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DMS-100 Family

Software Delivery

ONP/Hybrid Software Delivery Procedures

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About this document

This document describes the process for upgrading DMS-100 Family switches to software vintages of Batch Change Supplement (BCS) 29 through 36 and PCL releases during 1994 on in-service sites. This document set supports both NT40 and SuperNode switches. However, NT40 is not supported beyond BCS36.

"One Night Process" (ONP) software delivery refers to the delivery of a software update in one night. This is done on like processors including NT40 to NT40, SuperNode to SuperNode, and the various applications of SuperNode.

"Hybrid Process" and "2-Night Process" methods, which are based on the ONP, are also included in this document. To understand the differences see the "Introduction" section."

How this document is organized

The information in this document is organized in the following manner.

The *Introduction* chapter introduces the One Night Process and briefly describes how the various software delivery methods work.

The *Site preparation overview* chapter provides an overview of Telco/Carrier administrative and site responsibilities. It also explains the use of the Methods of Procedure (MOP) sections in performing a software delivery.

This is followed by the *Method of Procedure* (or MOP) sections which contain a series of detailed procedure modules needed to prepare for and deliver the new software load. Separate MOPs are included for specific purposes.

Appendix A: Command Summaries contains example console sessions and command syntax used throughout the software delivery process.

Appendix B: Supplementary Procedures contains additional procedures which may be referenced during the software delivery process.

Appendix C: Test Call Scripts provides a generic test plan for the verification of the new software release. The test plan requires the site to fill-in and test the applicable test call types both prior to and following the software delivery.

Introduction

About the software delivery process

One Night Process (ONP) methods may be used with offices going to BCS29 or higher. This document set supports both NT40 and SuperNode switches. However, NT40 is not supported beyond BCS36.

The One Night Process is an automated software delivery process. ONP consists of procedure oriented type enforcing language (PROTEL) programs which have been developed to step the user through the software delivery. This enables the use of high level commands which can be completed in a shorter time than with previous methods.

In many cases the software program, itself, prompts the user to perform the required tasks as they are needed. In this respect the ONP actually controls the delivery of software to the site.

The events of the One Night Process can be divided into two main areas. The first area is the data transfer (using MOVEBCS or TABXFR, depending on the BCS). It includes the applicable table data move functions sometimes known as dump and restore. The second area is BCSUPDATE, which includes all the required application functions needed to activate the new BCS software load.

ONP description

Even though not all the activities performed by the Telco or the software delivery engineer can be automated, the use of ONP does allow in many cases a complete software delivery in one night.

Since ONP collapses the overall software delivery time into one night; therefore, for jobs scheduled as ONP normally there are no Data Modification (DMO) restrictions, no frozen image capture, and no journal file maintenance by the site.

Hybrid process description

With the Hybrid Process the data transfer (dump and restore) is done ahead-of-time in a captive office using a frozen image supplied by the Telco and

resulting in a data-filled image. With this method the site should initiate an office data freeze (normally by activating JFFREEZE) and must follow journal file rules until the scheduled software delivery. This ensures that critical data is captured in journal files and can be restored on the night of the application.

This method is used when an office is determined to be too large to complete the ONP in one night, or if certain special activities are requested by the operating company. Examples of such activities might include LGC to LTC conversions, 100/200 splits, NPA splits, ISDN sparing, special requests for tuple changes or deletion, and certain office parameter changes.

With BCS32-34 MOVEBCS tools must be used to perform the dump and restore. Starting with BCS35 TABXFR is used for this. When either MOVEBCS or TABXFR is used to perform the dump and restore on a Hybrid job, it will be done in a captive lab and is referred to as a "Local Application."

Two Night process description

The Two Night Process is a combination of the ONP and Hybrid delivery methods. This process provides the data transfer (dump and restore) function on-site with a minimum of twelve hours of journal files as opposed to the minimum of ten days of data freeze (Hybrid process).

This process is used when an office is determined to be too large to complete the delivery in one night and the customer does not wish to freeze data modifications for an extended period (Hybrid process).

Using the MOPs

Perform the procedures in order. The responsibility for performing a step is indicated at the start. Throughout this document "Telco" refers to either a Telephone Company or Carrier; "site" refers to the craftperson or other personnel on-location at the DMS switch; and "App" is the BCS applicator who performs the actual software delivery update. (Occasionally "SDE" is also used referring to a Northern Telecom software delivery engineer.) In the procedures "ACT" or "INACT" refers to the active side or inactive side of the switch, respectively, on which to perform an action.

Site preparation overview

Planning activities

It is imperative that the administrative functions outlined below are reviewed by all offices immediately upon receipt of this document.

Administrative functions

The following administrative functions need to occur for all offices well in advance of the scheduled software delivery.

- In offices equipped with TOPS-OC (Operator Centralization), ensure the host OC office is upgraded prior to the remote OC office.
- For TOPS-MP offices, software upgrades should be performed in the following order:
 1. Patch the HOST OC.
 2. Upgrade the TPC with software compatible with the new BCS load.
 3. Upgrade the HOST OC.
 4. Upgrade the REMOTE OC.
- Since specific Telco policies may exist within various locations, an estimated time of SWACT should be established between Telco and the NT software delivery engineer.

Note: Northern Telecom recommends that the front-end activity switch (SWACT) be scheduled to take place during low traffic periods to minimize the impact on the office.

- Advanced notification of the software update must be provided by the site to operator services, service control centers, repair bureau, and other special services.
- Advise the data transferal regional coordinator (or equivalent) when the software delivery update will occur.
- The central office foreman will determine if an Operational Measurements (OM) tape is to be shipped and will make the necessary arrangements with the appropriate department.

- Offices equipped with Centralized Automatic Message Accounting (CAMA) or Local Automatic Message Accounting (LAMA) will arrange for the validation of an Automatic Message Accounting (AMA) test tape with the site billing center. Such testing may also include Station Message Detail Accounting (SMDR) or Other Common Carrier (OCC). The site billing center must be informed of this requirement four weeks prior to the software update. This test will be performed during POSTSWACT activities (*Appendix C: Test Call Scripts*). Ensure that the *AMADUMP User's Guide* (NTP 29C-1001-119) is readily available.
- Offices equipped with DPP or BMC actively collecting billing information may arrange with the downstream processing center to poll the billing information during *PRESWACT* and, optionally, during *POSTSWACT*.

Warnings

Ensure no hardware changes or retrofits will be in progress during a software delivery. These activities are prohibited during the BCS application. The affected hardware must be made INB (installation busy), and any further software changes must cease. Such activities would include, *but are not restricted to*, any of the following:

- Network extensions
- Memory extensions
- Peripheral additions or deletions
- MSB7 to LPP cutovers

Special activities

The operating company may request special changes to office data which can best be done during the dump and restore. These requests must be identified ahead-of-time and the job scheduled appropriately as either ONP or Hybrid (Local). Such activities, referred to as Customer Special Request workarounds, can include *but are not restricted to*, any of the following:

- deleting entries in table LINEATTR or changing certain restricted fields
- LGC to LTC (or LTC to LGC) conversion

Note: This request requires Telco to complete a workaround after CC SWACT. In *Appendix B* refer to Procedure B-4: Converting one PM to another.

- XPM to FXPM upgrade or Inservice FXPM relocation
- down-sizing of a switch involving deleting peripherals
- changing an MDC group to allow the installation of an attendant console
- changing table TRKGRP field SEL SEQ from MIDL or LIDL to ASEQ or DSEQ

- changing number of entries in TOPSDEV and TOPSPOS if certain pseudo-cllis or office parm TOPS_NUM_TRAFFIC_OFFICES has been maxed out
- NPA splits
- increasing amount of ICI codes per ATTCONS in table CUSTCONS
- changing or deleting carrier names in TOPEACAR
- 100/200 splits
- deleting or changing Serving Translation Scheme (STS)
- DCH sparing in ISDN offices
- changing or deleting remote site names

Pre-application site activities

The site personnel responsible for assisting Northern Telecom during the software delivery should become familiar with all sections of this document to ensure designated activities are completed in a timely manner.

- After reviewing this document, the Telco site should select the appropriate MOP in this document. To help in scheduling the needed site preparation work, be sure to consult your confirmation letter or Site Notification Package for an exact schedule of events.
- Turn to the *Site preparation procedure* section of the appropriate MOP, and begin completing the procedures in that section.
- Site should continue performing all needed procedures up through the *Site responsibilities the day of the software delivery procedure* section, which completes the pre-application phase.

In addition to this document, the site must also be familiar with the *Data Schema Changes* in the *Batch Change Supplement (BCS) Release Document* for the new BCS load.

Returning tapes

After a software delivery is completed the site should return to Northern Telecom for recycling all of the following tapes (if applicable) that were used with the *previous* BCS:

- New Peripheral load tapes
- ISN Peripheral load tapes
- ISDN load tapes
- BCSTOOLS tapes
- TAS Non-Res tapes
- Super Non-Res tapes

2-4 Site preparation overview

- Commissioning tapes

Please return the old tapes to:

For RTP market area please use the UPS Authorized Return Service:

Refer to PINK FLYER included with shipment of preliminary tapes and documents. Use the pre-printed UPS Return Service labels provided. Tape return shipments are charged to Northern Telecom.

NORTHERN TELECOM
Service and Operations-Richardson
S/W Production, Dept: 6755
2150 Lakeside Boulevard
Richardson, Texas
U.S.A. 75082

NORTHERN TELECOM Europe, Ltd.
Meridian House Concorde Road
134 Bridge Road
Maidenhead, Berkshire
England SL6 8DJ

NORTHERN TELECOM Canada, Ltd.
S/W Production, Dept: S644
8200 Dixie Road
Brampton, Ontario
Canada L6V 2M6

S/W Update Verification, Dept: S645/7M24 For VO sites for Canadian
1285 Baseline Road ONPs and retrofits
Ottawa, Ontario
Canada K2C 0A7

ONP SNODE MOP

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Site preparation procedure

Begin this section when the First Shipment of tapes and documentation arrives at the office. Site must complete the following procedures *before* being contacted by Northern Telecom for the pre-application checks (or Preliminary Precheck). In order to qualify the office for a software upgrade the series of prechecks must be successfully completed.

Procedure 1

Take image

- 1 **Site/ACT** Before beginning the front-end testing (processor tests), DUMP AN OFFICE IMAGE for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge, or one NT40 image to disk and copied to tape.
-

3-2 Site preparation procedure

Procedure 2 Route logs SNODE

This procedure ensures that specific logs are routed to an active log device and are not suppressed.

1 Site/ACT

```
> LOGUTIL  
> LISTREPS SPECIAL
```

If specific logs are suppressed use

```
> RESUME <log>
```

If logs have threshold set use

```
> THRESHOLD 0 <log>
```

where <log> refers to specific CM, MS, SLM, and MM logs.

2 > LISTROUTE DEVICE <printer>

If critical logs are not routed use

```
> ADDREP <printer> <log>
```

```
> STOPDEV <printer>
```

Verify only critical logs are enabled on the device and are correctly routed.

3 > STARTDEV <printer>

```
> LEAVE
```

Procedure 3
Processor tests SNODE

To ensure front-end stability Site should complete the following tests before being contacted for the pre-application checks.

Note: Perform the following front-end testing during low traffic periods.

- 1 **Site** Ensure the CPUs are in SYNC and the inactive side is NOT jammed.

- 2 **ACT** Match the memory from the Memory level of the MAP.
 - > MAPCI ; MTC ; CM ; MEMORY
 - > MATCH ALL
 - > QUIT

- 3 **INACT** From the inactive RTIF (remote terminal interface), jam the inactive CPU.
 - RTIF> \JAM
 - RTIF> YES *{for confirmation}*

- 4 **ACT** Drop SYNC from the CM level of the MAP.
 - > DPSYNC
 - > YES *{for confirmation}*

- 5 **INACT** Wait for the inactive CPU to return to flashing A1.

- 6 Test the CM stability with each of the following restarts on ONLY the *inactive* RTIF.
 - a. **INACT** RTIF> \RESTART WARM
 - RTIF> YES *{for confirmation}*
 - Wait for a flashing A1.*
 - b. **INACT** RTIF> \RESTART COLD
 - RTIF> YES *{for confirmation}*
 - Wait for a flashing A1.*
 - c. **INACT** RTIF> \RESTART RELOAD
 - RTIF> YES *{for confirmation}*
 - Wait for a flashing A1.*

-continued-

Procedure 3
Processor tests SNODE (continued)

7 ACT Test the memory cards from the Memory level of the MAP.

```
> MEMORY;TST ALL  
> QUIT
```

8 After completion of the test, check any logs indicating pass or fail. If above test failed, clear the problem and repeat the test.

9 ACT SYNC the CPUs from the CM level of the MAP.

```
> SYNC
```

10 After receiving the "Synchronization Successful" message, verify no faults are displayed at the CM or Memory levels of the MAP (shows all dots and no Xs or fs).

11 INACT At the inactive RTIF release the jam.

```
RTIF> \RELEASE JAM
```

12 ACT Switch activity of the CPUs from the CM level.

```
> SWACT
```

13 INACT Repeat steps 1 through 12 on the newly-inactive CPU.

14 Verify the CPUs remain in SYNC and the inactive side is NOT jammed.

15 ACT Match the memory from the Memory level of the MAP.

```
> MEMORY;MATCH ALL  
> QUIT
```

16 ACT Perform a REX test long from the CM level.

```
> REXTST LONG  
> YES {for confirmation}  
CPU SYNC, Message Controller (MC), and Subsystem Clock (SSC) states  
will change. The SuperNode will be out of SYNC for at least 60 minutes.
```

-continued-

Procedure 3
Processor tests SNODE (continued)

17 ACT After completion of the test, verify the test results:

> QUERYCM REXRESULT

The CPUs should be back in SYNC with no REX alarms at the CM level or on the main MAP display header. If the test failed, contact the site supervisor to resolve any problems and repeat steps 16 and 17.

18 Repeat (with the other CPU active) steps 16 and 17.

19 ACT Perform an image test from the CMMNT level of the MAP.

> CMMNT

> IMAGE

> QUIT

20 After completion of the test, check any logs indicating pass or fail. If above test failed, clear the problem and repeat the test.

Note: If on BCS 26-28 and patch BKR24C<xx> is present and activated (PATCHEDIT shows it ON), then skip over the rest of this procedure and go to the next procedure.

21 ACT Busy the Slave MS from the MS level of the MAP.

> MS;BSY <x>

where <x> refers to the Slave MS (look under Clock field).

22 ACT Test the MS from the MS level.

> TST <x>

23 After completion of the test the results of the test are displayed. If the test failed, resolve any problems and repeat the test.

24 ACT Return the busied MS to service.

> RTS <x>

25 Wait 5 minutes to ensure the clocks are stable and to allow the hardware audit to run. Both MS should be inservice.

-continued-

3-6 Site preparation procedure

Procedure 3 **Processor tests SNODE (continued)**

26 ACT Switch MS clock mastership.

> SWMAST

27 Test the other MS by repeating steps 21 through 26.

28 ACT > QUIT ALL

Procedure 4
Responsibilities before pre-application checks SN

- 1 **Site** Site is encouraged to verify all new software load and patch tapes received in a shipment.

Note: The following steps do not apply to a TAS NONRES tape which is used only by NT technical support to provide access to certain non-resident software tools.

- a. INSERT (or MOUNT) and LIST each tape.
 - b. From the tape header or first file verify the header matches the tape label and the tape is correct for the to_BCS. For a BCS IMAGE tape also verify the image filename is correct.
Verify a tape is good by listing the tape to the end without any errors.
 - c. If any problems are found notify your NT customer service representative immediately.
 - d. Keep the tapes on-site for use during the scheduled software update.
-
- 2 **Site** Review the D190 document (office feature record) to ensure the software content meets the expected requirements.

Note: Offices receiving feature package NTX218, EADAS, ensure table OMACC has only 25 entries. If table OMACC has more than 25 entries, the site will have to delete the extraneous entries so the five new EADAS Operation Measurement tuples will fit.

CAUTION

For MS preloading it is recommended that the MS be loaded using the new BCS IMAGE tape, and NOT the PM load tape. The MS load provided on the IMAGE tape contains a more current patch set.

Richardson customers may require loading of the MS prior to the arrival of the IMAGE tape. Contact Richardson BCS Applications for MS loading procedures.

If problems are encountered during loading, contact the appropriate TAS group for assistance.

The recommended procedure for MS preloading is found in section *Updating loads in the Message Switch* of this MOP. Wait to upgrade the MS until the new BCS IMAGE tape arrives on site.

- 3 **Site** Load and patch ALL PERIPHERAL MODULES with the to_BCS software loads according to the *Peripheral Software Release Document* ("Application Procedures" section).

-continued-

Procedure 4
Responsibilities before pre-application checks SN (continued)

Peripheral modules include all PMs, XPMs, DPP, MPC, and the various application processors associated with a DMS-SCP/STP/SSP such as the ENET, LPP (including EIUs, LIUs and LIMs) and the FP.

Note: If a cross-reference file (BCSxxXPM\$XREF) is at the beginning of the XPM patch tape, use it to identify patches applicable to each XPM load.

- 4 Site** Monitor front-end stability watching SuperNode CM,MM, and MS logs through the day of the software delivery.
-

Procedure 5
Save site files

- 1 Site/ACT** Copy all Telco/site-created files in store file (SFDEV) onto a labeled scratch tape. These files can be manually restored to SFDEV after the BCS application.
*Any patches and files downloaded to SFDEV need to remain in SFDEV for the BCS application-**DO NOT ERASE!***
-

Procedure 6
Peripheral verification SNODE

- 1 **Site/ACT** If the office is equipped with DDUs, erase all unwanted files. Then ensure the peripheral loads and peripheral patches for the to_BCS are on the same disk.

- 2 On the DDU used for primary billing collection (such as AMA SMDR OCC CDR), perform routine maintenance on the disk to ensure it is functioning properly. If excessive "bad blocks" are present, reformat the disk.

- 3 Ensure peripherals (including ENET and DPPs) are loaded and patched with the to_BCS software. (Refer to the *Peripheral Software Release Document*.)
Note: Procedures for preloading the MSs are in section *Updating loads in the Message Switch* of this MOP.

Procedure 7
Table ACDGRP

- 1 **App/ACT** Identify any "holes" in table ACDGRP and fill them with dummy tuples. Otherwise, you may be unable to retrieve MIS reports from some ACDGRPs.
 - a. > OMSHOW ACDGRP ACTIVE
 - b. Look for nonconsecutive keys. (example: 0 2 3 5 6 has 1 and 4 missing.)
 - c. If any missing tuples, have Translations personnel datafill with dummy tuples. (This prevents the renumbering of key indexes during the BCS update.)
 - d. Also provide datafill in table DNROUTE for each corresponding dummy tuple added in table ACDGRP.
-

Procedure 8
Fill in Test Call Scripts

- 1 **Site** Fill in and test the *Test Call Scripts* in *Appendix C*.

This is to provide a thorough test plan exercise for testing the new BCS load. You will be asked to make your test calls after switching activity to the new BCS.

Data consistency check procedure

Procedure 1 is for offices on BCS34 and higher.

Procedure 2 is for offices on BCS33 and lower.

CAUTION

Review Software Delivery Bulletins and any current Warning Bulletins concerning TABAUDIT before using it.

Procedure 1

Run TABAUDIT (BCS34 and higher)

Perform this procedure at 15 days prior to the software delivery date. This allows time to correct any table data problems that might be found. At the insertion minus 10 days pre-check, NT engineers will review the results. The data consistency checks must be successfully completed including any needed data corrections in order for the scheduled application to be completed on schedule.

For all offices on BCS 34 and higher, perform the following steps. These steps are used to verify table data integrity using TABAUDIT.

A complete tutorial of TABAUDIT is provided in *Appendix A*. This includes information on TABAUDIT enhancements (BCS36) which provide automated scheduling capability and facilitate data capture.

Warning: TABAUDIT can take up to 10 hours to run. The length of time will vary from site to site depending on the number and size of tables.

- 1 **Site/ACT** Verify table data using TABAUDIT. Send output to a recording device (e.g. D000SCRATCH). Make note of the device used, since the files will be reviewed by NT prior to BCS application.

TABAUDIT may be set-up to run all the tables using the "ALL" option or to run a range of tables using the "FROM" and "TO" options. TABAUDIT can only be run from only one terminal at a time.

- To use the "FROM" and "TO" options see substep **a** below.
- To use the "ALL" option see substep **b** below.

Warning: If a device is *not* specified when issuing the TABAUDIT ALL command, only a SUMMARY\$FILE will be created in Store File and no separate file will be created for individual failed tables.

-continued-

Procedure 1
Run TABAUDIT (continued)

If necessary, TABAUDIT may be stopped and restarted . To stop TABAUDIT at anytime, use break HX. When restarting TABAUDIT, determine the last table verified by reviewing the "SUMMARY\$FILE " file in SFDEV. The last table verified can also be determined by listing table DART and reviewing the "CHKDATE" and "CHKTIME" fields for the most recently verified table.

Some tables will output information or warning messages as though they are being changed. However, no changes will be made since TABAUDIT does not execute any write procedures.

For example, when TABAUDIT is performed on table DATASIZE the following message is output for every tuple checked:

A restart is needed for this change to take effect. Check the NTP as to which is appropriate warm or cold.

Or for example, when STDPRTCT is checked, the additional output is:
Warning: Changes in table STDPRTCT may alter office billing.

- a. Until the amount of time required to verify all tables is known for a particular site it is recommended to perform the verification on a range of tables using the "FROM" and "TO" options and information found in table DART.

```
> TABAUDIT FROM <start table> [TO <end table>]  
<device name>
```

For example, to obtain table names in increments of 100, enter Table DART, list, go down 100 and list two. Record or print the table names. Continue this until the end of table DART is reached.

```
> TABLE DART; LIST (output will be the "FROM" table name)  
> DOWN 100; LIST 2 (output will be the "TO" table name of the  
first 100 and the "FROM" table name for the second 100)  
> DOWN 100; LIST 2 (repeat until the end of table is reached)  
> LEAVE
```

Perform TABAUDIT on the first 100 tables as shown in the following example:

```
> TABAUDIT FROM DART TO BGDATA <device name>
```

When complete, perform TABAUDIT on the next 100. Repeat until all tables have been verified.

