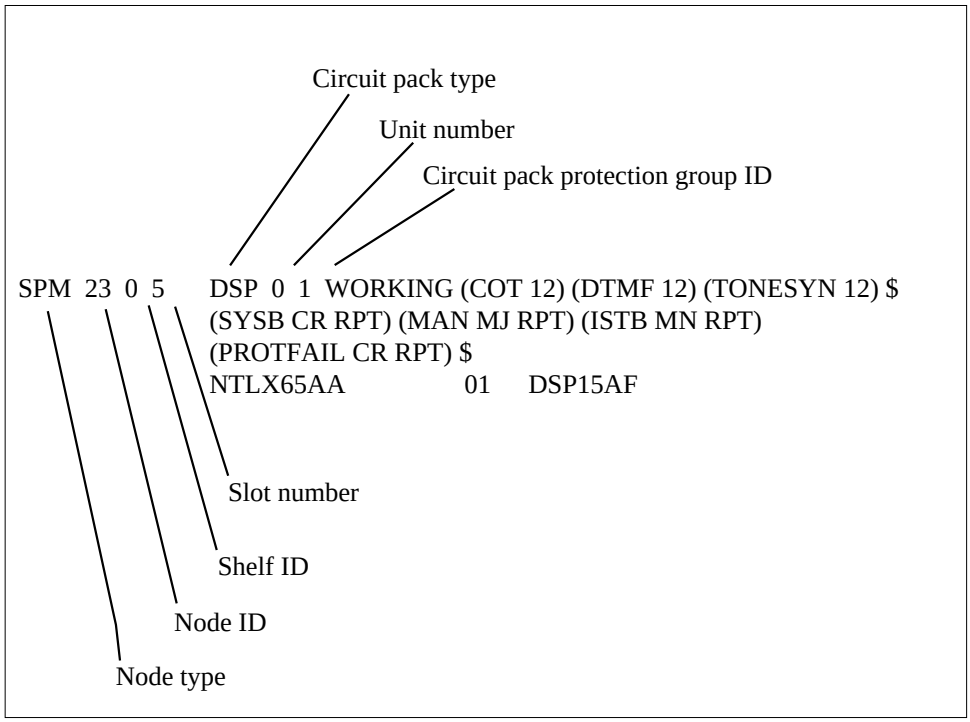
Example of datafill for table MNCKTPAK

```
CPKKEY                                                    CPKINFO
                          PEC    RELEASE          LOAD
-------------------------------------------------------------------

SPM 23 0 5          DSP 0 1 WORKING (COT 12) (DTMF 12) (TONESYN 12) $
                    (SYSB CR RPT) (MAN MJ RPT) (ISTB MN RPT)
                    (PROTFAIL CR RPT) $
                    NTLX65AA          01      DSP16AF

SPM 23 0 7          CEM 0 (SYSB CR RPT) (MANB MJ REP) (ISTB MN RPT)
                    (SYSBNA CR RPT) (MANBNA MJ RPT) (HLDOVR MJ RPT)
                    (HLDOVR24 MJ RPT) (VCXO70 MN RPT) (VCXO90 MJ RPT)
                    (CLKOOS MJ RPT) $
                    NTLX82AA          01      CEM16AF

SPM 23 0 9          OC3 0 1 WORKING (SYSB CR RPT) (MANB MJ RPT)
                    (ISTB MN RPT) (PROTFAIL NA RPT) $
                    NTLX71AA          01      OC316AF

SPM 23 0 14         VSP 0 1 WORKING (ECAN 12) $ (SYSB CR RPT) (MANB MJ RPT)
                    (ISTB MN RPT) (PROTFAIL CR RPT) $
                    NTLX66AA          01      DSP16AF
```

The following illustration identifies the fields you need to populate the Circuit pack upgrade work sheet for a DSP. The location of these fields for other RMs—OC3, VSP, DLC, and SRM—are identical. Note that the CEM does not belong to a

protection group, and therefore does not have a circuit pack protection group ID.

Fields used to populate the Circuit pack upgrade work sheet



The circuit pack protection group ID is a subfield of field CPKTYPE. The following list identifies the subfield name for each RM type.

- OC3: OC3GRPID
- DSP: DSPGRPID
- DLC: DLCGRPID
- SRM: SRMGRPID

You must enter the protection group ID from table MNPRTGRP in table MNCKTPAK. A message displays if the protection group ID has not already been defined in table MNPRTGRP. In table MNPRTGRP, you can define the protection group in field GRPKEY, subfield GRPID. Valid values for subfield GRPID are 1 through 28.

The following work sheet provides a sample of a completed Circuit pack upgrade work sheet for SPM 23.

Sample circuit pack upgrade work sheet

Node ID (SPM no.)	Shelf ID	Slot no.	Circuit pack type	Unit no.	Circuit pack protection group ID
23	0	1	VSP	0	1
		2	VSP	1	1
		3	VSP	2	1
		4	VSP	3	1
		5	VSP	4	1
		6	VSP	5	1
		7	CEM	0	NA
		8	CEM	1	NA
		9	OC3	0	1
		10	OC3	1	1
		11			
		12			
		13			
		14			
	1	1	VSP	6	2
		2			
		3			
		4	VSP	7	2
		5	DSP	0	1
		6			
		7	DSP	1	1
		8	DSP	2	1
		9	DSP	3	1
		10	DSP	4	1
		11	DSP	5	1
		12	DSP	6	1
		13	DSP	7	1
		14			

27 Use the following work sheet to record the circuit pack protection groups to be upgraded. Duplicate the work sheet as needed so you can use a separate work sheet for each SPM. For each SPM, copy the data from the Circuit pack upgrade work sheet to the following work sheet.

Note: A circuit pack group normally contains multiple circuit packs.

Circuit pack protection groups work sheet

Node ID (SPM no.)	Circuit pack type	Circuit pack protection group ID	Unit no.							
	CEM	**NA**	**0**	**1**						
Record the status of each DSP: Working/Spare, Active/Inactive, In-service/Out of service.										

where

Node ID
is the SPM number

Circuit pack type
is the type of the circuit pack

Circuit pack protection group ID
is the ID of the corresponding protection group where the circuit pack belongs

Unit no.
is the unit number of the circuit pack belonging to the circuit pack group

The following work sheet provides a sample of a completed Circuit pack protection groups work sheet for SPM 23.

Sample circuit pack protection groups work sheet

Node ID (SPM no.)	Circuit pack type	Circuit pack protection group ID	Unit no.							
23	CEM	NA	0	1						
	OC3	1	0	1						
	DSP	1	0	1	2	3	4	5	6	7
	VSP	1	0	1	2	3	4	5		
	VSP	2	6	7						

Record the status of each DSP: Working/Spare, Active/Inactive, In-service/Out of service.

DSP 0 1, Working, Active, In-service
DSP 1 1, Spare, Inactive, In-service
DSP 2 1, Working, Active, In-service
DSP 3 1, Working, Active, In-service
DSP 4 1, Working, Active, In-service
DSP 5 1, Working, Active, In-service
DSP 6 1, Working, Active, In-service
DSP 7 1, Working, Active, In-service

28

ATTENTION

Respond correctly to the decision box in this step. Your response is critical for you to prepare for the SPM upgrade successfully. Be sure that you follow the steps that apply to the type of release upgrade you are preparing.

If you are updating table PMLOADS for an SPM	Do
milestone release	Procedure 29
maintenance or emergency release	Procedure 31
PPSL milestone release	Procedure 33
PPSL maintenance release	Procedure 35

Note: Use the Load update work sheet to help you complete the table PMLOADS update.

29 Update table PMLOADS and table MNCKTPAK for an SPM milestone release by performing the following steps.

a Access table PMLOADS by typing

```
>TABLE PMLOADS
```

and pressing the Enter key.

b Add a new load name by typing

```
>ADD new_load_name new_act_file actvol
backup_file backup_vol N
```

and pressing the Enter key.

where

new_load_name
is the load name of the new load

new_act_file
is the load file name of the new load file

actvol
is the disk volume where the new load file is stored

backup_file
is the load file name of the backup load file

backup_vol
is the disk volume where the backup load file is stored

Example

```
>ADD DSP17AF DSP17AF_010005 S00DPMLOADS
DSP17AF_010005 S00DPMLOADS N
```

Example of MAP display

```
                    LOADNAME
                       ACTFILE              ACTVOL
                       BKPFILE              BKPVOL          UPDACT
_____________________________________________________________

                       DSP16AF
                DSP17AF_000005          S00DPMLOADS
                DSP17AF_000005          S00DPMLOADS              N

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
```

c Confirm the system prompt by typing

>Y

and pressing the Enter key.

d Check the Load update work sheet you completed in Step 6 to determine if you updated all loads in table PMLOADS.

If you have	Do
not updated all loads in table PMLOADS	Procedure 29b
updated all loads in table PMLOADS	Procedure 29e

e Exit table PMLOADS and reenter table MNCKTPAK by typing

>QUIT

and pressing the Enter key.

Use table MNCKTPAK to update the circuit pack load inventory for an SPM.

f Determine which circuit packs you need to upgrade. Refer to the Circuit pack upgrade work sheet you completed in Procedure 26.

g Update the default load for a circuit pack that you need to upgrade on the SPM by typing

>POS SPM spm_no shelf_ID slot_no

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM where the circuit pack exists

shelf_ID
is the ID of the SPM shelf where the circuit pack exists

slot_no
is the slot on the SPM shelf where the circuit pack exists

Example

```
>POS SPM 23 0 1
```

h Determine the new load for the circuit pack. Refer to the Load update work sheet you completed in Procedure 6.

i Update the default load name for the circuit pack by typing

```
>CHA LOAD new_load_name
```

and pressing the Enter key.

where

new_load_name
is the new load name

Examples

```
>CHA LOAD DSP17AF
>CHA LOAD OC317AF
>CHA LOAD CEM17AF
```

Example of MAP display for new DSP load name DSP16AF

```
SPM 23 0 1 DSP 4 1 SPARE (SYSB CR RPT) (MANB MJ RPT) (ISTB MN RPT)
          (PROTFAIL CR RPT) $
          NTLX65AA        01          DSP17AF

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
```

j Confirm the system prompt by typing

```
>Y
```

and pressing the Enter key.

k Check the Load update work sheet to determine if you need to upgrade other circuit packs.

If you have	Do
not upgraded all required circuit packs	Procedure 29g
upgraded all required circuit packs	Procedure 29l

l Exit table MNCKTPAK by typing

>QUIT

and pressing the Enter key.

30

ATTENTION

This step is optional. To proceed with the SPM upgrade, you are not required to manually update PRSM with the PRSU content of the new load files. If you do not use this step to manually update PRSM, the PRSM automated process STATUS AUDIT performs a DBAUDIT on the new load files. The STATUS AUDIT is scheduled in table AUTOPRSU.

If you manually update PRSM with the new PRSU content, you are able at any time to display the PRSU content of new load files by using PRSM queries such as SELECT and REPORT commands.

a Access the PRSM tool by typing

>PRSM

and pressing the Enter key.

b Update PRSM with the PRSU content of the new load file by typing

>DBAUDIT SPMLOAD new_load_file_name

and pressing the Enter key.

where

new_load_file_name
is the load name of the new load file required to update the current load

Example

>DBAUDIT SPMLOAD CEM15AF_010005

c Check the Load update work sheet you completed in Step 6 to determine if you updated PRSM for all loads in table PMLOADS.

If you have	Do
not updated PRSM for all new loads in table PMLOADS	Procedure 30b
updated PRSM for all new loads in table PMLOADS	Procedure 30d

d Exit the PRSM tool by typing

>QUIT

and pressing the Enter key.

Go to Procedure 36.

31

ATTENTION
This step creates a minor SPM alarm under the PM banner. This alarm generates when there is a mismatch between the datafilled active load file in table PMLOADS and the software currently running on an SPM. No action is necessary.

Update table PMLOADS for an SPM maintenance or emergency release by performing the following steps.

a Access table PMLOADS by typing

>TABLE PMLOADS

and pressing the Enter key.

b Add the new load by typing

>ADD current_load_name new_act_file actvol backup_file backup_vol N

and pressing the Enter key.

where

current_load_name
is the load name of a load to be updated

new_act_file
is the load file name of the new load file

actvol
is the disk volume where the new load file is stored

backup_file
is the load file name of the backup load file

backup_vol
is the disk volume where the backup load file is stored

Example

```
>ADD DSP17AF DSP17AF_010005 S00DPMLOADS
DSP17AF_010005 S00DPMLOADS N
```

Example of MAP display

```
                    LOADNAME
                       ACTFILE                ACTVOL
                       BKPFILE                BKPVOL          UPDACT
-------------------------------------------------------------------

                       DSP17AF
                DSP17AF_010005          S00DPMLOADS
                DSP17AF_010005          S00DPMLOADS                N

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
```

c Confirm the system prompt by typing

>Y

and pressing the Enter key.

d Check the Load update work sheet you completed in Step 6 to determine if you updated all loads in table PMLOADS.

If you have	Do
not updated all loads in table PMLOADS	Procedure 31b
updated all loads in table PMLOADS	Procedure 31e

e Return to the MAP level by typing

>QUIT ALL

and pressing the Enter key.

32

ATTENTION

This step is optional. To proceed with the SPM upgrade, you are not required to manually update PRSM with the PRSU content of the new load files. If you do not use this step to manually update PRSM, the PRSM automated process STATUS AUDIT performs a DBAUDIT on the new load files. The STATUS AUDIT is scheduled in table AUTOPRSU.

If you manually update PRSM with the new PRSU content, you are able at any time to display the PRSU content of new load files by using PRSM queries such as SELECT and REPORT commands.

a Access the PRSM tool by typing

>PRSM

and pressing the Enter key.

b Update PRSM with the PRSU content of the new load file by typing

>DBAUDIT SPMLOAD new_load_file_name

and pressing the Enter key.

where

new_load_file_name
is the load name of the new load file required to update the current load

Example

>DBAUDIT SPMLOAD CEM17AF_010005

c Check the Load update work sheet you completed in Procedure 6 to determine if you updated PRSM for all loads in table PMLOADS.

If you have	Do
not updated PRSM for all new loads in table PMLOADS	Procedure 32b
updated PRSM for all new loads in table PMLOADS	Procedure 32d

d Exit the PRSM tool by typing

```
>QUIT
```

and pressing the Enter key.

e Go to Procedure 36.

33

ATTENTION
This step creates a minor SPM alarm under the PM banner. This alarm generates when there is a mismatch between the datafilled active load file in table PMLOADS and the software currently running on an SPM. No action is necessary.

Update tables PMLOADS and MNCKTPAK for an SPM PPSL milestone release by performing the following steps.

a Access table PMLOADS by typing

```
>TABLE PMLOADS
```

and pressing the Enter key.

b Add the new load by typing

```
>ADD current_load_name new_act_file actvol
backup_file backup_vol N
```

and pressing the Enter key.

where

current_load_name
is the load name of a load to be updated

new_act_file
is the load file name of the new load file

actvol
is the disk volume where the new load file is stored

backup_file
is the load file name of the backup load file

backup_vol
is the disk volume where the backup load file is stored

Example

```
>ADD DSP17AF DSP16AF_010005A1 S00DPMLOADS
DSP17AF_010005A1 S00DPMLOADS N
```

Example of MAP display

```
                    LOADNAME
                        ACTFILE                 ACTVOL
                        BKPFILE                 BKPVOL          UPDACT
-------------------------------------------------------------------------

                        DSP17AF
                DSP17AF_010005A1        S00DPMLOADS
                DSP17AF_010005A1        S00DPMLOADS                     N

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
```

c Confirm the system prompt by typing

>Y

and pressing the Enter key.

d Check the Load update work sheet you completed in Step 6 to determine if you updated all loads in table PMLOADS.

If you have	Do
not updated all loads in table PMLOADS	Procedure 33b
updated all loads in table PMLOADS	Procedure 33e

e Exit table PMLOADS and reenter table MNCKTPAK by typing

>QUIT

and pressing the Enter key.

Use table MNCKTPAK to update the circuit pack load inventory for an SPM.

f Determine which circuit packs you need to upgrade. Refer to the Circuit pack upgrade work sheet you completed in Procedure 26.

g Update the default load for a circuit pack that you need to upgrade on the SPM by typing

>POS SPM spm_no shelf_ID slot_no

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM where the circuit pack exists

shelf_ID
is the ID of the SPM shelf where the circuit pack exists

slot_no
is the slot on the SPM shelf where the circuit pack exists

Example

```
>POS SPM 23 0 1
```

h Determine the new load for the circuit pack. Refer to the Load update work sheet you completed in Procedure 6.

i Update the default load name for the circuit pack by typing

```
>CHA LOAD new_load_name
```

and pressing the Enter key.

where

new_load_name
is the new load name

Examples

```
>CHA LOAD DSP17AF
```

```
>CHA LOAD OC317AF
```

```
>CHA LOAD CEM17AF
```

Example of MAP display for new DSP load name DSP16AF

```
SPM 23 0 1 DSP 4 1 SPARE (SYSB CR RPT) (MANB MJ RPT) (ISTB MN RPT)
          (PROTFAIL CR RPT) $
          NTLX65AA        01          DSP17AF

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
```

j Confirm the system prompt by typing

```
>Y
```

and pressing the Enter key.

k Check the Load update work sheet to determine if you need to upgrade other circuit packs.

If you have	Do
not upgraded all required circuit packs	Procedure 33g
upgraded all required circuit packs	Procedure 33l

l Exit table MNCKTPAK by typing

>QUIT

and pressing the Enter key.

34

ATTENTION

This step is optional. To proceed with the SPM upgrade, you are not required to manually update PRSM with the PRSU content of the new load files. If you do not use this step to manually update PRSM, the PRSM automated process STATUS AUDIT performs a DBAUDIT on the new load files. The STATUS AUDIT is scheduled in table AUTOPRSU.

If you manually update PRSM with the new PRSU content, you are able at any time to display the PRSU content of new load files by using PRSM queries such as SELECT and REPORT commands.

a Access the PRSM tool by typing

>PRSM

and pressing the Enter key.

b Update PRSM with the PRSU content of the new load file by typing

>DBAUDIT SPMLOAD new_load_file_name

and pressing the Enter key.

where

new_load_file_name
is the load name of the new load file required to update the current load

Note: When entering the load name for a PPSL load, do not enter the PPSL index. PRSM will only accept load names of fourteen characters.

Example

>DBAUDIT SPMLOAD CEM17AF_010005

c Check the Load update work sheet you completed in Procedure 6 to determine if you updated PRSM for all loads in table PMLOADS.

If you have	Do
not updated PRSM for all new loads in table PMLOADS	Procedure 32b
updated PRSM for all new loads in table PMLOADS	Procedure 32d

d Exit the PRSM tool by typing

>QUIT

and pressing the Enter key.

e Go to Procedure 36.

35 Update table PMLOADS for an SPM PPSL maintenance release by performing the following steps.

a Access table PMLOADS by typing

>TABLE PMLOADS

and pressing the Enter key.

b Position on the load name by typing

>POS current_load_name

and pressing the

Example

>POS DSP16AF

Example of MAP display

```
DSP17AF DSP17AF_010005A1 S00DPMLOADS
DSP17AF_010005A1 S00DPMLOADS N
```

c Change the load file name and the backup load file name by performing the following steps:

i Begin the table change by typing

>CHA

and pressing the Enter key.

ii For each unchanged value, press the Enter key at the prompt. The only values entered in this step should be the new values.

Example

This example changes the load file name and backup load file name from DSP17AF_010005A1 to DSP17AF_010005B1.

```
>CHA

ENTER Y TO CONTINUE PROCESSING OR N TO
QUIT

>Y

LOADNAME: DSP17AF

>

ACTFILE: DSP17AF_010005A1

>DSP17AF_010005B1

ACTVOL: S00DPMLOADS

>

BKPFILE: DSP16AF_010005A1

>DSP17AF_010005B1

BKPVOL: S00DPMLOADS

>

UPDACT: N

>

TUPLE TO BE CHANGED:

DSP17AF DSP17AF_010005B1 S00DPMLOADS
DSP17AF_010005B1 S00DPMLOADS N

ENTER Y TO CONFIRM, N TO REJECT OR E TO
EDIT.

>Y

TUPLE CHANGED
```

d Check the Load update work sheet you completed in Step 6 to determine if you updated all loads in table PMLOADS.

If you have	Do
not updated all loads in table PMLOADS	Procedure 35b
updated all loads in table PMLOADS	Procedure 35e

e Return to the MAP level by typing

>QUIT ALL

and pressing the Enter key.

36 Stop the terminal response from printing by typing

>RECORD STOP ONTO printer_name

and pressing the Enter key.

where

printer_name
is the name of the printer

Example

>RECORD STOP ONTO printer1

37 Return to the CI level of the MAP display by typing

>QUIT ALL

and pressing the Enter key.

If you	Do
did not need to update table PMLOADS	Procedure 38
updated table PMLOADS for a PPSL maintenance release	Procedure 38
updated table PMLOADS for any release type other than a PPSL maintenance release	Procedure 39

38 You have successfully completed this procedure. You do not need to upgrade the SPM. Do not go to the Procedure , “Perform a manual SPM upgrade,” on page -98.