- b. Use the TABAUDIT ALL command to perform the data verification function on all tables listed in table DART using just one command.

```
> TABAUDIT ALL <device name>
```

-continued-

Procedure 1
Run TABAUDIT (continued)

- 2** Review the summary output and any failed table files. If any table fails, contact the translations engineer who can help in resolving any data consistency issues. To verify a corrected table, run TABAUDIT ONLY and specify the corrected table.

```
> TABAUDIT ONLY <table name> <device name>  
Continue until all tables have been corrected.
```

- 3** When all tables have been corrected, if time permits, perform a TABAUDIT on all the tables again by range or by use of the "ALL" command. This is to ensure that no changes performed in step 2 have adversely affected other tables.
-

Procedure 2
Run CHECKTAB (BCS33 and lower)

Perform this procedure at 15 days prior to the software delivery date. This allows time to correct any table data problems that might be found.

For offices on BCS 33 and lower that are scheduled for a complete One Night Process (not Hybrid), please refer to your Site Notification Package (or contact the NT Customer Service Representative) for the appropriate procedure concerning the use of CHECKTAB.

Updating loads in the Message Switch

Begin this section as soon as the new BCS IMAGE tape arrives on site (normally two to three days before the software delivery).

Procedure 1 is to copy the new CM and MS loads onto a SLM disk. This is for all offices, and is required in order to load the MS and to enable loading the mate CM from SLM disk.

Procedure 2 is only for offices on BCS34 and higher. Procedure 2 is to preload the MSs with the new MS load. (For offices on BCS33 and lower, the MSs will be loaded by the BCS Applicator on the night of the software delivery.)

Note: When scheduled for a BCS-n to BCS-n application (for example, BCS34 to BCS34) Telco may choose to NOT preload MSs as long as the present MS load is patched current.

Procedure 1 Restore CM and MS loads

Restore (that is, copy) the new CM and MS loads onto a SLM disk.

- 1 **Site/ACT** List the SLM tape cartridge with the new BCS IMAGE files (both _MS and _CM loads).
 - a. Place the cartridge into the SLM tape drive on the same side as the inactive CPU.
 - b. > DISKUT
 - c. > IT <tape_device>
*Inserts the tape into the inactive-side SLM, for example:
IT S00T or IT S01T*
 - d. > LF <tape_device>
for example, LF S00T or LF S01T. May take up to one hour to list.
 - e. Verify the MS and CM load files are the correct ones to use.
*To help understand the image filenames, you may use CI command
DISPMS <filename> which displays the image header information.
(Refer to Appx. A for more details of this command.)*

-continued-

Procedure 1
Restore CM and MS loads (continued)

- 2 Select a SLM disk volume onto which to restore the new BCS IMAGE.
- The volume selected should not be on the same SLM with active DIRP billing.
 - The volume should not be the same volume normally used to take images. (This is so that AUTOIMAGE won't fail for lack of disk space.)

If there is a problem completing this step, please contact the next level of support.

- 3 Restore both the CM load and the appropriate MS load onto the selected SLM disk volume.
- a. > RE FILE <disk_volume><tape_device><filename_CM>
Restores the CM load onto the SLM, for example:
RE FILE S01DIMG0 S01T LD101015ND36_CM
 - b. > RE FILE <disk_volume><tape_device><filename_MS>
Restores the MS load onto the SLM, for example:
RE FILE S01DIMG0 S01T LD101015MS36CR_MS
 - c. > ET <tape_device>
Ejects the SLM tape, for example:
ET S01T
 - d. > QUIT
-

Procedure 2
Preload both MSs

As of BCS34, backward-compatibility is supported in the Message Switch (MS). This means, if the office is on BCS34 or higher, then it is possible to PRELOAD *both* MSs with the new MS load before the CM is upgraded to the new BCS.

CAUTION

Do not attempt to upgrade the Message Switch at this time unless the office is currently on BCS34 or higher.

Failure to heed this caution could result in degradation of the switch since the MS load is not backward compatible until the office is on BCS34.

CAUTION

If the office is on BCS34 or higher, both MSs must be loaded with the MS load provided on the BCS IMAGE tape prior to starting the BCS application.

The following procedure assumes the proper MS load was successfully copied to a SLM disk volume.

Note: The BCS IMAGE provided is patched current. If any new patches are required, these will be downloaded to SFDEV and applied on the night of the BCS application.

- 1 **Site/ACT** List the SLM disk volume onto which the new BCS IMAGE files (both _MS and _CM loads) were previously restored (copied).
 - a. > DISKUT
 > LF SOOD<volume> *{or SO1D<volume>}*
where <volume> is the SLM disk volume with the BCS IMAGE.
 - b. Verify the image files (both _MS and _CM) on the SLM disk volume are correct. Be sure to use the image files provided on the new BCS IMAGE tape.
To help understand the image filenames, you may use the DISPMS <filename> command which displays the image header information. (Refer to Appx. A for more details of this command.)
-
- 2 At the MS level of the MAP, determine which MS contains the SLAVE clock. (Look for "slave" under the CLOCK field.)
 - > MAPCI ; MTC ; MS

-continued-

Procedure 2
Preload both MSs (continued)

3 > BSY <MS#> *{the MS with the slave clock}*

4 > LOADMS <MS#> <filename>
where <filename> is the name of the _MS load file listed above in step 1.
> YES *{for confirmation}*

5 When prompted, perform an out-of-service test on the MS just loaded.
> TST <MS#> *{on the OOS MS}*
Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.

CAUTION
Do not proceed unless NO faults are reported.
Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.

6 > RTS <MS#> *{not OOBAND!}*

7 Wait 5 minutes to ensure the clocks are stable and to allow the hardware audit to run. Both MSs should be inservice.
Note: The MS load on the CM image tape is patched as current as possible. Copies of all MS patches that were applied to this load will be in mate SFDEV when the CM image is loaded for the BCS application. Once the CM load is made active (by the SWACT) the MATCHALL MS (PATCHER) will function as intended.

8 Switch MS clock mastership.
> SWMAST

9 Monitor MS logs for 10 minutes to ensure stability.

10 Repeat steps 3 through 9 to update the load in the other MS.

11 > QUIT MAPCI

Site responsibilities the day of the software delivery

The following steps must be completed by site personnel *before* the software delivery engineer contacts the site for the scheduled software delivery.

Procedure 1

Day zero checklist

- 1 **Site** Verify that all problems identified from performing table data checks have all been resolved.

- 2 Verify that the front-end processors have been in sync for the past 24 hours and the last REX test has passed.

- 3 Verify an image has been taken in the last 24 hours and backed to tape.

- 4 Ensure you have undertaken your critical test call plan and verified it. (See *Appendix C: Test Call Scripts*.)

- 5 Verify SFDEV has been cleared of all Telco/site-created files.

- 6 Verify all to_BCS patches have been downloaded to site and are present in SFDEV.

7 **LIU7 image with feature AQ1102**

In preparation for the ONP, assuming that the LIU7s have had their software loads upgraded, dump an image of an INSV LIU7. There should be no changes to the tables C7GTT, C7GTTTYPE, C7NETSSN, or C7DCIS6 between the time this image is dumped and when the ONP occurs.

This is to utilize feature AQ1102, which allows faster recovery of LIU7s under certain circumstances. Please refer to the feature description for details of the possible recovery scenarios.

Note: If an image with up-to-date data is not available, then data sync of an LIU7 following the CC Warm SWACT may take considerable time if table C7GTT is very large.

Procedure 2
Patch verification

The Site is responsible for the following patch verification step.

- 1 **Site/ACT** All patches downloaded to SFDEV after the final office review should be copied to tape (or to disk) and LEFT IN SFDEV.
 - *From-side patches that are process-related (affecting ONP tools) will be applied by the BCS Applicator on the night of the BCS application.*
 - *To-side front-end and MS patches in SFDEV will be automatically applied to the new BCS load on the night of the BCS application.*
-

Procedure 3
Run DATADUMP

1 **Site/ACT** Run DATADUMP to output important switch information for future reference.

- a. > LOGUTIL;STOPDEV <printer>
where <printer> is an available printer to be used for recording. This makes sure the logs are stopped on the device.
> LEAVE
- b. > RECORD START ONTO <printer>
- c. > BCSUPDATE;DATADUMP *{for BCS33 and higher}*
When DATADUMP is completed:
> QUIT
- d. > DRCI;RUNEXEC DATA_DUMP *{for BCS32 and lower}*
When DATADUMP is completed:
> QUIT
- e. > RECORD STOP ONTO <printer>
-

3-24 Site responsibilities the day of the software delivery

Procedure 4 **FX voice and data**

- 1 **Site** Ensure there will be uninterrupted communication with the software delivery engineer during the software delivery. (Provide FX voice and data lines.)

- 2 Ensure at least two dialup ports are operational-one on each IOC. These should have COMCLASS of ALL.

- 3 Verify user names to be used during the software update have PRIVCLAS of ALL.

Preliminary phase procedure

This section details both SITE and BCS applicator (App) activities required for a One Night Process software delivery.

The actual software delivery begins when the software delivery engineer puts the switch into simplex mode (drops sync) and loads the inactive CPU with the new BCS software load.

Two dialup ports are required, one for the active side processor (label it ACT) and one for the inactive side processor (label it INACT). Remember to acquire a soft copy of the console sessions for both terminals.

Note: Telco may elect to monitor the application process by recording onto printers. This can impact the software delivery time. Site may start recording by issuing the following command for two printers, one for each of the dialup ports to be used by the applicator: "RECORD START FROM <terminal_id> ONTO <printer>."

CAUTION

Ensure no hardware changes or retrofits are in progress. This includes network or memory extensions and peripheral additions/deletions.

These activities are prohibited during the BCS application. Such hardware must be made INB (installation busy), and any further software changes must cease.

Procedure 1
Interrupt/ABORT process

Both SITE and Applicator should be familiar with each of the following steps before continuing with the procedures in this section.

If problems develop during the software delivery, resort to one of the following actions.

- 1 If the MOVEBCS process must be halted or interrupted, use the MOVEBCS HALT option. Refer to "Interrupt MOVEBCS" in *Appendix A* (page A-19).

- 2 If the TABXFR process must be halted or interrupted, use the HALT option. Refer to "Interrupt TABXFR" in *Appendix A* (page A-24).

- 3 It may be necessary to STOP (and reschedule) the application after PRESWACT has been implemented, but before the switch of activity. Refer to "PRESWACT Abort" in *Appendix A* (page A-29).

- 4 If a controlled REVERT is required after the switch of activity (SWACT) refer to "Revert to old load procedure" (page 3-119).

- 5 If an emergency ABORT is required after the switch of activity (SWACT) refer to "Emergency Abort procedure" (page 3-145).

Procedure 2
Remote login

- 1 **App/ACT** Contact the control center (if required) and the site on the voice phone and connect to both dialups. Verify one dialup port is on IOC0 and the other is on IOC1.
-
- 2 **App/ACT** Login the users and if applicable, set LOGINCONTROL.
 - a. <break>
 - b. ?LOGIN
Enter username and password *{system response}*
> <username> <password>
 - or
> <username>
> <password>
where username and password can both be found on the Pre-application report.
 - c. For BCS33 and higher enter:
> BCSUPDATE;DEVICE
> QUIT
 - d. For BCS32 and lower enter:
> LOGUTIL;STOP;STOP *{Note the name of this device}*
> LEAVE
> LOGINCONTROL <device> QUERY
 - e. Verify *Open Condition Logout* is *N*. If not, retain the original status and enter:
> LOGINCONTROL <device> OPENFORCEOUT FALSE
Verify *Max Idle Time* is *Forever*. If not, retain original status and enter:
> LOGINCONTROL <device> MAXIDLETIME FOREVER
> LOGINCONTROL <device> DISABLEON REMOVE
<forceout_conditions> *{conditions obtained in substep d above}*
 - f. Repeat this entire step on the other terminal device.
-

Procedure 3
Check logs SNODE

1 App/ACT For BCS33 and higher check logs to verify processor stability.

> BCSUPDATE ; LOGCHECK

> QUIT

Do not continue until all logs have been explained.

2 App/ACT For BCS32 and lower check logs to verify processor stability.

> LOGUTIL

> OPEN <log_buffer> ; WHILE (BACK) ()

where <log_buffer> refers to CM, MS, SLM and MM logs.

> LEAVE

> TRAPINFO

Check for store parity traps, MM (mismatch), and store checksum logs. Do not continue until all logs have been explained.

Procedure 4
Stop journal file

- 1 **App/ACT** ROTATE and STOP the Journal File recording.
 - a. > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
Check which JF volume is currently active.
 - b. > CLOSE JF ACTIVE
QUERY again to verify rotation.
 - c. > JF STOP
Verify stopped.
 - d. > QUIT MAPCI
-

Procedure 5
Ensure MSs loaded

As of BCS34, backward-compatibility is supported in the Message Switch. This means, if the office is on BCS34 or higher, then it is possible to PRELOAD *both* MSs with the new MS load before the CM is upgraded to the new BCS.

- 1 **App/ACT** If the office is on BCS34 or higher, then ensure both MSs are loaded with the new MS load that was provided on the new BCS IMAGE tape.
-

Procedure 6
Drop sync SNODE**1 App/ACT Type:**

> MAPCI ; MTC ; CM

2 App/ACT Ensure the CM you want to load with the new BCS load is *inactive* and the corresponding MS and SLM components are used.

For example: if the new BCS image resides on SLM disk 0, then CM 0 should be the inactive side, and the MS 0 clock should be the slave clock.

- a. Determine where the new BCS image resides (normally SLM disk 0).
 - b. If needed to align the CM with the SLM, you may switch activity of the CM using SWACT (CM level).
 - c. If needed to align the MS clock with the CM, you may switch MS clock mastership using SWMAST (MS level). If you do, wait five minutes to continue.
-

3 Site/INACT From the inactive RTIF enter:

RTIF> \JAM

RTIF> YES *{for confirmation}*

4 App/ACT

> DPSYNC *{from CM level}*

> YES *{if prompted to disable AUTO PATCHING}*

> YES *{to confirm DPSYNC}*

5 Site/INACT Site must tell the engineer when the inactive CM is flashing A1.**6 App/ACT**

> QUIT MAPCI

3-32 Preliminary phase procedure

Procedure 7 **BULLETINS before LOADMATE**

- 1 App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning LOADMATE.
-

Procedure 8 Loadmate SNODE

- 1 **App/ACT** List the SLM disk volume onto which the new BCS IMAGE files (both `_MS` and `_CM` load files) were previously restored (copied).
 - a. `> DISKUT`
`> LF SOOD<volume>` *{or SO1D<volume>}*
where <volume> is the SLM disk volume with the BCS IMAGE.
 - b. Verify the image files (both `_MS` and `_CM`) on the SLM disk volume are correct. Be sure to use the image files that were provided on the new BCS IMAGE tape.
To help understand the image filenames, you may use the DISPMS <filename> command which displays the image header information. (Refer to Appx. A for details of this command.)
-
- 2 **App/ACT** If the `_CM` image file was not previously restored to the SLM disk, you can instead loadmate from SLM tape as follows. (Otherwise, go on to with the next step to load from disk.)

CAUTION

The `_MS` file will have to be restored to the SLM disk in order to load the MS (during PRESWACT if not already done).
 However, since loadmate can be done using SLM disk or tape, you may wait until loadmate is done to restore the `_MS` file to SLM disk.

Insert the new BCS IMAGE cartridge into the SLM tape drive corresponding to the inactive CM.

`> LDMATE DIRECT TAPE 2` *{loads 2nd file on the tape}*

-continued-

Procedure 8
Loadmate SNODE (continued)

3 App/ACT If BCS28 and higher, loadmate using the SLM disk as follows.

a. Ensure no DIRP files are opened on the SLM disk with the image.

```
> DIRP;QUERY <subsystem> ALL
where <subsystem> is AMA, OM, JF, or DLOG.
```

If any opened files, close the files (or rotate the information to the active side).

CAUTION

LDMATE DIRECT (below) will fail if there are any opened files on the SLM device with the image.

"DIRECT LOADMATE OPERATION FAILED: File System operations must be halted before initiating loadmate."

b. > LDMATE DIRECT DISK <filename_CM>

If you get the above message, either close the opened file(s), or else loadmate using the VIAMS option as follows.

```
> LDMATE VIAMS <filename_CM>
```

4 App/ACT If BCS27 loadmate using the SLM disk as follows.

a. Activate patch SSY05C27.

```
> PATCHEDIT SSY05C27 ON
```

b. > LDMATE <filename_CM>

5 App/ACT If BCS26 loadmate using the SLM disk as follows.

```
> LDMATE <filename_CM>
```

6 Site and App/INACT Wait for loadmate to complete and the inactive processor to flash A1.

While waiting for loadmate, SITE may display the patches in store file (PATCHER; DISPLAY <patch>) or may copy any new patches to the new patch tape (or to disk).

Procedure 9
Login inactive after Loadmate SNODE

Login on the inactive processor after loadmate is complete.

1 App/ACT Type:

```
> MATELINK RTS
```

2 Allow initialization on the inactive side (flashing A1).

3 LOGOUT of the active side if logged in on the terminal labeled INACT.

4 > MATEIO

```
> MATELOG <device>
```

where <device> is the name of the terminal labeled INACT.

5 App/INACT

```
Enter username and password
```

{mate-side response}

```
Mate> OPERATOR OPERATOR
```

or Enter username

```
Mate> OPERATOR
```

```
Enter password
```

```
Mate> OPERATOR
```

Procedure 10
Set date and header message

- 1 **App/INACT** Set the current date and site header message on the mate side.

```
Mate> SETDATE <dd mm yy> {set today's date}
```

```
Mate> SETLOGMSG '<text>'
```

where <text> becomes the office header on the new software load. Using the old header as the model, change the **Office Order (COEO)**, **office name**, **Product Code** (or BCS level), and **application date**. Ensure all symbols at the beginning and end of the header message remain the same (including spaces).

Note: The "Order/Suborder" (Office Order) and "To Product/Version" (Product Code/BCS) can be found in the *Parmmail*.

Example:

```
94/04/12 00:41 *** H01234 OFFICE LEC00002 120494 ***
```

Procedure 11
Download application files (RTP)

- 1 **App/ACT** Download special application files to active side SFDEV.
If to_BCS 37 and higher the Applicator Package will contain the following files:

- PARMCHGS
*Download PARMCHGS renaming it as "FEATDATA."
Print this file for reference information.*

Note: PARMMAIL is also in the Applicator Package for reference.

- SITEINFO
*Download SITEINFO. This file will be used to update the Inform list
(next step) for the new software load.*
-

- 2 Matecopy the SITEINFO file to the inactive, and read (execute) it.

Note: To allow further calculation of patches for a given office, the site_key must be inserted into the inform list to identify that inform list to patadm. This is done by applying special patches which will correct the patch inform list.

- a. **ACT**
Matecopy SITEINFO to inactive side SFDEV.

- b. **INACT**
Read SITEINFO (to execute) on the inactive side.

Note: When read, SITEINFO will enter patcher, create the "dummy patches" in sfdev, apply the patches to update the inform list, and erase the patches.

Procedure 12
Check logs inactive SNODE

- 1 App/INACT** For to_BCS 33 and higher check mate logs to verify processor stability.

```
Mate> BCSUPDATE;LOGCHECK
```

```
Mate> QUIT
```

Do not continue until all logs have been explained.

- 2 App/INACT** For to_BCS 32 and lower check mate CM logs.

```
Mate> LOGUTIL;OPEN CM;WHILE(BACK)()
```

```
Mate> LEAVE
```

```
Mate> TRAPINFO
```

Check for store parity traps. Do not continue until all logs have been explained. Traps from active side (FOOTPRINT) may also be shown.

- 3 App/INACT**

```
Mate> TRAPINFO CLEAR
```

Procedure 13
Mate-side memory check

- 1 **App/ACT** If from_BCS 32 and higher, perform a mate-side memory check.

CAUTION

If this test fails *do not continue*-immediately notify the site supervisor.
The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side.

Note: Entering the RUNSTEP command below gives a warning that the step is done out of process. This is okay-answer YES to the prompt.

- a. > BCSUPDATE;RUNSTEP MATE_MEM_CHECK

Note: This displays on the active side the result of the test, "completed" or "not completed." If it is not completed an error message is also printed on the active side.

- b. Should this check fail, isolate and replace the faulty memory card on the inactive side. For additional information, turn to "MATE_MEM_CHECK failure" in *Appendix B*.

- c. > QUIT
-

Procedure 14
Retain PARM values

1 **App** Obtain a list of the following office parameters for reference.

```
> TABLE OFCVAR
> POS NODEREXCONTROL
> POS LCDREX_CONTROL
> QUIT

> TABLE OFCENG
> POS GUARANTEED_TERMINAL_CPU_SHARE
> QUIT

> TABLE OFCSTD
> POS DUMP_RESTORE_IN_PROGRESS
> QUIT
```

Procedure 15
Patch inactive

PATCH the inactive processor by following this procedure. (Mate patching can instead be done manually if desired.)

Note: Entering the RUNSTEP commands below gives a warning that the step is done out of process. This is okay-answer YES to the prompt.

- 1 **App/INACT** If coming from _BCS 31 and lower, on the mate side turn on access to WTAB using TASTOOL procedure.

- 2 **ACT** On the active side, ensure table PADNDEV points to the device (typically SFDEV) containing the patches that were downloaded for the to_BCS.

```
> TABLE PADNDEV;LIST ALL
```

If there are devices in this table that do not contain to_BCS patches, make a note of the tuples and DELETE them.

Note: MOVEBCS or TABXFR will attempt mate patching again (until this is patched out). After MOVEBCS/TABXFR does this, you will need to restore the original data in table PADNDEV. There are two ways of doing this:

1. In procedure "MOVEBCS/TABXFR setup"-Set a stop point in MOVEBCS/TABXFR to stop before table PADNDEV is moved. (At that point the patching will be completed.) Then when it stops edit the table on the active side and allow the data transfer to continue.
2. In procedure "MOVEBCS/TABXFR completed"-Allow MOVEBCS/TABXFR to run to completion as usual. Then edit table PADNDEV on both the active and inactive sides.

- 3

```
> BCSUPDATE;RUNSTEP VERIFY_DSLIMIT
```

- 4

```
> RESET
```

- 5

```
> RUNSTEP DISABLE_AUTOIMAGE
```

Note: This step is not valid if the AUTOIMAGE feature is not available.

- 6

```
> RUNSTEP SET_OFFICE_TUPLES
```

- 7

```
> RUNSTEP SEND_PATCHES
```

- 8

```
> RUNSTEP APPLY_PATCHES
```

- 9

```
> QUIT
```

-continued-

Procedure 15
Patch inactive (continued)

- 10 Site and App/INACT** Print the PATCH\$FILE and review applied (mate) patches.

```
Mate> LISTSF ALL;PRINT PATCH$FILE
```

If you need to DISPLAY any patches that were applied on the inactive side, these patches can still be accessed from the active side.

- 11** Mate> TRAPINFO

If trap occurred, do not continue until the trap is explained and action taken to correct the error.

Procedure 16
Activate patches inactive

- 1 **App/ACT** Determine which ACT patches are activated in the old load.
 - a. > PATCHEDIT
This command shows a list of 'ACT' patches and which ones are activated (turned on).
 - b. Review the patch list to determine which patches are currently activated (ON) on the active side.
Normally any ACT patch activated in the old load should be manually activated in the new load (see next step).

- 2 **Site and App/INACT** As needed activate ACT patches on the inactive side.
 - a. Mate> PATCHEDIT
 - b. Compare the mate-side patch list with active-side list obtained above. Decide with the site if any patches need to be activated (set "ON") at this time.
Passwords will be provided on the 'APF' report for any "feature patches" in the new BCS load. Give the password to Telco, but do NOT activate the patch at this time unless already ON in the old load.
 - c. Mate> PATCHEDIT <patch> ON
This activates the patch.
 - d. Repeat this command for each patch to be activated.
 - e. Also determine from comparing the patch lists if any ACT patches should be set to "NA" (no audit) state.
 - f. Mate> PATCHEDIT <patch> NA
This sets the patch to "NA" state.
 - g. Repeat this command for each patch to be set to "NA."

Procedure 17
Restart inactive for patches

- 1 **App** Perform each of three types of restarts (warm, cold, and reload) on the inactive side to satisfy the requirements of any patch(s) needing a restart.

Note: Sequence of restarts is not important.

INACT

```
Mate> RESTART <restart type>
```

```
Mate> YES {for confirmation}
```

- 2 Allow initialization on the inactive side (flashing A1).
-

- 3 Login on the inactive side.
-

- 4 Repeat above steps for each type of restart required.
-

Procedure 18
IPL modules

- 1 **App/ACT** If from_BCS 30 and lower, to avoid problems using STATUSCHECK, STATUSUPDATE, and RESTARTSWCT because of device/hardware irregularities, do the following.

- a. > QUERY <module>
where <module> is:
NODESTAT STCSTAT IPMLSTAT
CARRSTAT JCTRSTAT DCHSTAT

Repeat QUERY for each module listed.

Note: OPMSTAT, CCS6STAT, RCUSTAT, and CSCSTAT are also status modules, but do not require this procedure. The counts for these modules are set to their maximum values.

- b. If any module is loaded, as indicated by the QUERY command, enter the following:

> RUN <xxxx> IPL
where <xxxx> is a loaded module.

Note: Three or four SWERRS will be generated for each module entered in this step. The SWERRS are expected and indicate that procedures and counts for the hardware are being updated.

Procedure 19
SWCTCHK verification

- 1 **App/ACT** If from_BCS 29 and lower, verify Pre-application Engineering has entered the SWCTCHK command (see *Pre-application Report*). If not done earlier complete this step.
 - a. Ensure patch EWW08 is applied on the active (from-side) load.
 - b. > SWCTCHK
-

Procedure 20
MASSTC

- 1 **App** Check status in MASSTC level (TOPS office only).
 - a. **ACT**
 - > MASSTC
 - > STATUS
 - b. If the status is INITIAL, then no action is needed.
 - c. **INACT** If the status is DUPLICATED, then *with Telco consent* on the MATE side enter:
 - Mate> ENABLE
 - or, if data is obsolete
 - Mate> SCRAP
 - d. **ACT** If the status is SWITCHED, then *with Telco consent* on the ACTIVE side enter:
 - > PERM
-

Procedure 21
BULLETINS before data transfer

- 1 **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning the data transfer (MOVEBCS/TABXFR).
-

MOVEBCS procedure

For COMPLETE ONP ONLY (NOT HYBRID)-This section details steps required to move the data from the old BCS load to the new BCS load.

For from_BCS 34 and lower, the MOVEBCS is used to perform the data transfer portion of a BCS application.

Procedure 1 Table DART

- 1 **App** For to_BCS 30 and 31 only, prepare table DART as follows.
 - a. **ACT** > MATECOPY DRNOW
 - b. **INACT** Mate> LISTSF ALL
Mate> READ DRNOW
Mate> ERASESF DRNOW
Mate> DARTEDIT
Mate> PRINTDART LONG *{optional list for reference}*
Mate> QUIT

Note: For additional DARTEDIT command syntax refer to *MOVEBCS summary* in Appendix A.

- 2 **App** For to_BCS 29 only, prepare table DART as follows.
 - a. **ACT** > MATECOPY DRNOW
 - b. **INACT** Mate> RESTTYPE EXTERNAL
Mate> LISTSF ALL
Mate> READ DRNOW
Mate> ERASESF DRNOW
-

**Procedure 2
Office PARMs**

CAUTION

Before beginning read all bulletins concerning changes to office parameters (PARMs).

Some office PARM values, if not already built into the new load, will have to be set during the data transfer. This could involve setting stop points in the MOVEBCS/TABXFR prior to starting.

PARAMETERS RULE-If any office PARMs are found to be different between the old and new software loads, then follow this rule:

- Use the requested PARM value from the *Parmmail* (or *Parm Variance Report*).
- If there is no requested or reformatted PARM value, use the value that is currently in the switch (old load).

Note: A reformatted value is indicated on the Parmmail as the polling value with "R" beside it.

- 1 Office parameters are already set in the undatafilled BCS image.
 - a. Compare (delta) the parm values in the inactive side with the ordered parameters indicated in the *Parm Variance Report*.
 - b. Normally, if any parms need to be corrected, make the required changes *before* beginning the data transfer. Make the parm corrections by changing the appropriate office tables on the inactive side.

Note: On the mate side use commands "MOVEBCS STOP BEFORE <table name>" and "MOVEBCS STOP AFTER <table name>" to cause the MOVEBCS process to stop at specified tables. The "STOP BEFORE" option is safer because it does not involve pre- or post-activities which may be attached to a particular table. (For example, "MOVEBCS STOP AFTER NNASST" is not possible since the post-activity for NNASST may include a restart.)

When using these options remember to use "STOP CLEAR BEFORE <table name>" or "STOP CLEAR AFTER <table name>" before continuing MOVEBCS. This clears the previous stop points.

Procedure 3
Stop after CLLIMITCE\$DIAGDATA

1 App/INACT For from_BCS 26 and to_BCS 29 type:

```
Mat> MOVEBCS STOP AFTER CLLIMITCE$DIAGDATA
```

Procedure 4
MVEBCS setup

- 1 **App** Set up TRACECI to monitor MOVEBCS summary and error messages on the primary terminal (ACT).
 - a. **ACT** > TRACECI DEVICE <device_name>
where <device_name> is the name of the device labeled INACT.
Response on the inactive side:
This device is selected for TRACEing
 - b. **INACT** Mate> TRACECI TEST 'THIS IS A TEST'
"THIS IS A TEST" is output on the device selected above.

- 2 **App/INACT** Set MOVEBCS to stop at each error with a limit of not more than 100.
 - a. Mate> MOVEBCS LIMIT 25 *{limit of 25 is recommended}*
 - b. Mate> MOVEBCS STOPIF 1

Procedure 5 Start MOVEBCS

- 1 App Start the data transfer using MOVEBCS as follows.

CAUTION

MOVEBCS will perform a mate-side memory check. If this test fails *do not continue*-immediately notify the site supervisor.
The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side.

- a. **INACT** Mate> MOVEBCS;LOGOUT
MOVEBCS will perform an automatic restart reload after each of the following tables is transferred: DATASIZE, NNASST (or CMSHELF), and (conditionally) TRKMEM. Following the automatic restart, MOVEBCS will automatically start transferring the next table listed in table DART.
- b. Certain tables will fail with the message "This table is Recursive..." *No action is required other than to restart MOVEBCS.*
- Note:** This message means the table will be re-datafilled automatically by MOVEBCS (since data for the table depends upon other tables being datafilled first). Recursive tables may include: XLANAME, ESAPXLA, NCOS, THOUGRP, IBNRTE, OFRT, FNMAP, and others.
- c. **ACT** If any table fails to restore properly on the mate side, MOVEBCS will stop (depending on STOPIF and LIMIT) and will identify the headtable/subtable position in error.

For any table in error investigate the problem by entering on the ACTIVE side:

```
> DELTA <table> NOFILE           {compares old and new tuples}
or
> DELTA <table> SUB <subtable> NOFILE
```

- d. **INACT** Whenever it is necessary to login on the inactive (mate) side to correct an error, first *verify a flashing A1* on the inactive processor; then login on the mate side and make the needed changes.
- e. **INACT** Each time you restart the MOVEBCS, also LOGOUT on the mate side (as above).

```
Mate> MOVEBCS;LOGOUT
```

Note: Avoid unnecessary or prolonged logged-in sessions on the mate side while MOVEBCS is running.

Procedure 6
Copy patches

- 1 **Site/ACT** While the data transfer is running and as time allows, on the active side copy patches in store file to the new patch tape (or to disk) and XPM patches to disk.

Note: Following are steps to copy individual patches to tape or disk. You may instead create a file to automatically copy these patches.

- a. Install the new patch tape on a tape drive (x) with a write enable ring.
 - b. > LISTSF ALL
 - c. > MOUNT <x>;LIST T<x>
 - d. > COPY <sfdev_patch> T<x>
where <sfdev_patch> refers to patches in SFDEV listed in step 1.b.
 - e. Repeat COPY for each patch in SFDEV.
 - f. > DEMOUNT T<x>
 - g. > LISTSF ALL
 - h. List the disk volume where the XPM loads (and patches) normally reside.
 - i. > COPY <xpm_patch> <pload_disk>
where <xpm_patch> refers to XPM patches in SFDEV (format aaannXyy\$PATCH: aaa is alphabetic, nn is numeric, and yy is the BCS number), and where <pload_disk> is the XPM disk volume listed above. Do not perform if there are no XPM patches in SFDEV, if there are no XPMs or if there are no disks.
 - j. Repeat COPY for each XPM patch in SFDEV.
-

Procedure 7
Table CLLIMTCE\$DIAGDATA

- 1 **App/INACT** For from_BCS 26 and to_BCS 29: if a stop point was set previously, expect MOVEBCS to stop after table CLLIMTCE subtable DIAGDATA is restored to allow the following workaround to be done.
 - a. After MOVEBCS stops, login on the inactive (mate) side and enter:
Mate> FIXDIAG
 - b. CLEAR the stop point that was set AFTER CLLIMTCE\$DIAGDATA.
Mate> MOVEBCS STOP CLEAR AFTER CLLIMTCE\$DIAGDATA
 - c. Restart MOVEBCS.
Mate> MOVEBCS;LOGOUT
-

Procedure 8
MOVEBCS completed

- 1 MOVEBCS is finished when you receive the following message.

INACT - completed D/R of office

Note: Do not perform the following step if PADNDEV data was manually restored *during* the MOVEBCS. (See procedure "Patch inactive.")

- 2 **ACT and INACT** On BOTH the active and inactive sides, change table PADNDEV back the way it was before patching the mate side.
-

Procedure 9
Login inactive

1 **App/INACT** *Verify a flashing A1 on the inactive processor.*

2 Login on the mate side as follows.

a. ACT

> MATEIO

> MATELOG <**device**>

where <device> is the name of the terminal labeled INACT.

b. INACT

Enter username and password *{mate-side response}*

Mate> OPERATOR OPERATOR

or Enter username

Mate> OPERATOR

Enter password

Mate> OPERATOR

Procedure 10
Print reports

1 **App** Generate a final data transfer report. This will include both the table exception report and the NTX package delta.

a. **ACT** Only if RECORD START was *not* done previously, type the following.

```
> RECORD START FROM <terminal_id> ONTO <printer>  
where <terminal_id> is the terminal device labeled INACT, and  
<printer> refers to a printer used to collect the data transfer  
information.
```

b. **INACT**

```
Mate> MOVEBCS REPORT
```

c. **ACT** Only if RECORD START was done in substep a (above), type the following.

```
> RECORD STOP FROM <terminal_id> ONTO <printer>  
where <terminal_id> and <printer> are the devices used above.
```

Procedure 11
Trapinfo inactive

1 App/INACT Type:

Mat> TRAPINFO

If a trap has occurred, do not continue until the trap is explained.

This page purposely left blank.

TABXFR procedure

For COMPLETE ONP ONLY (NOT HYBRID)-This section details steps required to move the data from the old BCS load to the new BCS load.

For from_BCS 35 and higher, the TABXFR increment is used to perform the data transfer portion of a BCS application.

Procedure 1 Office PARMs with TABXFR

CAUTION

Before beginning read all bulletins concerning changes to office parameters (PARMs).

Some office PARM values, if not already built into the new load, will have to be set during the data transfer. This could involve setting stop points in the MOVEBCS/TABXFR prior to starting.

PARAMETERS RULE-If any office PARMs are found to be different between the old and new software loads, then follow this rule:

- Use the requested PARM value from the *Parmmail* (or *Parm Variance Report*).
- If there is no requested or reformatted PARM value, use the value that is currently in the switch (old load).

Note: A reformatted value is indicated on the Parmmail as the polling value with "R" beside it.

- 1 **If to_BCS36 and lower**-Office parameters are already set in the undatafilled BCS image.
 - a. Compare (delta) the parm values in the inactive side with the ordered parameters indicated in the *Parm Variance Report*.
 - b. Normally, if any parms need to be corrected, make the required changes *before* beginning the data transfer. Make the parm corrections by changing the appropriate office tables on the inactive side.

-continued-

Procedure 1
Office PARMs with TABXFR (continued)

- 2** **If to_BCS37/CSP02 and higher-**With the introduction of CSP02 office parameters will be set as part of the TABXFR.
- a.** Compare (delta) the parm changes to be applied by the FEATDATA file with the ordered parameters indicated in the *Parmmail*.
Note: PARMMAIL and PARMCHGS files are in the Applicator Package. All *new* and *changed* parm values as indicated in PARMMAIL are also listed in PARMCHGS (and FEATDATA).
 - b.** If any parms need to be changed, edit the FEATDATA file to reflect the corrected parm values. TABXFR will use this file to set the parms.
 - c.** **App/ACT** Once the FEATDATA file is verified correct, MATECOPY the file to inactive (mate) side SFDEV. This file will be processed after the parm tables restore.
-

Procedure 2
TABXFR setup

1 **App** Set up TRACECI to monitor TABXFR summary and error messages on the primary terminal (ACT).

- a. **ACT** > TRACECI DEVICE <device_name>
where <device_name> is the name of the device labeled INACT.
Response on the inactive side:
This device is selected for TRACEing
 - b. **INACT** Mate> TRACECI TEST 'THIS IS A TEST'
"THIS IS A TEST" is output on the device selected above.
-

2 **App/INACT** Set up and initialize the TABXFR platform used to perform the table transfers.

- a. Mate> TABXFR
TABXFR: *{system response}*
- b. Mate> STOPIF 1
Table transfer will stop after this number of failures.
- c. Mate> LIMIT 25
Limits the number of failures allowed on a table.
- d. Mate> SETUP STANDARD
TABXFR type set to: STANDARD. *{system response}*

Note: The STATUS command can be used at any time while in the TABXFR increment to display information about the setup and status of the data transfer.

Procedure 3
Start TABXFR

- 1 **App** Start the data transfer using TABXFR as follows.

CAUTION

**TABXFR will perform a mate-side memory check. If this test fails
do not continue-immediately notify the site supervisor.**
The purpose of the check is to prevent a SWACT to faulty hardware
on the inactive side.

- a. **INACT** Mate> TABXFR;STARTXFR;LOGOUT
TABXFR will perform an automatic restart reload after each of the following tables is transferred: DATASIZE, NNASST (or CMSHELF), and (conditionally) TRKMEM. Following the automatic restart, TABXFR will automatically start transferring the next table listed in table DART.

Note: A list of empty head tables is sent to the inactive side at the beginning of TABXFR. The applicator may also see empty sub tables that are not on the list being transferred. This is normal and is design intent.

- b. **ACT** If any table fails to restore properly on the mate side, TABXFR will stop (depending on STOPIF and LIMIT) and will identify the headtable/subtable position in error.

For any table in error investigate the problem by entering on the ACTIVE side:

> DELTA <table> NOFILE *{compares old and new tuples}*

or

> DELTA <table> SUB <subtable> NOFILE

- c. **INACT** Whenever it is necessary to login on the inactive (mate) side to correct an error, first *verify a flashing A1* on the inactive processor; then login on the mate side and make the needed changes.

- d. **INACT** Continue theTABXFR as follows. Also LOGOUT on the mate side (as above).

Mate> TABXFR;STARTXFR;LOGOUT

Note: Avoid unnecessary or prolonged logged-in sessions on the mate side while TABXFR is running.

Procedure 4
Copy patches

- 1 **Site/ACT** While the data transfer is running and as time allows, on the active side copy patches in store file to the new patch tape (or to disk) and XPM patches to disk.

Note: Following are steps to copy individual patches to tape or disk. You may instead create a file to automatically copy these patches.

- a. Install the new patch tape on a tape drive (x) with a write enable ring.
 - b. > LISTSF ALL
 - c. > MOUNT <x>;LIST T<x>
 - d. > COPY <sfdev_patch> T<x>
where <sfdev_patch> refers to patches in SFDEV listed in step 1.b.
 - e. Repeat COPY for each patch in SFDEV.
 - f. > DEMOUNT T<x>
 - g. > LISTSF ALL
 - h. List the disk volume where the XPM loads (and patches) normally reside.
 - i. > COPY <xpm_patch> <pload_disk>
where <xpm_patch> refers to XPM patches in SFDEV (format aaannXyy\$PATCH: aaa is alphabetic, nn is numeric, and yy is the BCS number), and where <pload_disk> is the XPM disk volume listed above. Do not perform if there are no XPM patches in SFDEV, if there are no XPMs or if there are no disks.
 - j. Repeat COPY for each XPM patch in SFDEV.
-

Procedure 5
TABXFR completed

- 1 **App** TABXFR is finished when you receive the following message.

INACT - completed D/R of office

Note: Do not perform the following step if PADNDEV data was manually restored *during* the TABXFR. (See procedure "Patch inactive.")

- 2 **ACT and INACT** On BOTH the active and inactive sides, change table PADNDEV back the way it was before patching the mate side.
-

Procedure 6
Login inactive

1 **App/INACT** *Verify a flashing A1 on the inactive processor.*

2 Login on the mate side as follows.

a. ACT

> MATEIO

> MATELOG <**device**>

where <device> is the name of the terminal labeled INACT.

b. INACT

Enter username and password *{mate-side response}*

Mate> OPERATOR OPERATOR

or Enter username

Mate> OPERATOR

Enter password

Mate> OPERATOR

Procedure 7
Print reports TABXFR

1 **App** Generate a final data transfer report. This will include both the table exception report and (with BCS36 and lower) the NTX package delta.

a. **ACT** Only if RECORD START was *not* done previously, type the following.

```
> RECORD START FROM <terminal_id> ONTO <printer>  
where <terminal_id> is the terminal device labeled INACT, and  
<printer> refers to a printer used to collect the data transfer  
information.
```

b. **INACT**

```
Mate> REPORT {still in TABXFR increment}
```

```
Mate> QUIT {quits out of TABXFR}
```

c. **ACT** Only if RECORD START was done in substep a (above), type the following.

```
> RECORD STOP FROM <terminal_id> ONTO <printer>  
where <terminal_id> and <printer> are the devices used above.
```

Procedure 8
Trapinfo inactive

1 App/INACT Type:

Mat> TRAPINFO

If a trap has occurred, do not continue until the trap is explained.

This page purposely left blank.

PRESWACT procedure

This section details steps required to prepare for the CC activity switch to the new software load.

Procedure 1

BULLETINS before PRESWACT

- 1 **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning PRESWACT.
-

Procedure 2
Unload module JCTRSTAT

If this is an ENET office, perform this procedure. Note carefully the from and to BCS qualifiers.

- 1 **App/ACT** If an ENET office is going from BCS31 to BCS34RTS, the module JCTRSTAT will have to be *unloaded* on the ACTIVE side of the switch *before starting* PRESWACT.

> UNLOAD JCTRSTAT

System response: The module will be unloaded from the switch.

Note: This is necessary due to a change in the software packaging of JNET and ENET code which occurred between BCS34RTM and BCS34RTS.

Procedure 3 Start PRESWACT

- 1 **App/ACT** Perform PRESWACT of BCSUPDATE.

Note: Please logout all users on the inactive side while PRESWACT is running.

```
> BCSUPDATE
> PRESWACT
```

- 2 Read the following notes, and continue the procedure while PRESWACT is running.

Note 1: PRESWACT runs all steps required before the CC switch of activity and flags them as completed when they pass. If any error occurs, PRESWACT will stop and give instructions. If this is the case, follow PRESWACT instructions to correct the problem (contact the site supervisor if necessary).

As an example:

```
TABLE_DELTA          executing
:
Table AMAOPTS *** Checksum incorrect, keys incorrect
:
TABLE_DELTA          not complete

ACT - Error: Inactive table data did not match.
Correct error condition. Enter Preswact to continue
```

For any table in error, investigate the problem by entering:

```
> DELTA <table> NOFILE          {compares new/old tuples}
```

or > DELTA <table> SUB <subtable> NOFILE

To continue, run PRESWACT again by entering:

```
> PRESWACT
```

Note 2: A hardware conversion (such as LTC/LTCI) scheduled concurrently with the BCS upgrade will require certain table changes, additions or deletions. PRESWACT step TABLE_DELTA will detect a mismatch between the old and new data, and will stop, indicating an error. If this is the case, confirm the table differences are due to the conversion, resolve any differences, and run PRESWACT again (type >PRESWACT) to continue.