39 Access table PMLOADS by typing

>TABLE PMLOADS

and pressing the Enter key.

40 Delete the old load names from table PMLOADS by typing

```
>DEL old_load_name old_act_file actvol
backup_file backup_vol N
```

and pressing the Enter key.

where

old_load_name
is the load name of the old load

old_act_file
is the load file name of the old load file

actvol
is the disk volume where the new load file is stored

backup_file
is the load file name of the backup load file

backup_vol
is the disk volume where the backup load file is stored

Example

```
>DEL DSP16AF DSP16AF_010005 S00DPMLOADS
DSP16AF_010005 S00DPMLOADS N
```

41 Confirm the system prompt by typing

```
>Y
```

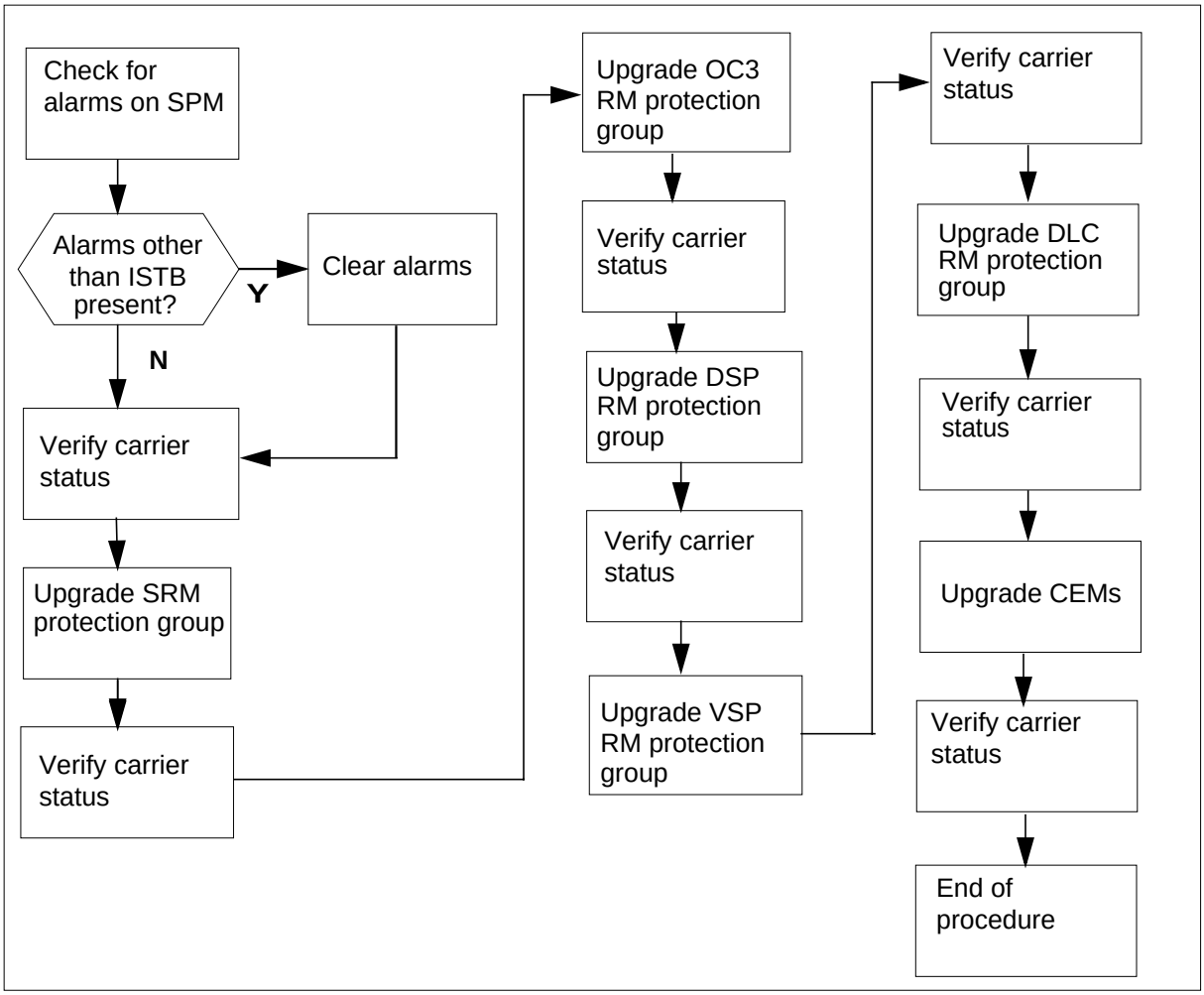
and pressing the Enter key.

42 You have successfully completed this procedure and you have correctly prepared for a manual SPM upgrade. Go to the Procedure , “Perform a manual SPM upgrade,” on page -98.

Upgrade procedures

The following figure summarizes the manual upgrade process.

Summary of procedure



Perform a manual SPM upgrade

ATTENTION
Follow your company policy for soaking selected circuit packs before upgrading the rest of your office.

At the CI level of the MAP display

1 Review the introductory material to this procedure. Make sure that you meet all prerequisites before beginning this procedure.

2 The SPM upgrade involves upgrading circuit pack software loads running on the SPM. The circuit packs are grouped into circuit pack protection groups. Therefore, an SPM upgrade is comprised of the following tasks:

- Check alarms on the SPM before you start the upgrade.
- Verify the status of the SPM carriers before you start the upgrade.
- Update circuit pack load inventory, if necessary.
- Upgrade all RM circuit pack protection groups that you need to upgrade.
- For each RM circuit pack protection group, upgrade all circuit packs in the groups that you need to upgrade.
- Upgrade CEMs that you need to upgrade.

a Use the NO DISPLAY mode to post the SPM by typing

```
>MAPCI NODISP;MTC;PM;POST SPM spm_no
```

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

```
>MAPCI NODISP;MTC;PM;POST SPM 23
```

b Display alarms on the RMs on the SPM by typing

```
>QUERYPM FLT
```

and pressing the Enter key.

c Display alarms on the SPM by typing

```
>LISTALM
```

and pressing the Enter key.

d Use the following work sheet to record the alarms raised on the SPM. Duplicate the work sheet as needed.

Alarms on an SPM work sheet

Node ID (SPM no.)	Alarm	Object (the alarm is raised against)	Note
23	ISTB	SPM 23	
	ISTB	CEM 0	
	ISTB	CEM 1	
	ISTB	OC3 1	
	ISTB	VSP 0	
	ISTB	DSP 0	
	ISTB	DSP 1	

where

Node ID
is the SPM number

Alarm
is the name of the alarm

Object
is the object against which the alarm is raised

Note
is any note you feel may help you

The following work sheet provides a sample of a completed Alarms on an SPM work sheet for SPM 23.

Sample alarms on an SPM work sheet

Node ID (SPM no.)	Alarm	Object (the alarm is raised against)	Note
23	ISTB	SPM 23	
	ISTB	CEM 0	
	ISTB	CEM 1	
	ISTB	OC3 1	
	ISTB	VSP 0	
	ISTB	DSP 0	
	ISTB	DSP 1	

e Use the map to display the SPM Carriers by typing

`>MAPCI;MTC;TRKS;CARRIER;POST SPM spm_no 1`

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

f Use the following worksheet to record the status of any SPM carriers not in an INSV or OFFL state.

SPM carrier status worksheet

Node ID (SPM no.)	Carrier	Carrier state	Reason

where

Carrier
is the SPM carrier not INSV or OFFL

Carrier state
is the state of the carrier, i.e. SYSB, MANB

Reason
is the cause of the carrier state

The following work sheet provides a sample of a completed SPM carrier status work sheet for SPM 23.

Sample SPM carrier status work sheet

Node ID (SPM no.)	Carrier	Carrier state	Reason
14	108	MANB	Maintenance
22	116	SYSB	RAI

3 Determine the impact of the current alarm status on the SPM upgrade.

If there are	Do
alarms	Procedure 4
no alarms	Procedure 6

4 Determine the alarm types.

If	Do
there is an alarm other than ISTB alarm	Procedure 5
all alarms are ISTB alarms	Procedure 6

5 Perform the appropriate alarm clearing procedure. After you complete the alarm clearing procedure, return to this point.

6

ATTENTION

If you are performing a milestone release upgrade, do not continue with this procedure until you have updated tables PMLOADS and MNCKTPAK. See the Procedure, "Prepare a manual SPM upgrade," on page 53 to add the new load names to table PMLOADS, add the new load names to table MNCKTPAK, and delete the old load names from table PMLOADS.

Determine the RM circuit pack protection groups for an SPM to upgrade by performing the following steps.

Note: RM circuit packs do not include CEM circuit packs.

a Identify all RM circuit pack protection groups you need to upgrade. Refer to the Circuit pack protection groups work sheet you completed in Procedure, "Prepare a manual SPM upgrade," on page 53.

b

ATTENTION

Operating company personnel can upgrade more than one RM and more than one SPM at the same time.

To upgrade multiple RMs at the same time on the same SPM, open a MAPCI session for each RM type.

To upgrade concurrently multiple SPMs, Nortel Networks recommends upgrading up to two SPMs at the same time. Open a MAPCI session for each RM type on each SPM.

Note that during in-service loading, which involves downloading from the computing module (CM), you can load a maximum of six RMs at the same time. The restriction of in-service loading no more than six RMs at the same time also applies to CEMs. During mate loading, there is no restriction on the number of RMs that can be loaded from the mate at the same time.

Select the next RM circuit pack protection group to upgrade.

Note: The order for upgrading circuit packs is as follows: SRM -> OC3 -> DSP -> VSP -> DLC -> CEM.

If	Do
you select an SRM group	the Procedure, “Upgrade an SRM protection group,” on page 107
you select an OC3 group	the Procedure, “Upgrade an OC3 protection group,” on page 113
you select a DSP or VSP group	the Procedure, “Upgrade a DSP or VSP protection group,” on page 117
you select a DLC group	the Procedure, “Upgrade a DLC protection group,” on page 129
there are no more RM circuit packs group to upgrade	Procedure 7

7 Perform the Procedure, “Upgrade the CEMs,” on page 133.

8 You have successfully completed the procedure for upgrading an SPM.

Upgrade an SRM protection group

ATTENTION

To abort the upgrade and back out the loads, you must reverse the upgrade procedure you have already completed. To avoid possible complications, Nortel Networks strongly recommends that you reverse the order you used to load the RM types, including OC3s, DSPs, VSPs, and DLCs. Back out the SRM loads last.

When you get to the step to in-service load the SRM, you must modify the command to include the filename of the original load. Rather than use LOADMOD INSVLD, you must use LOADMOD <filename of original load> INSVLD.

At the CI level of the MAP display

1 If the SRM to replace is the Active node reference for the Message Switch (MS), a Node Reference Switch needs to occur before it is replaced.

If the SRM is	Do
ACTIVE	Procedure 2
STANDBY	Procedure 4

2 Access the clock level of the message switch MS by typing

`>MAPCI;MTC;MS;CLOCK`

and pressing the Enter key.

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

SPM                    Message Switch   Clock   Shelf  0       Inter-MS Link 0 1
 0 Quit                  MS 0       .          Master         F                    . .
 2                       MS 1       .          Slave          F                    . .
 3
 4 SwCarr              Shelf 0                  1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2
 5                     Card  1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 6 Tst_                Chain           |     |
 7                     MS 0  . . . . . I - - I - - - - - - - - . - - . . . . . . .
 8                     MS 1  . . . . . I - - I - - - - - - - - F - - . . . . . . .
 9
10 Sync                Card 02 Alm Stat %Adj Src | Car Stat Sp PM     RMTyp SSM
11 DpSync              MS 0  .  .  Lkg +08.6 Lk0 | Lk0 Lck   - SPM 031 SRM  PRS
12 SwMast              MS 1  .  .  Syn -00.8 Ms0 | Lk1 Smp   - SPM 030 SRM  ST3
13 Card_               Links Slipping:  NA   out of  NA
14 QueryMS             MTC:
15                     MS:
16                     SHELF:
17                     CLOCK:
18 Adjust_

   14:12 >
```

3 Switch the SRM from ACTIVE to STANDBY by typing

>SwCarr

and pressing the Enter key.

4 Post the SPM by typing

>MAPCI;MTC;PM;POST SPM spm_no

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

>MAPCI;MTC;PM;POST SPM 23

Example of MAP display

```
SPM 23  INSV     Class: DMSCP
Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
DSP 2  1 A Insv  CEM 1  8 I Insv  DLC 1  1 A Insv  --- -  8 - ----
DSP 4  2 A Insv  OC3 0  9 A Insv  --- -  2 - ----  --- -  9 - ----
DSP 1  3 I Insv  OC3 1 10 I Insv  --- -  3 - ----  --- - 10 - ----
DSP 3  4 A Insv  VSP 2 11 A Insv  --- -  4 - ----  --- - 11 - ----
--- -  5 - ----  VSP 4 12 A Insv  --- -  5 - ----  --- - 12 - ----
SRM 0  6 A InSv  VSP 1 13 I Insv  --- -  6 - ----  --- - 13 - ----
CEM 0  7 A Insv  VSP 0 14 A Insv  DLC 2  7 I Insv  --- - 14 - ----
```

5 Access the SRM card by typing

>SELECT SRM 0

and pressing the Enter key.

This is an example of an SRM screen.

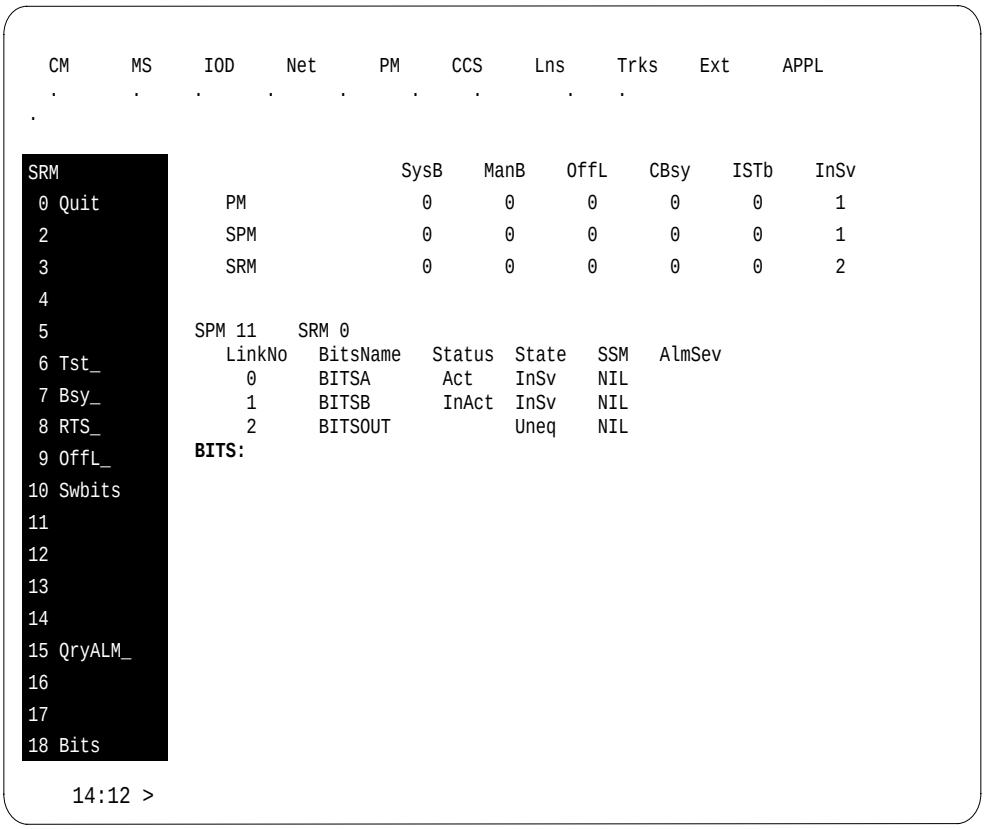
```
  CM      MS     IOD     Net      PM     CCS     Lns     Trks    Ext     APPL
  .       .      .       .        .      .       .       .       .
.

SRM                          SysB    ManB    OffL    CBsy    ISTb    InSv
 0 Quit          PM           0       0       0       0       0       1
 2               SPM          0       0       0       0       0       1
 3 ListSet       SRM          0       0       0       0       0       2
 4
 5          SPM 11    SRM 0  Act  InSv
 6 Tst      Interface:
 7 Bsy      Loc : Row A FrPos 4 ShPos 6 ShId 0 Slot 6  Prot Grp : 1
 8 RTS      Default Load: SPMLOAD                      Prot Role: Working
 9 OffL
10 LoadMod
11
12 Next
13 Select_
14 QueryMod
15 ListAlm
16
17
18 Bits

    14:12 >
```

6 Access the BITS link level by typing

>Bits

and pressing the Enter key.

This is an example of the BITS screen.



7 Record the BITS link numbers associated with the SRM and the state of each link.

8 Manual busy (ManB) the BITS links by typing

>BSY link_no

for each link number and pressing the Enter key.

where

link_no
is the BITS link number (0 to 2)

9 Return to the SRM level by typing

>QUIT

and pressing the Enter key.

10 Busy the SRM by typing

>BSY

and pressing the Enter key.

11 Load the SRM with the new load by typing

>LOADMOD

and pressing the Enter key.

12 Busy the SRM by typing

>BSY

and pressing the Enter key.

13 Return the SRM to service by typing

>RTS

and pressing the Enter key.

14 Access the BITS level by typing

>BITS

and pressing the Enter key.

15 At the BITS screen, restore the BITS links to their original state as recorded in Procedure 7.

16 If the SRM was orginally the Active node reference, return it to ACTIVE status.

If the SRM was originally	Do
ACTIVE	Procedure 17
STANDBY	Procedure 19

17 Access the clock level of the message switch (MS) by typing

>MAPCI;MTC;MS;CLOCK

and pressing the Enter key.

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

SPM                    Message Switch   Clock   Shelf  0       Inter-MS Link 0 1
 0 Quit                  MS 0       .          Master         F                    . .
 2                       MS 1       .          Slave          F                    . .
 3
 4 SwCarr              Shelf 0                  1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2
 5                     Card  1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 6 Tst_                Chain           |     |
 7                     MS 0  . . . . . I - - I - - - - - - - - . - - . . . . . . .
 8                     MS 1  . . . . . I - - I - - - - - - - - F - - . . . . . . .
 9
10 Sync                Card 02 Alm Stat %Adj Src | Car Stat Sp PM     RMTyp SSM
11 DpSync              MS 0  .  .  Lkg +08.6 Lk0 | Lk0 Lck   - SPM 031 SRM  PRS
12 SwMast              MS 1  .  .  Syn -00.8 Ms0 | Lk1 Smp   - SPM 030 SRM  ST3
13 Card_               Links Slipping:  NA   out of  NA
14 QueryMS             MTC:
15                     MS:
16                     SHELF:
17                     CLOCK:
18 Adjust_

   14:12 >
```

18 Switch the SRM from ACTIVE to STANDBY by typing

`>SwCarr`

and pressing the Enter key.

19 Check for alarms on the SPM by performing the substeps listed in Step 2 of the Procedure, “Perform a manual SPM upgrade”.

20 You have completed upgrading an SRM circuit pack protection group for the SPM.

Go to Step 6b of the Procedure, “Perform a manual SPM upgrade”.

Upgrade an OC3 protection group

ATTENTION

To abort the upgrade and back out the loads, you must reverse the upgrade procedure you have already completed. To avoid possible complications, Nortel Networks strongly recommends that you reverse the order you used to load the RM types, including OC3s, DSPs, VSPs, and DLCs. Back out the SRM loads last.

When you get to the step to in-service load the OC3, you must modify the command to include the filename of the original load. Rather than use LOADMOD INSVLD, you must use LOADMOD <filename of original load> INSVLD.

At the CI level of the MAP display

1 Determine the unit numbers of the OC3 RMs in the circuit pack protection group. Refer to the Circuit pack protection groups work sheet you completed in the Procedure, "Prepare a manual SPM upgrade," on page 53.

2 Post the SPM by typing

```
>MAPCI;MTC;PM;POST SPM spm_no
```

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

```
>MAPCI;MTC;PM;POST SPM 23
```

Example of MAP display

```
SPM 23  INSV     Class: DMSCP
Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
DSP 2  1 A Insv  CEM 1  8 I Insv  DLC 1  1 A Insv  --- -  8 - ----
DSP 4  2 A Insv  OC3 0  9 A Insv  --- -  2 - ----  --- -  9 - ----
DSP 1  3 I Insv  OC3 1 10 I Insv  --- -  3 - ----  --- - 10 - ----
DSP 3  4 A Insv  VSP 2 11 A Insv  --- -  4 - ----  --- - 11 - ----
--- -  5 - ----  VSP 4 12 A Insv  --- -  5 - ----  --- - 12 - ----
--- -  6 - ----  VSP 1 13 I Insv  --- -  6 - ----  --- - 13 - ----
CEM 0  7 A Insv  VSP 0 14 A Insv  DLC 2  7 I Insv  --- - 14 - ----
```

3 Record the unit number of the inactive OC3 RM in the circuit pack protection group.

Note: The inactive OC3 RM will be referred to as the seed OC3 RM. The unit number of this OC3 RM is referred to as seed_oc3_unit for the remainder of this procedure. The other OC3 RM will be referred to as the target OC3 RM.