-continued-

Procedure 3
Start PRESWACT (continued)

Note 3: PRESWACT step TABLE_DELTA may also display an informative message without stopping. When this occurs, it is not considered an error; rather, it is an indication that something is different in the old and new BCS loads. Note the information displayed, and at a convenient stopping point, compare the old and new loads to understand and validate the differences. *As an example:*

```
TABLE_DELTA           executing
:
Table ATTCONS Checksum incorrect, keys match
:
TABLE_DELTA           complete
```

Procedure 4
Override module JCTRSTAT

PRESWACT may STOP with the message "Failed SWACT_MODULE_CHECK." If you see this message and it is indicating that JCTRSTAT is the only module missing on the inactive side and if this is an ENET office, perform this procedure. If any other module is reported to be missing from the inactive side please investigate before taking any action. Note carefully the from and to BCS qualifiers.

- 1 App/ACT** If an ENET office is going from BCS32 thru 34RTM to BCS34RTS or higher, PRESWACT step SWACT_MODULE_CHECK will have to be *overridden* as follows.

> BCSUPDATE;SWACTCI;MODCHECK OVERRIDE *{for BCS33 and higher}*

> BCSUPDATE;SWCT;MODCHECK OVERRIDE *{for BCS32}*

System response: The user will be prompted to override module JCTRSTAT.

Note: This is necessary due to a change in the software packaging of JNET and ENET code which occurred between BCS34RTM and BCS34RTS.

**Procedure 5
PRESWACT DIRP and billing**

Site and software delivery engineer should work together to prepare both PRIMARY and PARALLEL DIRP billing subsystems for the CC switch of activity (SWACT). This procedure gives the steps to accomplish this preparation.

Note: Site can begin doing this procedure while the Applicator continues with other PRESWACT procedures.

1.0 Disk drive parallel DIRP coming from BCS31 and lower

- a. **Site/ACT** In table DIRPSSYS determine which disks are being used for parallel DIRP recording.

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

- b. For a parallel volume that is on DISK, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS by replacing the volume name with nil volume (\$).

- c. Copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.

- d. Erase all closed parallel DIRP files from the disk:

```
> CLEANUP FILE <parallel_filename>  
where <parallel_filename> is each file to be erased.
```

- e. Reformat the parallel disk volume:

```
> DIRPPFMT <parallel_volume>  
where <parallel_volume> is the original volume name.
```

- f. If to_BCS 32 and higher, rename the first file on the reformatted parallel volume (created by the "dirppfmt" command). Using the "renamefl" command, change the file name from "DIRPPARALLEL" to "B000000000000" (12 zeros).

- g. **Site and App/INACT** If from_BCS 31, ensure that parallel disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

-continued-

Procedure 5
PRESWACT DIRP and billing (continued)**1.1 Disk drive parallel DIRP coming from BCS32 and higher**

Note: If from_BCS 32 and higher, Site no longer has to take down parallel billing if on disk.

Site and App/INACT Ensure that parallel disk volumes are in table DIRPPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPPOOL on the inactive side before SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPPOOL_CHECK displays the datafill for table DIRPPPOOL on the inactive side.

If from_BCS 33 and lower, PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPPOOL.

DIRP will recover parallel recording to disk on the newly-active side after SWACT.

CAUTION**Recently recorded parallel data may be overwritten.**

Site should copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.

- If a single parallel volume is in use, information on the volume will be lost over SWACT.
- If more than one parallel volume is allocated to DIRP, DIRP will start recording after SWACT on the volume with the oldest time stamp. Hence information on that volume will be lost over SWACT.

2 Disk drive PRIMARY billing

- a. Site/ACT** If on disk (DDU), from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR).
- b.** If required by Telco policy copy unprocessed DIRP files to back-up tape (using DIRPAUTO or DIRPCOPY commands).
- c.** Verify that table DIRPHOLD contains no unprocessed billing files (if DIRPAUTO was used above).

-continued-

Procedure 5
PRESWACT DIRP and billing (continued)

- d. **Site and App/INACT** If from_BCS 32 and higher, ensure that regular disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

3 Tape drive PRIMARY billing

- a. **Site/ACT** If on tape (MTD), from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR), CLOSE the standby file, and DMNT the standby volume.

Example:

```
> ROTATE AMA
> CLOSE AMA STDBY 1
> DMNT AMA T1                                     {standby volume}
```

- b. Remove the demounted standby tape from the tape drive, and put up a new tape to be used as the next DIRP volume.
- c. Prepare a new standby volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
where <x> is the standby device number, and <volume_id> is the
name of the standby volume.
```

If prompted enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then select an unused or expired tape for formatting.

```
> DEMOUNT T<x>
```

Leave the standby volume at load point and ON LINE. Immediately following SWACT, it will become the ACTIVE volume of the appropriate subsystem.

- d. **Site and App/INACT** If from_BCS 32 and higher, ensure that regular tape volumes are in table DIRPPOOL on the inactive side. This allows the tape to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

-continued-

Procedure 5
PRESWACT DIRP and billing (continued)

4.0 DPP/BMC PRIMARY billing coming from BCS31 and lower

- a. **Site/ACT** If on DPP or BMC, from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR), CLOSE the standby file, and DMNT the standby volume.

Note: DIRP sees DPP/BMC as a tape drive port.

- b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

```
> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
```

This re-establishes the block header on the DPP.

- c. Display current DPP settings to hardcopy (retain for POSTSWACT).

- d. Prepare a new standby volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
```

where <x> is the standby device number, and <volume_id> is the name of the standby volume.

If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)" then enter:

```
> ERASTAPE <x>
```

where <x> is the standby device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

System response is:

```
***WARNING, THIS TAPE WILL BE ERASED***
```

CAUTION

At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
 If a mistake is made, a real tape could be erased.

Enter YES to confirm the command.

```
> DEMOUNT T<x>
```

If ERASTAPE command was used, repeat this substep (d) to rename the volume.

Leave the standby volume demounted. Immediately following SWACT, it will become the ACTIVE volume of the appropriate subsystem.

-continued-

**Procedure 5
PRESWACT DIRP and billing (continued)**

- e. **Site and App/INACT** If from_BCS 31, ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

```
Mate> TABLE DIRPPOOL; POS <pool_#>  
where <pool_#> is the number for DPP AMA pool.
```

If going to BCS32 and higher CHANGE field DEVTYPE in table DIRPPOOL to DPP (not TAPE).

CAUTION

**Starting in BCS32 in a pool of DPP or BMC volumes,
field DEVTYPE in table DIRPPOOL should be DPP (not TAPE).**
Otherwise, if datafilled as TAPE you will have to recover the volume manually after SWACT.

- f. **Site and App/ACT** If SMDR recording is on BMC (datafilled as TAPE in table DIRPSSYS/DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY volume. In table DIRPSSYS/DIRPPOOL add the TAPE device as a standby BMC. Also add the device in DIRP_REC (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

Note: Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

- g. **Site and App/INACT** Verify the DIRP_REC file on the inactive side is correct for the SWACT to the new BCS load.

```
Mate> LISTSF ALL
```

```
Mate> PRINT DIRP_REC
```

If necessary, edit DIRP_REC to make corrections.

-continued-

Procedure 5 PRESWACT DIRP and billing (continued)

If going to BCS32 and higher, *delete* the DPP tuple in the DIRP_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

```
Mate> EDIT DIRP_REC
Mate> DOWN '<poolname>'      {name of the pool using the DPP}
Mate> DELETE
Mate> ERASESF DIRP_REC
Mate> FILE SFDEV DIRP_REC
```

4.1 DPP/BMC PRIMARY billing coming from BCS32 and higher

- a. **Site/ACT** Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

```
> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
This re-establishes the block header on the DPP.
```

- b. **Site and App/ACT** If SMDR recording is on BMC (datafilled as TAPE in table DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY TAPE volume. In table DIRPPOOL add the TAPE device as a standby BMC. Also add the device on the inactive side (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

Note: Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

- c. **Site and App/INACT** Ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

```
Mate> TABLE DIRPPOOL;POS <pool_#>
where <pool_#> is the number for DPP AMA pool.
```

-continued-

**Procedure 5
PRESWACT DIRP and billing (continued)**

Verify field DEVTYPE in table DIRPPOOL is DPP (not TAPE).

CAUTION

Starting in BCS32 in a pool of DPP or BMC volumes, field DEVTYPE in table DIRPPOOL should be DPP (not TAPE). Otherwise, if datafilled as TAPE you will have to recover the volume manually after SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

5.0 Tape drive parallel DIRP coming from BCS33 and lower

- a. **Site/ACT** In table DIRPSSYS or DIRPPOOL determine which MTDs are being used for parallel DIRP recording.

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

Note: TAPEX cannot be used for parallel recording.

- b. For a parallel volume that is on TAPE, CLOSE the parallel file and DMNT the volume from the DIRP level. Remove the volume from table DIRPSSYS or DIRPPOOL by replacing the volume name with nil volume (\$). Physically remove the tape from the drive.

- c. Replace these tapes with freshly formatted, empty tapes.

Note: This substep can also be done after the CC switch of activity (during POSTSWACT) if the tape drive is needed for other purposes.

Prepare each new parallel volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
where <x> is the parallel device number, and <volume_id> is the name
of the parallel volume.
```

```
> DEMOUNT T<x>
```

Leave the tape at load point and ON LINE so it can be activated as the new PARALLEL device after SWACT.

-continued-

Procedure 5 PRESWACT DIRP and billing (continued)

5.1 Tape drive parallel DIRP coming from BCS34 and higher

Note: This step can be used to automatically recover parallel volumes after the SWACT. Alternatively, you can do the previous step if you wish to wait until after the SWACT to format the new parallel volumes.

- a. **Site/ACT** In table DIRPPOOL determine which MTDs are being used for parallel DIRP recording. PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.
- b. For a parallel volume that is on TAPE, demount all EXCEPT the current parallel volume from table DIRPPOOL by replacing the volume name in DIRPPOOL with nil volume (\$). Then physically remove the tape from the drive.
- c. Replace these tapes with freshly formatted, empty tapes.

Prepare each new parallel volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
where <x> is the parallel device number, and <volume_id> is the name
of the parallel volume.
```

```
> DEMOUNT T<x>
```

Leave the tape at load point and ON LINE so it can be activated as the new PARALLEL device after SWACT.

- d. **Site and App/INACT** Ensure that parallel tape volumes are in table DIRPPOOL on the inactive side. This allows the tape to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

- If a single parallel volume is used for recording, the volume will be dropped over SWACT.

- If multiple tape volumes are in use for parallel recording, the volume in use before the SWACT will be dropped from DIRP and a freshly-formatted, empty volume will be used for recording.

6.0 DPP/BMC parallel DIRP coming from BCS33 and lower

In BCS32 or BCS33 DIRP no longer supports parallel AMA recording on a DPP or BMC volume, UNLESS device type TAPE is used in table DIRPPOOL (in which case you must manually recover the DPP after SWACT).

- a. **Site/ACT** In table DIRPSSYS or DIRPPOOL identify which DPP/BMC(s) is being used for parallel DIRP recording.

-continued-

Procedure 5
PRESWACT DIRP and billing (continued)

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

- b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

```
> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA  
This re-establishes the block header on the DPP.
```

- c. Display current DPP settings to hardcopy (retain for POSTSWACT).
- d. For a parallel volume that is on DPP or BMC, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS or DIRPPOOL by replacing the volume name with nil volume (\$).
- e. Prepare each new parallel volume as follows.

```
> MOUNT <x> FORMAT <volume_id>  
where <x> is the parallel device number, and <volume_id> is the name  
of the parallel volume.
```

If prompted enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)" then enter:

```
> ERASTAPE <x>  
where <x> is the parallel device number.
```

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect data collected by the DPP/BMC. It only resets DMS indicators.

System response is:

```
***WARNING, THIS TAPE WILL BE ERASED***
```

CAUTION

**At this point again confirm the device is a port to a DPP or BMC,
and NOT an unexpired billing tape.**
If a mistake is made, a real tape could be erased.

Enter YES to confirm the command.

```
> DEMOUNT T<x>
```

If ERASTAPE command was used, repeat this substep (e) to rename the volume.

Leave the billing volume in this state so it can be activated as the new PARALLEL volume following SWACT.

-continued-

Procedure 5
PRESWACT DIRP and billing (continued)

- f. **Site and App/INACT** If to_BCS 32 and higher, ensure that parallel DPP/BMC volumes are in table DIRPPOOL on the inactive side. This allows the DPP/BMC to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.
- g. **Site and App/INACT** If to_BCS 32 and higher, for the parallel DPP tuple in table DIRPPOOL change field DEVTYPE to TAPE (not DPP).
- h. **Site and App/INACT** Verify the DIRP_REC file on the inactive side is correct for the SWACT to the new BCS load.

```
Mate> LISTSF ALL
```

```
Mate> PRINT DIRP_REC
```

If necessary, edit DIRP_REC to make corrections.

If going to BCS32 and higher, *delete* the DPP tuple in the DIRP_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

```
Mate> EDIT DIRP_REC
```

```
Mate> DOWN '<poolname>'      {name of the pool using the DPP}
```

```
Mate> DELETE
```

```
Mate> ERASESF DIRP_REC
```

```
Mate> FILE SFDEV DIRP_REC
```

6.1 DPP/BMC parallel DIRP coming from BCS34 and higher

In BCS34 and higher DIRP no longer supports parallel AMA recording on a DPP or BMC volume. Table control prohibits the filling of devtype DPP in a parallel pool.

Procedure 6
Data extension

- 1 **App/INACT** For a DATA EXTENSION only-Once PRESWACT step MATE_RESTART_RELOAD (or step MATE_RESTART prior to BCS35) has completed, perform the following workaround. This allows the new trunks to remain in the INB state after SWACT.
 - a. Log into the inactive side.
 - b. Mate> LISTSF ALL

Note: The file 'NEWTRKS' should be in storefile. This file is created by Loadbuild to identify all the trunks added for the Data Extension.
 - c. Mate> MAPCI NODISP;MTC;TRKS;TTP
 - d. Mate> COMMAND PTBI (POST T @1 @2;FRLS;BSY INB)
 - e. Mate> READ NEWTRKS
 - f. Mate> QUIT ALL
-

Procedure 7
MS_CHECK failure (continued)

- 9 > TST <MS#> VIAMATE
Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.

CAUTION
Do not proceed unless NO faults are reported.
Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.

-
- 10 Monitor MS logs for 5 minutes to ensure stability.

-
- 11 Continue PRESWACT.

> QUIT MAPCI

> PRESWACT

{still in BCSUPDATE}

Procedure 8
STATUSCHECK if MS loaded in PRESWACT

- 1 **App/ACT** After PRESWACT is completed and only if one MS was loaded during PRESWACT (BCS33 and lower), run a STATUSCHECK (to enable the matelink).

Note: STATUSCHECK *may* cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.

- a. > BCSUPDATE ; SWACTCI ; STATUSCHECK {for BCS33 and higher}
 > BCSUPDATE ; SWCT ; STATUSCHECK {for BCS31 or BCS32}
 > SWCT ; STATUSCHECK {for BCS30 and lower}
- b. Ensure the STATUSCHECK passes (with both sides matching).
If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.
-

Procedure 9
Login inactive

1 **App/INACT** *Verify a flashing A1 on the inactive processor.*

2 Login on the mate side as follows.

a. **ACT**

> MATEIO

> MATELOG <device>

where <device> is the name of the terminal labeled INACT.

b. **INACT**

Enter username and password *{mate-side response}*

Mate> OPERATOR OPERATOR

or Enter username

Mate> OPERATOR

Enter password

Mate> OPERATOR

Procedure 10
Logout DNC

- 1 **Site and App/ACT** If DNC is in use (feature package NTX560), have Telco confirm that all DNC end users have been contacted and are logged out.
-

Procedure 11
Table CRSFMT alarm

- 1 **App/ACT** In table CRSFMT, field ALARM, if any entry is set to 'Y', then the device must also be allocated in table DIRPPOOL. Otherwise, set it to 'N'.

Note: If a volume is allocated in DIRPPOOL it is being used.

SWACT and POSTSWACT procedure

This section details steps required to perform a CC switch of activity (SWACT), test the new load, and complete the software delivery process.

Procedure 1 BULLETINS before SWACT

- 1 App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning the SWACT.
-

Procedure 2
Before SWACT

- 1 **Site** Do not proceed until both the Telco and NT on-line support agree.

- 2 **Site** Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

- 3 **Site** Ensure no further activity is performed on the DPP, including DPP polling or disk backup. Inform the downstream processing center.

- 4 **Site** Disable all polling and periodic testing. There is to be no activity on the SuperNode CM, MS, and CLOCK or NT40 CC and CMC until cleared by the software delivery engineer. Failure to comply may result in a system restart.

- 5 **Site** Dump the SPMS register information to a printer (or other device) according to Telco practice.

- 6 **Site** Disconnect any ISDN Digital Test Access (DTA) monitors. (Reference NTP 297-2421-300.)

CAUTION

If DTA monitor is left connected over the SWACT, it will not be possible to reconnect it without first reloading the PM from CC data.

- a. Enter the LTPDATA level of MAP.
- b. Query all DTA monitors on the switch by issuing the command,
 > EQUIP DTA QUERY ALL
- c. If the DMS responds with "No DTA equipment reserved on switch" then no further action is needed.
- d. Make note of any connected monitors by looking at the CONNECT field of the query display.

 Use the POST command to post each monitored LEN, and then issue the command,

 > CONNECT <N> RLS
 where <N> is the integer number of the monitor from the first column of the query display.

 Do this for each connected monitor. Repeat substep b as necessary to review DTA status.

-continued-

Procedure 2
Before SWACT (continued)

- e. Reset all monitor LENS and DS0 channels by issuing the command,
- ```
> EQUIP DTA RESET <N>
```
- where <N> is the integer number of the monitor from the first column of the query display.
- Do this until no equipment is left "Equipped." Repeat substep b as necessary to review DTA status.
- 

- 7 **Site** If BCS35, ensure Bit Error Rate Tester (BERT) is not running. BERT is a manual action used to test the quality of a CCS7 link.

**CAUTION**

**In BCS35 BERT should not be left running during the CC SWACT. Otherwise, the link will hang up over the SWACT.**  
If BERT is left running over the SWACT, you will have to go into the PM level, post the offending LIU7/MSB7, and BSY and RTS it.

- a. To determine if BERT is on: Go into C7LKSET level and post each linkset in turn. The link state should not indicate 'BERT'.
- b. To turn off BERT, go into the C7LKSET level and post the linkset. Go into C7BERT level and type STOP <linkno>.
-

**Procedure 3**  
**Restore special logs**

Special logs (suppressed logs or logs with a threshold) are set up in LOGUTIL on a per-site basis. These do not get restored to the new load. This procedure manually restores any special logs on the new load.

*Note:* A restart/reload on the mate side will cause suppress/threshold settings to be lost. If a mate restart occurs before the switch of activity, verify the settings are present and, if not, repeat this procedure.

**1 App/ACT** List all special logs on the active side.

```
> LOGUTIL
> LISTREPS SPECIAL
```

*Example output:*

```
LINE 138 7 INFO TRMT *thresh= 25*
PM 189 5 INFO PM SW Information... *supp*
```

---

**2 App/INACT** Restore special logs on the mate side.

```
Mate> LOGUTIL
Mate> LISTREPS SPECIAL
```

*Commands to restore above example:*

```
Mate> THRESHOLD 25 LINE 138
Mate> SUPPRESS PM 189
```

---

**3 App/INACT** Verify the correct logs are set up and match the active load.

```
Mate> LOGUTIL
Mate> LISTREPS SPECIAL
```

---

**Procedure 4**  
**Start logs**

- 1 **App/ACT** Set up LOGS for the SWACT.

**Note:** The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.

- a. > LOGUTIL; STOP
  - b. > DELDEVICE <device>  
*where <device> is where logs are to be routed.*
  - c. > ADDREP <device> SWCT *{also add SWNR if on BCS30 and lower}*
  - d. > START  
*This starts logs on "this" device. If a different terminal device was selected above, then use >STARTDEV <device>.*
  - e. > LEAVE
-

**Procedure 5**  
**Release JAM SNODE**

UNJAM the processors in preparation for the CC switch of activity (SWACT).

**1 Site and App/INACT** Verify the inactive side is flashing A1.

---

**2 Site/INACT** From the inactive RTIF enter:

```
RTIF> \RELEASE JAM
```

---

**Procedure 6**  
**Perform TST <MS#> VIAMATE**

**CAUTION**

**This procedure, if applicable, must be completed successfully within 15 minutes of the SWACT.**

Failure to execute a fault-free TST <MS#> VIAMATE may result in PM clocking faults after the SWACT and possibly eventual failure of PMs (i.e., SYSB PMs).

**Note:** When the RESTARTSWACT or RESTARTSWCT command is entered, if more than 15 minutes has passed since completing TST <MS#> VIAMATE you will be instructed to repeat the TST <MS#> VIAMATE command.

- 1 App/ACT QUERYMS to verify the Message Switch loads. Complete this step only if either MS load version does not match the BCS level of the inactive CM.**

> MAPCI ; MTC ; MS

> QUERYMS

*If MS loads are not identical, ensure the MS with the incompatible load is ManB, then continue.*

> MATELINK BSY *{if not done, mate side will restart when matelink RTS'd}*

> TST <MS#> VIAMATE *{on the ManB MS}*

*Wait for the test to pass before continuing. Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.*

**CAUTION**

**Do not proceed unless NO faults are reported.**

Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.

**Procedure 7**  
**Establish mate communication SNODE**

1 **App/ACT** Establish communication with the mate (inactive ) side.

**Note:** STATUSCHECK *may* cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.

- a. > BCSUPDATE ; SWACTCI ; STATUSCHECK        {for BCS33 and higher}
- > BCSUPDATE ; SWCT ; STATUSCHECK        {for BCS31 or BCS32}
- > SWCT ; STATUSCHECK                    {for BCS30 and lower}

b. Ensure the STATUSCHECK passes (with both sides matching).  
*If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.*

---

## Procedure 8 SWACT

Refer to "CC Warm SWACT Summary" in *Appendix A* for a description of the CC warm SWACT process. Also refer to *Appendix B* for a procedure for testing call survivability over a CC warm SWACT and to *Appendix C* for sample test call scripts.

**Note:** Only "simple" 2-port and echo calls that are in a stable talking state (that is, not in a transition state such as dialing) will survive a CC warm SWACT. Survival means that the call is kept up until the next signaling message is received (usually, for example, a terminate message, but on any other message as well, such as an attempt to use the conference feature).

- 1 **App/ACT** Wait a *minimum* of 10 minutes after the *completion* (flashing A1) of the last RESTART on the inactive side before entering the appropriate switch of activity (SWACT) command (below).

### CAUTION

**FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a controlled SWACT.**  
Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

### CAUTION

**After a CC warm SWACT do not JAM the inactive CPU RTIF.**  
The system requires the JAM status to be clear on both CPUs in order to recover successfully. Recovery is indicated with a SWCT 101 log.

- 2 **App/ACT** INTERNATIONAL offices switch CC activity (SWACT) as follows. All others go to step 3.

**Note:** This step is valid if the NTX470AA (International Common Basic) package is built into the load.

> INTLSWCT ; DATE ; RESTARTSWCT {only for INTL offices}

-continued-

**Procedure 8**  
**SWACT (continued)**

**3 App/ACT** All other offices switch CC activity (SWACT) with CC warm SWACT as follows.

**a.** For BCS36 and higher type:

> BCSUPDATE ; SWACTCI ; QUERYSWACT

*System prompt will tell you which SWACT command to use, either NORESTARTSWACT or RESTARTSWACT:*

> DATE ; NORESTARTSWACT

*Respond (yes/no) to system prompt using lower-case.*

*or else,*

> DATE ; RESTARTSWACT

**b.** For BCS35 and lower type:

> BCSUPDATE ; SWACTCI ; DATE ; RESTARTSWACT *{for BCS33-BCS35}*

> BCSUPDATE ; SWCT ; DATE ; RESTARTSWCT *{for BCS31 or BCS32}*

> SWCT ; DATE ; RESTARTSWCT *{for BCS30 and lower}*

*System response varies with the BCS level, but the following prompt is a typical example.*

ACTIVE DEFAULT SETTINGS :

FORCESWACT set ON

LOADEXECS set ON

NOMATCH set OFF

Do you wish to continue?

Please confirm ("YES" or "NO"):

...Starting Warm SWACT now.

---

**4 Site/ACT** Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

**CAUTION**

**Work quickly to complete the procedures to follow.**  
The POSTSWACT steps will verify that the office is functioning normally with the new software load.



**Procedure 9**  
**Start POSTSWACT**

**CAUTION**

**After a CC warm SWACT do not JAM the inactive CPU RTIF.**  
 The system requires the JAM status to be clear on both CPUs in order to recover successfully. Recovery is indicated with a SWCT 101 log.

**App/ACT** Login, check the date and time, and start POSTSWACT.

- 1 Type:  
 <break>

---

- 2 ?LOGIN  
 Enter username and password *{system response}*  
 > <username> <password>

or

- > <username>  
 > <password>

---

- 3 > DATE  
*Verify the date and time are correct.*

---

- 4 Reestablish recording onto devices (console session) as required.

---

- 5 > BCSUPDATE ; POSTSWACT  
*POSTSWACT runs all steps required after the CC switch of activity and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. If this is the case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue.*  
*If no problems are encountered, POSTSWACT stops after BEGIN\_TESTING and waits until the site verifies the sanity of the current load.*

---

**Procedure 10**  
**SYSBSY Message Switch**

- 1 **App/ACT** If a Message Switch is SYSBSY, make it ManB.
    - a. > MAPCI ;MTC ;MS
    - b. > BSY <MS#> *{for the sysbsy MS}*
    - c. > QUIT MAPCI
-

## Procedure 11 Recover billing

**Site and App/ACT** POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1 > MAPCI ;MTC ; IOD ; DIRP  
> QUERY AMA ALL *{note which volume is ACTIVE}*

2 If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3 TAPEX volumes must be manually remounted using the DIRP MNT command.

4 Assign standby billing devices for TAPE and DPP/BMC.

a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.

b. > MOUNT <x> FORMAT <stdby\_volume>  
*where <x> is the standby device number, and <stdby\_volume> is the name of the standby volume.*

Example: MOUNT 3 FORMAT DPPAMA

c. Enter the first filename, or if system response is:  
"request aborted. Tape not expired (use ERASTAPE)"  
then enter:

> ERASTAPE <x>  
*where <x> is the standby device number.*

**Note:** On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

*System response is:*

\*\*\*WARNING, THIS TAPE WILL BE ERASED\*\*\*

### CAUTION

**At this point again confirm the device is a port to a DPP or BMC,  
and NOT an unexpired billing tape.**  
If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-

**Procedure 11**  
**Recover billing (continued)**

- d. > DEMOUNT T<x>
  - e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.
  - f. Repeat this entire step for each standby billing subsystem.
- 

**5** Activate standby devices.

- a. > MNT <subsystem> <x> {still in DIRP level}  
*Example: MNT AMA 3*  
Enter YES to confirm the command.
  - b. > QUERY AMA {to confirm standby volume is available}
  - c. Repeat this step for each billing subsystem.
- 

**6** If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)

\* If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

**Note:** Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

---

**7** Bring up parallel devices (as required) using the preformatted volumes.

- a. For BCS31 and lower:

In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.

*Example:*

```
TABLE DIRPSSYS;POS AMA
CHA PARVOL T4
or CHA PARVOL D010PAMA
```

- b. For BCS32 and higher:

In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.

*Example:*

```
TABLE DIRPSSYS;POS AMA
```

In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

-continued-

**Procedure 11**  
**Recover billing (continued)**

*Examples:*

TABLE DIRPPPOOL; POS 62 (*pool for AMAPOOL*)

CHA VOLUME23 T4

*or* CHA VOLUME23 D010PAMA

- c.** Repeat substep a or b for each parallel volume to be activated.
  - d.** > QUIT MAPCI
- 
- 8** Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
-

**Procedure 12**  
**Display DPP settings**

**App/ACT** Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1 > MAPCI NODISP;MTC;IOD;DPP AMA

---

2 > COLLPSW

**Note:** If different, perform steps 3 and 4; otherwise go to step 5.

---

3 > COLLPSW 1 <4\_digits> <6\_digits>

---

4 > COLLPSW 2 <4\_digits> <6\_digits>

---

5 > AMATPSW

**Note:** If different, perform step 6; otherwise, go to step 7.

6 > AMATPSW <4\_digits> <6\_digits>

---

7 > AMAHRS

**Note:** If different, perform step 8; otherwise, go to step 9.

---

8 > AMAHRS <start\_hour> <end\_hour>

---

9 > VALPARM INVALID

**Note:** If different, perform step 10; otherwise, go to step 11.

---

10 > VALPARM INVALID <threshold>

---

11 > ERRMAP ACT

**Note:** If different, perform steps 12 and 13.

---

12 > ERRMAP <alarm\_no> <type> <level>

---

13 Repeat step 12 for each alarm that is different.

---

**Procedure 13**  
**INI trunks**

**App/ACT** If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

**1** > MAPCI ; MTC ; TRKS ; TTP

---

**2** > POST A INI

---

**3** > REPEAT <**x**> (FRLS ; RTS ; NEXT)  
*where <x> is the number of INI trunks in the posted set.*

---

**Procedure 14**  
**Restart inactive POST SNODE**

Prepare the inactive side for a revert to the old BCS load.

*Note:* A restart on the inactive side is done at this time in order to save time in the event that a revert to the old load should become necessary.

**1 Site/INACT** From the CM MAP level, ensure the inactive processor is not under test (ut). If it is, WAIT FOR TESTING TO COMPLETE.

---

**2 Site/INACT** From the inactive RTIF perform a restart reload on the *inactive* side.

```
RTIF> \RESTART RELOAD
```

```
RTIF> YES {for confirmation}
```

---

**3 Site/INACT** Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

---

**4 App/INACT** Confirm that the inactive processor is flashing A1.

---



**Procedure 15**  
**DRTIME statistics**

- 1 **App/ACT** Get a hardcopy of DRTIME statistics (if needed).

> DRTIME PRINT

*DRTIME provides statistics on the BCS application. If requested, the information should be forwarded to the appropriate Northern Telecom department.*

---

**Procedure 16**  
**Do Test Calls**

- 1 **Site/ACT** Perform TEST CALLS that were identified ahead-of-time from *Appendix C: Test Call Scripts*.

**CAUTION**

**If an abort becomes necessary due to critical test failures,** revert to the old load using the *Revert to the old load* procedure; otherwise, continue.

**Note:** Verify AMAB logs in conjunction with certain AMA test calls.

---

**Procedure 17**  
**After testing is complete SYNC SNODE**

- 1 **App/ACT** POSTSWACT will STOP at step BEGIN\_TESTING to allow site to complete testing. After SITE accepts the current load, then put the processors in sync as follows.

**Note:** Do not enter POSTSWACT again until the processors are in sync.

- a. > MAPCI ; MTC ; CM ; SYNC  
> YES *{for confirmation}*
  - b. > QUIT MAPCI
  - c. > POSTSWACT *{still in BCSUPDATE}*
-

**Procedure 18**  
**POST\_MS\_CHECK failure**

**App/ACT** POSTSWACT may STOP with the message "Failed POST\_MS\_CHECK for active CM load: #." (Both MS loads will be displayed.) *Only if you see this message*, load the MS reported to have an incompatible load with the compatible MS load as follows.

- 1 > DISKUT  
> LF S00D<volume> *{or S01D <volume>}*  
*where <volume> is the SLM disk volume with the correct \_MS load file.*

---
- 2 > MAPCI ;MTC ;MS

---
- 3 > LOADMS <MS#> <filename>  
*where <MS#> is the MS to be loaded, and <filename> is the name of the  
\_MS load file listed above in step 1.*  
> YES *{for confirmation}*

---
- 4 > TST <MS#> *{not VIAMATE}*  
*Ensure the test passes with no faults.*

---
- 5 > RTS <MS#> *{not OOBAND!}*

---
- 6 > QUIT MAPCI

---

**Procedure 19**  
**Finish POSTSWACT**

- 1 App/ACT** If necessary run POSTSWACT one more time to completion.  

```
> BCSUPDATE ; POSTSWACT
```

At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

---
- 2 Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

---
- 3 App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

---
- 4 Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

---
- 5 Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

---
- 6 Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

---
- 7 Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

---
- 8 Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

---
- 9 Site/ACT** Return PORTS and USER information back to original values.

---
- 10 Site/ACT** Notify DNC end users to LOGIN the DNC.

---

**Procedure 20**  
**Take image SNODE**

1 **Site/ACT** DUMP AN IMAGE of the new BCS load for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge.

---

2 After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to 'OFF' during the ONP.

**Note:** Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.

---

**Procedure 21**  
**Start journal file**

- 1 **Site/ACT** If equipped, start journal file and verify started.
    - a. > JF START
    - b. > MAPCI ; MTC ; IOD ; DIRP
    - c. > QUERY JF ALL  
*QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."*
    - d. > QUIT ALL
-

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## Revert to old load procedure

This section details steps required to revert to the old BCS load.

Perform the following procedure if a controlled REVERT is required after the CC switch of activity (SWACT).

Remember, the CPU with the new BCS load is now *active*. You will be going back to the old BCS load which is now *inactive*.

### **Procedure 1** **Before REVERT**

- 1 **Site** Do not proceed until both the Telco and NT on-line support agree.

---

- 2 **Site** Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

---

**Procedure 2**  
**Restart inactive SNODE 2**

**CAUTION**

**Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.**

- 1 **Site/INACT** Perform a restart reload on the inactive processor (old BCS load).
  - a. From the CM MAP level, ensure the inactive processor is *not* under test (ut). If it is, WAIT FOR THE TESTING TO COMPLETE.
  - b. From the inactive RTIF perform a restart reload on the *inactive* processor (old load).

```
RTIF> \RESTART RELOAD
RTIF> YES {for confirmation}
```
  - c. Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

- 
- 2 **App/INACT** Confirm that the inactive processor is flashing A1.
-

**Procedure 3**  
**Establish mate communication SNODE**

- 1 **App/ACT** Establish communication with the mate (inactive ) side.
    - a.
      - > BCSUPDATE ; SWACTCI ; STATUSCHECK *{for BCS33 and higher}*
      - > BCSUPDATE ; SWCT ; STATUSCHECK *{for BCS31 or BCS32}*
      - > SWCT ; STATUSCHECK *{for BCS30 and lower}*
    - b. Ensure the STATUSCHECK passes (with both sides matching).  
*If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.*  
  
**Note:** STATUSCHECK *may* cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.
-

**Procedure 4**  
**Login inactive**

1 **App/INACT** *Verify a flashing A1 on the inactive processor.*

---

2 Login on the mate side as follows.

**a. ACT**

> MATEIO

> MATELOG <**device**>

*where <device> is the name of the terminal labeled INACT.*

**b. INACT**

Enter username and password *{mate-side response}*

Mate> OPERATOR OPERATOR

or Enter username

Mate> OPERATOR

Enter password

Mate> OPERATOR

---

**Procedure 5**  
**TRACECI close**

- 1 **App/INACT** If old load (inactive side) is BCS34 or lower, then close out the old active MOVEBCS/TABXFR message file.

Mat> TRACECI CLOSE

*{for BCS34 and lower}*

---

**Procedure 6**  
**Configure DIRP billing**

- 1 **Site/App** Configure the DIRP billing subsystems for revert SWACT to the old load.

**Note:** For details for completing the following refer to "PRESWACT DIRP and billing" procedure.

- a. **ACT** Take down billing tapes and format new standby volumes in DIRP. Leave these demounted, they will become the active volumes after SWACT.

Disk volumes will rotate and recover automatically after SWACT.

Parallel volumes on tape (or DPP/BMC) can be recovered manually after SWACT.

- b. **INACT** If reverting to BCS31 or higher:

Ensure datafill is correct on the mate side for tables DIRPPOOL or DIRPSSYS.

- c. **INACT** If DIRP\_REC file is present in mate SFDEV, ensure each entry in DIRP\_REC is correct for the revert SWACT.

**Note:** In DIRP\_REC the parallel volume assignments for DIRPPOOL should be set to nil (\$) for all pools.

---

**Procedure 7**  
**Start logs**

- 1 **App/ACT** Set up LOGS for the SWACT.

**Note:** The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.

- a. > LOGUTIL; STOP
  - b. > DELDEVICE <device>  
*where <device> is where logs are to be routed.*
  - c. > ADDRIP <device> SWCT {also add SWNR if on BCS30 and lower}
  - d. > START  
*This starts logs on "this" device. If a different terminal device was selected above, then use >STARTDEV <device>.*
  - e. > LEAVE
-

**3-126** Revert to old load procedure

---

**Procedure 8**  
**Ensure inactive unjammed**

- 1 Site and App/INACT** Ensure inactive side is *unjammed*.
-



**Procedure 9**  
**Perform TST <MS#> VIAMATE for Revert**

**CAUTION**

**This procedure, if applicable, must be completed successfully within 15 minutes of the SWACT.**

Failure to execute a fault-free TST <MS#> VIAMATE may result in PM clocking faults after the SWACT and possibly eventual failure of PMs (i.e., SYSB PMs).

**Note:** When the ABORTSWACT command is entered, if more than 15 minutes has passed since completing TST <MS#> VIAMATE you will be instructed to repeat the TST <MS#> VIAMATE command.

- 1 **App/ACT** Test the ManB Message Switch to ensure the MS clocks are in sync. **Complete this step only if one MS load is incompatible with the BCS level of the inactive CM (for example, when reverting to BCS33 or lower).**

> MAPCI ;MTC ;MS

*Ensure that the MS corresponding to the inactive CPU is ManB.*

> MATELINK BSY {If not done, mate side will restart when matelink RTS'd}

> TST <MS#> VIAMATE {on the ManB MS}

*Wait for the test to pass before continuing. Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.*

**CAUTION**

**Do not proceed unless NO faults are reported.**

Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.

**Procedure 10**  
**Establish mate communication SNODE**

1 **App/ACT** Establish communication with the mate (inactive ) side.

**Note:** STATUSCHECK *may* cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.

- a. > BCSUPDATE ; SWACTCI ; STATUSCHECK        {for BCS33 and higher}
- > BCSUPDATE ; SWCT ; STATUSCHECK        {for BCS31 or BCS32}
- > SWCT ; STATUSCHECK                    {for BCS30 and lower}

b. Ensure the STATUSCHECK passes (with both sides matching).  
*If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.*

---

**Procedure 11**  
**Revert**

- 1 **App/ACT** Wait a MINIMUM of 10 minutes after the COMPLETION (flashing A1) of the last restart on the inactive side before entering the ABORT-SWACT, ABORTSWCT, or RESTARTSWCT command.

**CAUTION**

**FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a CC warmSWACT.**  
Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

- 2 **App/ACT** INTERNATIONAL offices switch CC activity (SWACT) as follows.

**Note:** This step is valid if the NTX470AA (International Common Basic) package is built into the load.

> INTLSWCT ; DATE ; RESTARTSWCT *{only for INTL offices}*

- 3 **App/ACT** ALL OTHER offices switch CC activity (SWACT) with CC warm-SWACT as follows.

**CAUTION**

**If a SWACT application module exists on the new, active side, but is missing from the old, inactive side, the revert SWACT may fail.**

If reverting to BCS32 and higher, any SWACT applications missing from the inactive side will automatically be overridden.

If reverting to BCS31 and lower, SWACT will fail for any SWACT applications missing from the inactive side. In this case, any SWACT application missing from the inactive side must be *unloaded from the active side* in order for the revert-back to succeed. If you are unloading a module in a load prior to BCS30, use the SWCTCHK command before performing the revert-back.

-continued-

**Procedure 11**  
**REVERT (continued)**

> BCSUPDATE ; SWACTCI ; DATE ; ABORTSWACT *{for BCS33 and higher}*

**CAUTION**

**In BCS34 and higher the ABORTSWACT command has an option called NOCHECK which will allow the CC warm SWACT to continue even if there are bad devices on the active side (such as a CBSY LTC). Use the NOCHECK option *only* as a last resort and with special care taken to ensure office integrity.**

> BCSUPDATE ; SWCT ; DATE ; ABORTSWCT *{for BCS31 or BCS32}*

> SWCT ; DATE ; RESTARTSWCT *{for BCS30 and lower}*

*System response varies with the BCS level, but the following prompt is a typical example.*

```
ACTIVE DEFAULT SETTINGS :
FORCESWACT set ON
LOADEXECES set ON
NOMATCH set OFF
Do you wish to continue?
Please confirm ("YES" or "NO"):
...Starting Warm SWACT now.
```

- 
- 4 Site/ACT** Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

**CAUTION**

**Work quickly to complete the procedures to follow.**  
The POSTSWACT steps will verify that the office is functioning normally with the new software load.

---

**Procedure 12**  
**Start POSTSWACT**

**App/ACT** Login, check the date and time, and start POSTSWACT.

- 1 Type:  
<break>

---

  - 2 ?LOGIN  
Enter username and password *{system response}*  
> <username> <password>  
or > <username>  
> <password>

---

  - 3 > DATE  
*Verify the date and time are correct.*

---

  - 4 Reestablish recording onto devices (console session) as required.

---

  - 5 > BCSUPDATE ; POSTSWACT  
*POSTSWACT runs all steps required after the CC switch of activity and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. If this is the case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue.*  
*If no problems are encountered, POSTSWACT stops after BEGIN\_TESTING and waits until the site verifies the sanity of the current load.*
-

**Procedure 13**  
**SYSBSY Message Switch**

- 1 **App/ACT** If a Message Switch is SYSBSY, make it ManB.
    - a. > MAPCI ;MTC ;MS
    - b. > BSY <MS#> *{for the sysbsy MS}*
    - c. > QUIT MAPCI
-

#### Procedure 14 Recover billing

**Site and App/ACT** POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1 > MAPCI ;MTC ; IOD ; DIRP  
> QUERY AMA ALL *{note which volume is ACTIVE}*

2 If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3 TAPEX volumes must be manually remounted using the DIRP MNT command.

4 Assign standby billing devices for TAPE and DPP/BMC.

a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.

b. > MOUNT <x> FORMAT <stdby\_volume>  
*where <x> is the standby device number, and <stdby\_volume> is the name of the standby volume.*

Example: MOUNT 3 FORMAT DPPAMA

c. Enter the first filename, or if system response is:  
"request aborted. Tape not expired (use ERASTAPE)"  
then enter:

> ERASTAPE <x>  
*where <x> is the standby device number.*

**Note:** On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

*System response is:*

\*\*\*WARNING, THIS TAPE WILL BE ERASED\*\*\*

#### CAUTION

**At this point again confirm the device is a port to a DPP or BMC,  
and NOT an unexpired billing tape.**  
If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-

**Procedure 14**  
**Recover billing (continued)**

- d. > DEMOUNT T<x>
  - e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.
  - f. Repeat this entire step for each standby billing subsystem.
- 

**5** Activate standby devices.

- a. > MNT <subsystem> <x> {still in DIRP level}  
*Example: MNT AMA 3*  
Enter YES to confirm the command.
  - b. > QUERY AMA {to confirm standby volume is available}
  - c. Repeat this step for each billing subsystem.
- 

**6** If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)

\* If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

**Note:** Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

---

**7** Bring up parallel devices (as required) using the preformatted volumes.

- a. For BCS31 and lower:  
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.  
*Example:*  
TABLE DIRPSSYS;POS AMA  
CHA PARVOL T4  
or CHA PARVOL D010PAMA
- b. For BCS32 and higher:  
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.  
*Example:*  
TABLE DIRPSSYS;POS AMA  
  
In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

-continued-



**Procedure 14**  
**Recover billing (continued)**

*Examples:*

TABLE DIRPPool; POS 62 (*pool for AMAPOOL*)

CHA VOLUME23 T4

*or* CHA VOLUME23 D010PAMA

- c.** Repeat substep a or b for each parallel volume to be activated.
  - d.** > QUIT MAPCI
- 
- 8** Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
-

**Procedure 15**  
**Display DPP settings**

**App/ACT** Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1 > MAPCI NODISP;MTC;IOD;DPP AMA

---

2 > COLLPSW

**Note:** If different, perform steps 3 and 4; otherwise go to step 5.

---

3 > COLLPSW 1 <4\_digits> <6\_digits>

---

4 > COLLPSW 2 <4\_digits> <6\_digits>

---

5 > AMATPSW

**Note:** If different, perform step 6; otherwise, go to step 7.

6 > AMATPSW <4\_digits> <6\_digits>

---

7 > AMAHRS

**Note:** If different, perform step 8; otherwise, go to step 9.

---

8 > AMAHRS <start\_hour> <end\_hour>

---

9 > VALPARM INVALID

**Note:** If different, perform step 10; otherwise, go to step 11.

---

10 > VALPARM INVALID <threshold>

---

11 > ERRMAP ACT

**Note:** If different, perform steps 12 and 13.

---

12 > ERRMAP <alarm\_no> <type> <level>

---

13 Repeat step 12 for each alarm that is different.

---

**Procedure 16**  
**INI trunks**

**App/ACT** If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

**1** > MAPCI ; MTC ; TRKS ; TTP

---

**2** > POST A INI

---

**3** > REPEAT <**x**> (FRLS ; RTS ; NEXT)  
*where <x> is the number of INI trunks in the posted set.*

---

**Procedure 17**  
**Do Test Calls**

- 1 **Site/ACT** Perform TEST CALLS that were identified ahead-of-time from *Appendix C: Test Call Scripts*.
-

**Procedure 18**  
**After testing is complete SYNC SNODE**

- 1 **App/ACT** POSTSWACT will STOP at step BEGIN\_TESTING to allow site to complete testing. After SITE accepts the current load, then put the processors in sync as follows.