4 Select the seed OC3 by typing

>SELECT OC3 seed_oc3_unit

and pressing the Enter key.

where

seed_oc3_unit
is the unit number of the inactive OC3 RM

Example

>SELECT OC3 1

Example of MAP display

```
SPM 23  OC3 1  InAct  InSv

Loc: Row N FrPos 24 ShPos 43 ShId 0 Slot10 Prot Grp: 1
Default Load: OC315AF              Prot Role: Spare
```

5 Follow the Procedure, "In-service loading procedure," on page 233 to load the seed OC3 RM.

6 Begin executing manual OC3 RM sparing to switch activity by accessing the protection level of the MAP display and typing

>PROT

and pressing the Enter key.

Example of MAP display

```
SPM    23  ISTb
Prot Grp: OC3_GRP 1 Mode: Non-revertive Schema: one_plus_one
Sh0 U R A Stat Sh0 U R A Stat Sh1 U R A Stat Sh1 U R A Stat
 1 -- - - ----  8 -- - - ----  1  - - - ----  8 -- - - ----
 2 -- - - ----  9  0 W A InSv  2  - - - ----  9 -- - - ----
 3 -- - - ---- 10  1 S I InSv  3 -- - - ---- 10 -- - - ----
 4 -- - - ---- 11 -- - - ----  4 -- - - ---- 11 -- - - ----
 5 -- - - ---- 12 -- - - ----  5  - - - ---- 12 -- - - ----
 6 -- - - ---- 13 -- - - ----  6  - - - ---- 13 -- - - ----
 7 -- - - ---- 14 -- - - ----  7  - - - ---- 14 -- - - ----
```

7 Perform the manual switch activity by typing

`>MANUAL target_oc3_unit seed_oc3_unit`

and pressing the Enter key.

where

target_oc3_unit
is the unit number of the OC3 RM that has not been upgraded

seed_oc3_unit
is the unit number of the OC3 RM that has been upgraded

Example

`>MANUAL 0 1`

Example of MAP display

```
A sparing action may impact services on this node.

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

8 Confirm the system prompt by typing

`>Y`

and pressing the Enter key.

Example of MAP display

```
SPM    23  ISTb
Prot Grp: OC3_GRP 1 Mode: Non-revertive Schema: one_plus_one
Sh0 U R A Stat Sh0 U R A Stat Sh1 U R A Stat Sh1 U R A Stat
 1 -- - - ----  8 -- - - ----  1  - - - ----  8 -- - - ----
 2 -- - - ----  9  0 W I InSv  2  - - - ----  9 -- - - ----
 3 -- - - ---- 10  1 S A InSv  3 -- - - ---- 10 -- - - ----
 4 -- - - ---- 11 -- - - ----  4 -- - - ---- 11 -- - - ----
 5 -- - - ---- 12 -- - - ----  5  - - - ---- 12 -- - - ----
 6 -- - - ---- 13 -- - - ----  6  - - - ---- 13 -- - - ----
 7 -- - - ---- 14 -- - - ----  7  - - - ---- 14 -- - - ----
 manual 0 1
 SPM 1 OC3 1 Manual : Request has been submitted.
 SPM 1 OC3 1 Spare : Command completed.  Command passed.
```

9 Follow the Procedure, "RM-to-RM loading procedure," on page 237 to load the target OC3 RM.

10 Check for alarms on the SPM by performing the substeps listed in Step 2 of the Procedure, "Perform a manual SPM upgrade".

11 You have completed upgrading an OC3 circuit pack protection group for the SPM.

Go to Step 6b of the Procedure, "Perform a manual SPM upgrade"

Upgrade a DSP or VSP protection group

ATTENTION

To abort the upgrade and back out the loads, you must reverse the upgrade procedure you have already completed. To avoid possible complications, Nortel Networks strongly recommends that you reverse the order you used to load the RM types, including OC3s, DSPs, VSPs, and DLCs. Back out the SRM loads last.

When you get to the step to in-service load the DSP, you must modify the command to include the filename of the original load. Rather than use LOADMOD INSVLD, you must use LOADMOD <filename of original load> INSVLD.

ATTENTION

All DSP resources are initially datafilled in table MNCKTPAK. In response to the LISTRES command, the MAP display shows the “Datafilled” information. This “Datafilled” information references table MNCKTPAK.

At the CI level of the MAP display

1 Determine the unit numbers of the DSP RMs in the circuit pack protection group. Refer to the Circuit pack protection groups work sheet you completed in the Procedure, “Prepare a manual SPM upgrade,” on page 53.

Note 1: When you use this procedure to upgrade VSP RMs, substitute the acronym VSP for DSP.

Note 2: If you are upgrading an LX66 VSP, use a DSP load. If you are upgrading an LX85 or LX86 VSP, use a COH load.

2 Post the SPM by typing

>MAPCI;MTC;PM;POST SPM spm_no

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

>MAPCI;MTC;PM;POST SPM 23

Example of MAP display

```
SPM 23  INSV     Class: DMSCP
Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
DSP 2  1 A Insv  CEM 1  8 I Insv  DLC 1  1 A Insv  --- -  8 - ----
DSP 4  2 A Insv  OC3 0  9 A Insv  --- -  2 - ----  --- -  9 - ----
DSP 1  3 I Insv  OC3 1 10 I Insv  --- -  3 - ----  --- - 10 - ----
DSP 3  4 A Insv  VSP 2 11 A Insv  --- -  4 - ----  --- - 11 - ----
--- -  5 - ----  VSP 4 12 A Insv  --- -  5 - ----  --- - 12 - ----
--- -  6 - ----  VSP 1 13 I Insv  --- -  6 - ----  --- - 13 - ----
CEM 0  7 A Insv  VSP 0 14 A Insv  DLC 2  7 I Insv  --- - 14 - ----
```

3 Select all the DSP RMs by typing

>SELECT DSP ALL

and pressing the Enter key.

Example of MAP display

```
 CM    MS    IOD    Net    PM   CCS   LNS   Trks    Ext    Appl
  .     .     .      .      .    .     .     .       .      .

DSP             SysB     ManB     OffL     CBsy     ISTb      InSv
 0 Quit    PM      1        0        2        0       28        32
 2     _   SPM     0        0        1        0        1         0
 3 ListSet   DSP   0        0        0        0        0         4
 4 ListRes
 5         SPM 23  DSP 1  InAct  InSv
 6 Tst
 7 Bsy     Loc: Row F FrPos 7 ShPos 58 ShId 1 Slot 3 Prot Grp: 1
 8 RTS     Default Load: DSP15AF                    Prot Role: Spare
 9 OffL
10 LoadMod
11
12 Next
13 Select_
14 QueryMod
15 ListAlm
16 Prot
17 Sperform
18
```

4 Display a list of resource information for a DSP RM by typing

>LISTRES

and pressing the Enter key.

Record the resource information for the DSP RM using the hard copy from the printer.

Example of MAP display

```
  CM    MS    IOD    Net    PM   CCS   LNS   Trks    Ext    Appl
   .     .     .      .      .    .     .     .       .      .

DSP             SysB     ManB     OffL     CBsy     ISTb      InSv
 0 Quit    PM      1        0        2        0       28        32
 2     _   SPM     0        0        1        0        1         0
 3 ListSet   DSP   0        0        0        0        0         4
 4 ListRes
 5         SPM 23  DSP 1  InAct  InSv
 6 Tst
 7 Bsy     Loc: Row F FrPos 7 ShPos 58 ShId 1 Slot 3 Prot Grp: 1
 8 RTS     Default Load: DSP15AF                     Prot Role: Spare
 9 OffL
10 LoadMod  ListRes
            Protecting RM SHID: 1 Slot: 3 Circuit Pack: DSP 1 RMID: 22
11          COT      :  Datafilled: 14  Actual:  14
12 Next     DTMF     :  Datafilled:  4  Actual:   4
13 Select_  TONESYN  :  Datafilled: 64  Actual:  64
14 QueryMod ABBIT    :  Datafilled: 14  Actual:  14
15 ListAlm  MF       :  Datafilled: 40  Actual:  40
16 Prot
17 Sperform
18
```

5 Post the next DSP RM by typing

>NEXT

and pressing the Enter key.

6 Display a list of resource information for a DSP RM by typing

>LISTRES

and pressing the Enter key.

Record the resource information for the DSP RM using the hard copy from the printer.

7 Determine if the resource information for all DSP RMs on the SPM have been recorded.

If you	Do
have not recorded the resource information for all the DSP RMs on the SPM	Procedure 5

If you	Do
have recorded the resource information for all the DSP RMs on the SPM	Procedure 8

8 Verify that the datafilled resources match the actual resources. By comparing the datafilled resources to the actual resources, you can determine what sparing, if any, must be performed to correct resource mismatches.

If datafilled resources	Do
do not match the actual resources	Procedure 34
match the actual resources	Procedure 9

9 Determine the state of the spare DSP. Refer to the Circuit pack protection groups work sheet you completed in the Procedure, “Prepare a manual SPM upgrade,” on page 53.

If the spare DSP	Do
is in-service and active	Procedure 10
is in-service and inactive	Procedure 12

10 Switch activity from the active spare DSP to the inactive working DSP in the circuit pack protection group by typing

```
>MANUAL active_spare_dsp_unit
inactive_working_dsp_unit
```

and pressing the Enter key.

where

active_spare_dsp_unit
is the unit number of the active spare DSP RM

inactive_working_dsp_unit
is the unit number of the inactive working DSP RM

Example

```
>MANUAL 2 1
```

Example of MAP display

```
A sparing action may impact services on this node.

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

11 Confirm the system prompt by typing

>Y

and pressing the Enter key.

12 Select the spare DSP RM by typing

>SELECT DSP spare_dsp_unit

and pressing the Enter key.

where

spare_dsp_unit
is the unit number of the spare DSP RM

Example

>SELECT DSP 1

13 Follow the Procedure, "In-service loading procedure," on page 233 to load the spare DSP RM.

Note: The spare DSP RM will be referred to as the seed DSP RM. The unit number of DSP RM is referred to as seed_dsp_unit for the remainder of this procedure. Active DSP RMs which have not been upgraded will be referred to as target DSP RMs.

14 Access the protection level of the MAP by typing

>PROT

and pressing the Enter key.

15 Determine if you need to upgrade other DSP RMs in the circuit pack protection group.

If	Do
there are active DSP RMs in the circuit pack protection group that have not been upgraded	Procedure 16
all DSP RMs in the circuit pack (either active or inactive) have been upgraded	Procedure 27

16 Switch activity from an active DSP RM that you have not upgraded to the seed DSP RM in the circuit pack protection group by typing

>MANUAL target_dsp_unit seed_dsp_unit

and pressing the Enter key.

where

target_dsp_unit
is the unit number of an active DSP RM that has not been upgraded

spare_dsp_unit
is the unit number of the seed DSP RM

Example

>MANUAL 2 1

Example of MAP display

```
A sparing action may impact services on this node.

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

17 Confirm the system prompt by typing

>Y

and pressing the Enter key.

18 Select the target DSP RM by typing

>SELECT DSP target_dsp_unit

and pressing the Enter key.

where

target_dsp_unit
is the unit number of the target DSP RM that has not been upgraded

Example

>SELECT DSP 2

19 Load the target DSP RM from the spare DSP RM by typing

>LOADMOD MATE seed_dsp_unit

and pressing the Enter key.

where

seed_dsp_unit
is the unit number of the seed DSP RM

Example

>LOADMOD MATE 1

Note: During execution of the LOADMOD INSVLD command, the RM automatically goes to a SysB state and then returns to service. You will observe the Insv-SysB-Insv state change on the MAP terminal. If the RM goes SysB before the command completes, you do not need to take any action.

20 Access the PRSM tool by typing

>PRSM

and pressing the Enter key.

21 Perform an ISTBAudit to apply the patches from the first unit to the mate units by typing

>ISTBAUDIT SPM spm_no DSP

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

>ISTBAUDIT SPM 23 DSP

22 Confirm the system prompt by typing

>Y

and pressing the Enter key.

23 Exit the PRSM tool by typing

>QUIT

and pressing the Enter key.

24 Access the protection level of the MAP by typing

>PROT

and pressing the Enter key.

25 Switch activity from the seed DSP RM to the target DSP RM by typing

>MANUAL seed_dsp_unit target_dsp_unit

and pressing the Enter key.

where

seed_dsp_unit
is the unit number of the seed DSP RM

target_dsp_unit
is the unit number of the newly upgraded DSP RM

Example

>MANUAL 1 2

Example of MAP display

```
A sparing action may impact services on this node.

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

26 Confirm the system prompt by typing

>Y

and pressing the Enter key.

Return to Step 15.

27 Post the SPM by typing

>MAPCI;MTC;PM;POST SPM spm_no

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

>MAPCI;MTC;PM;POST SPM 23

Note: At this point, the spare DSP RM should be in-service and inactive.

28 Select all the DSP RMs by typing

>SELECT DSP ALL

and pressing the Enter key.

29 Display a list of resource information for a DSP RM by typing

>LISTRES

and pressing the Enter key.

Record the resource information for the DSP RM.

30 Post the next DSP RM by typing

>NEXT

and pressing the Enter key.

31 Display a list of resource information for a DSP RM by typing

>LISTRES

and pressing the Enter key.

Record the resource information for the DSP RM.

32 Determine if the resource information for all DSP RMs on the SPM have been recorded.

If you	Do
have not recorded the resource information for all the DSP RMs on the SPM	Procedure 30
you have recorded the resource information for all the DSP RMs on the SPM	Procedure 33

33 Verify that the datafilled resources match the actual resources. By comparing the datafilled resources to the actual resources, you can determine what sparing, if any, must be performed to correct resource mismatches.

If datafilled resources	Do
do not match the actual resources	Procedure 34
match the actual resources	Procedure 37

Note: The datafilled resource on the inactive spare DSP should be 0. If it is not 0, please contact your Nortel Networks TAS representative.

34 Access the protection level of the MAP by typing

>PROT

and pressing the Enter key.

35 Perform DSP sparing to correct resource mismatches by typing

>MANUAL resource_information_match_dsp_unit datafilled_resources_match_dsp_unit

and pressing the Enter key.

where

resource_information_match_dsp_unit
is the DSP RM whose actual resources match the datafilled resources of a second DSP RM

datafilled_resources_match_dsp_unit
is the DSP unit whose datafilled resources match the actual resources of the first DSP RM

Example

```
>MANUAL 1 0
```

Example of MAP display

```
A sparing action may impact services on this node.

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

36 Confirm the system prompt by typing

```
>Y
```

and pressing the Enter key.

Repeat steps 35 and 36 for each DSP RM so the datafilled resources match the actual resources.

If you cannot correct the mismatches by this method, please contact your Nortel Networks TAS representative.

37 Exit the SPM level MAP display by typing

```
>QUIT ALL
```

and pressing the Enter key.

38 Access the PRSM tool by typing

```
>PRSM
```

and pressing the Enter key.

39 Audit the load file status of the DSP RMs by typing

```
>DBAUDIT SPM spm_no DSP
```

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

```
>DBAUDIT SPM 23 DSP
```

40 Confirm the system prompt by typing

>Y

and pressing the Enter key.

When you first perform a DBAUDIT on the DSPs, the MAP display reports a database discrepancy. This report of a “Database discrepancy found in x DESTs" is normal. Note that x equals the number of DSPs datafilled. At this point in the procedure, the DBAUDIT is successful. The system also generates an SPM300 and a PRSM400 log as part of DBAUDIT. The generation of these logs does not indicate a problem. If you want to verify the success of the DBAUDIT, you may repeat the DBAUDIT. If you repeat the DBAUDIT, the MAP display will report “Database discrepancy found in 0 DESTs."

41 Exit the PRSM tool by typing

>QUIT

and pressing the Enter key.

42 Check for alarms on the SPM by performing the substeps listed in Step 2 of the Procedure, “Perform a manual SPM upgrade”.

43 You have completed upgrading a DSP circuit pack protection group for the SPM.

Go to Step 6b of the Procedure, “Perform a manual SPM upgrade”

Upgrade a DLC protection group

ATTENTION

To abort the upgrade and back out the loads, you must reverse the upgrade procedure you have already completed. To avoid possible complications, Nortel Networks strongly recommends that you reverse the order you used to load the RM types, including OC3s, DSPs, VSPs, and DLCs. Back out the SRM loads last.

When you get to the step to in-service load the DLC, you must modify the command to include the filename of the original load. Rather than use LOADMOD INSVLD, you must use LOADMOD <filename of original load> INSVLD.

At the CI level of the MAP display

1 Determine the unit numbers of the DLC RMs in the circuit pack protection group. Refer to the Circuit pack protection groups work sheet you completed in the Procedure, "Prepare a manual SPM upgrade," on page 53.

2 Post the SPM by typing

```
>MAPCI;MTC;PM;POST SPM spm_no
```

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

```
>MAPCI;MTC;PM;POST SPM 23
```

Example of MAP display

```
SPM 23  INSV     Class: DMSCP
Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
DSP 2  1 A Insv  CEM 1  8 I Insv  DLC 1  1 A Insv  --- -  8 - ----
DSP 4  2 A Insv  OC3 0  9 A Insv  --- -  2 - ----  --- -  9 - ----
DSP 1  3 I Insv  OC3 1 10 I Insv  --- -  3 - ----  --- - 10 - ----
DSP 3  4 A Insv  VSP 2 11 A Insv  --- -  4 - ----  --- - 11 - ----
--- -  5 - ----  VSP 4 12 A Insv  --- -  5 - ----  --- - 12 - ----
--- -  6 - ----  VSP 1 13 I Insv  --- -  6 - ----  --- - 13 - ----
CEM 0  7 A Insv  VSP 0 14 A Insv  DLC 2  7 I Insv  --- - 14 - ----
```

3 Record the unit number of the inactive DLC RM in the circuit pack protection group.

Note: The inactive DLC RM will be referred to as the seed DLC RM. The unit number of this DLC RM is referred to as seed_dlc_unit for the remainder of this procedure. The other DLC RM will be referred to as the target DLC RM.

4 Select the seed DLC by typing

>SELECT DLC seed_dlc_unit

and pressing the Enter key.

where

seed_dlc_unit
is the unit number of the seed DLC RM

Example

>SELECT DLC 1

Example of MAP display

```
SPM 23  DLC 1  InAct  InSv

Loc: Row N FrPos 24 ShPos 43 ShId 1 Slot1 Prot Grp: 1
Default Load: DLC15AF              Prot Role: Spare
```

5 Follow the Procedure, “In-service loading procedure,” on page 233 to load the seed DLC RM.

6 Begin executing manual DLC RM sparing to switch activity by accessing the protection level of the MAP display and typing

>PROT

and pressing the Enter key.

Example of MAP display

```
SPM    23  ISTb
Prot Grp: DLC_GRP 1 Mode: Non-revertive Schema: one_plus_one
Sh0 U R A Stat Sh0 U R A Stat Sh1 U R A Stat Sh1 U R A Stat
 1 -- - - ----  8 -- - - ----  1  0 W A InSv  8 -- - - ----
 2 -- - - ----  9 -- - - ----  2  - - - ----  9 -- - - ----
 3 -- - - ---- 10 -- - - ----  3 -- - - ---- 10 -- - - ----
 4 -- - - ---- 11 -- - - ----  4 -- - - ---- 11 -- - - ----
 5 -- - - ---- 12 -- - - ----  5  - - - ---- 12 -- - - ----
 6 -- - - ---- 13 -- - - ----  6  - - - ---- 13 -- - - ----
 7 -- - - ---- 14 -- - - ----  7  1 S I InSv 14 -- - - ----
```

7 Perform the manual switch activity by typing

`>MANUAL target_dlc_unit seed_dlc_unit`

and pressing the Enter key.

where

target_dlc_unit
is the unit number of the DLC RM that has not been upgraded

seed_dlc_unit
is the unit number of the DLC RM that has been upgraded

Example

`>MANUAL 0 1`

Example of MAP display

```
A sparing action may impact services on this node.

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

8 Confirm the system prompt by typing

`>Y`

and pressing the Enter key.

Example of MAP display

```
SPM    23  ISTb
Prot Grp: DLC_GRP 1 Mode: Non-revertive Schema: one_plus_one
Sh0 U R A Stat Sh0 U R A Stat Sh1 U R A Stat Sh1 U R A Stat
 1 -- - - ----  8 -- - - ----  1  0 W A InSv  8 -- - - ----
 2 -- - - ----  9 -- - - ----  2  - - - ----  9 -- - - ----
 3 -- - - ---- 10 -- - - ----  3 -- - - ---- 10 -- - - ----
 4 -- - - ---- 11 -- - - ----  4 -- - - ---- 11 -- - - ----
 5 -- - - ---- 12 -- - - ----  5  - - - ---- 12 -- - - ----
 6 -- - - ---- 13 -- - - ----  6  - - - ---- 13 -- - - ----
 7 -- - - ---- 14 -- - - ----  7  1 S I InSv 14 -- - - ----
 manual 0 1
 SPM 1 DLC 1 Manual : Request has been submitted.
 SPM 1 DLC 1 Spare : Command completed.  Command passed.
```

9 Follow the Procedure, “RM-to-RM loading procedure,” on page 237 to load the target DLC RM.

10 Check for alarms on the SPM by performing the substeps listed in Step 2 of the Procedure, “Perform a manual SPM upgrade”.