**Note:** Do not enter POSTSWACT again until the processors are in sync.

- a. > MAPCI ; MTC ; CM ; SYNC  
> YES *{for confirmation}*
  - b. > QUIT MAPCI
  - c. > POSTSWACT *{still in BCSUPDATE}*
-

**Procedure 19**  
**POST\_MS\_CHECK failure**

**App/ACT** POSTSWACT may STOP with the message "Failed POST\_MS\_CHECK for active CM load: #." (Both MS loads will be displayed.) *Only if you see this message*, load the MS reported to have an incompatible load with the compatible MS load as follows.

- 1 > DISKUT  
> LF S00D<volume> *{or S01D <volume>}*  
*where <volume> is the SLM disk volume with the correct \_MS load file.*

---
- 2 > MAPCI ;MTC ;MS

---
- 3 > LOADMS <MS#> <filename>  
*where <MS#> is the MS to be loaded, and <filename> is the name of the \_MS load file listed above in step 1.*  
> YES *{for confirmation}*

---
- 4 > TST <MS#> *{not VIAMATE}*  
*Ensure the test passes with no faults.*

---
- 5 > RTS <MS#> *{not OOBAND!}*

---
- 6 > QUIT MAPCI

---

**Procedure 20**  
**Finish POSTSWACT**

- 1 App/ACT** If necessary run POSTSWACT one more time to completion.  

```
> BCSUPDATE ; POSTSWACT
```

At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

---
- 2 Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

---
- 3 App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

---
- 4 Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

---
- 5 Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

---
- 6 Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

---
- 7 Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

---
- 8 Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

---
- 9 Site/ACT** Return PORTS and USER information back to original values.

---
- 10 Site/ACT** Notify DNC end users to LOGIN the DNC.

---

**Procedure 21**  
**Take image SNODE**

1 **Site/ACT** DUMP AN IMAGE of the new BCS load for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge.

---

2 After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to 'OFF' during the ONP.

**Note:** Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.

---



**Procedure 22**  
**Start journal file**

- 1 **Site/ACT** If equipped, start journal file and verify started.
    - a. > JF START
    - b. > MAPCI ; MTC ; IOD ; DIRP
    - c. > QUERY JF ALL  
*QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."*
    - d. > QUIT ALL
-

**Procedure 23**  
**More Revert/ABORT steps**

- 1 **Site and App/INACT** If asked to do so by technical support take an image of the *inactive* (mate) side load.

---
- 2 **Site and App/ACT** With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

---
- 3 **Site and App** Following an ABORT, rescheduling of the software update must be negotiated. Refer to *Procedure for rescheduling aborted applications*.

---
- 4 **App/ACT** On the ACTIVE side perform the following steps to restore the active side to its original configuration.
  - a. If old load is BCS35 and higher:
    - > BCSUPDATE ; ABORT\_PRESWACT
    - > TABXFR ; CANCEL
    - > QUIT ALL
  - b. If old load is BCS34 and lower:
    - > BCSUPDATE ; RESET
    - > QUIT ALL

---

## Emergency abort procedure

**CAUTION**

Perform the following steps only if a decision has been reached to activate the old load without regard to preserving stable call processing.

Remember, the CPU with the new BCS load is now active. You will be going back to the old BCS load which is now inactive.

**Procedure 1  
Before EABORT**

- 1 Site** Do not proceed until both the Telco and NT on-line support agree.

---

- 2 Site** Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

---

**Procedure 2**  
**Restart inactive SNODE 2**

**CAUTION**

**Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.**

- 1 **Site/INACT** Perform a restart reload on the inactive processor (old BCS load).
  - a. From the CM MAP level, ensure the inactive processor is *not* under test (ut). If it is, WAIT FOR THE TESTING TO COMPLETE.
  - b. From the inactive RTIF perform a restart reload on the *inactive* processor (old load).

```
RTIF> \RESTART RELOAD
RTIF> YES {for confirmation}
```
  - c. Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

- 
- 2 **App/INACT** Confirm that the inactive processor is flashing A1.
-

**Procedure 3**  
**Ensure inactive unjammed**

- 1 **Site and App/INACT** Ensure inactive side is *unjammed*.
-

**Procedure 4**  
**Cold SWACT SNODE**

- 1 Site/ACT** JAM active side to force a switch of activity (cold swact).

RTIF> \OVERRIDE

RTIF> \JAM

RTIF> YES *{for confirmation}*

---

- 2 Site/ACT** Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.  
*At this point the CC switch of activity is over.*
- 

- 3 Site and App/ACT** *Work quickly to complete the next procedure.* The *POSTSWACT* procedure (to follow) checks that the office is functioning as normal.

**Note:** Be sure to notify appropriate levels of support of the ABORT before putting the switch back in SYNC.

---

**Procedure 5**  
**Start POSTSWACT**

**App/ACT** Login, check the date and time, and start POSTSWACT.

- 1 Type:  
<break>

---

  - 2 ?LOGIN  
Enter username and password *{system response}*  
> <username> <password>
  - or > <username>  
> <password>

---

  - 3 > DATE  
*Verify the date and time are correct.*

---

  - 4 Reestablish recording onto devices (console session) as required.

---

  - 5 > BCSUPDATE ; POSTSWACT  
*POSTSWACT runs all steps required after the CC switch of activity and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. If this is the case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue.*  
*If no problems are encountered, POSTSWACT stops after BEGIN\_TESTING and waits until the site verifies the sanity of the current load.*
-

**Procedure 6**  
**SYSBSY Message Switch**

- 1 **App/ACT** If a Message Switch is SYSBSY, make it ManB.
    - a. > MAPCI ;MTC ;MS
    - b. > BSY <MS#> *{for the sysbsy MS}*
    - c. > QUIT MAPCI
-



## Procedure 7 Recover billing

**Site and App/ACT** POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1 > MAPCI ;MTC ; IOD ; DIRP  
> QUERY AMA ALL *{note which volume is ACTIVE}*

2 If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3 TAPEX volumes must be manually remounted using the DIRP MNT command.

4 Assign standby billing devices for TAPE and DPP/BMC.

a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.

b. > MOUNT <x> FORMAT <stdby\_volume>  
*where <x> is the standby device number, and <stdby\_volume> is the name of the standby volume.*

Example: MOUNT 3 FORMAT DPPAMA

c. Enter the first filename, or if system response is:  
"request aborted. Tape not expired (use ERASTAPE)"  
then enter:

> ERASTAPE <x>  
*where <x> is the standby device number.*

**Note:** On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

*System response is:*

\*\*\*WARNING, THIS TAPE WILL BE ERASED\*\*\*

### CAUTION

**At this point again confirm the device is a port to a DPP or BMC,  
and NOT an unexpired billing tape.**

If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-

**Procedure 7**  
**Recover billing (continued)**

- d. > DEMOUNT T<x>
  - e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.
  - f. Repeat this entire step for each standby billing subsystem.
- 

**5** Activate standby devices.

- a. > MNT <subsystem> <x> {still in DIRP level}  
*Example: MNT AMA 3*  
Enter YES to confirm the command.
  - b. > QUERY AMA {to confirm standby volume is available}
  - c. Repeat this step for each billing subsystem.
- 

**6** If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)

\* If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

**Note:** Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

---

**7** Bring up parallel devices (as required) using the preformatted volumes.

- a. For BCS31 and lower:  
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.  
*Example:*  
TABLE DIRPSSYS;POS AMA  
CHA PARVOL T4  
or CHA PARVOL D010PAMA
- b. For BCS32 and higher:  
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.  
*Example:*  
TABLE DIRPSSYS;POS AMA  
  
In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

-continued-

**Procedure 7**  
**Recover billing (continued)**

*Examples:*

TABLE DIRPPool; POS 62 (*pool for AMAPOOL*)

CHA VOLUME23 T4

*or* CHA VOLUME23 D010PAMA

- c.** Repeat substep a or b for each parallel volume to be activated.
  - d.** > QUIT MAPCI
- 
- 8** Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
-

**Procedure 8**  
**Display DPP settings**

**App/ACT** Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1 > MAPCI NODISP;MTC;IOD;DPP AMA

---

2 > COLLPSW

**Note:** If different, perform steps 3 and 4; otherwise go to step 5.

---

3 > COLLPSW 1 <4\_digits> <6\_digits>

---

4 > COLLPSW 2 <4\_digits> <6\_digits>

---

5 > AMATPSW

**Note:** If different, perform step 6; otherwise, go to step 7.

6 > AMATPSW <4\_digits> <6\_digits>

---

7 > AMAHRS

**Note:** If different, perform step 8; otherwise, go to step 9.

---

8 > AMAHRS <start\_hour> <end\_hour>

---

9 > VALPARM INVALID

**Note:** If different, perform step 10; otherwise, go to step 11.

---

10 > VALPARM INVALID <threshold>

---

11 > ERRMAP ACT

**Note:** If different, perform steps 12 and 13.

---

12 > ERRMAP <alarm\_no> <type> <level>

---

13 Repeat step 12 for each alarm that is different.

---

**Procedure 9**  
**INI trunks**

**App/ACT** If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

**1** > MAPCI ; MTC ; TRKS ; TTP

---

**2** > POST A INI

---

**3** > REPEAT <**x**> (FRLS ; RTS ; NEXT)  
*where <x> is the number of INI trunks in the posted set.*

---

**Procedure 10**  
**Do Test Calls**

- 1 **Site/ACT** Perform TEST CALLS that were identified ahead-of-time from *Appendix C: Test Call Scripts*.
-

**Procedure 11**  
**After testing is complete SYNC SNODE**

- 1 **App/ACT** POSTSWACT will STOP at step BEGIN\_TESTING to allow site to complete testing. After SITE accepts the current load, then put the processors in sync as follows.

**Note:** Do not enter POSTSWACT again until the processors are in sync.

- a. > MAPCI ; MTC ; CM ; SYNC  
> YES *{for confirmation}*
  - b. > QUIT MAPCI
  - c. > POSTSWACT *{still in BCSUPDATE}*
-

**Procedure 12**  
**POST\_MS\_CHECK failure**

**App/ACT** POSTSWACT may STOP with the message "Failed POST\_MS\_CHECK for active CM load: #." (Both MS loads will be displayed.) *Only if you see this message*, load the MS reported to have an incompatible load with the compatible MS load as follows.

- 1 > DISKUT  
> LF S00D<volume> *{or S01D <volume>}*  
*where <volume> is the SLM disk volume with the correct \_MS load file.*

---
- 2 > MAPCI ;MTC ;MS

---
- 3 > LOADMS <MS#> <filename>  
*where <MS#> is the MS to be loaded, and <filename> is the name of the \_MS load file listed above in step 1.*  
> YES *{for confirmation}*

---
- 4 > TST <MS#> *{not VIAMATE}*  
*Ensure the test passes with no faults.*

---
- 5 > RTS <MS#> *{not OOBAND!}*

---
- 6 > QUIT MAPCI

---



**Procedure 13**  
**Finish POSTSWACT**

- 1 App/ACT** If necessary run POSTSWACT one more time to completion.  

```
> BCSUPDATE ; POSTSWACT
```

At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

---
- 2 Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

---
- 3 App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

---
- 4 Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

---
- 5 Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

---
- 6 Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

---
- 7 Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

---
- 8 Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

---
- 9 Site/ACT** Return PORTS and USER information back to original values.

---
- 10 Site/ACT** Notify DNC end users to LOGIN the DNC.

---

**Procedure 14**  
**Take image SNODE**

1 **Site/ACT** DUMP AN IMAGE of the new BCS load for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge.

---

2 After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to 'OFF' during the ONP.

**Note:** Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.

---

**Procedure 15**  
**Start journal file**

- 1 **Site/ACT** If equipped, start journal file and verify started.
    - a. > JF START
    - b. > MAPCI ; MTC ; IOD ; DIRP
    - c. > QUERY JF ALL  
*QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."*
    - d. > QUIT ALL
-

**Procedure 16**  
**More Revert/ABORT steps**

- 1 **Site and App/INACT** If asked to do so by technical support take an image of the *inactive* (mate) side load.

---
- 2 **Site and App/ACT** With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

---
- 3 **Site and App** Following an ABORT, rescheduling of the software update must be negotiated. Refer to *Procedure for rescheduling aborted applications*.

---
- 4 **App/ACT** On the ACTIVE side perform the following steps to restore the active side to its original configuration.
  - a. If old load is BCS35 and higher:
    - > BCSUPDATE ; ABORT\_PRESWACT
    - > TABXFR ; CANCEL
    - > QUIT ALL
  - b. If old load is BCS34 and lower:
    - > BCSUPDATE ; RESET
    - > QUIT ALL

---

---

# Hybrid SNODE MOP

---

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## Site preparation procedure

Begin this section when the First Shipment of tapes and documentation arrives at the office. Site must complete the following procedures *before* being contacted by Northern Telecom for the pre-application checks (or Preliminary Precheck). In order to qualify the office for a software upgrade the series of prechecks must be successfully completed.

### Procedure 1

#### Take image

- 1 **Site/ACT** Before beginning the front-end testing (processor tests), DUMP AN OFFICE IMAGE for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge, or one NT40 image to disk and copied to tape.
-

**Procedure 2**  
**Route logs SNODE**

This procedure ensures that specific logs are routed to an active log device and are not suppressed.

**1 Site/ACT**

```
> LOGUTIL
> LISTREPS SPECIAL
```

If specific logs are suppressed use

```
> RESUME <log>
```

If logs have threshold set use

```
> THRESHOLD 0 <log>
```

*where <log> refers to specific CM, MS, SLM, and MM logs.*

---

**2** > LISTROUTE DEVICE <printer>

If critical logs are not routed use

```
> ADDREP <printer> <log>
```

```
> STOPDEV <printer>
```

*Verify only critical logs are enabled on the device and are correctly routed.*

---

**3** > STARTDEV <printer>

```
> LEAVE
```

---

**Procedure 3**  
**Processor tests SNODE**

To ensure front-end stability Site should complete the following tests before being contacted for the pre-application checks.

*Note:* Perform the following front-end testing during low traffic periods.

- 1 **Site** Ensure the CPUs are in SYNC and the inactive side is NOT jammed.

---

- 2 **ACT** Match the memory from the Memory level of the MAP.
  - > MAPCI ; MTC ; CM ; MEMORY
  - > MATCH ALL
  - > QUIT

---

- 3 **INACT** From the inactive RTIF (remote terminal interface), jam the inactive CPU.
  - RTIF> \JAM
  - RTIF> YES *{for confirmation}*

---

- 4 **ACT** Drop SYNC from the CM level of the MAP.
  - > DPSYNC
  - > YES *{for confirmation}*

---

- 5 **INACT** Wait for the inactive CPU to return to flashing A1.

---

- 6 Test the CM stability with each of the following restarts on ONLY the *inactive* RTIF.
  - a. **INACT** RTIF> \RESTART WARM
    - RTIF> YES *{for confirmation}*
    - Wait for a flashing A1.*
  - b. **INACT** RTIF> \RESTART COLD
    - RTIF> YES *{for confirmation}*
    - Wait for a flashing A1.*
  - c. **INACT** RTIF> \RESTART RELOAD
    - RTIF> YES *{for confirmation}*
    - Wait for a flashing A1.*

-continued-

**Procedure 3**  
**Processor tests SNODE (continued)**

**7 ACT** Test the memory cards from the Memory level of the MAP.

```
> MEMORY;TST ALL
> QUIT
```

---

**8** After completion of the test, check any logs indicating pass or fail. If above test failed, clear the problem and repeat the test.

---

**9 ACT** SYNC the CPUs from the CM level of the MAP.

```
> SYNC
```

---

**10** After receiving the "Synchronization Successful" message, verify no faults are displayed at the CM or Memory levels of the MAP (shows all dots and no Xs or fs).

---

**11 INACT** At the inactive RTIF release the jam.

```
RTIF> \RELEASE JAM
```

---

**12 ACT** Switch activity of the CPUs from the CM level.

```
> SWACT
```

---

**13 INACT** Repeat steps 1 through 12 on the newly-inactive CPU.

---

**14** Verify the CPUs remain in SYNC and the inactive side is NOT jammed.

---

**15 ACT** Match the memory from the Memory level of the MAP.

```
> MEMORY;MATCH ALL
> QUIT
```

---

**16 ACT** Perform a REX test long from the CM level.

```
> REXTST LONG
> YES {for confirmation}
CPU SYNC, Message Controller (MC), and Subsystem Clock (SSC) states
will change. The SuperNode will be out of SYNC for at least 60 minutes.
```

---

-continued-

**Procedure 3**  
**Processor tests SNODE (continued)**

**17 ACT** After completion of the test, verify the test results:

> QUERYCM REXRESULT

*The CPUs should be back in SYNC with no REX alarms at the CM level or on the main MAP display header. If the test failed, contact the site supervisor to resolve any problems and repeat steps 16 and 17.*

---

**18** Repeat (with the other CPU active) steps 16 and 17.

---

**19 ACT** Perform an image test from the CMMNT level of the MAP.

> CMMNT

> IMAGE

> QUIT

---

**20** After completion of the test, check any logs indicating pass or fail. If above test failed, clear the problem and repeat the test.

---

**Note:** If on BCS 26-28 and patch BKR24C<xx> is present and activated (PATCHEDIT shows it ON), then skip over the rest of this procedure and go to the next procedure.

**21 ACT** Busy the Slave MS from the MS level of the MAP.

> MS;BSY <x>

*where <x> refers to the Slave MS (look under Clock field).*

---

**22 ACT** Test the MS from the MS level.

> TST <x>

---

**23** After completion of the test the results of the test are displayed. If the test failed, resolve any problems and repeat the test.

---

**24 ACT** Return the busied MS to service.

> RTS <x>

---

**25** Wait 5 minutes to ensure the clocks are stable and to allow the hardware audit to run. Both MS should be inservice.

---

-continued-

#### 4-6 Site preparation procedure

---

##### **Procedure 3** **Processor tests SNODE (continued)**

**26 ACT** Switch MS clock mastership.

> SWMAST

---

**27** Test the other MS by repeating steps 21 through 26.

---

**28 ACT** > QUIT ALL

---

**Procedure 4**  
**Responsibilities before pre-application checks SN**

- 1 **Site** Site is encouraged to verify all new software load and patch tapes received in a shipment.

**Note:** The following steps do not apply to a TAS NONRES tape which is used only by NT technical support to provide access to certain non-resident software tools.

- a. INSERT (or MOUNT) and LIST each tape.
- b. From the tape header or first file verify the header matches the tape label and the tape is correct for the to\_BCS. For a BCS IMAGE tape also verify the image filename is correct.  
*Verify a tape is good by listing the tape to the end without any errors.*
- c. If any problems are found notify your NT customer service representative immediately.
- d. Keep the tapes on-site for use during the scheduled software update.

- 2 **Site** Review the D190 document (office feature record) to ensure the software content meets the expected requirements.

**Note:** Offices receiving feature package NTX218, EADAS, ensure table OMACC has only 25 entries. If table OMACC has more than 25 entries, the site will have to delete the extraneous entries so the five new EADAS Operation Measurement tuples will fit.

**CAUTION**

**For MS preloading it is recommended that the MS be loaded using the new BCS IMAGE tape, and NOT the PM load tape. The MS load provided on the IMAGE tape contains a more current patch set.**

**Richardson customers may require loading of the MS prior to the arrival of the IMAGE tape. Contact Richardson BCS Applications for MS loading procedures.**

**If problems are encountered during loading, contact the appropriate TAS group for assistance.**

The recommended procedure for MS preloading is found in section *Updating loads in the Message Switch* of this MOP. Wait to upgrade the MS until the new BCS IMAGE tape arrives on site.

- 3 **Site** Load and patch ALL PERIPHERAL MODULES with the to\_BCS software loads according to the *Peripheral Software Release Document* ("Application Procedures" section).

-continued-

**Procedure 4**  
**Responsibilities before pre-application checks SN (continued)**

*Peripheral modules include all PMs, XPMs, DPP, MPC, and the various application processors associated with a DMS-SCP/STP/SSP such as the ENET, LPP (including EIUs, LIUs and LIMs) and the FP.*

**Note:** If a cross-reference file (BCSxxXPM\$XREF) is at the beginning of the XPM patch tape, use it to identify patches applicable to each XPM load.

---

- 4 Site** Monitor front-end stability watching SuperNode CM,MM, and MS logs through the day of the software delivery.
-



**Procedure 5**  
**Save site files**

- 1 Site/ACT** Copy all Telco/site-created files in store file (SFDEV) onto a labeled scratch tape. These files can be manually restored to SFDEV after the BCS application.  
*Any patches and files downloaded to SFDEV need to remain in SFDEV for the BCS application-**DO NOT ERASE!***
-

**Procedure 6**  
**Peripheral verification SNODE**

- 1 **Site/ACT** If the office is equipped with DDUs, erase all unwanted files. Then ensure the peripheral loads and peripheral patches for the to\_BCS are on the same disk.

---
- 2 On the DDU used for primary billing collection (such as AMA SMDR OCC CDR), perform routine maintenance on the disk to ensure it is functioning properly. If excessive "bad blocks" are present, reformat the disk.

---
- 3 Ensure peripherals (including ENET and DPPs) are loaded and patched with the to\_BCS software. (Refer to the *Peripheral Software Release Document*.)  
**Note:** Procedures for preloading the MSs are in section *Updating loads in the Message Switch* of this MOP.

---

**Procedure 7**  
**Table ACDGRP**

- 1 **App/ACT** Identify any "holes" in table ACDGRP and fill them with dummy tuples. Otherwise, you may be unable to retrieve MIS reports from some ACDGRPs.
    - a. > OMSHOW ACDGRP ACTIVE
    - b. Look for nonconsecutive keys. (example: 0 2 3 5 6 has 1 and 4 missing.)
    - c. If any missing tuples, have Translations personnel datafill with dummy tuples. (This prevents the renumbering of key indexes during the BCS update.)
    - d. Also provide datafill in table DNROUTE for each corresponding dummy tuple added in table ACDGRP.
-

**Procedure 8**  
**Fill in Test Call Scripts**

- 1 **Site** Fill in and test the *Test Call Scripts* in *Appendix C*.

This is to provide a thorough test plan exercise for testing the new BCS load. You will be asked to make your test calls after switching activity to the new BCS.

---

---

## Data consistency check procedure

*Procedure 1* is for offices on BCS34 and higher.

### CAUTION

Review Software Delivery Bulletins and any current Warning Bulletins concerning TABAUDIT before using it.

#### Procedure 1 Run TABAUDIT (BCS34 and higher)

Perform this procedure at 15 days prior to the software delivery date. This allows time to correct any table data problems that might be found. At the insertion minus 10 days pre-check, NT engineers will review the results. The data consistency checks must be successfully completed including any needed data corrections in order for the scheduled application to be completed on schedule.

For all offices on BCS 34 and higher, perform the following steps. These steps are used to verify table data integrity using TABAUDIT.

A complete tutorial of TABAUDIT is provided in *Appendix A*. This includes information on TABAUDIT enhancements (BCS36) which provide automated scheduling capability and facilitate data capture.

**Warning:** TABAUDIT can take up to 10 hours to run. The length of time will vary from site to site depending on the number and size of tables.

- 1 **Site/ACT** Verify table data using TABAUDIT. Send output to a recording device (e.g. D000SCRATCH). Make note of the device used, since the files will be reviewed by NT prior to BCS application.

TABAUDIT may be set-up to run all the tables using the "ALL" option or to run a range of tables using the "FROM" and "TO" options. TABAUDIT can only be run from only one terminal at a time.

- To use the "FROM" and "TO" options see substep **a** below.
- To use the "ALL" option see substep **b** below.

**Warning:** If a device is *not* specified when issuing the TABAUDIT ALL command, only a SUMMARY\$FILE will be created in Store File and no separate file will be created for individual failed tables.

-continued-

**Procedure 1**  
**Run TABAUDIT (continued)**

If necessary, TABAUDIT may be stopped and restarted . To stop TABAUDIT at anytime, use break HX. When restarting TABAUDIT, determine the last table verified by reviewing the "SUMMARY\$FILE " file in SFDEV. The last table verified can also be determined by listing table DART and reviewing the "CHKDATE" and "CHKTIME" fields for the most recently verified table.

Some tables will output information or warning messages as though they are being changed. However, no changes will be made since TABAUDIT does not execute any write procedures.

For example, when TABAUDIT is performed on table DATASIZE the following message is output for every tuple checked:

*A restart is needed for this change to take effect. Check the NTP as to which is appropriate warm or cold.*

Or for example, when STDPRTCT is checked, the additional output is:  
*Warning: Changes in table STDPRTCT may alter office billing.*

- a. Until the amount of time required to verify all tables is known for a particular site it is recommended to perform the verification on a range of tables using the "FROM" and "TO" options and information found in table DART.

```
> TABAUDIT FROM <start table> [TO <end table>]
<device name>
```

For example, to obtain table names in increments of 100, enter Table DART, list, go down 100 and list two. Record or print the table names. Continue this until the end of table DART is reached.

```
> TABLE DART; LIST (output will be the "FROM" table name)
> DOWN 100; LIST 2 (output will be the "TO" table name of the
first 100 and the "FROM" table name for the second 100)
> DOWN 100; LIST 2 (repeat until the end of table is reached)
> LEAVE
```

Perform TABAUDIT on the first 100 tables as shown in the following example:

```
> TABAUDIT FROM DART TO BGDATA <device name>
```

When complete, perform TABAUDIT on the next 100. Repeat until all tables have been verified.

- b. Use the TABAUDIT ALL command to perform the data verification function on all tables listed in table DART using just one command.

```
> TABAUDIT ALL <device name>
```

---

-continued-

**Procedure 1**  
**Run TABAUDIT (continued)**

- 2** Review the summary output and any failed table files. If any table fails, contact the translations engineer who can help in resolving any data consistency issues. To verify a corrected table, run TABAUDIT ONLY and specify the corrected table.

```
> TABAUDIT ONLY <table name> <device name>
Continue until all tables have been corrected.
```

---

- 3** When all tables have been corrected, if time permits, perform a TABAUDIT on all the tables again by range or by use of the "ALL" command. This is to ensure that no changes performed in step 2 have adversely affected other tables.
-

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## JFFREEZE procedure

This procedures in this section are required only when the office is scheduled for a Hybrid process software delivery. Site personnel should perform the procedure at 10 days prior to the software delivery date, or when instructed to do so by Northern Telecom.

Whenever possible JFFREEZE should be used to take the "frozen image" and begin the data freeze. Northern Telecom must receive the frozen image by 8 days prior to the software delivery date to allow enough time to complete the dump and restore.

### **Procedure 1** **Stop activities**

- 1 **Site/ACT** Advise all personnel that all activities must stop (including service orders, translations, trunking, and other data modification) until told otherwise.

---

- 2 Verify that no hardware changes or retrofits are in progress (such as network and memory extensions).

---

**Procedure 2**  
**Patch verification before frozen image**

The Site is responsible for the following patch verification steps.

- 1 **Site/ACT** Ensure any from-side patches recently downloaded to SFDEV are applied *before* dumping the frozen image (Hybrid method). NOTIFY THE SITE SUPERVISOR of any new from-side patches not yet applied.

---

- 2 Review a current list of from-side patches needed for the BCS application. This list can be obtained from your patch administrator.

---

- 3 Verify all required patches on the list are applied *before* dumping the frozen image (Hybrid method).

---

- 4 The front-end and MS patches should be copied to the patch tape (or to disk) and LEFT IN SFDEV.

---

**Procedure 3**  
**Stop journal file for freeze**

- 1 **Site/ACT** CLOSE and STOP the Journal File recording.
    - a. > MAPCI;MTC;IOD;DIRP;QUERY JF ALL  
*Check which JF volume is currently active.*
    - b. > CLOSE JF ACTIVE  
> CLOSE JF ACTIVE  
*JF is closed twice to ensure current timestamp on active journal file.  
QUERY again to verify rotation.*
    - c. > JF STOP  
*Verify stopped.*
    - d. > QUIT MAPCI
-

**Procedure 4**  
**Setup for frozen image**

1 **Site/ACT** Ensure user OPERATOR is correctly permitted.

a. > SHOW USERS

```
NAME PRIO STACK NRDEV LANGUAGE PRIV
OPERATOR 4 5000 ENGLISH ALL
```

b. If OPERATOR is not permitted as stated above, change with the "PERMIT" command.

*If OPERATOR is logged in, logout the user and use the "PERMIT" command from another user. Then again login as OPERATOR.*

c. **Important:** Also change the PASSWORD to "OPERATOR" for the image. This is only temporary and can be changed back after the frozen image.

---

2 **Site/ACT** Delete MAP log device from table LOGDEV to ensure logs are not sent to to the MAP terminal.

> TABLE LOGDEV;POS MAP

*Retain position MAP data for a later step.*

> DELETE

> QUIT

**Note:** This tuple can be added back at the end of this procedure.

---

3 **Site/ACT** Verify MAP datafill in table TERMDEV.

a. > TABLE TERMDEV;LIS

*Retain position MAP data for a later step.*

```
MAP 0 8 VT100 B1200 CL 1X67BC NONE N NONE ALL
```

*System response with a new IOC, 1X61AB.*

or

```
MAP 0 20 VT100 B1200 CL 1X67BC NONE N NONE ALL
```

*System response with an old IOC, 1X61AA.*

b. Change any fields which do not match. The **bold** type (fields IOCNO, CKTNO, BAUDRT, and INTYP) is a must, other fields are not critical.

**CAUTION**

**Do not "<break>/STOP" or "HX" because it will  
cause the table changes to take effect.**

The tuple can be changed back at the end of this procedure.

---

-continued-

**Procedure 4**  
**Setup for frozen image (continued)**

- 4 Verify the MAP device is in service.
- a. > MAPCI;MTC;IOD;LISDEV CONS
  - b. Verify MAP position is in service as follows.
    - > IOC 0;CARD 2 *{with a new IOC, 1X61AB}*
    - or
    - > IOC 0;CARD 5 *{with an old IOC, 1X61AA}*
- If port 0 (MAP) is not in service (a dot represents in service) then do:
- > BSY 0;RTS 0
  - c. > QUIT ALL
- 

- 5 Verify tuple JF datafill in table DIRPSSYS.
- a. > TABLE DIRPSSYS;POS JF  
*Example system response:*  
  
JF Y 2 1 JFPOOL \$ CR MJ NA NA **30 30** \$ N NA  
**FIRSTACT NNNNNNN 0 NOROTATE BOTH NONE**
  - b. Retain the original datafill to restore to the new load before the images are dumped in the *SWACT/POSTSWACT* procedures.
  - c. Change the fields which do not match. The **bold** type (fields RETPD, CRETPD, FILEDATE, SHEDDAYS, ROTACLOS, and AUTOXFER) is a must. Other fields are not critical. (JFFREEZE automatically daily rotates journal file at approximately 0300 hours.)
  - d. > QUIT
-

**Procedure 5**  
**Cleanup journal files**

Copy journal files to tape and ERASE them from disk with this procedure.

- 1 **Site/ACT** > MAPCI;MTC;IOD;DIRP;QUERY JF ALL  
*Retain the volume names located under the VOLUME field for step 4 and step 8.*

---
- 2 > QUIT MAPCI

---
- 3 > DSKUT

---
- 4 LISTVOL <volume> ALL  
*where <volume> refers to the journal file volume(s) noted in step 1. Retain all filenames for step 6.*

---
- 5 Repeat step 4 for each volume found in step 1.

---
- 6 If the site does not require copying unprocessed journal files, go to step 8; otherwise, continue.  
Put up a tape on MTD 0. Either enter  
> DIRPAUTO JF *{steps you through the process}*  
or MOUNT the tape and enter  
> DIRPCOPY JF <unprocessed files> <T0>  
*where <unprocessed files> refers to JF files that begin with the letter "U" (e.g. U890327133614JF) and which were listed in step 4.*

---
- 7 Repeat step 6 for each unprocessed journal file.

---
- 8 > LISTVOL <volume> ALL  
*where <volume> refers to the journal file volume(s) noted in step 1. Retain all filenames for step 10.*

---
- 9 Repeat step 8 for each volume found in step 1.

---
- 10 > MAPCI;MTC;IOD;DIRP *{BCS24 and higher}*  
> CLEANUP FILE <filename>  
> YES *{for confirmation}*  
or  
> ERASEFL <filename> *{BCS23 and lower}*  
*where <filename> is all files except DIRP\_FILESEG and active files. Active files start with the letter "A" (e.g. A890327133614JF).*

---

-continued-

**Procedure 5**  
**Cleanup journal files (continued)**

- 11 Repeat step 10 for each filename found in step 4 or step 8 above.
-

**Procedure 6**  
**Start JFFREEZE**

- 1 **Site/ACT** Start JFFREEZE. To see a complete console session of JFFREEZE, see *Using JFFREEZE, Appendix A: Command Summaries*.

**Note:** Verify the normal image disk volume has enough space for a new image (erase the oldest image on the volume if necessary).

- a. > JFFREEZE ON

DO YOU WISH TO CONTINUE? *{system response}*  
Please confirm ("YES" or "NO"):

- b. > YES

ENTER THE FREE IOC OR SLM DISK VOLUME TO RECEIVE  
THE SYSTEM IMAGE FILE(S):

- c. > <disk>

*where <disk> is the normal image disk volume.*

JFFREEZE: THE SYSTEM...COMMENCE IN 2 MINUTES

DO YOU WISH TO PROCEED?  
Please confirm ("YES" or "NO"):

- d. > YES

JFFREEZE image dump commences in 2 minutes...  
Dump START time: yyyy/dd/mm hh:mm:ss.sss ddd..  
*JFFREEZE image dump information is output, followed by Journal file information.*

---



**Procedure 7**  
**Duplicate image SNODE**

- 1 **Site/ACT** Make three copies of the frozen image on SLM tape cartridge.
    - a. Insert a blank SLM cartridge in the SLM where the image was dumped.
    - b. 

```
> DISKUT
> INSERTTAPE <tape> WRITELABEL FROZEN
```

*where <tape> is the SLM tape on the same SLM device where the image was dumped.*
    - c. 

```
> LISTFL <slm>
```

*where <slm> is the SLM disk volume where the image was dumped. Retain the filenames (both \_MS and \_CM).*
    - d. 

```
> BACKUP FILE <slm> <filename>_MS
> BACKUP FILE <slm> <filename>_CM
```

*where <slm> is the SLM disk volume where the image was dumped, and <filename> is the name of the file listed above in substep c.*
    - e. 

```
> EJECTTAPE <tape>
```
    - f. Remove the SLM cartridge once the tape has stopped moving.
    - g. Repeat substeps a through f until three image copies are made.
-

**Procedure 8**  
**Resume work**

- 1 **Site/ACT** Advise change order personnel that service order activity may resume only by following *Journal file rules* procedure (to follow).
-

**Procedure 9**  
**Print table TERMDEV**

- 1 Site/ACT** Print a hard copy of table TERMDEV. Set the printout aside for the moment.  
*This printout will to be sent to Northern Telecom for use by the Dump and Restore engineer.*
-

**Procedure 10**  
**Send in frozen image**

- 1 **Site/ACT** Send two "frozen images" to the appropriate Northern Telecom facility.
  - a. Label the tapes as "Frozen image."
  - b. Send the image tapes to the following address:

*PLEASE CONTACT YOUR NT CUSTOMER SERVICE REPRESENTATIVE FOR THE CORRECT ADDRESS.*
  - c. Safely store the remaining tape at the DMS site.
  - d. Also include in the shipment the printout of table TERMDEV that was set aside above.

---
- 2 Safely store the remaining tape at the DMS site.

---

**Procedure 11**  
**Original data**

- 1 **Site/ACT** If any changes were made above (for the frozen image) to user OPERATOR or to the MAP device, restore the original data if desired as follows.
    - a. If a permit option was changed for user OPERATOR, change it back if desired.  

```
> SHOW USERS
```

*If OPERATOR is logged in, logout the user and use the "PERMIT" command from another user. Then again login as OPERATOR.*
    - b. The original password for user OPERATOR can also be restored at this time.
    - c. If MAP tuple was changed in table TERMDEV, restore the original data if desired.
    - d. If MAP device was deleted in table LOGDEV, restore the original data if desired.
-

**Procedure 12**  
**Journal file rules**

**Site FOLLOW THESE RULES** through the entire data freeze period (normally up to the night of the BCS application). The data freeze begins once the frozen image is completed. Please inform control center and craftsperson personnel of the following restrictions.

- 1 LIMIT SERVORD ACTIVITY and TABLE CHANGES during the data freeze.

**Warning:** Whenever possible use SERVORD, not table control, to make data changes.

---

- 2 Journal file is never to be stopped, even during journal file rotations. *If the AUTOIMAGE feature is used to take regular office images, the journal file starts and stops automatically as the image is dumped. This is the only exception to the rule.*
- 

3 ACTIVITIES WHICH **ARE NOT** PERMITTED

- changes to "restricted tables" (including tables C7LKSET, C7RTESET, and C7LINKSET)

**Note:** A list of all the RESTRICTED TABLES can be seen by listing entries in table FREEZTAB.

- network changes, additions, and deletions (tables NETWORK and NETJUNCT)
- PM changes, additions, and deletions (all tables ending with 'INV')
- trunk group changes, additions, and deletions (tables TRKGRP and TRKSGRP)
- trunk member changes, additions, and deletions (table TRKMEM)
- table TRKNAME changes, additions, and deletions
- IBN customer group changes, additions, and deletions
- OM and EADAS changes, additions, and deletions (tables OMACCTAB, OMCLASS, OMACCGRP, OMACCFLD, OMACCKEY, OMDDELTA, and OMSET)
- DRAMREC changes, additions, and deletions (that is, ASSIGN and RECORD)
- table changes, additions, and deletions from store files, and using OVERRIDE (OVE) or VERIFY OFF (VER OFF)
- use of the RENAMECLLI command
- use of the DMOPRO command
- use of the JF STOP command

-continued-

**Procedure 12**  
**Journal file rules (continued)**

- erasing journal files from disk
  - use of DIRP CLEANUP command. This could change 'R' journal files to 'P' status, and these may not be processed when JFDUMPF step is done. If file space is required then cleanup only non-journal files.
- 

**4** ACTIVITIES WHICH **ARE** PERMITTED

- all SERVORD commands
  - table changes must be made with VERIFY ON and kept on hard copy
  - emergency translation changes
- 

**5** If JFFREEZE is *not* activated, CLOSE and ROTATE journal files daily (whenever the number of records exceeds 1000). KEEP THE FILENAMES IN CHRONOLOGICAL ORDER IN A JOURNAL FILE LOGBOOK.

---

**Procedure 13**  
**System restart with JFFREEZE on**

**Site** If BCS29 and lower with JFFREEZE activated and a system restart occurs for some reason, observe the following procedure.

**1 ACT** Rotate the journal file:

- a. > MAPCI;MTC;IOD;DIRP;QUERY JF ALL  
*Check which JF volume is currently active.*
  - b. > ROTATE JF  
*QUERY again to verify rotation.*
  - c. > QUIT ALL
- 

**2** Print the journal file HISTORY file.

> JFFREEZE HISTORY

---

**3** Copy all journal file records listed in the HISTORY file to tape. Use the DIRPAUTO JF command (if available) or DIRPCOPY JF to copy the files. Keep the tape for backup the night of the BCS update.

---

**4** Verify tuple JF datafill in table DIRPSSYS:

- a. > TABLE DIRPSSYS;POS JF  
*Example system response:*

```
JF Y 2 1 JFPOOL $ CR MJ NA NA 30 30 TAPE $
FIRSTACT YYYYYYY 3 X24 BOTH NONE
```

- b. Change all fields which do not match. The **bold** type (fields RETPD, CRETPD, FILEDATE, SHEDDAYS, SHEDBASE, SHEDINCR, ROTACLOS, and AUTOXFER) is a must. Other fields are not critical. (This daily rotates journal file at approximately 0300 hours.)
  - c. > QUIT
- 

**5** Manually START journal file if not already started.

---

**6** DO NOT STOP JOURNAL FILE. Rotate journal file daily and archive all journal file tapes for use on the night of the BCS update. Keep a chronological record of each journal file for use by the update engineer.

---

**7** Observe *Journal file rules* procedure from this point on.

---



## Procedure 14 Changing DRAMREC with JFFREEZE on

**Site** When JFFREEZE is activated and it is necessary to do DRAMREC changes, additions or deletions (that is, ASSIGN or RECORD), observe the following procedure.

- 1 **ACT** Rotate the journal file:
  - a. > MAPCI;MTC;IOD;DIRP;QUERY JF ALL  
*Check which JF volume is currently active.*
  - b. > ROTATE JF  
*QUERY again to verify rotation.*
  - c. > QUIT ALL

---
- 2 Contact TAS to SUSPEND JFFREEZE.

---

- 3 Print the journal file HISTORY file.
 

```
> JFFREEZE HISTORY
```

---
- 4 Copy all journal file records listed in the HISTORY file to tape. Use the DIRPAUTO JF command (if available) or DIRPCOPY JF to copy the files. Keep the tape for backup the night of the BCS update.

---

- 5 Contact TAS to STOP JFFREEZE.

---

- 6 Verify tuple JF datafill in table DIRPSSYS:
  - a. > TABLE DIRPSSYS;POS JF  
*Example system response:*

```
JF Y 2 1 JFPOOL $ CR MJ NA NA 30 30 TAPE $
FIRSTACT YYYYYYY 3 X24 BOTH NONE
```
  - b. Change all fields which do not match. The **bold** type (fields RETPD, CRETPD, FILEDATE, SHEDDAYS, SHEDBASE, SHEDINCR, ROTACLOS, and AUTOXFER) is a must. Other fields are not critical. (This daily rotates journal file at approximately 0300 hours.)
  - c. > QUIT

---
- 7 Manually START journal file if not already started.

---

- 8 Make DRAMREC changes as required.

---

- 9 **DO NOT STOP JOURNAL FILE.** Rotate journal file daily and archive all journal file tapes for use on the night of the BCS update. Keep a chronological record of each journal file for use by the update engineer.

---

-continued-

4-34 JFFREEZE procedure

---

**Procedure 14**  
**Changing DRAMREC with JFFREEZE on (continued)**

10 Observe *Journal file rules* procedure from this point on.

---

## Updating loads in the Message Switch

Begin this section as soon as the new BCS IMAGE tape arrives on site (normally two to three days before the software delivery).

*Procedure 1* is to copy the new CM and MS loads onto a SLM disk. This is for all offices, and is required in order to load the MS and to enable loading the mate CM from SLM disk.