11 You have completed upgrading a DLC circuit pack protection group for the SPM.

Go to Step 6b of the Procedure, “Perform a manual SPM upgrade”

Upgrade the CEMs

ATTENTION

To abort the upgrade and back out the loads, you must reverse the upgrade procedure you have already completed. Back out the CEM loads first. Then back out the RM loads. To avoid complications, Nortel Networks strongly recommends that you reverse the order you used to load the RM types, including OC3s, DSPs, VSPs, and DLCs. Back out the SRM loads last.

When you get to the step to in-service load the CEM, you must modify the command to include the filename of the original load. Rather than use LOADMOD INSVLD, you must use LOADMOD <filename of original load> INSVLD.

ATTENTION

Procedure 6 in this procedure requires you to perform a protection switch of the CEM. The protection switch will fail when no OC3s are datafilled. Before upgrading the CEMs, ensure that OC3s are datafilled in table MNHSCARR.

Current software blocks a CEM protection switch when no carriers are datafilled. This block is a design intent.

At the CI level of the MAP display

1 Determine the CEM units to upgrade. Refer to the Circuit pack protection groups work sheet you completed in the Procedure , “Prepare a manual SPM upgrade,” on page -53.

2 Post the SPM by typing

```
>MAPCI;MTC;PM;POST SPM spm_no
```

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

>MAPCI;MTC;PM;POST SPM 23

Example of MAP display

```
SPM 23  INSV     Class: DMSCP
Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
DSP 2  1 A Insv  CEM 1  8 I Insv  DLC 1  1 A Insv  --- -  8 - ----
DSP 4  2 A Insv  OC3 0  9 A Insv  --- -  2 - ----  --- -  9 - ----
DSP 1  3 I Insv  OC3 1 10 I Insv  --- -  3 - ----  --- - 10 - ----
DSP 3  4 A Insv  VSP 2 11 A Insv  --- -  4 - ----  --- - 11 - ----
--- -  5 - ----  VSP 4 12 A Insv  --- -  5 - ----  --- - 12 - ----
--- -  6 - ----  VSP 1 13 I Insv  --- -  6 - ----  --- - 13 - ----
CEM 0  7 A Insv  VSP 0 14 A Insv  DLC 2  7 I Insv  --- - 14 - ----
```

3 Record the unit number of an inactive CEM.

Note: The inactive CEM will be referred to as the seed CEM. The unit number of this CEM is referred to as seed_cem_unit for the remainder of this procedure. The other CEM will be referred to as the target CEM.

4 Select the seed CEM by typing

>SELECT CEM seed_cem_unit

and pressing the Enter key.

where

seed_cem_unit
is the unit number of the seed CEM

Example

>SELECT CEM 1

5 Follow the Procedure , “In-service loading procedure,” on page -233 to load the seed CEM.

6 Begin executing manual CEM sparing to switch activity by accessing the protection level of the MAP display and typing

>PROT

and pressing the Enter key.

Note: If OC3s are not datafilled in table MNHSCARR, the manual protection switch will fail. To complete the protection switch, you must either datafill the OC3s prior to the manual

protection switch or force the protection switch by using the FORCE command.

7 Perform manual CEM activity switching by typing

>MANUAL

and pressing the Enter key.

Example of MAP display

```
A sparing action may impact services on this node.

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

8 Confirm the system prompt by typing

>Y

and pressing the Enter key.

9 Follow the Procedure , "In-service loading procedure," on page -233 to load the target CEM.

10 Check for alarms on the SPM by performing the steps listed in Procedure 2 of the Procedure , "Perform a manual SPM upgrade".

11 You have completed upgrading the CEM circuit pack protection group for the SPM.

Go to Procedure 8 of the Procedure , "Perform a manual SPM upgrade"

Prepare a manual SPM downgrade

ATTENTION
Follow your company policy for soaking selected circuit packs before downgrading the rest of your office.

At the CI level of the MAP display

1 Review the introductory material to this procedure.

2 Send the terminal response to a printer by typing

`>RECORD START ONTO <printer>`

and pressing the Enter key.

where

printer
is the name of the printer

Example

`>RECORD START ONTO printer1`

3 Print the contents of table PMLOADS by performing the following steps.

a Access table PMLOADS by typing

`>TABLE PMLOADS`

and pressing the Enter key.

b List the load file contents of table PMLOADS by typing

`>LIST ALL`

and pressing the Enter key.

c Exit table PMLOADS by typing

`>QUIT`

and pressing the Enter key.

4 Identify the SPM loads you need to update by performing the following steps.

a Compare the load file names on the SPM load tape to the active load file names in table PMLOADS. To determine the load file names on a SPM load tape, refer to Procedure 8e.To determine the load file names on an XA-Core tape, refer to Procedure 18e. To determine the load file names in table PMLOADS, refer to Procedure 3b.

b Use the following table to determine if you need to update the SPM load name in table PMLOADS.

Milestone release number, current release vs. new release	Postfix index number, current release vs. new release	PPSL index number, current release vs. new release	Downgrade type	Action
New release number is less than the current release number (See note.)	does not matter	unchanged	milestone	update
New release number and current release number are the same (See note.)	changed	unchanged	maintenance	update
New release number and current release number are the same (See note.)	changed	unchanged	emergency	update
New release number is less than the current release number (See note.)	does not matter	changed	PPSL milestone	update
New release number and current release number are the same (See note.)	unchanged	changed	PPSL maintenance	update PMLOADS only
New release number and current release number are the same (See note.)	unchanged	unchanged	not applicable	do not update
New release number is greater than the current release number (See note.)	does not matter	does not matter	error	contact next level of support

Note: Current release number refers to the number shown in table PMLOADS. New release number refers to the number shown on the SPM load tape.

c

ATTENTION
Respond correctly to the decision box in this step. Your response is critical for you to prepare for the SPM downgrade successfully. Be sure that you follow the steps that apply to the type of release downgrade for which you are preparing.

Determine if you need to update the SPM load name in table PMLOADS.

If you are preparing for a	Do
milestone release	Procedure 4d
maintenance or emergency release	Procedure 4e
PPSL maintenance release	Procedure 4f
PPSL milestone release	Procedure 4g

d You must update table PMLOADS if the following conditions exist for a milestone release:

- The new release number of an SPM load name on the SPM load tape is less than the current release number in table PMLOADS. (The load file contents of the SPM load tape shows the new release number. The active file in table PMLOADS shows current release number.)
- The postfix index number increases or remains the same.

Go to Procedure 5.

e You must update table PMLOADS if the following conditions exist for maintenance or emergency release:

- The new release number of an SPM load name on the SPM load tape is identical to the current release number in table PMLOADS. (The load file contents of the SPM load tape shows the new release number. The active file in table PMLOADS shows the current release number.)
- The six-digit postfix index of the SPM load file name changes from the current release to the new release.

Go to Procedure 5.

f You must update table PMLOADS if the following conditions exist for a PPSL milestone release:

- The new release number of an SPM load name on the SPM load tape is less than the current release number in table PMLOADS. (The load file contents of the SPM load tape shows the new release number. The active file in table PMLOADS shows current release number.)
- The postfix index number decreases or remains the same.
- The PPSL index number decreases.

Note: PPSL files are only available with SP16 loads or higher. To downgrade an SP16 PPSL load to an SP15 or lower load, treat the release as a milestone release.

Go to Procedure 5.

g You must update table PMLOADS if the following conditions exist for maintenance or emergency release:

- The new release number of an SPM load name on the SPM load tape is identical to the current release number in table PMLOADS. (The load file contents of the SPM load tape shows the new release number. The active file in table PMLOADS shows the current release number.)
- The postfix index number decreases or remains the same.
- The PPSL index number decreases.

Go to Procedure 5.

Note: For a PPSL maintenance release, it is unnecessary to perform the Procedure , "Perform a manual SPM downgrade," on page -182. Updating the file names in table PMLOADS is all that is required to downgrade the SPM.

5 Determine if you need to access table PMLOADS to update the load file names.

If you	Do
need to update the load file names in table PMLOADS	Procedure 6
do not need to update the load file names in table PMLOADS	Procedure 35

6

ATTENTION

The DSP load contains the LX66 VSP, as well as the DSP downgrade software.

Use the following work sheet to record the load in table PMLOADS that you need to update.

Load update work sheet

Current load name in PMLOADS	Current active load file name in PMLOADS	New load name from SPM load tape contents	New active load file name from SPM load tape contents	Downgrade procedure to perform

The following work sheet provides a sample of a completed Load update work sheet for a milestone release.

Sample load update work sheet for a milestone release

Current load name in PMLOADS	Current active load file name in PMLOADS	New load name from SPM load tape contents	New active load file name from SPM load tape contents	Downgrade procedure to perform
CEM17AE	CEM17AE_010010	CEM16AF	CEM16AF_010005	"Downgrade the CEMs across streams"
DLC17AE	DLC17AE_010010	DLC16AF	DLC16AF_010005	"Downgrade a DLC protection group"
DSP17AE	DSP17AE_010010	DSP16AF	DSP16AF_010005	"Downgrade a DSP or VSP protection group"
OC317AE	OC317AE_010010	OC316AF	OC316AF_010005	"Downgrade an OC3 protection group"

The following work sheet provides a sample of a completed Load update work sheet for a maintenance or emergency release.

Sample load update work sheet for a maintenance or emergency release

Current load name in PMLOADS	Current active load file name in PMLOADS	New load name from SPM load tape contents	New active load file name from SPM load tape contents	Downgrade procedure to perform
CEM17AF	CEM17AF_010003	CEM17AE	CEM17AE_010010	"Downgrade the CEMs within the same stream"
DLC17AF	DLC17AF_010003	DLC17AE	DLC17AE_010010	"Downgrade a DLC protection group"
DSP17AF	DSP17AF_010003	DSP17AE	DSP17AE_010010	"Downgrade a DSP or VSP protection group"
OC317AF	OC317AF_010003	OC317AE	OC317AE_010010	"Downgrade an OC3 protection group"

The following work sheet provides a sample of a completed Load update work sheet for a PPSL milestone release.

Sample load update work sheet for a PPSL milestone release

Current load name in PMLOADS	Current active load file name in PMLOADS	New load name from SPM load tape contents	New active load file name from SPM load tape contents	Downgrade procedure to perform
CEM17AF	CEM17AF_010003B1	CEM16AE	CEM16AE_010010A2	"Downgrade the CEMs within the same stream"
DLC17AF	DLC17AF_010003B1	DLC16AE	DLC16AE_010010A2	"Downgrade a DLC protection group"
DSP17AF	DSP17AF_010003B1	DSP16AE	DSP16AE_010010A2	"Downgrade a DSP or VSP protection group"
OC317AF	OC317AF_010003B1	OC316AE	OC316AE_010010A2	"Downgrade an OC3 protection group"

Note: PPSL files are only available with SP16 loads or higher. To downgrade an SP16 PPSL load to an SP15 or lower load, treat the release as a milestone release.

The following work sheet provides a sample of a completed Load update work sheet for a PPSL maintenance or release.

Sample load update work sheet for a PPSL maintenance release

Current load name in PMLOADS	Current active load file name in PMLOADS	New load name from SPM load tape contents	New active load file name from SPM load tape contents	Downgrade procedure to perform
CEM16AF	CEM16AF_010003B1	CEM16AF	CEM16AF_010010A1	None
DLC16AF	DLC16AF_010003B1	DLC16AF	DLC16AF_010010A1	None
DSP16AF	DSP16AF_010003B1	DSP16AF	DSP16AF_010010A1	None
OC316AF	OC316AF_010003B1	OC316AF	OC316AF_010010A1	None

Note 1: The tables above are meant as a guide only. Do not perform the downgrade procedures until you are instructed to do so in the Procedure , "Perform a manual SPM downgrade," on page -182.

Note 2: For a PPSL maintenance release, it is unnecessary to perform the Procedure , "Perform a manual SPM downgrade," on page -182. Updating the file names in table PMLOADS is all that is required to downgrade the SPM.

7

If PRSU files are on	Do
an SLM cartridge tape	Procedure 8
an XA-Core cartridge tape	Procedure 18

At the SLM tape drive

8 List the contents of the SPM load tape by performing the following steps.

a Select a system load module (SLM) disk volume as the volume for the new loads and PRSU files.

b Place the SPM load tape into the SLM tape drive of the selected SLM disk volume.

At the MAP display

c Access the disk utility by typing

```
>DISKUT
```

and pressing the Enter key.

d Insert the SLM load tape into the SLM tape drive by typing

```
>IT drive_name
```

and pressing the Enter key.

where

drive_name
is the name of the SLM tape drive

Example

```
>IT S00T
```

e List the load file contents of the SLM tape by typing

```
>LF drive_name
```

and pressing the Enter key.

where

drive_name
is the name of the SLM tape drive

Example

>LF S00T

9 Identify the PRSUs for the SPM load files.

a Verify that the tape contains the $XREF patch control file.

If the SLM tape cartridge label text indicates	Do
"Patches: Yes"	Procedure 9b
"Patches: No"	Procedure 10

b Copy the $XREF file to the SLM disk volume by typing

>MFR STDVOL disk_vol drive_name tape_vol $XREF_file

and pressing the Enter key.

where

disk_vol
is the name of the selected SLM disk volume

drive_name
is the name of the SLM tape drive

tape_vol
is the name of the PCL-specific SLM tape cartridge volume

$XREF_file
is the name of the $XREF patch control file

Example

>MFR STDVOL S00DPMLOADS S00T SPM00035 XPM35RTP$XREF

c Print the $XREF file to identify the PRSUs for the SPM load files by typing

>PRINT $XREF_file

and pressing the Enter key.

where

$XREF_file
is the name of the $XREF patch control file

Example

```
>PRINT XPM35RTP$XREF
```

10

> **ATTENTION**
> Do not modify the SPM external load file name when copying from the SLM tape to the disk volume.

Copy all new required load files by performing the following steps.

a Copy one required load file from the SLM tape to a disk volume by typing

```
>MFR STDVOL disk_vol drive_name tape_vol
new_load_file
```

and pressing the Enter key.

where

disk_vol
is the name of the selected SLM disk volume

drive_name
is the name of the SLM tape drive

tape_vol
is the name of the PCL-specific SLM tape cartridge volume

new_load_file
is the name of the new load file required to update the current load

Example

```
>MFR STDVOL S00DPMLOADS S00T SPM00035
CEM15AF_010005
```

b Copy the remaining load files from the SLM tape to a disk volume.

If	Do
there are required load files that you have not copied from the SLM tape to a disk volume	Procedure 10a
you have copied all required load files from the SLM tape to a disk volume	Procedure 11

11 Make sure that all required load files have been correctly copied on the disk volume by performing the following steps.

a List the contents of the disk volume that contains the new loads by typing

>LF disk_vol

and pressing the Enter key.

where

disk_vol
is the name of the selected SLM disk volume

Example

>LF S00DPMLOADS

Example of MAP display

FILE NAME	O R I O O FILE R E T P L CODE G C O E D C N		MAX REC LEN	NUM OF RECORDS IN FILE	FILE SIZE IN BLOCKS	LAST MODIFY DATE
CEM15AB_010005	O F	0	1536	10103	30341	990518
MPF15BG	O F	0	138	514	191	990209
MTMKA02	O F	0	76	302	63	980826
ENX12AU	O F	0	1020	3642	7289	990512
ENX11BA	O F	0	1020	3707	7410	990414
LRS15BJ	O F	0	1020	3707	7417	990512
LRS15BJ	I F	0	1020	3707	7414	990302
MPC403AD	O F	9	2048	162	703	980826
ERS11BA	O F	0	1020	4812	9646	990414
ED715BC	O F	0	1024	2740	5499	990209
ERS12AU	O F	0	1020	4812	9646	990512
ED715BC	O F	0	1024	2754	5558	990512
DSP15AF_010005	O V	0	256	18331	8926	990518
MPF15BG	O F	0	138	514	914	990512
OC315AF_010005	O V	0	256	19942	9754	990518

b Compare the results of the LF disk_vol command to the entries you made on the Load update work sheet in Procedure 6.

If	Do
you discover required load files that were not copied on the disk volume	Procedure 10a
all required load files have been copied onto the disk volume	Procedure 12

12 Copy the SPM load files from the active SLM disk volume to a backup SLM disk volume.

a List the active SPM load file SLM disk volume contents by typing

`>LF disk_vol`

and pressing the Enter key.

where

disk_vol
is the SPM disk volume name

Example

`>LF S00DPMLOADS`

b Select a different SLM disk volume to store the backup SPM load files.

c

ATTENTION
Do not modify the SPM external load file name when copying from the disk volume to the backup disk volume.

Copy one SPM load file by typing

`>COPY new_load disk_vol`

and pressing the Enter key.

where

new_load
is the new SPM load file name

disk_vol
is the backup SLM disk volume name

Example

`>COPY CEM17AA S01DPMLOADS`

d Create backup SPM load files for the remaining SPM load files.

If a backup SPM load file	Do
has not been created for all SPM load files	Procedure 12c
has been created for all SPM load files	Procedure 12e

e List the backup SPM load file SLM disk volume by typing

>LF disk_vol

and pressing the Enter key.

where

disk_vol
is the backup SPM disk volume name

Example

>LF S01DPMLOADS

f Compare the results of the LF disk_vol command to the entries you made on the Load update worksheet in Procedure 6.

If all SPM load files	Do
are in the backup volume	Procedure 13
are not in the backup volume	Procedure 12c

13 Use the list printed in Procedure 9c to identify any PRSU files you need to copy.

14 Remove the SPM load tape from the SLM tape drive.

15 Quit the disk utility by typing

>QUIT

and pressing the Enter key.

16 Store the SPM load tape in an available on-site location for future use.

17 Proceed to Procedure 23.

At the MAP level

18

ATTENTION

The XA-Core command syntax for drive_no and disk_no correspond to the following identifiers in the XA-Core command examples:

Shelf position is the front (F) or rear (R) shelf position of the input output processor (IOP).

Slot position is the two-digit number of the slot position for the IOP with the tape device.

Packlet position is the upper (U) or lower (L) packlet position of the IOP with the tape device.

In the command example F17UTAPE, F is the shelf position, 17 is the two-digit slot position, U is the packlet position, and TAPE identifies the software delivery medium.

Begin copying the necessary SPM load and PRSU files to an XA-Core disk volume by performing the following steps.

a Access the disk utility by typing

```
>DISKUT
```

and pressing the Enter key.

b Select an XA-Core disk volume for the new SPM load and PRSU files.

At the XA-core tape drive

c Place the XA-Core tape cartridge into the XA-Core tape drive for the selected XA-Core disk volume.

At the MAP level

d Mount the XA-core tape cartridge in the XA-Core tape drive by typing

```
>IT <drive_no>
```

and pressing the Enter key.

where

drive_no
is the XA-Core tape drive number

e List the contents of the tape by typing

>LF <drive_no>

and pressing the Enter key.

where

drive_no
is the XA-Core tape drive number

f Verify the tape contains each required SPM load file.

If each required load file	Do
is on the tape	Procedure 18g
is not on the tape	Contact your next level of support. the tape could be missing load files critical to the downgrade.

g Verify the tape contains the $XREF patch control file.

If the XA-Core tape cartridge label text	Do
indicates Patches: Yes	Procedure 18h
indicates Patches: No	Procedure 19

h Copy the $XREF file to the XA-Core disk volume by typing

>RE FILE <disk_vol> <drive_no> <$XREF_file>

and pressing the Enter key.

where

disk_vol
is the XA-Core disk volume

drive_no
is the XA-Core tape drive number

$XREF_file
is the $XREF file name

i Print the $XREF file to identify the PRSUS for the SPM load files by typing

>PRINT $XREF_file

and pressing the Enter key.

where

$XREF_file
is the XPMxxRTP$XREF patch control file name

j

ATTENTION
Do not modify the SPM external load file name when copying from the XA-Core tape to the disk volume.

Copy the SPM load files by typing

>RE FILE <disk_vol> <drive_no> <new_load>

and pressing the Enter key for each required SPM load file.

where

disk_vol
is the XA-Core disk volume name

drive_no
is the XA-Core tape drive number

new_load
is the new SPM load file

k List the XA-core disk volume contents to verify all SPM load files are in the volume by typing

>LF <disk_vol>

and pressing the Enter key.

where

disk_vol
is the XA-Core disk volume

If all SPM load files	Do
are in the volume	Procedure 19
are not in the volume	Procedure 18j

19 Copy the SPM load files from the active XA-Core disk volume to a backup XA-Core disk volume by performing the following steps.

a List the active SPM load load file XA-Core disk volume contents by typing

>LF <disk_vol>

and pressing the Enter key.

where

disk_vol
is the XA-Core disk volume name

b Select a different XA-Core disk volume to store the backup SPM load files.

c

ATTENTION
Do not modify the SPM external load file name when copying from the disk volume to the backup disk volume.

Copy the SPM load files by typing

>COPY <new_load> <disk_vol>

and pressing the Enter key for each SPM load file.

where

new_load
is the new SPM load file name

disk_vol
is the backup XA-Core disk volume name

d List the backup SPM load file XA-Core disk volume contents to verify all SPM load files are in the volume by typing

>LF disk_vol

and pressing the Enter key.

where

disk_vol
is the backup XA-Core disk volume name

If all SPM load files	Do
are in the backup volume	Procedure 20
are not in the backup volume	Procedure 19c

20 Identify and copy the PRSU files by performing the following steps:

a Copy the PRSU files by typing

>RE FILE <disk_vol> <drive_no> <prsu_id>

and pressing the Enter key for each PRSU file.

where

disk_vol
is the XA-Core disk volume name

drive_no
is the XA-Core tape drive number

prsu_id
is the PRSU file name

b List the XA-Core disk volume contents to verify all PRSU files are in the volume by typing

>LF <disk_vol>

and pressing the Enter key.

where

disk_vol
is the XA-Core disk volume name

If all PRSU files	Do
are in the volume	Procedure 20c
are not in the volume	Procedure 20a

c Eject the XA-Core tape cartridge by typing

>ET <drive_no>

and pressing the Enter key.

where

drive_no
is the XA-Core tape drive number

At the XA-Core tape drive

d Remove the XA-Core tape cartridge

Note: If there are no PRSUs to copy, proceed to Procedure 22

21 Copy the PRSU files from the active XA-Core disk volume to a backup XA-Core disk volume by performing the following steps.

a List the active PRSU file XA-Core disk volume contents by typing

>LF <disk_vol>

and pressing the Enter key.

where

disk_vol
is the XA-Core disk volume name

b Select a different XA-Core disk volume to store the backup PRSU files.

c Copy the PRSU files to the backup disk volume by typing

>COPY <prsu_id> <disk_vol>

and pressing the Enter key.

where

prsu_id
is the PRSU file name

disk_vol
is the backup XA-Core disk volume name

d List the backup PRSU file XA-Core disk volume contents to verify all PRSU files are in the volume by typing

>LF <disk_vol>

and pressing the Enter key.

where

disk_vol
is the backup XA-Core disk volume name

If all PRSU files	Do
are in the backup volume	Procedure 22
are not in the backup volume	Procedure 21c

22 Quit the utility by typing

>QUIT

and pressing the Enter key.

23

If you are performing	Do
a PPSL maintenance release	Procedure 27
any release type other than a PPSL maintenance release	Procedure 24

24 Identify the SPM circuit packs to be downgraded by performing the following steps. Match the load of an SPM circuit pack in table MNCKTPAK against the current load in table PMLOADS.

Note: For the current load in table PMLOADS, see the Load update work sheet that you completed in Procedure 7. If you need to update the current load in table PMLOADS, you must downgrade the SPM circuit packs.

a Access table MNCKTPAK by typing

```
>TABLE MNCKTPAK
```

and pressing the Enter key.

b List the corresponding circuit packs to be downgraded by typing

```
>LIST ALL ('LOAD' EQ the_load_to_update)
```

and pressing the Enter key.

where

the_load_to_update
is the load name of a load in table PMLOADS that you need to downgrade

Note: You must include the ' immediately before and after the key word LOAD, and the key word must be in upper case.

Examples

```
>LIST ALL ('LOAD' EQ OC316AF)
```

```
>LIST ALL ('LOAD' EQ DSP16AF)
```

```
>LIST ALL ('LOAD' EQ CEM16AF)
```

Example of MAP display for load name DSP15AF

```
      CPKKEY                                                    CPKINFO
                              PEC    RELEASE          LOAD
-------------------------------------------------------------------------
SPM 23 1 1          VSP 0 1 WORKING (ECAN 12) $ (SYSB CR RPT) (MANB MJ RPT)
                    (ISTB MN RPT) (PROTFAIL CR RPT) $
                    NTLX66AA          01      DSP16AF

SPM 23 1 2          VSP 1 1 SPARE (SYSB CR RPT) (MANB MJ RPT) (ISTB MN RPT)
                    (PROTFAIL CR RPT) $
                    NTLX66AA          01      DSP016AF

SPM 23 1 7          DSP 0 1 WORKING (COT 12) (DTMF 12) (TONESYN 12) $
                    (SYSB CR RPT) (MAN MJ RPT) (ISTB MN RPT)
                    (PROTFAIL CR RPT) $
                    NTLX65AA          01      DSP16AF

SPM 23 1 8          DSP 1 1 SPARE (SYSB CR RPT) (MANB MJ RPT) (ISTB MN PRT)
                    (PROTFAIL CR RPT) $
                    NTLX65AA          01      DSP16AF

SPM 40 1 1          VSP 0 1 WORKING (ECAN 12) $ (SYSB CR RPT) (MANB MJ RPT)
                    (ISTB MN RPT) (PROTFAIL CR RPT) $
                    NTLX66AA          01      DSP16AF

SPM 40 1 2          VSP 1 1 SPARE (SYSB CR RPT) (MANB MJ RPT) (ISTB MN RPT)
                    (PROTFAIL CR RPT) $
                    NTLX66AA          01      DSP16AF

SPM 40 1 7          DSP 0 1 WORKING (COT 80) (DTMF 64) (TONESYN 255)
                    (ABBIT 7) (MF 10) $ (SYSB CR RPT) (MANB MJ RPT)
                    (ISTB MN RPT) (PROTFAIL CR RPT) $
                    NTLX65AA          01      DSP16AF

SPM 40 1 8          DSP 1 1 SPARE (SYSB CR RPT) (MANB MJ RPT) (ISTB MN PRT)
                    (PROTFAIL CR RPT) $
                    NTLX65AA          01      DSP16AF
```

25 Use the following work sheet to record the circuit packs you must downgrade. Duplicate the work sheet as needed so you can use a separate work sheet for each SPM.

Circuit pack downgrade work sheet

Node ID (SPM no.)	Shelf ID	Slot no.	Circuit pack type	Unit no.	Circuit pack protection group ID
	0	1			
		2			
		3			
		4			
		5			
		6			
		7	CEM		NA
		8	CEM		NA
		9			
		10			
		11			
		12			
		13			
		14			
	1	1			
		2			
		3			
		4			
		5			
		6			
		7			
		8			
		9			
		10			
		11			
		12			
		13			
		14			

where

Node ID
is the SPM number

Shelf ID
is the shelf ID of the circuit pack

Slot no.
is the slot number of the circuit pack

Circuit pack type
is the type of the circuit pack

Unit no.
is the unit number of the circuit pack

Circuit pack protection group ID
is the ID of the corresponding protection group where the circuit pack belongs

The following illustration shows sample datafill for table MNCKTPAK. For the purposes of this illustration, it shows only one example for each circuit pack type.

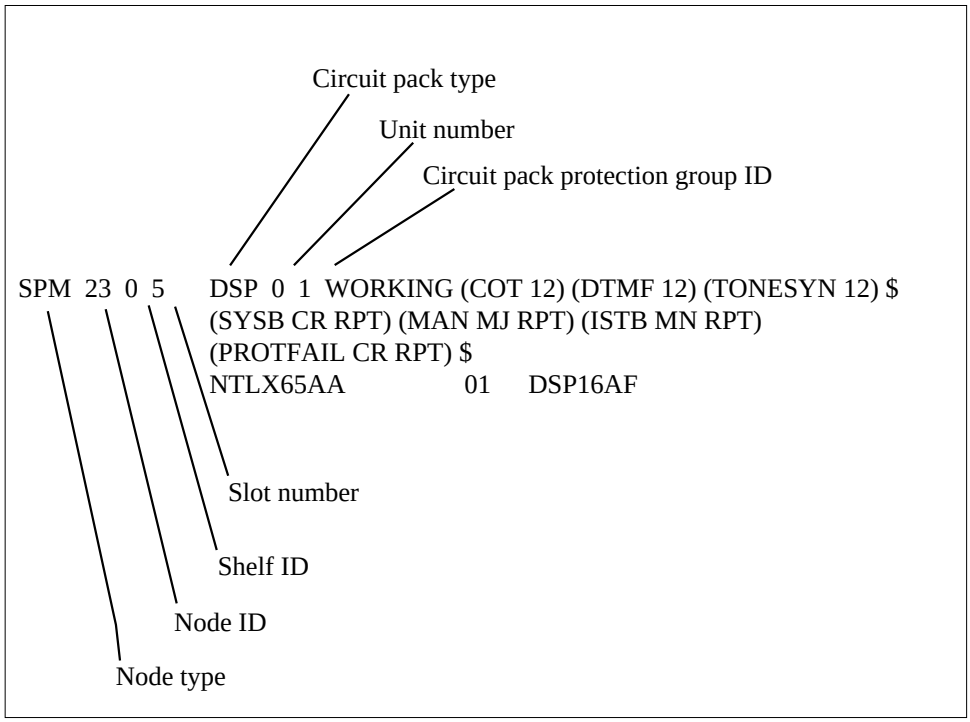
Example of datafill for table MNCKTPAK

```
CPKKEY                                                          CPKINFO
                          PEC    RELEASE          LOAD
-------------------------------------------------------------------------

SPM 23 0 5          DSP 0 1 WORKING (COT 12) (DTMF 12) (TONESYN 12) $
                    (SYSB CR RPT) (MAN MJ RPT) (ISTB MN RPT)
                    (PROTFAIL CR RPT) $
                    NTLX65AA          01      DSP16AE

SPM 23 0 7          CEM 0 (SYSB CR RPT) (MANB MJ REP) (ISTB MN RPT)
                    (SYSBNA CR RPT) (MANBNA MJ RPT) (HLDOVR MJ RPT)
                    (HLDOVR24 MJ RPT) (VCXO70 MN RPT) (VCXO90 MJ RPT)
                    (CLKOOS MJ RPT) $
                    NTLX82AA          01      CEM16AE

SPM 23 0 9          OC3 0 1 WORKING (SYSB CR RPT) (MANB MJ RPT)
                    (ISTB MN RPT) (PROTFAIL NA RPT) $
                    NTLX71AA          01      OC316AE

SPM 23 0 14         VSP 0 1 WORKING (ECAN 12) $ (SYSB CR RPT) (MANB MJ RPT)
                    (ISTB MN RPT) (PROTFAIL CR RPT) $
                    NTLX66AA          01      DSP16AE
```

The following illustration identifies the fields you need to populate the Circuit pack downgrade work sheet for a DSP. The location of these fields for other RMs—OC3, SRM, VSP, and DLC—are identical. Note that the CEM does not belong to a

protection group, and therefore does not have a circuit pack protection group ID.

Fields used to populate the Circuit pack downgrade work sheet



The circuit pack protection group ID is a subfield of field CPKTYPE. The following list identifies the subfield name for each RM type.

- OC3: OC3GRPID
- SRM: SRMGRPID
- DSP: DSPGRPID
- DLC: DLCGRPID

You must enter the protection group ID from table MNPRTGRP in table MNCKTPAK. A message displays if the protection group ID has not already been defined in table MNPRTGRP. In table MNPRTGRP, you can define the protection group in field GRPKEY, subfield GRPID. Valid values for subfield GRPID are 1 through 28.

The following work sheet provides a sample of a completed Circuit pack downgrade work sheet for SPM 23.

Sample circuit pack downgrade work sheet

Node ID (SPM no.)	Shelf ID	Slot no.	Circuit pack type	Unit no.	Circuit pack protection group ID
23	0	1	VSP	0	1
		2	VSP	1	1
		3	VSP	2	1
		4	VSP	3	1
		5	VSP	4	1
		6	VSP	5	1
		7	CEM	0	NA
		8	CEM	1	NA
		9	OC3	0	1
		10	OC3	1	1
		11			
		12			
		13			
		14			
	1	1	VSP	6	2
		2			
		3			
		4	VSP	7	2
		5	DSP	0	1
		6			
		7	DSP	1	1
		8	DSP	2	1
		9	DSP	3	1
		10	DSP	4	1
		11	DSP	5	1
		12	DSP	6	1
		13	DSP	7	1
		14			

26 Use the following work sheet to record the circuit pack protection groups to be downgraded. Duplicate the work sheet as needed so you can use a separate work sheet for each SPM. For each SPM, copy the data from the Circuit pack downgrade work sheet to the following work sheet.

Note: A circuit pack group normally contains multiple circuit packs.

Circuit pack protection groups work sheet

Node ID (SPM no.)	Circuit pack type	Circuit pack protection group ID	Unit no.							
	CEM	**NA**	**0**	**1**						

Record the status of each DSP: Working/Spare, Active/Inactive, In-service/Out of service.

where

Node ID
is the SPM number

Circuit pack type
is the type of the circuit pack

Circuit pack protection group ID
is the ID of the corresponding protection group where the circuit pack belongs

Unit no.
is the unit number of the circuit pack belonging to the circuit pack group

The following work sheet provides a sample of a completed Circuit pack protection groups work sheet for SPM 23.

Sample circuit pack protection groups work sheet

Node ID (SPM no.)	Circuit pack type	Circuit pack protection group ID	Unit no.							
23	CEM	NA	0	1						
	OC3	1	0	1						
	DSP	1	0	1	2	3	4	5	6	7
	VSP	1	0	1	2	3	4	5		
	VSP	2	6	7						

Record the status of each DSP: Working/Spare, Active/Inactive, In-service/Out of service.

DSP 0 1, Working, Active, In-service
DSP 1 1, Spare, Inactive, In-service
DSP 2 1, Working, Active, In-service
DSP 3 1, Working, Active, In-service
DSP 4 1, Working, Active, In-service
DSP 5 1, Working, Active, In-service
DSP 6 1, Working, Active, In-service
DSP 7 1, Working, Active, In-service

27

ATTENTION

Respond correctly to the decision box in this step. Your response is critical for you to prepare for the SPM downgrade successfully. Be sure that you follow the steps that apply to the type of release downgrade you are preparing.

If you are updating table PMLOADS for an SPM	Do
milestone downgrade	Procedure 28
maintenance or emergency downgrade	Procedure 30
PPSL milestone downgrade	Procedure 32
PPSL maintenance downgrade	Procedure 34

Note: Use the Load update work sheet to help you complete the table PMLOADS update.

28 Update table PMLOADS and table MNCKTPAK for an SPM milestone downgrade by performing the following steps.

a Access table PMLOADS by typing

```
>TABLE PMLOADS
```

and pressing the Enter key.

b Add a new load name by typing

```
>ADD new_load_name new_act_file actvol
backup_file backup_vol N
```

and pressing the Enter key.

where

new_load_name
is the load name of the new load

new_act_file
is the load file name of the new load file

actvol
is the disk volume where the new load file is stored

backup_file
is the load file name of the backup load file

backup_vol
is the disk volume where the backup load file is stored

Example

```
>ADD DSP0017 DSP0017_010009 S00DPMLOADS
DSP0017_010009 S00DPMLOADS N
```

Example of MAP display

```
                    LOADNAME
                        ACTFILE                 ACTVOL
                        BKPFILE                 BKPVOL          UPDACT
-------------------------------------------------------------------------

                        DSP0017
                DSP0017_000001          S00DPMLOADS
                DSP0017_000001          S00DPMLOADS                     N

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
```

c Confirm the system prompt by typing

>Y

and pressing the Enter key.

d Check the Load update work sheet you completed in Procedure 7 to determine if you updated all loads in table PMLOADS.

If you have	Do
not updated all loads in table PMLOADS	Procedure 28b
updated all loads in table PMLOADS	Procedure 28e

e Exit table PMLOADS and reenter table MNCKTPAK by typing

>QUIT

and pressing the Enter key.

Use table MNCKTPAK to update the circuit pack load inventory for an SPM.

f Determine which circuit packs you need to downgrade. Refer to the Circuit pack downgrade work sheet you completed in Procedure 25.

g Update the default load for a circuit pack that you need to downgrade on the SPM by typing

>POS SPM spm_no shelf_ID slot_no

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM where the circuit pack exists

shelf_ID
is the ID of the SPM shelf where the circuit pack exists

slot_no
is the slot on the SPM shelf where the circuit pack exists

Example

```
>POS SPM 23 0 1
```

h Determine the new load for the circuit pack. Refer to the Load update work sheet you completed in Procedure 7.

i Update the default load name for the circuit pack by typing

```
>CHA LOAD new_load_name
```

and pressing the Enter key.

where

new_load_name
is the new load name

Examples

```
>CHA LOAD DSP0017
```

```
>CHA LOAD OC317AF
```

```
>CHA LOAD CEM17AF
```

Example of MAP display for new DSP load name DSP0017

```
SPM 23 0 1 DSP 4 1 SPARE (SYSB CR RPT) (MANB MJ RPT) (ISTB MN RPT)
          (PROTFAIL CR RPT) $
          NTLX65AA        01          DSP0017

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
```

j Confirm the system prompt by typing

```
>Y
```

and pressing the Enter key.

k Check the Load update work sheet to determine if you need to downgrade other circuit packs.

If you have	Do
not downgraded all required circuit packs	Procedure 28g
downgraded all required circuit packs	Procedure 28l

l Exit table MNCKTPAK by typing

>QUIT

and pressing the Enter key.

29

ATTENTION

This step is optional. To proceed with the SPM downgrade, you are not required to manually update PRSM with the PRSU content of the new load files. If you do not use this step to manually update PRSM, the PRSM automated process STATUS AUDIT performs a DBAUDIT on the new load files. The STATUS AUDIT is scheduled in table AUTOPRSU.

If you manually update PRSM with the new PRSU content, you are able at any time to display the PRSU content of new load files by using PRSM queries such as SELECT and REPORT commands.

a Access the PRSM tool by typing

>PRSM

and pressing the Enter key.

b Update PRSM with the PRSU content of the new load file by typing

>DBAUDIT SPMLOAD new_load_file_name

and pressing the Enter key.

where

new_load_file_name
is the load name of the new load file required to update the current load

Example

>DBAUDIT SPMLOAD CEM17AF_010005

c Check the Load update work sheet you completed in Procedure 7 to determine if you updated PRSM for all loads in table PMLOADS.

If you have	Do
not updated PRSM for all new loads in table PMLOADS	Procedure 29b
updated PRSM for all new loads in table PMLOADS	Procedure 29d

d Exit the PRSM tool by typing

>QUIT

and pressing the Enter key.

Go to Procedure 35.

30

ATTENTION
This step creates a minor SPM alarm under the PM banner. This alarm generates when there is a mismatch between the datafilled active load file in table PMLOADS and the software currently running on an SPM. No action is necessary.

Update table PMLOADS for an SPM downgrade within the same stream by performing the following steps.

a Access table PMLOADS by typing

>TABLE PMLOADS

b Locate a current load you need to update by typing

>POS current_load_name

and pressing the Enter key.

where

current_load_name
is the load name of a load to be updated

Example

>POS DSP0017

c Remove the load by typing

>DEL

and pressing the Enter key.

d Confirm the deletion by typing

>Y

and pressing the Enter key.

e Add the new load by typing

>ADD current_load_name new_act_file actvol backup_file backup_vol N

and pressing the Enter key.

where

current_load_name
is the load name of a load to be updated

new_act_file
is the load file name of the new load file

actvol
is the disk volume where the new load file is stored

backup_file
is the load file name of the backup load file

backup_vol
is the disk volume where the backup load file is stored

Example

>ADD DSP0017 DSP0017_010009 S00DPMLOADS DSP0017_010009 S00DPMLOADS N

Example of MAP display

```
                    LOADNAME
                        ACTFILE              ACTVOL
                        BKPFILE              BKPVOL          UPDACT
-------------------------------------------------------------------

                        DSP0017
                DSP0017_010009          S00DPMLOADS
                DSP0017_010009          S00DPMLOADS             N

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
```

f Confirm the system prompt by typing

>Y

and pressing the Enter key.

g Check the Load update work sheet you completed in Procedure 7 to determine if you updated all loads in table PMLOADS.

If you have	Do
not updated all loads in table PMLOADS	Procedure 30b
updated all loads in table PMLOADS	Procedure 30h

h Return to the MAP level by typing

```
>QUIT ALL
```

and pressing the Enter key.

31

ATTENTION

This step is optional. To proceed with the SPM downgrade, you are not required to manually update PRSM with the PRSU content of the new load files. If you do not use this step to manually update PRSM, the PRSM automated process STATUS AUDIT performs a DBAUDIT on the new load files. The STATUS AUDIT is scheduled in table AUTOPRSU.

If you manually update PRSM with the new PRSU content, you are able at any time to display the PRSU content of new load files by using PRSM queries such as SELECT and REPORT commands.

a Access the PRSM tool by typing

```
>PRSM
```

and pressing the Enter key.

b Update PRSM with the PRSU content of the new load file by typing

```
>DBAUDIT SPMLOAD new_load_file_name
```

and pressing the Enter key.

where

new_load_file_name
is the load name of the new load file required to update the current load

Example

```
>DBAUDIT SPMLOAD CEM17AF_010005
```

c Check the Load update work sheet you completed in Procedure 7 to determine if you updated PRSM for all loads in table PMLOADS.

If you have	Do
not updated PRSM for all new loads in table PMLOADS	Procedure 31b
updated PRSM for all new loads in table PMLOADS	Procedure 31d

d Exit the PRSM tool by typing

```
>QUIT
```

and pressing the Enter key.

e Go to Procedure 35

32

ATTENTION
This step creates a minor SPM alarm under the PM banner. This alarm generates when there is a mismatch between the datafilled active load file in table PMLOADS and the software currently running on an SPM. No action is necessary.

Update tables PMLOADS and MNCKTPAK for an SPM PPSL milestone release by performing the following steps.

Note: SPM PPSLs are only available for SP16 or higher loads. If you are downgrading to an SP15 or lower load, go to Procedure 28.

a Access table PMLOADS by typing

```
>TABLE PMLOADS
```

and pressing the Enter key.

b Add the new load by typing

```
>ADD new_load_name new_act_file actvol
backup_file backup_vol N
```

and pressing the Enter key.

where

new_load_name
is the name of the load name to be added

new_act_file
is the load file name of the new load file

actvol
is the disk volume where the new load file is stored

backup_file
is the load file name of the backup load file

backup_vol
is the disk volume where the backup load file is stored

Example

```
>ADD DSP17AF DSP17AF_010005A1 S00DPMLOADS
DSP17AF010005A1 S00DPMLOADS N
```

Example of MAP display

```
                    LOADNAME
                        ACTFILE                 ACTVOL
                        BKPFILE                 BKPVOL          UPDACT
-------------------------------------------------------------------------

                        DSP17AF
                DSP17AF_010005A1        S00DPMLOADS
                DSP17AF_010005A1        S00DPMLOADS             N

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
```

c Confirm the system prompt by typing

>Y

and pressing the Enter key.

d Check the Load update work sheet you completed in Procedure 7 to determine if you updated all loads in table PMLOADS.

If you have	Do
not updated all loads in table PMLOADS	Procedure 32b
updated all loads in table PMLOADS	Procedure 32e

e Exit table PMLOADS and reenter table MNCKTPAK by typing

>QUIT

and pressing the Enter key.

Use table MNCKTPAK to update the circuit pack load inventory for an SPM.

f Determine which circuit packs you need to downgrade. Refer to the Circuit pack downgrade work sheet you completed in Procedure 25.

g Update the default load for a circuit pack that you need to downgrade on the SPM by typing

>POS SPM spm_no shelf_ID slot_no

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM where the circuit pack exists

shelf_ID
is the ID of the SPM shelf where the circuit pack exists

slot_no
is the slot on the SPM shelf where the circuit pack exists

Example

>POS SPM 23 0 1

h Determine the new load for the circuit pack. Refer to the Load update work sheet you completed in Procedure 7.

i Update the default load name for the circuit pack by typing

>CHA LOAD new_load_name

and pressing the Enter key.

where

new_load_name
is the new load name

Examples

>CHA LOAD DSP17AF

>CHA LOAD OC317AF

>CHA LOAD CEM17AF

Example of MAP display for new DSP load name DSP0014

```
SPM 23 0 1 DSP 4 1 SPARE (SYSB CR RPT) (MANB MJ RPT) (ISTB MN RPT)
          (PROTFAIL CR RPT) $
          NTLX65AA          01          DSP17AF

ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
```

j Confirm the system prompt by typing

>Y

and pressing the Enter key.

k Check the Load update work sheet to determine if you need to downgrade other circuit packs.

If you have	Do
not downgraded all required circuit packs	Procedure 32g
downgraded all required circuit packs	Procedure 32l

l Exit table MNCKTPAK by typing

>QUIT

and pressing the Enter key.

m Go to Procedure 35.

33

ATTENTION

This step is optional. To proceed with the SPM downgrade, you are not required to manually update PRSM with the PRSU content of the new load files. If you do not use this step to manually update PRSM, the PRSM automated process STATUS AUDIT performs a DBAUDIT on the new load files. The STATUS AUDIT is scheduled in table AUTOPRSU.

If you manually update PRSM with the new PRSU content, you are able at any time to display the PRSU content of new load files by using PRSM queries such as SELECT and REPORT commands.

a Access the PRSM tool by typing

>PRSM

and pressing the Enter key.

b Update PRSM with the PRSU content of the new load file by typing

>DBAUDIT SPMLOAD new_load_file_name

and pressing the Enter key.

where

new_load_file_name
is the load name of the new load file required to update the current load

Note: When entering the load name for a PPSL load, do not enter the PPSL index. PRSM will only accept load names of fourteen characters.

Example

>DBAUDIT SPMLOAD CEM17AF_010005

c Check the Load update work sheet you completed in Procedure 7 to determine if you updated PRSM for all loads in table PMLOADS.

If you have	Do
not updated PRSM for all new loads in table PMLOADS	Procedure 29b
updated PRSM for all new loads in table PMLOADS	Procedure 29d

d Exit the PRSM tool by typing

>QUIT

and pressing the Enter key.

Go to Procedure 35.

34

ATTENTION
This step creates a minor SPM alarm under the PM banner. This alarm generates when there is a mismatch between the datafilled active load file in table PMLOADS and the software currently running on an SPM. No action is necessary.

Update table PMLOADS for an SPM PPSL maintenance downgrade by performing the following steps.

a Access table PMLOADS by typing

>TABLE PMLOADS

and pressing the Enter key.

b Locate a current load you need to update by typing

>POS current_load_name

and pressing the Enter key.

where

current_load_name
is the load name of a load to be updated

Example

>POS DSP17AF

Example of MAP display

```
DSP17AF DSP17AF_010005B1 S00DPMLOADS
DSP17AF_010005B1 S00DPMLOADS N
```

c Change the load name and the backup load file name by performing the following steps:

i Begin the table change by typing

>CHA

and pressing the Enter key.

ii For each unchanged value, press the Enter key at the prompt. The only values entered in this step should be the new values.

Example

This example changes the load file name and backup load file name from DSP17AF_01000B1 to DSP17AF_01000A1.

```
>CHA
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>Y
LOADNAME: DSP17AF
>
ACTFILE: DSP17AF_010005B1
>DSP17AF_010005A1
ACTVOL: S00DPMLOADS
```

```
>

BKPFILE: DSP17AF_010005B1

>DSP17AF_010005A1

BKPVOL: S00DPMLOADS

>

UPDACT: N

>

TUPLE TO BE CHANGED:

DSP17AF DSP17AF_010005A1 SOODPMLOADS
DSP17AF_010005A1 S00DPMLOADS N

ENTER Y TO CONFIRM, N TO REJECT OR E TO
EDIT.

>Y

TUPLE CHANGED
```

d Check the Load update work sheet you completed in Procedure 7 to determine if you updated all loads in table PMLOADS.

If you have	Do
not updated all loads in table PMLOADS	Procedure 34b
updated all loads in table PMLOADS	Procedure 34e

e Return to the MAP level by typing

>QUIT ALL

and pressing the Enter key.

35 Stop the terminal response from printing by typing

>RECORD STOP ONTO printer_name

and pressing the Enter key.

where

printer_name
is the name of the printer

Example

>RECORD STOP ONTO printer1

36 Return to the CI level of the MAP display by typing

>QUIT ALL

and pressing the Enter key.

If you	Do
did not need to update table PMLOADS	Procedure 37
updated table PMLOADS for a PPSL maintenance release	Procedure 37
updated table PMLOADS any release type other than a PPSL maintenance release	Procedure 38

37 You have successfully completed this procedure. You do not need to downgrade the SPM. Do not go to the Procedure , “Perform a manual SPM downgrade,” on page -182.

38 Access table PMLOADS by typing

>TABLE PMLOADS

and pressing the Enter key.

39 Delete the old load names from table PMLOADS by typing

>DEL old_load_name old_act_file actvol backup_file backup_vol N

and pressing the Enter key.

where

old_load_name
is the load name of the old load

old_act_file
is the load file name of the old load file

actvol
is the disk volume where the new load file is stored

backup_file
is the load file name of the backup load file

backup_vol
is the disk volume where the backup load file is stored

Example

>DEL DSP16AF DSP16AF_010076 S00DPMLOADS DSP16AF_010009 S00DPMLOADS N

40 Confirm the system prompt by typing

>Y

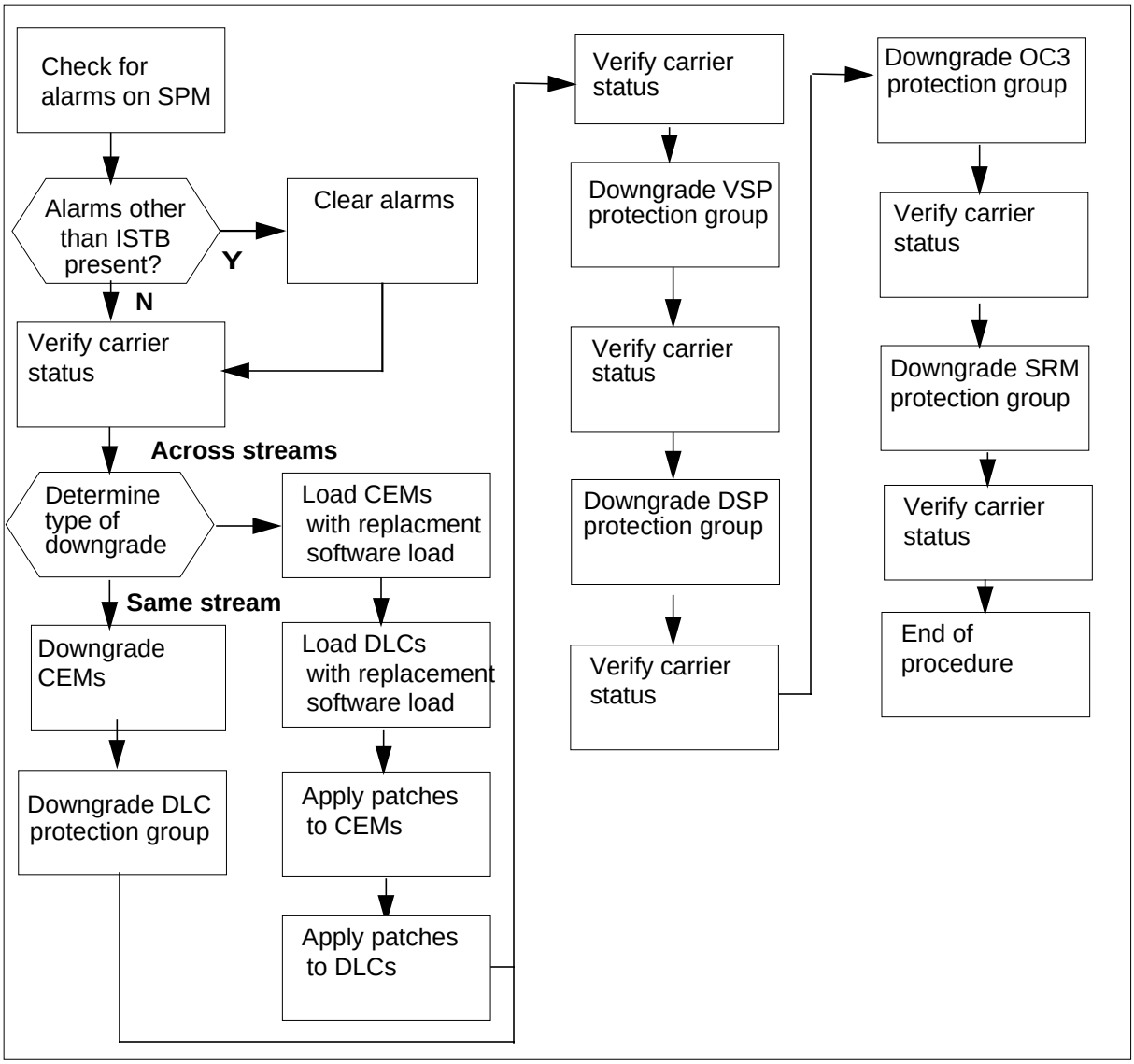
and pressing the Enter key.

41 You have successfully completed this procedure and you have correctly prepared for a manual SPM downgrade. Go to the Procedure , “Perform a manual SPM downgrade,” on page -182.

Upgrade procedures

The following figure summarizes the manual downgrade process.

Summary of procedure



Perform a manual SPM downgrade

At the CI level of the MAP display

1 Review the introductory material to this procedure. Make sure that you meet all prerequisites before beginning this procedure.

2 The SPM downgrade involves upgrading circuit pack software loads running on the SPM. The circuit packs are grouped into circuit pack protection groups. Therefore, an SPM downgrade is comprised of the following tasks:

- Check alarms on the SPM before you start the downgrade.
- Verify the status of the SPM carriers before you start the downgrade.
- Downgrade CEMs that you need to downgrade.
- Update circuit pack load inventory, if necessary.
- Downgrade all RM circuit pack protection groups that you need to downgrade.
- For each RM circuit pack protection group, downgrade all circuit packs in the groups that you need to downgrade.

a Use the NO DISPLAY mode to post the SPM by typing

```
>MAPCI NODISP;MTC;PM;POST SPM spm_no
```

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

```
>MAPCI NODISP;MTC;PM;POST SPM 23
```

b Display alarms on the RMs on the SPM by typing

```
>QUERYPM FLT
```

and pressing the Enter key.

c Display alarms on the SPM by typing

```
>LISTALM
```

and pressing the Enter key.

d Use the following work sheet to record the alarms raised on the SPM. Duplicate the work sheet as needed.

Alarms on an SPM work sheet

Node ID (SPM no.)	Alarm	Object (the alarm is raised against)	Note
23	ISTB	SPM 23	
	ISTB	CEM 0	
	ISTB	CEM 1	
	ISTB	OC3 1	
	ISTB	VSP 0	
	ISTB	DSP 0	
	ISTB	DSP 1	

where

Node ID
is the SPM number

Alarm
is the name of the alarm

Object
is the object against which the alarm is raised

Note
is any note you feel may help you

The following work sheet provides a sample of a completed Alarms on an SPM work sheet for SPM 23.

Sample alarms on an SPM work sheet

Node ID (SPM no.)	Alarm	Object (the alarm is raised against)	Note
23	ISTB	SPM 23	
	ISTB	CEM 0	
	ISTB	CEM 1	
	ISTB	OC3 1	
	ISTB	VSP 0	
	ISTB	DSP 0	
	ISTB	DSP 1	

e Use the map to display the SPM Carriers by typing

`>MAPCI;MTC;TRKS;CARRIER;POST SPM spm_no 1`

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

f Use the following worksheet to record the status of any SPM carriers not in an INSV or OFFL state.

SPM carrier status worksheet

Node ID (SPM no.)	Carrier	Carrier state	Reason

where

Carrier
is the SPM carrier not INSV or OFFL

Carrier state
is the state of the carrier, i.e. SYSB, MANB

Reason
is the cause of the carrier state

The following work sheet provides a sample of a completed SPM carrier status work sheet for SPM 23.

Sample SPM carrier status work sheet

Node ID (SPM no.)	Carrier	Carrier state	Reason
14	108	MANB	Maintenance
22	116	SYSB	RAI

3 Determine the impact of the current alarm status on the SPM downgrade.

If there are	Do
alarms	Procedure 4
no alarms	Procedure 6

4 Determine the alarm types.

If	Do
there is an alarm other than ISTB alarm	Procedure 5
all alarms are ISTB alarms	Procedure 6

5 Perform the appropriate alarm clearing procedure. After you complete the alarm clearing procedure, return to this point.

6 Downgrade the CEM units before any other units.

If	Do
you are downgrading the CEM units within the same stream (i.e. 12.10 -> 12.9 or 14.4 ->14.3)	the Procedure , “Downgrade the CEMs within the same stream,” on page -191
you are downgrading the CEM units across streams (i.e. 16.0 -> 14.81)	the Procedure , “Downgrade the CEMs across streams,” on page -197

7 Select the next RM circuit pack protection group to downgrade.

Note: The order for downgrading circuit packs is as follows: DLC -> VSP -> DSP -> OC3 -> SRM.

If you need to downgrade	Do
a DLC group	the Procedure , “Downgrade a DLC protection group,” on page -209
a VSP or DSP group	the Procedure , “Downgrade a DSP or VSP protection group,” on page -213
a OC3 group	the Procedure , “Downgrade an OC3 protection group,” on page -223
a SRM group	the Procedure , “Downgrade an SRM protection group,” on page -227
no RM protection groups	Procedure 8

8 You have successfully completed the procedure for downgrading an SPM.

If there are	Do
additional SPMs to downgrade during this shift	repeat this procedure
other PMs or hardware types to update during this shift	go to the appropriate procedure in the *Peripheral Module Software Release Document*
no more PMs or hardware types to update during this shift	go to “Finishing a PM update shift" in the *Peripheral Module Software Release Document*

Downgrade the CEMs within the same stream

At the CI level of the MAP display

1 Determine the CEM units to downgrade. Refer to the Circuit pack protection groups work sheet you completed in the Procedure, “Prepare a manual SPM downgrade,” on page 137.

If there are	Do
CEM units that you need to downgrade	Procedure 2
no CEM units that you need to downgrade	Step 7 of the Procedure, “Perform a manual SPM downgrade”

2 Post the SPM by typing

`>MAPCI;MTC;PM;POST SPM spm_no`

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

`>MAPCI;MTC;PM;POST SPM 23`

Example of MAP display

```
SPM 23  INSV     Class: DMSCP
Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
DSP 2  1 A Insv  CEM 1  8 I Insv  DLC 1  1 A Insv  --- -  8 - ----
DSP 4  2 A Insv  OC3 0  9 A Insv  --- -  2 - ----  --- -  9 - ----
DSP 1  3 I Insv  OC3 1 10 I Insv  --- -  3 - ----  --- - 10 - ----
DSP 3  4 A Insv  VSP 2 11 A Insv  --- -  4 - ----  --- - 11 - ----
--- -  5 - ----  VSP 4 12 A Insv  --- -  5 - ----  --- - 12 - ----
--- -  6 - ----  VSP 1 13 I Insv  --- -  6 - ----  --- - 13 - ----
CEM 0  7 A Insv  VSP 0 14 A Insv  DLC 2  7 I Insv  --- - 14 - ----
```

3 Record the unit number of an inactive CEM.

Note: The inactive CEM will be referred to as the seed CEM. The unit number of this CEM is referred to as seed_cem_unit for the remainder of this procedure. The other CEM will be referred to as the target CEM.

4 Select the seed CEM by typing

`>SELECT CEM seed_cem_unit`

and pressing the Enter key.

where

seed_cem_unit
is the unit number of the seed CEM

Example

`>SELECT CEM 1`

5 In-service load the seed CEM by typing

`>LOADMOD <filename> INSVLD`

and pressing the Enter key.

where

filename
is the name of the replacement load file

Note: During execution of the LOADMOD INSVLD command, the RM automatically goes to a SysB state and then returns to service. You will observe the Insv-SysB-Insv state change on the MAP terminal. If the RM goes SysB before the command completes, you do not need to take any action.

6

ATTENTION

Do not apply a patch to a ManB RM. When you RTS the RM, it boots from flash. The patch will not be applied for one hour. To avoid the delay, apply all patches Insv. Note that the CEM does not boot from flash when RTSed. The CEM boots only by using ResetMod.

Access the PRSM tool by typing

>PRSM

and pressing the Enter key.

7 Audit the status of the RM by typing

>DBAUDIT SPM spm_no rm_type rm_no

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

rm_no
is the RM number

Example

>DBAUDIT SPM 23 CEM 1

8 Determine if RM PRSUs have been provided for the RM load file.

If RM PRSUs	Do
have been provided for the RM load file	Procedure 9
have not been provided for the RM load file	Procedure 10

9 Apply the PRSUs by typing

>APPLY 'prsu_id | prsu_id | prsu_id IN SPM spm_no rm rm_no

and pressing the Enter key.

where

prsu_id
is the PRSU name

spm_no
is the ID (number) of the SPM

rm_no
is the rm number

Example

```
>APPLY 'ABC05513 | DEF10513 | GHI45513 IN SPM 23
CEM 1
```

10 Exit the PRSM tool by typing

```
>QUIT
```

and pressing the Enter key.

11 Access the protection level of the MAP by typing

```
>PROT
```

and pressing the Enter key.

12 Switch activity from the target CEM to the seed CEM by typing

```
>MANUAL
```

and pressing the Enter key.

Example of MAP display

```
A sparing action may impact services on this node.

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

13 Confirm the system prompt by typing

```
>Y
```

and pressing the Enter key.

14 Select the target CEM by typing

```
>SELECT CEM target_cem_unit
```

and pressing the Enter key.

where

target_cem_unit
is the unit number of the target CEM

Example

```
>SELECT CEM 0
```

15 In-service load the target CEM by typing

>LOADMOD <filename> INSVLD

and pressing the Enter key.

where

filename
is the name of the replacement load file

Note: During execution of the LOADMOD INSVLD command, the RM automatically goes to a SysB state and then returns to service. You will observe the Insv-SysB-Insv state change on the MAP terminal. If the RM goes SysB before the command completes, you do not need to take any action.

16 Access the PRSM tool by typing

>PRSM

and pressing the Enter key.

17 Perform an ISTBAudit to apply the patches from the seed CEM to the target CEM by typing

>ISTBAUDIT SPM spm_no rm

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

rm
is the resource module type

Example

>ISTBAUDIT SPM 23 CEM

Example of MAP display

```
Attempting to process 2 destinations.
SPM 23 CEM 0, SPM 23 CEM 1

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

18 Confirm the system prompt by typing

>Y

and pressing the Enter key.

Example of MAP display

```
Database audit submitted for 2 DESTs
Auditing destination SPM 0 CEM 0 . . . . .
Auditing destination SPM 0 CEM 1 . . . . .
Database audit completed for 2 DESTs
Database discrepancy found in 2 DESTs
```

19 Exit the PRSM tool by typing

>QUIT

and pressing the Enter key.

20 Check for alarms on the SPM by performing the substeps listed in Step 2 of the Procedure, “Perform a manual SPM downgrade”.

21 You have succesfully downgraded both CEMs for the SPM.

Go to Step 7 of the Procedure, “Perform a manual SPM downgrade”.

Downgrade the CEMs across streams

CAUTION
Loss of Service
Downgrading the SPM across streams will cause the SPM to be out of service for a period of time.

At the CI level of the MAP display

1 Determine the CEM units to downgrade. Refer to the Circuit pack protection groups work sheet you completed in Procedure, “Prepare a manual SPM downgrade”.

If there are	Do
CEM units that you need to downgrade	Procedure 2
no CEM units that you need to downgrade	Step 7 of the Procedure, “Perform a manual SPM downgrade”

2 Post the SPM by typing

```
>MAPCI;MTC;PM;POST SPM spm_no
```

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

```
>MAPCI;MTC;PM;POST SPM 23
```

Example of MAP display

```
SPM 23  INSV     Class: DMSCP
Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
DSP 2  1 A Insv  CEM 1  8 I Insv  DLC 1  1 A Insv  --- -  8 - ----
DSP 4  2 A Insv  OC3 0  9 A Insv  --- -  2 - ----  --- -  9 - ----
DSP 1  3 I Insv  OC3 1 10 I Insv  --- -  3 - ----  --- - 10 - ----
DSP 3  4 A Insv  VSP 2 11 A Insv  --- -  4 - ----  --- - 11 - ----
--- -  5 - ----  VSP 4 12 A Insv  --- -  5 - ----  --- - 12 - ----
--- -  6 - ----  VSP 1 13 I Insv  --- -  6 - ----  --- - 13 - ----
CEM 0  7 A Insv  VSP 0 14 A Insv  DLC 2  7 I Insv  --- - 14 - ----
```

3 Record the unit numbers of the active and inactive CEMs.

Note: The inactive CEM will be referred to as the seed CEM. The unit number of this CEM is referred to as seed_cem_unit for the remainder of this procedure. The other CEM will be referred to as the target CEM.

4 Select the seed CEM by typing

>SELECT CEM seed_cem_unit

and pressing the Enter key.

where

seed_cem_unit
is the unit number of the seed CEM

Example

>SELECT CEM 1

5 Busy the seed CEM by typing

>BSY

and pressing the Enter key.

6 Load the seed CEM by typing

>LOADMOD <filename> NOWAIT

where

filename
is the name of the loadfile you are downgrading to.

Note: Once the seed CEM is loaded with the previous load, continue with the next step. The use of the NOWAIT option ensures that the command prompt is immediately returned to the user.

7 Check for alarms on the SPM by performing the substeps listed in Step 2 of the Procedure, "Perform a manual SPM downgrade".

8 Select the target CEM by typing

>SELECT CEM target_cem_unit

and pressing the Enter key

where

target_cem_unit
is the unit number of the target CEM

Example

>SELECT CEM 0

9

CAUTION
Possible service interruption
Performing this step will drop all RMs to a CBSY state and all SPM traffic will be lost until Procedure 11 is performed.

Busy the target CEM by typing

>BSY FORCE

and pressing the Enter key.

10 Select the seed CEM by typing

>SELECT CEM seed_cem_unit

and pressing the Enter key.

where

seed_cem_unit
is the unit number of the seed CEM

Example

>SELECT CEM 1

11 Return the seed CEM to service by typing

>RTS

and pressing the Enter key.

Note: This will result in the CEM coming in service and taking activity. RMs and circuits will begin to recover.

12 Access the PRSM tool by typing

>PRSM

and pressing the Enter key.

13 Perform an ISTBAudit to determine if any patches should be applied to the seed CEM by typing

>ISTBAUDIT SPM spm_no rm

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

rm
is the resource module type

Example

>ISTBAUDIT SPM 23 CEM

Example of MAP display

```
Attempting to process 1 destination.
SPM 23 CEM 1

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

14 Confirm the system prompt by typing

>Y

and pressing the Enter key.

Example of MAP display

```
Database audit submitted for 1 DEST
Auditing destination SPM 0 CEM 1 . . . . .
Database audit completed for 1 DEST
Database discrepancy found in 1 DEST
```

15 If applicable, apply the PRSUs to the seed CEM by typing

>APPLY 'prsu_id | prsu_id | prsu_id IN SPM spm_no rm rm_no

and pressing the Enter key.

where

prsu_id
is the PRSU name

spm_no
is the ID (number) of the SPM

rm_no
is the rm number

Example

```
>APPLY 'ABC05513 | DEF10513 | GHI45513 IN SPM 23
CEM 1
```

16 Exit PRSM by typing

```
>QUIT
```

and pressing the Enter key.

17 Select the target CEM by typing

```
>SELECT CEM target_cem_unit
```

and pressing the Enter key.

where

target_cem_unit
is the unit number of the target CEM

Example

```
>SELECT CEM 0
```

18 Load the target CEM with the previous load by typing

```
>LOADMOD <filename> NOWAIT
```

and pressing the Enter key.

where

filename
is the name of the loadfile you are downgrading to.

19 Once loading is complete, return the target CEM to service by typing

```
>RTS
```

and pressing the Enter key.

20 Access the PRSM tool by typing

```
>PRSM
```

and pressing the Enter key.

21 Perform an ISTBAudit to apply the patches from the seed CEM to the target CEM by typing

>ISTBAUDIT SPM spm_no rm

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

rm
is the resource module type

Example

>ISTBAUDIT SPM 23 CEM

Example of MAP display

```
Attempting to process 2 destinations.
SPM 23 CEM 0, SPM 23 CEM 1

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

22 Confirm the system prompt by typing

>Y

and pressing the Enter key.

Example of MAP display

```
Database audit submitted for 2 DESTs
Auditing destination SPM 0 CEM 0 . . . . .
Auditing destination SPM 0 CEM 1 . . . . .
Database audit completed for 2 DESTs
Database discrepancy found in 2 DESTs
```

23 Exit the PRSM tool by typing

>QUIT

and pressing the Enter key.

24

If there are	Do
DLC RMs to downgrade	Procedure 25
no DLC RMs to downgrade	Procedure 12

25 Determine the unit numbers of the DLC RMs in the circuit pack protection group. Refer to the Circuit pack protection groups work sheet you completed in the Procedure, "Prepare a manual SPM downgrade," on page 137.

26 Post the SPM by typing

>MAPCI;MTC;PM;POST SPM spm_no

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

>MAPCI;MTC;PM;POST SPM 23

Example of MAP display

```
SPM 23  INSV     Class: DMSCP
Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
--- -  1 - ----  CEM 1  8 I Insv  DLC 1  1 A Insv  --- -  8 - ----
--- -  2 - ----  OC3 0  9 A Insv  --- -  2 - ----  --- -  9 - ----
DSP 1  3 I Insv  OC3 1 10 I Insv  --- -  3 - ----  --- - 10 - ----
DSP 2  4 A Insv  VSP 2 11 A Insv  --- -  4 - ----  --- - 11 - ----
--- -  5 - ----  VSP 4 12 A Insv  --- -  5 - ----  --- - 12 - ----
--- -  6 - ----  VSP 1 13 I Insv  --- -  6 - ----  --- - 13 - ----
CEM 0  7 A Insv  VSP 0 14 A Insv  DLC 2  7 I Insv  --- - 14 - ----
```

27 Record the unit number of the inactive DLC RM in the circuit pack protection group.

Note: The inactive DLC RM you select is called the seed DLC RM. The unit number of this DLC RM is referred to as seed_dlc_unit for the remainder of this procedure.

28 Select the seed DLC RM by typing

>SELECT DLC seed_dlc_unit

and pressing the Enter key.

where

seed_dlc_unit
is the unit number of the seed DLC RM

Example

>SELECT DLC 1

29 Busy the seed DLC by typing

>BSY

and pressing the Enter key.

30 Load the seed DLC by typing

>LOADMOD <filename> NOWAIT

where

filename
is the name of the loadfile you are downgrading to.

31 Once loading is complete, return the seed DLC to service by typing

>RTS

and pressing the Enter key.

32 Access the PRSM tool by typing

>PRSM

and pressing the Enter key.

33 Perform an ISTBAudit to determine if any patches should be applied to the seed DLC by typing

>ISTBAUDIT SPM spm_no rm

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

rm
is the resource module type

Example

>ISTBAUDIT SPM 23 DLC

Example of MAP display

```
Attempting to process 2 destinations.
SPM 23 DLC 1

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

34 Confirm the system prompt by typing

>Y

and pressing the Enter key.

Example of MAP display

```
Database audit submitted for 1 DEST
Auditing destination SPM 0 DLC 1 . . . . .
Database audit completed for 1 DEST
Database discrepancy found in 1 DEST
```

35 Apply the PRSUs to the seed DLC by typing

>APPLY ‘prsu_id | prsu_id | prsu_id IN SPM spm_no rm rm_no

and pressing the Enter key.

where

prsu_id
is the PRSU name

spm_no
is the ID (number) of the SPM

rm_no
is the rm number

Example

>APPLY ‘ABC05513 | DEF10513 | GHI45513 IN SPM 23 DLC 1

36 Exit the PRSM tool by typing

>QUIT

and pressing the Enter key.

37 Access the protection level of the MAP by typing

>PROT

and pressing the Enter key.

38 Switch activity from the target DLC RM to the seed DLC RM by typing

>MANUAL target_dlc_unit seed_dlc_unit

and pressing the Enter key.

where

target_dlc_unit
is the unit number of the target DLC RM that has not been downgraded

seed_dlc_unit
is the unit number of the seed DLC RM

Example

>MANUAL 1 0

Example of MAP display

```
A sparing action may impact services on this node.

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

39 Confirm the system prompt by typing

>Y

and pressing the Enter key.

40 Exit the PROT level by typing

>QUIT

and pressing the Enter key.

41 Select the target DLC by typing

>SELECT DLC target_dlc_unit

and pressing the Enter key.

where

target_dlc_unit
is the unit number of the target DLC RM

42 Busy the target DLC by typing

>BSY

and pressing the Enter key.

43 Load the inactive DLC from its mate by typing

>LOADMOD <filename> NOWAIT

and pressing the Enter key.

where

filename
is the name of the loadfile you are downgrading to.

44 Once loading is complete, return the target DLC to service by typing

>RTS

and pressing the Enter key.

45 Access to PRSM tool by typing

```
>PRSM
```

and pressing the Enter key.

46 Perform an ISTBAudit to apply the patches from the seed DLC to the target DLC by typing

```
>ISTBAUDIT SPM spm_no rm
```

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

rm
is the resource module type

Example

```
>ISTBAUDIT SPM 23 DLC
```

Example of MAP display

```
Attempting to process 2 destinations.
SPM 23 DLC 0, SPM 23 DLC 1

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

47 Exit the PRSM tool by typing

```
>QUIT
```

and pressing the Enter key.

48 Check for alarms on the SPM by performing the substeps listed in Step 2 of the Procedure, "Perform a manual SPM downgrade".

49 You have succesfully downgraded both CEMs and DLC RMs for the SPM.

Go to Step 7 of the Procedure, "Perform a manual SPM downgrade".

Downgrade a DLC protection group

At the CI level of the MAP display

1 Determine the unit numbers of the DLC RMs in the circuit pack protection group. Refer to the Circuit pack protection groups work sheet you completed in the Procedure, “Prepare a manual SPM downgrade,” on page 137.

2 Post the SPM by typing

`>MAPCI;MTC;PM;POST SPM spm_no`

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

`>MAPCI;MTC;PM;POST SPM 23`

Example of MAP display

```
SPM 23  INSV     Class: DMSCP
Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
--- -  1 - ----  CEM 1  8 I Insv  DLC 1  1 A Insv  --- -  8 - ----
--- -  2 - ----  OC3 0  9 A Insv  --- -  2 - ----  --- -  9 - ----
DSP 1  3 I Insv  OC3 1 10 I Insv  --- -  3 - ----  --- - 10 - ----
DSP 2  4 A Insv  VSP 2 11 A Insv  --- -  4 - ----  --- - 11 - ----
--- -  5 - ----  VSP 4 12 A Insv  --- -  5 - ----  --- - 12 - ----
--- -  6 - ----  VSP 1 13 I Insv  --- -  6 - ----  --- - 13 - ----
CEM 0  7 A Insv  VSP 0 14 A Insv  DLC 2  7 I Insv  --- - 14 - ----
```

3 Record the unit number of the inactive DLC RM in the circuit pack protection group.

Note: The inactive DLC RM you select is called the seed DLC RM. The unit number of this DLC RM is referred to as seed_dlc_unit for the remainder of this procedure.

4 Select the seed DLC RM by typing

>SELECT DLC seed_dlc_unit

and pressing the Enter key.

where

seed_dlc_unit
is the unit number of the seed DLC RM

Example

>SELECT DLC 1

5 Follow the Procedure, "In-service loading procedure," on page 233 to load the seed DLC RM.

6 Access the protection level of the MAP by typing

>PROT

and pressing the Enter key.

7 Switch activity from the target DLC RM to the seed DLC RM by typing

>MANUAL target_dlc_unit seed_dlc_unit

and pressing the Enter key.

where

target_dlc_unit
is the unit number of the target DLC RM that has not been downgraded

seed_dlc_unit
is the unit number of the seed DLC RM

Example

>MANUAL 1 0

Example of MAP display

```
A sparing action may impact services on this node.

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

8 Confirm the system prompt by typing

>Y

and pressing the Enter key.

9 Follow the Procedure, "RM-to-RM loading procedure," on page 237 to load the target DLC RM.

10 Access the protection level of the MAP display by typing

>PROT

and pressing the Enter key.

11 Switch activity from the seed DLC RM to the target DLC RM by typing

>MANUAL seed_dlc_unit target_dlc_unit

and pressing the Enter key.

where

seed_dlc_unit
is the unit number of the seed DLC RM

target_dlc_unit
is the unit number of the target DLC RM

Example

>MANUAL 0 1

Example of MAP display

```
A sparing action may impact services on this node.

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

12 Confirm the system prompt by typing

>Y

and pressing the Enter key.

13 Exit the SPM level MAP display by typing

>QUIT ALL

and pressing the Enter key.

14 Access the PRSM tool by typing

>PRSM

and pressing the Enter key.

15 Audit the load file status of the DLC RMs by typing

>DBAUDIT SPM spm_no DLC

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

>DBAUDIT SPM 23 DLC

16 Confirm the system prompt by typing

>Y

and pressing the Enter key.

When you first perform a DBAUDIT on the DLCs, the MAP display reports a database discrepancy. This report of a “Database discrepancy found in x DESTs" is normal. Note that x equals the number of DLCs datafilled. At this point in the procedure, the DBAUDIT is successful. The system also generates an SPM300 and a PRSM400 log as part of DBAUDIT. The generation of these logs does not indicate a problem. If you want to verify the success of the DBAUDIT, you may repeat the DBAUDIT. If you repeat the DBAUDIT, the MAP display will report “Database discrepancy found in 0 DESTs."

17 Exit the PRSM tool by typing

>QUIT

and pressing the Enter key.

18 Check for alarms on the SPM by performing the substeps listed in Step 2 of the Procedure, “Perform a manual SPM downgrade”.

19 You have succesfully downgraded a DLC protection group for the SPM.

Go to Step 7 of the Procedure, “Perform a manual SPM downgrade”.

Downgrade a DSP or VSP protection group

At the CI level of the MAP display

1 Determine the unit numbers of the VSP RMs in the circuit pack protection group. Refer to the Circuit pack protection groups work sheet you completed in the Procedure, "Prepare a manual SPM downgrade," on page 137.

Note 1: When you use this procedure to downgrade DSP RMs, substitute the acronym DSP for VSP.

Note 2: If you are downgrading an LX66 VSP, use a DSP load. If you are downgrading an LX85 or LX86 VSP, use a COH load.

2 Post the SPM by typing

```
>MAPCI;MTC;PM;POST SPM spm_no
```

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

```
>MAPCI;MTC;PM;POST SPM 23
```

Example of MAP display

```
SPM 23  INSV     Class: DMSCP
Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
DSP 2  1 A Insv  CEM 1  8 I Insv  DLC 1  1 A Insv  --- -  8 - ----
DSP 4  2 A Insv  OC3 0  9 A Insv  --- -  2 - ----  --- -  9 - ----
DSP 1  3 I Insv  OC3 1 10 I Insv  --- -  3 - ----  --- - 10 - ----
DSP 3  4 A Insv  VSP 2 11 A Insv  --- -  4 - ----  --- - 11 - ----
--- -  5 - ----  VSP 4 12 A Insv  --- -  5 - ----  --- - 12 - ----
--- -  6 - ----  VSP 1 13 I Insv  --- -  6 - ----  --- - 13 - ----
CEM 0  7 A Insv  VSP 0 14 A Insv  DLC 2  7 I Insv  --- - 14 - ----
```

3 Select all the VSP RMs by typing

>SELECT VSP ALL

and pressing the Enter key.

Example of MAP display

```
 CM    MS    IOD    Net    PM   CCS   LNS   Trks    Ext    Appl
  .     .     .      .      .    .     .     .       .      .

VSP             SysB     ManB     OffL     CBsy     ISTb      InSv
 0 Quit    PM      1        0        2        0       28        32
 2     _   SPM     0        0        1        0        1         0
 3 ListSet   VSP   0        0        0        0        0         4
 4 ListRes
 5         SPM 23  VSP 1  InAct  InSv
 6 Tst
 7 Bsy     Loc: Row F FrPos 7 ShPos 58 ShId 1 Slot 3 Prot Grp: 1
 8 RTS     Default Load: DSP15AF                     Prot Role: Spare
 9 OffL
10 LoadMod
11
12 Next
13 Select_
14 QueryMod
15 ListAlm
16 Prot
17 Sperform
18
```

4 Display a list of resource information for a VSP RM by typing

>LISTRES

and pressing the Enter key.

Record the resource information for the VSP RM using the hard copy from the printer.

Example of MAP display

```
 CM    MS    IOD    Net    PM   CCS   LNS   Trks    Ext    Appl
  .     .     .      .      .    .     .     .       .      .

VSP             SysB     ManB     OffL     CBsy     ISTb      InSv
 0 Quit    PM      1        0        2        0       28        32
 2     _   SPM     0        0        1        0        1         0
 3 ListSet   VSP   0        0        0        0        0         4
 4 ListRes
 5         SPM 23  VSP 1  InAct  InSv
 6 Tst
 7 Bsy     Loc: Row F FrPos 7 ShPos 58 ShId 1 Slot 3 Prot Grp: 1
 8 RTS     Default Load: DSP15AF                    Prot Role: Spare
 9 OffL
10 LoadMod  ListRes
11          Protecting RM SHID: 1 Slot: 3 Circuit Pack: VSP 1 RMID: 22
12 Next     ECAN      :  Datafilled: 260  Actual:  260
13 Select_
14 QueryMod
15 ListAlm
16 Prot
17 Sperform
18
```

5 Post the next VSP RM by typing

>NEXT

and pressing the Enter key.

6 Display a list of resource information for a VSP RM by typing

>LISTRES

and pressing the Enter key.

Record the resource information for the VSP RM using the hard copy from the printer.

7 Determine if the resource information for all VSP RMs on the SPM have been recorded.

If you	Do
have not recorded the resource information for all the VSP RMs on the SPM	Procedure 5
have recorded the resource information for all the VSP RMs on the SPM	Procedure 8

8 Verify that the datafilled resources match the actual resources. By comparing the datafilled resources to the actual resources,

you can determine what sparing, if any, must be performed to correct resource mismatches.

If datafilled resources	Do
do not match the actual resources	Procedure 30
match the actual resources	Procedure 9

9 Determine the state of the spare VSP. Refer to the Circuit pack protection groups work sheet you completed in the Procedure, “Prepare a manual SPM downgrade,” on page 137.

If the spare VSP	Do
is in-service and active	Procedure 10
is in-service and inactive	Procedure 12

10 Switch activity from the active spare VSP to the inactive working VSP in the circuit pack protection group by typing

`>MANUAL active_spare_VSP_unit inactive_working_vsp_unit`

and pressing the Enter key.

where

active_spare_vsp_unit
is the unit number of the active spare VSP RM

inactive_working_vsp_unit
is the unit number of the inactive working VSP RM

Example

`>MANUAL 2 1`

Example of MAP display

```
A sparing action may impact services on this node.

Do you wish to continue?
Please confirm (“YES”, ”Y”, “NO”, or “N”):
```

11 Confirm the system prompt by typing

`>Y`

and pressing the Enter key.

12 Select the spare VSP RM by typing

>SELECT VSP spare_vsp_unit

and pressing the Enter key.

where

spare_vsp_unit
is the unit number of the spare VSP RM

Example

>SELECT VSP 1

Note: The spare VSP RM will be referred to as the seed VSP RM. The unit number of VSP RM is referred to as seed_vsp_unit for the remainder of this procedure. Active VSP RMs which have not been downgraded will be referred to as target VSP RMs.

13 Follow the Procedure, "In-service loading procedure," on page 233 to load the seed VSP RM.

14 Access the protection level of the MAP by typing

>PROT

and pressing the Enter key.

15 Determine if you need to downgrade other VSP RMs in the circuit pack protection group.

If	Do
there are active VSP RMs in the circuit pack protection group that have not been downgraded	Procedure 16
all VSP RMs in the circuit pack (either active or inactive) have been downgraded	Procedure 23

16 Switch activity from an active VSP RM that you have not upgraded to the seed VSP RM by typing

>MANUAL active_vsp_unit seed_vsp_unit

and pressing the Enter key.

where

active_vsp_unit
is the unit number of an active VSP RM that has not been downgraded

seed_vsp_unit
is the unit number of the seed VSP RM

Example

>MANUAL 2 1

Example of MAP display

```
A sparing action may impact services on this node.

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

17 Confirm the system prompt by typing

>Y

and pressing the Enter key.

18 Select the target VSP RM by typing

>SELECT VSP target_vsp_unit

and pressing the Enter key.

where

target_vsp_unit
is the unit number of the target VSP RM that has not been upgraded

Example

>SELECT VSP 2

19 Load the target VSP RM from the seed VSP RM by typing

>LOADMOD MATE seed_vsp_unit

and pressing the Enter key.

where

seed_vsp_unit
is the unit number of the seed VSP RM

Example

>LOADMOD MATE 1

Note: During execution of the LOADMOD INSVLD command, the RM automatically goes to a SysB state and then returns to service. You will observe the Insv-SysB-Insv state change on the MAP terminal. If the RM goes SysB before the command completes, you do not need to take any action.

20 Access the protection level of the MAP by typing

>PROT

and pressing the Enter key.

21 Switch activity from the seed VSP RM to the target VSP RM by typing

>MANUAL seed_vsp_unit target_vsp_unit

and pressing the Enter key.

where

seed_vsp_unit
is the unit number of the seed VSP RM

target_vsp_unit
is the unit number of the target VSP RM

Example

>MANUAL 1 2

Example of MAP display

```
A sparing action may impact services on this node.

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

22 Confirm the system prompt by typing

>Y

and pressing the Enter key.

Return to Procedure 15.

23 Post the SPM by typing

>MAPCI;MTC;PM;POST SPM spm_no

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

>MAPCI;MTC;PM;POST SPM 23

Note: At this point, the seed VSP RM should be in-service and inactive.

24 Select all the VSP RMs by typing

>SELECT VSP ALL

and pressing the Enter key.

25 Display a list of resource information for a VSP RM by typing

>LISTRES

and pressing the Enter key.

Record the resource information for the VSP RM.

26 Post the next VSP RM by typing

>NEXT

and pressing the Enter key.

27 Display a list of resource information for a VSP RM by typing

>LISTRES

and pressing the Enter key.

Record the resource information for the VSP RM.

28 Determine if the resource information for all VSP RMs on the SPM have been recorded.

If you	Do
have not recorded the resource information for all the VSP RMs on the SPM	Procedure 26
you have recorded the resource information for all the VSP RMs on the SPM	Procedure 29

29 Verify that the datafilled resources match the actual resources. By comparing the datafilled resources to the actual resources, you can determine what sparing, if any, must be performed to correct resource mismatches.

If datafilled resources	Do
do not match the actual resources	Procedure 30
match the actual resources	Procedure 33

Note: The datafilled resource on the inactive spare VSP should be 0. If it is not 0, please contact your Nortel Networks TAS representative.

30 Access the protection level of the MAP by typing

>PROT

and pressing the Enter key.

31 Perform VSP sparing to correct resource mismatches by typing

>MANUAL resource_information_match_vsp_unit datafilled_resources_match_vsp_unit

and pressing the Enter key.

where

resource_information_match_vsp_unit
is the VSP RM whose actual resources match the datafilled resources of a second VSP RM

datafilled_resources_match_vsp_unit
is the VSP unit whose datafilled resources match the actual resources of the first VSP RM

Example

>MANUAL 1 0

Example of MAP display

```
A sparing action may impact services on this node.

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

32 Confirm the system prompt by typing

>Y

and pressing the Enter key.

Repeat Steps 31 and 32 for each VSP RM so the datafilled resources match the actual resources.

If you cannot correct the mismatches by this method, please contact your Nortel Networks TAS representative.

33 Exit the SPM level MAP display by typing

>QUIT ALL

and pressing the Enter key.

34 Access the PRSM tool by typing

>PRSM

and pressing the Enter key.

35 Perform an ISTBAudit to apply the patches from the seed VSP to the target VSPs by typing

>ISTBAUDIT SPM spm_no VSP

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

>ISTBAUDIT SPM 23 VSP

Example of MAP display

```
Attempting to process 2 destinations.
SPM 23 VSP 0, SPM 23 VSP 1

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

36 Confirm the system prompt by typing

>Y

and pressing the Enter key.

Example of MAP display

```
Database audit submitted for 2 DESTs
Auditing destination SPM 0 VSP 0 . . . . .
Auditing destination SPM 0 VSP 1 . . . . .
Database audit completed for 2 DESTs
Database discrepancy found in 2 DESTs
```

37 Exit the PRSM tool by typing

>QUIT

and pressing the Enter key.

38 Check for alarms on the SPM by performing the substeps listed in Step 2 of the Procedure, "Perform a manual SPM downgrade".

39 You have succesfully downgraded a VSP protection group for the SPM.

Go to Step 7 of the Procedure, "Perform a manual SPM downgrade".

Downgrade an OC3 protection group

At the CI level of the MAP display

1 Determine the unit numbers of the OC3 RMs in the circuit pack protection group. Refer to the Circuit pack protection groups work sheet you completed in the Procedure, "Prepare a manual SPM downgrade," on page 137.

2 Post the SPM by typing

`>MAPCI;MTC;PM;POST SPM spm_no`

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

`>MAPCI;MTC;PM;POST SPM 23`

Example of MAP display

```
SPM 23  INSV     Class: DMSCP
Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
--- -  1 - ----  CEM 1  8 I Insv  DLC 1  1 A Insv  --- -  8 - ----
--- -  2 - ----  OC3 0  9 A Insv  --- -  2 - ----  --- -  9 - ----
DSP 1  3 I Insv  OC3 1 10 I Insv  --- -  3 - ----  --- - 10 - ----
DSP 2  4 A Insv  VSP 2 11 A Insv  --- -  4 - ----  --- - 11 - ----
--- -  5 - ----  VSP 4 12 A Insv  --- -  5 - ----  --- - 12 - ----
--- -  6 - ----  VSP 1 13 I Insv  --- -  6 - ----  --- - 13 - ----
CEM 0  7 A Insv  VSP 0 14 A Insv  DLC 2  7 I Insv  --- - 14 - ----
```

3 Record the unit number of the inactive OC3 RM in the circuit pack protection group.

Note: The inactive OC3 RM you select is called the seed OC3 RM. The unit number of this OC3 RM is referred to as

seed_oc3_unit for the remainder of this procedure. The other OC3 RM will be referred to as the target OC3 RM.

4 Select the seedOC3 RM by typing

>SELECT OC3 seed_oc3_unit

and pressing the Enter key.

where

seed_oc3_unit
is the unit number of the seed OC3 RM

Example

>SELECT OC3 1

5 Follow the Procedure, "In-service loading procedure," on page 233 to load the seed OC3 RM.

6 Access the protection level of the MAP by typing

>PROT

and pressing the Enter key.

7 Switch activity from an active OC3 RM that you have not downgraded to the seed OC3 RM in the circuit pack protection group by typing

>MANUAL active_oc3_unit seed_oc3_unit

and pressing the Enter key.

where

active_oc3_unit
is the unit number of an active OC3 RM that has not been downgraded

seed_oc3_unit
is the unit number of the seed OC3 RM

Example

>MANUAL 1 0

Example of MAP display

```
A sparing action may impact services on this node.

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

8 Confirm the system prompt by typing

>Y

and pressing the Enter key.

9 Follow the Procedure, "RM-to-RM loading procedure," on page 237 to load the target OC3 RM.

10 Access the protection level of the MAP display by typing

>PROT

and pressing the Enter key.

11 Switch activity from the seed OC3 RM to the target OC3 RM by typing

>MANUAL seed_oc3_unit target_oc3_unit

and pressing the Enter key.

where

seed_oc3_unit
is the unit number of the seed OC3 RM

target_oc3_unit
is the unit number of the target OC3 RM

Example

>MANUAL 0 1

Example of MAP display

```
A sparing action may impact services on this node.

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

12 Confirm the system prompt by typing

>Y

and pressing the Enter key.

13 Exit the SPM level MAP display by typing

>QUIT ALL

and pressing the Enter key.

14 Check for alarms on the SPM by performing the substeps listed in Step 2 of the Procedure, "Perform a manual SPM downgrade".

15 You have succesfully downgraded an OC3 protection group for the SPM.

Go to Step 7 of the Procedure, “Perform a manual SPM downgrade”.

Downgrade an SRM protection group

ATTENTION

To abort the upgrade and back out the loads, you must reverse the upgrade procedure you have already completed. To avoid possible complications, Nortel Networks strongly recommends that you reverse the order you used to load the RM types, including OC3s, DSPs, VSPs, and DLCs. Back out the SRM loads last.

When you get to the step to in-service load the SRM, you must modify the command to include the filename of the original load. Rather than use LOADMOD INSVLD, you must use LOADMOD <filename of original load> INSVLD.

At the CI level of the MAP display

1 If the SRM to replace is the Active node reference for the Message Switch (MS), a Node Reference Switch needs to occur before it is replaced.

If the SRM is	Do
ACTIVE	Procedure 2
STANDBY	Procedure 4

2 Access the clock level of the message switch MS by typing

`>MAPCI;MTC;MS;CLOCK`

and pressing the Enter key.

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

SPM                    Message Switch   Clock   Shelf  0       Inter-MS Link 0 1
 0 Quit                  MS 0       .          Master         F                    . .
 2                       MS 1       .          Slave          F                    . .
 3
 4 SwCarr              Shelf 0                  1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2
 5                     Card  1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 6 Tst_                Chain     | |
 7                     MS 0  . . . . . I - - I - - - - - - - - . - - . . . . . . .
 8                     MS 1  . . . . . I - - I - - - - - - - - F - - . . . . . . .
 9
10 Sync                Card 02 Alm Stat %Adj Src | Car Stat Sp PM     RMTyp SSM
11 DpSync              MS 0  .  .  Lkg +08.6 Lk0 | Lk0 Lck   - SPM 031 SRM  PRS
12 SwMast              MS 1  .  .  Syn -00.8 Ms0 | Lk1 Smp   - SPM 030 SRM  ST3
13 Card_               Links Slipping:  NA   out of  NA
14 QueryMS             MTC:
15                     MS:
16                     SHELF:
17                     CLOCK:
18 Adjust_

   14:12 >
```

3 Switch the SRM from ACTIVE to STANDBY by typing

>SwCarr

and pressing the Enter key.

4 Post the SPM by typing

>MAPCI;MTC;PM;POST SPM spm_no

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

>MAPCI;MTC;PM;POST SPM 23

Example of MAP display

```
SPM 23  INSV     Class: DMSCP
Shlf0 SL A Stat  Shlf0 SL A Stat  Shlf1 SL A Stat  Shlf1 SL A Stat
DSP 2  1 A Insv  CEM 1  8 I Insv  DLC 1  1 A Insv  --- -  8 - ----
DSP 4  2 A Insv  OC3 0  9 A Insv  --- -  2 - ----  --- -  9 - ----
DSP 1  3 I Insv  OC3 1 10 I Insv  --- -  3 - ----  --- - 10 - ----
DSP 3  4 A Insv  VSP 2 11 A Insv  --- -  4 - ----  --- - 11 - ----
--- -  5 - ----  VSP 4 12 A Insv  --- -  5 - ----  --- - 12 - ----
SRM 0  6 A InSv VSP 1 13 I Insv  --- -  6 - ----  --- - 13 - ----
CEM 0  7 A Insv  VSP 0 14 A Insv  DLC 2  7 I Insv  --- - 14 - ----
```

5 Access the SRM card by typing

>SELECT SRM 0

and pressing the Enter key.

This is an example of an SRM screen.

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

SRM                                  SysB    ManB    OffL    CBsy    ISTb    InSv
 0 Quit          PM                   0       0       0       0       0       1
 2               SPM                  0       0       0       0       0       1
 3 ListSet       SRM                  0       0       0       0       0       2
 4
 5
 6 Tst       SPM 11    SRM 0  Act  InSv
 7 Bsy       Interface:
 8 RTS       Loc : Row A FrPos 4 ShPos 6 ShId 0 Slot 6  Prot Grp : 1
 9 OffL      Default Load: SPMLOAD                      Prot Role: Working
10 LoadMod
11
12 Next
13 Select_
14 QueryMod
15 ListAlm
16
17
18 Bits

    14:12 >
```

6 Access the BITS link level by typing

>Bits

and pressing the Enter key.

This is an example of the BITS screen.

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

SRM                                  SysB    ManB    OffL    CBsy    ISTb    InSv
 0 Quit          PM                    0       0       0       0       0       1
 2               SPM                   0       0       0       0       0       1
 3               SRM                   0       0       0       0       0       2
 4
 5
 6 Tst_       SPM 11    SRM 0
 7 Bsy_          LinkNo   BitsName   Status  State   SSM   AlmSev
 8 RTS_            0      BITSA       Act    InSv    NIL
 9 OffL_           1      BITSB       InAct  InSv    NIL
10 Swbits          2      BITSOUT            Uneq    NIL
11              BITS:
12
13
14
15 QryALM_
16
17
18 Bits

     14:12 >
```

7 Record the BITS link numbers associated with the SRM and the state of each link.

8 Manual busy (ManB) the BITS links by typing

>BSY link_no

for each link number and pressing the Enter key.

where

link_no
is the BITS link number (0 to 2)

9 Return to the SRM level by typing

>QUIT

and pressing the Enter key.

10 Busy the SRM by typing

>BSY

and pressing the Enter key.

11 Load the SRM with the new load by typing

>LOADMOD <file_name>

where

file_name
is the name of the loadfile you are downgrading to

and pressing the Enter key.

12 Busy the SRM by typing

>BSY

and pressing the Enter key.

13 Return the SRM to service by typing

>RTS

and pressing the Enter key.

14 Access the BITS level by typing

>BITS

and pressing the Enter key.

15 At the BITS screen, restore the BITS links to their original state as recorded in Procedure 7.

16 If the SRM was orginally the Active node reference, return it to ACTIVE status.

If the SRM was originally	Do
ACTIVE	Procedure 17
STANDBY	Procedure 19

17 Access the clock level of the message switch (MS) by typing

>MAPCI;MTC;MS;CLOCK

and pressing the Enter key.

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

SPM                    Message Switch   Clock   Shelf  0       Inter-MS Link 0 1
 0 Quit                  MS 0       .          Master         F                    . .
 2                       MS 1       .          Slave          F                    . .
 3
 4 SwCarr              Shelf 0                  1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2
 5                     Card  1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 6 Tst_                Chain           |     |
 7                     MS 0  . . . . . I - - I - - - - - - - - . - - . . . . . .
 8                     MS 1  . . . . . I - - I - - - - - - - - F - - . . . . . .
 9
10 Sync                Card 02 Alm Stat %Adj Src | Car Stat Sp PM     RMTyp SSM
11 DpSync              MS 0  .  .  Lkg +08.6 Lk0 | Lk0 Lck   - SPM 031 SRM  PRS
12 SwMast              MS 1  .  .  Syn -00.8 Ms0 | Lk1 Smp   - SPM 030 SRM  ST3
13 Card_               Links Slipping:  NA   out of  NA
14 QueryMS             MTC:
15                     MS:
16                     SHELF:
17                     CLOCK:
18 Adjust_

   14:12 >
```

18 Switch the SRM from ACTIVE to STANDBY by typing

`>SwCarr`

and pressing the Enter key.

19 Check for alarms on the SPM by performing the substeps listed in Step 2 of the Procedure, “Perform a manual SPM downgrade”.

20 You have succesfully downgraded an SRM protection group for the SPM.

Go to Step 7 of the Procedure, “Perform a manual SPM downgrade”.

ATTENTION

The following in-service load procedure applies only when you upgrade to the next milestone release, for example, SP10 load to SP11 load or SP11 load to SP12 load. Do not use the in-service load procedure if you skip milestone releases, for example, SP10 load to SP12 load. If you skip a load, you must busy the spare RMs before loading them. This out-of-service load successfully upgrades the RMs.

In-service loading procedure

At the MAP level

1

If	Do
you are performing an upgrade	Procedure 2
you are performing a downgrade	Procedure 3

2 In-service load the inactive RM by typing

```
>LOADMOD INSVLD
```

and pressing the Enter key.

Note: During execution of the LOADMOD INSVLD command, the RM automatically goes to a SysB state and then returns to service. You will observe the Insv-SysB-Insv state change on the MAP terminal. You do not need to take any action for the RM to return to service.

Go to Procedure 4.

3 In-service load the seeding RM by typing

```
>LOADMOD <filename> INSVLD
```

and pressing the Enter key.

where

filename
is the name of the loadfile you are downgrading to

Note: During execution of the LOADMOD INSVLD command, the RM automatically goes to a SysB state and then returns to service. You will observe the Insv-SysB-Insv state change on the MAP terminal. You do not need to take any action for the RM to return to service.

4

ATTENTION
Do not apply a patch to a ManB RM. When you RTS the RM, it boots from flash. The patch will not be applied for one hour. To avoid the delay, apply all patches Insv. Note that the CEM does not boot from flash when RTSed. The CEM boots only by using ResetMod.

Access the PRSM tool by typing

```
>PRSM
```

and pressing the Enter key.

5 Audit the status of the RM by typing

```
>DBAUDIT SPM spm_no rm_type rm_no
```

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

rm_no
is the RM number

Example

```
>DBAUDIT SPM 23 DLC 1
```

6 Determine if RM PRSUs have been provided for the RM load file.

If RM PRSUs	Do
have been provided for the RM load file	Procedure 7

If RM PRSUs	Do
have not been provided for the RM load file	Procedure 8

7 Apply the PRSUs by typing

```
>APPLY ‘prsu_id | prsu_id | prsu_id IN SPM
spm_no rm rm_no
```

and pressing the Enter key.

where

prsu_id
is the PRSU name

spm_no
is the ID (number) of the SPM

rm_no
is the rm number

Example

```
>APPLY ‘ABC05513 | DEF10513 | GHI45513 IN SPM 23
DLC 1
```

8 Exit the PRSM tool by typing

```
>QUIT
```

and pressing the Enter key.

RM-to-RM loading procedure

At the MAP level

1 Begin RM-to-RM loading the inactive RM by selecting the newly inactive RM and typing

```
>SELECT rm inactive_rm_unit
```

and pressing the Enter key.

where

inactive_rm_unit
is the unit number of the inactive RM

Example

```
>SELECT OC3 0
```

2 Load the inactive RM from its mate by typing

```
>LOADMOD MATE active_rm_unit
```

and pressing the Enter key.

where

active_rm_unit
is the unit number of the active RM

Example

```
>LOADMOD MATE 1
```

Note: During execution of the LOADMOD INSVLD command, the RM automatically goes to a SysB state and then returns to service. You will observe the Insv-SysB-Insv state change on the MAP terminal. If the RM goes SysB before the command completes, you do not need to take any action.

3 Exit the SPM level MAP display by typing

```
>QUIT ALL
```

and pressing the Enter key.

4 Access the PRSM tool by typing

>PRSM

and pressing the Enter key.

5 Perform an ISTBAudit to apply the patches from the first unit to the second unit by typing

>ISTBAUDIT SPM spm_no RM

and pressing the Enter key.

where

spm_no
is the ID (number) of the SPM

Example

>ISTBAUDIT SPM 23 OC3

Example of MAP display

```
Attempting to process 2 destinations.
SPM 23 OC3 0, SPM 23 OC3 1

Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

6 Confirm the system prompt by typing

>Y

and pressing the Enter key.

Example of MAP display

```
Database audit submitted for 2 DESTs
Auditing destination SPM 0 OC3 0 . . . . .
Auditing destination SPM 0 OC3 1 . . . . .
Database audit completed for 2 DESTs
Database discrepancy found in 2 DESTs
```

7 Exit the PRSM tool by typing

>QUIT

and pressing the Enter key.