*Procedure 2* is only for offices on BCS34 and higher. Procedure 2 is to preload the MSs with the new MS load. (For offices on BCS33 and lower, the MSs will be loaded by the BCS Applicator on the night of the software delivery.)

**Note:** When scheduled for a BCS-n to BCS-n application (for example, BCS34 to BCS34) Telco may choose to NOT preload MSs as long as the present MS load is patched current.

### Procedure 1 Restore CM and MS loads

Restore (that is, copy ) the new CM and MS loads onto a SLM disk.

- 1 **Site/ACT** List the SLM tape cartridge with the new BCS IMAGE files (both \_MS and \_CM loads).
  - a. Place the cartridge into the SLM tape drive on the same side as the inactive CPU.
  - b. > DISKUT
  - c. > IT <tape\_device>  
*Inserts the tape into the inactive-side SLM, for example:  
IT S00T or IT S01T*
  - d. > LF <tape\_device>  
*for example, LF S00T or LF S01T. May take up to one hour to list.*
  - e. Verify the MS and CM load files are the correct ones to use.  
*To help understand the image filenames, you may use CI command  
DISPMS <filename> which displays the image header information.  
(Refer to Appx. A for more details of this command.)*

---

-continued-

**Procedure 1**  
**Restore CM and MS loads (continued)**

- 2 Select a SLM disk volume onto which to restore the new BCS IMAGE.
- The volume selected should not be on the same SLM with active DIRP billing.
  - The volume should not be the same volume normally used to take images. (This is so that AUTOIMAGE won't fail for lack of disk space.)

*If there is a problem completing this step, please contact the next level of support.*

---

- 3 Restore both the CM load and the appropriate MS load onto the selected SLM disk volume.

- a. > RE FILE <disk\_volume><tape\_device><filename\_CM>  
*Restores the CM load onto the SLM, for example:*  
RE FILE S01DIMG0 S01T LD101015ND36\_CM
- b. > RE FILE <disk\_volume><tape\_device><filename\_MS>  
*Restores the MS load onto the SLM, for example:*  
RE FILE S01DIMG0 S01T LD101015MS36CR\_MS
- c. > ET <tape\_device>  
*Ejects the SLM tape, for example:*  
ET S01T
- d. > QUIT
-

**Procedure 2**  
**Preload both MSs**

As of BCS34, backward-compatibility is supported in the Message Switch (MS). This means, if the office is on BCS34 or higher, then it is possible to PRELOAD *both* MSs with the new MS load before the CM is upgraded to the new BCS.

**CAUTION**

**Do not attempt to upgrade the Message Switch at this time unless the office is currently on BCS34 or higher.**

Failure to heed this caution could result in degradation of the switch since the MS load is not backward compatible until the office is on BCS34.

**CAUTION**

**If the office is on BCS34 or higher, both MSs must be loaded with the MS load provided on the BCS IMAGE tape prior to starting the BCS application.**

The following procedure assumes the proper MS load was successfully copied to a SLM disk volume.

*Note:* The BCS IMAGE provided is patched current. If any new patches are required, these will be downloaded to SFDEV and applied on the night of the BCS application.

- 1 **Site/ACT** List the SLM disk volume onto which the new BCS IMAGE files (both \_MS and \_CM loads) were previously restored (copied).
    - a. > DISKUT  
 > LF SOOD<volume> *{or SO1D<volume>}*  
*where <volume> is the SLM disk volume with the BCS IMAGE.*
    - b. Verify the image files (both \_MS and \_CM) on the SLM disk volume are correct. Be sure to use the image files provided on the new BCS IMAGE tape.  
*To help understand the image filenames, you may use the DISPMS <filename> command which displays the image header information. (Refer to Appx. A for more details of this command.)*
- 
- 2 At the MS level of the MAP, determine which MS contains the SLAVE clock. (Look for "slave" under the CLOCK field.)
    - > MAPCI ; MTC ; MS

-continued-

**Procedure 2**  
**Preload both MSs (continued)**

3 > BSY <MS#> *{the MS with the slave clock}*

---

4 > LOADMS <MS#> <filename>  
*where <filename> is the name of the \_MS load file listed above in step 1.*  
> YES *{for confirmation}*

---

5 When prompted, perform an out-of-service test on the MS just loaded.  
> TST <MS#> *{on the OOS MS}*  
*Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.*

**CAUTION**  
**Do not proceed unless NO faults are reported.**  
Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.

---

6 > RTS <MS#> *{not OOBAND!}*

---

7 Wait 5 minutes to ensure the clocks are stable and to allow the hardware audit to run. Both MSs should be inservice.  
**Note:** The MS load on the CM image tape is patched as current as possible. Copies of all MS patches that were applied to this load will be in mate SFDEV when the CM image is loaded for the BCS application. Once the CM load is made active (by the SWACT) the MATCHALL MS (PATCHER) will function as intended.

---

8 Switch MS clock mastership.  
> SWMAST

---

9 Monitor MS logs for 10 minutes to ensure stability.

---

10 Repeat steps 3 through 9 to update the load in the other MS.

---

11 > QUIT MAPCI

---

---

## Site responsibilities the day of the software delivery

The following steps must be completed by site personnel *before* the software delivery engineer contacts the site for the scheduled software delivery.

### Procedure 1

#### Day zero checklist

- 1 **Site** Verify that all problems identified from performing table data checks have all been resolved.

---
- 2 Verify that the front-end processors have been in sync for the past 24 hours and the last REX test has passed.

---
- 3 Verify an image has been taken in the last 24 hours and backed to tape.

---
- 4 Ensure you have undertaken your critical test call plan and verified it. (See *Appendix C: Test Call Scripts*).

---
- 5 Verify SFDEV has been cleared of all Telco/site-created files.

---
- 6 Verify all to\_BCS patches have been downloaded to site and are present in SFDEV.

---

#### 7 **LIU7 image with feature AQ1102**

In preparation for the ONP, assuming that the LIU7s have had their software loads upgraded, dump an image of an INSV LIU7. There should be no changes to the tables C7GTT, C7GTTYPE, C7NETSSN, or C7DCIS6 between the time this image is dumped and when the ONP occurs.

*This is to utilize feature AQ1102, which allows faster recovery of LIU7s under certain circumstances. Please refer to the feature description for details of the possible recovery scenarios.*

**Note:** If an image with up-to-date data is not available, then data sync of an LIU7 following the CC Warm SWACT may take considerable time if table C7GTT is very large.

---

**Procedure 2**  
**Patch verification**

The Site is responsible for the following patch verification step.

- 1 **Site/ACT** All patches downloaded to SFDEV after the final office review should be copied to tape (or to disk) and LEFT IN SFDEV.
    - *From-side patches that are process-related (affecting ONP tools) will be applied by the BCS Applicator on the night of the BCS application.*
    - *To-side front-end and MS patches in SFDEV will be automatically applied to the new BCS load on the night of the BCS application.*
-



**Procedure 3**  
**Run DATADUMP**

1 **Site/ACT** Run DATADUMP to output important switch information for future reference.

- a. > LOGUTIL;STOPDEV <printer>  
*where <printer> is an available printer to be used for recording. This makes sure the logs are stopped on the device.*  
> LEAVE
- b. > RECORD START ONTO <printer>
- c. > BCSUPDATE;DATADUMP *{for BCS33 and higher}*  
When DATADUMP is completed:  
> QUIT
- d. > DRCI;RUNEXEC DATA\_DUMP *{for BCS32 and lower}*  
When DATADUMP is completed:  
> QUIT
- e. > RECORD STOP ONTO <printer>
-

**Procedure 4**  
**FX voice and data**

- 1 **Site** Ensure there will be uninterrupted communication with the software delivery engineer during the software delivery. (Provide FX voice and data lines.)

---
- 2 Ensure at least two dialup ports are operational-one on each IOC. These should have COMCLASS of ALL.

---
- 3 Verify user names to be used during the software update have PRIVCLAS of ALL.

---

## Preliminary phase procedure

This section details both SITE and BCS applicator (App) activities required for a Hybrid process software delivery. The data transfer should already be completed.

The actual software delivery begins when the software delivery engineer puts the switch into simplex mode (drops sync) and loads the inactive CPU with the datafilled BCS software load.

Two dialup ports are required, one for the active side processor (label it ACT) and one for the inactive side processor (label it INACT). Remember to acquire a soft copy of the console sessions for both terminals.

*Note:* Telco may elect to monitor the application process by recording onto printers. This can impact the software delivery time. Site may start recording by issuing the following command for two printers, one for each of the dialup ports to be used by the applicator: "RECORD START FROM <terminal\_id> ONTO <printer>."

### **CAUTION**

**Ensure no hardware changes or retrofits are in progress. This includes network or memory extensions and peripheral additions/deletions.** These activities are prohibited during the BCS application. Such hardware must be made INB (installation busy), and any further software changes must cease.

**Procedure 1**  
**Interrupt/ABORT process**

Both SITE and Applicator should be familiar with each of the following steps before continuing with the procedures in this section.

If problems develop during the software delivery, resort to one of the following actions.

- 1 It may be necessary to STOP (and reschedule) the application after PRESWACT has been implemented, but before the switch of activity. Refer to "PRESWACT Abort" in *Appendix A* (page A-29).

---

- 2 If a controlled REVERT is required after the switch of activity (SWACT) refer to "Revert to old load procedure" (page 4-121).

---

- 3 If an emergency ABORT is required after the switch of activity (SWACT) refer to "Emergency Abort procedure" (page 4-147).

---

---

**Procedure 2**  
**Remote login**

- 1 **App/ACT** Contact the control center (if required) and the site on the voice phone and connect to both dialups. Verify one dialup port is on IOC0 and the other is on IOC1.
- 
- 2 **App/ACT** Login the users and if applicable, set LOGINCONTROL.
    - a. <break>
    - b. ?LOGIN  
Enter username and password *{system response}*  
> <username> <password>
    - or > <username>  
> <password>  
*where username and password can both be found on the Pre-application report.*
    - c. For BCS33 and higher enter:  
> BCSUPDATE;DEVICE  
> QUIT
    - d. For BCS32 and lower enter:  
> LOGUTIL;STOP;STOP *{Note the name of this device}*  
> LEAVE  
> LOGINCONTROL <device> QUERY
    - e. Verify *Open Condition Logout* is *N*. If not, retain the original status and enter:  
> LOGINCONTROL <device> OPENFORCEOUT FALSE  
Verify *Max Idle Time* is *Forever*. If not, retain original status and enter:  
> LOGINCONTROL <device> MAXIDLETIME FOREVER  
> LOGINCONTROL <device> DISABLEON REMOVE  
<forceout\_conditions> *{conditions obtained in substep d above}*
    - f. Repeat this entire step on the other terminal device.
-

**Procedure 3**  
**Check logs SNODE**

**1 App/ACT** For BCS33 and higher check logs to verify processor stability.

> BCSUPDATE ; LOGCHECK

> QUIT

*Do not continue until all logs have been explained.*

---

**2 App/ACT** For BCS32 and lower check logs to verify processor stability.

> LOGUTIL

> OPEN <log\_buffer> ; WHILE (BACK) ( )

*where <log\_buffer> refers to CM, MS, SLM and MM logs.*

> LEAVE

> TRAPINFO

*Check for store parity traps, MM (mismatch), and store checksum logs. Do not continue until all logs have been explained.*

---

**Procedure 4**  
**Stop journal file**

- 1 **App/ACT** ROTATE and STOP the Journal File recording.
    - a. > MAPCI;MTC;IOD;DIRP;QUERY JF ALL  
*Check which JF volume is currently active.*
    - b. > CLOSE JF ACTIVE  
*QUERY again to verify rotation.*
    - c. > JF STOP  
*Verify stopped.*
    - d. > QUIT MAPCI
-

**Procedure 5**  
**Ensure MSs loaded**

As of BCS34, backward-compatibility is supported in the Message Switch. This means, if the office is on BCS34 or higher, then it is possible to PRELOAD *both* MSs with the new MS load before the CM is upgraded to the new BCS.

- 1 **App/ACT** If the office is on BCS34 or higher, then ensure both MSs are loaded with the new MS load that was provided on the new BCS IMAGE tape.
-



---

**Procedure 6**  
**Drop sync SNODE****1 App/ACT Type:**

> MAPCI ; MTC ; CM

---

**2 App/ACT** Ensure the CM you want to load with the new BCS load is *inactive* and the corresponding MS and SLM components are used.

*For example: if the new BCS image resides on SLM disk 0, then CM 0 should be the inactive side, and the MS 0 clock should be the slave clock.*

- a. Determine where the new BCS image resides (normally SLM disk 0).
  - b. If needed to align the CM with the SLM, you may switch activity of the CM using SWACT (CM level).
  - c. If needed to align the MS clock with the CM, you may switch MS clock mastership using SWMAST (MS level). If you do, wait five minutes to continue.
- 

**3 Site/INACT** From the inactive RTIF enter:

RTIF> \JAM

RTIF> YES *{for confirmation}*

---

**4 App/ACT**

> DPSYNC *{from CM level}*

> YES *{if prompted to disable AUTO PATCHING}*

> YES *{to confirm DPSYNC}*

---

**5 Site/INACT** Site must tell the engineer when the inactive CM is flashing A1.**6 App/ACT**

> QUIT MAPCI

---

**Procedure 7**  
**BULLETINS before LOADMATE**

- 1 **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning LOADMATE.
-

## Procedure 8 Loadmate SNODE

- 1 **App/ACT** List the SLM disk volume onto which the new BCS IMAGE files (both `_MS` and `_CM` load files) were previously restored (copied).
    - a. `> DISKUT`  
`> LF SOOD<volume>` *{or SO1D<volume>}*  
*where <volume> is the SLM disk volume with the BCS IMAGE.*
    - b. Verify the image files (both `_MS` and `_CM`) on the SLM disk volume are correct. Be sure to use the image files that were provided on the new BCS IMAGE tape.  
*To help understand the image filenames, you may use the `DISPMS <filename>` command which displays the image header information. (Refer to Appx. A for details of this command.)*
- 
- 2 **App/ACT** If the `_CM` image file was not previously restored to the SLM disk, you can instead loadmate from SLM tape as follows. (Otherwise, go on to with the next step to load from disk.)

### CAUTION

**The `_MS` file will have to be restored to the SLM disk in order to load the MS (during PRESWACT if not already done).**  
 However, since loadmate can be done using SLM disk or tape, you may wait until loadmate is done to restore the `_MS` file to SLM disk.

Insert the new BCS IMAGE cartridge into the SLM tape drive corresponding to the inactive CM.

`> LDMATE DIRECT TAPE 2` *{loads 2nd file on the tape}*

-continued-

**Procedure 8**  
**Loadmate SNODE (continued)**

**3 App/ACT** If BCS28 and higher, loadmate using the SLM disk as follows.

**a.** Ensure no DIRP files are opened on the SLM disk with the image.

```
> DIRP;QUERY <subsystem> ALL
where <subsystem> is AMA, OM, JF, or DLOG.
```

If any opened files, close the files (or rotate the information to the active side).

**CAUTION**

**LDMATE DIRECT (below) will fail if there are any opened files on the SLM device with the image.**

"DIRECT LOADMATE OPERATION FAILED: File System operations must be halted before initiating loadmate."

**b.** > LDMATE DIRECT DISK <filename\_CM>

*If you get the above message, either close the opened file(s), or else loadmate using the VIAMS option as follows.*

```
> LDMATE VIAMS <filename_CM>
```

---

**4 App/ACT** If BCS27 loadmate using the SLM disk as follows.

**a.** Activate patch SSY05C27.

```
> PATCHEDIT SSY05C27 ON
```

**b.** > LDMATE <filename\_CM>

---

**5 App/ACT** If BCS26 loadmate using the SLM disk as follows.

```
> LDMATE <filename_CM>
```

---

**6 Site and App/INACT** Wait for loadmate to complete and the inactive processor to flash A1.

*While waiting for loadmate, SITE may display the patches in store file (PATCHER; DISPLAY <patch>) or may copy any new patches to the new patch tape (or to disk).*

---

**Procedure 9**  
**Login inactive after Loadmate SNODE**

Login on the inactive processor after loadmate is complete.

**1 App/ACT Type:**

```
> MATELINK RTS
```

---

**2** Allow initialization on the inactive side (flashing A1).

---

**3** LOGOUT of the active side if logged in on the terminal labeled INACT.

---

**4** > MATEIO

```
> MATELOG <device>
```

*where <device> is the name of the terminal labeled INACT.*

---

**5 App/INACT**

```
Enter username and password
```

*{mate-side response}*

```
Mate> OPERATOR OPERATOR
```

or Enter username

```
Mate> OPERATOR
```

```
Enter password
```

```
Mate> OPERATOR
```

---

**Procedure 10**  
**Set date and header message**

- 1 **App/INACT** Set the current date and site header message on the mate side.

```
Mate> SETDATE <dd mm yy> {set today's date}
```

```
Mate> SETLOGMSG '<text>'
```

where <text> becomes the office header on the new software load. Using the old header as the model, change the **Office Order (COEO)**, **office name**, **Product Code** (or BCS level), and **application date**. Ensure all symbols at the beginning and end of the header message remain the same (including spaces).

**Note:** The "Order/Suborder" (Office Order) and "To Product/Version" (Product Code/BCS) can be found in the *Parmmail*.

*Example:*

```
94/04/12 00:41 *** H01234 OFFICE LEC00002 120494 ***
```

---

**Procedure 11**  
**Check logs inactive SNODE**

- 1 App/INACT** For to\_BCS 33 and higher check mate logs to verify processor stability.

```
Mate> BCSUPDATE ; LOGCHECK
```

```
Mate> QUIT
```

*Do not continue until all logs have been explained.*

---

- 2 App/INACT** For to\_BCS 32 and lower check mate CM logs.

```
Mate> LOGUTIL ; OPEN CM ; WHILE (BACK) ()
```

```
Mate> LEAVE
```

```
Mate> TRAPINFO
```

*Check for store parity traps. Do not continue until all logs have been explained. Traps from active side (FOOTPRINT) may also be shown.*

---

- 3 App/INACT**

```
Mate> TRAPINFO CLEAR
```

---

**Procedure 12**  
**Mate-side memory check**

- 1 **App/ACT** If from\_BCS 32 and higher, perform a mate-side memory check.

**CAUTION**

**If this test fails *do not continue*-immediately notify the site supervisor.**  
The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side.

**Note:** Entering the RUNSTEP command below gives a warning that the step is done out of process. This is okay-answer YES to the prompt.

- a. > BCSUPDATE;RUNSTEP MATE\_MEM\_CHECK

**Note:** This displays on the active side the result of the test, "completed" or "not completed." If it is not completed an error message is also printed on the active side.

- b. Should this check fail, isolate and replace the faulty memory card on the inactive side. For additional information, turn to "MATE\_MEM\_CHECK failure" in *Appendix B*.

- c. > QUIT
-



**Procedure 13**  
**Retain PARM values**

**1 App** Obtain a list of the following office parameters for reference.

```
> TABLE OFCVAR
> POS NODEREXCONTROL
> POS LCDREX_CONTROL
> QUIT

> TABLE OFCENG
> POS GUARANTEED_TERMINAL_CPU_SHARE
> QUIT

> TABLE OFCSTD
> POS DUMP_RESTORE_IN_PROGRESS
> QUIT
```

---

**Procedure 14**  
**Patch inactive**

PATCH the inactive processor by following this procedure. (Mate patching can instead be done manually if desired.)

*Note:* Entering the RUNSTEP commands below gives a warning that the step is done out of process. This is okay-answer YES to the prompt.

**1 App/INACT** If coming from \_BCS 31 and lower, on the mate side turn on access to WTAB using TASTOOL procedure.

---

**2 ACT** On the active side, ensure table PADNDEV points to the device (typically SFDEV) containing the patches that were downloaded for the to\_BCS.

> TABLE PADNDEV;LIST ALL

*If there are devices in this table that do not contain to\_BCS patches, make a note of the tuples and DELETE them.*

*Note:* MOVEBCS or TABXFR will attempt mate patching again (until this is patched out). After MOVEBCS/TABXFR does this, you will need to restore the original data in table PADNDEV. There are two ways of doing this:

1. In procedure "MOVEBCS/TABXFR setup"-Set a stop point in MOVEBCS/TABXFR to stop before table PADNDEV is moved. (At that point the patching will be completed.) Then when it stops edit the table on the active side and allow the data transfer to continue.

2. In procedure "MOVEBCS/TABXFR completed"-Allow MOVEBCS/TABXFR to run to completion as usual. Then edit table PADNDEV on both the active and inactive sides.

---

**3** > BCSUPDATE;RUNSTEP VERIFY\_DSLIMIT

---

**4** > RESET

---

**5** > RUNSTEP DISABLE\_AUTOIMAGE

*Note:* This step is not valid if the AUTOIMAGE feature is not available.

---

**6** > RUNSTEP SET\_OFFICE\_TUPLES

---

**7** > RUNSTEP SEND\_PATCHES

---

**8** > RUNSTEP APPLY\_PATCHES

---

**9** > QUIT

---

-continued-

**Procedure 14**  
**Patch inactive (continued)**

- 10 Site and App/INACT** Print the PATCH\$FILE and review applied (mate) patches.

```
Mate> LISTSF ALL;PRINT PATCH$FILE
```

*If you need to DISPLAY any patches that were applied on the inactive side, these patches can still be accessed from the active side.*

---

- 11** Mate> TRAPINFO

*If trap occurred, do not continue until the trap is explained and action taken to correct the error.*

---

**Procedure 15**  
**Activate patches inactive**

- 1 **App/ACT** Determine which ACT patches are activated in the old load.
    - a. > PATCHEDIT  
*This command shows a list of 'ACT' patches and which ones are activated (turned on).*
    - b. Review the patch list to determine which patches are currently activated (ON) on the active side.  
*Normally any ACT patch activated in the old load should be manually activated in the new load (see next step).*

---

  - 2 **Site and App/INACT** As needed activate ACT patches on the inactive side.
    - a. Mate> PATCHEDIT
    - b. Compare the mate-side patch list with active-side list obtained above. Decide with the site if any patches need to be activated (set "ON") at this time.  
*Passwords will be provided on the 'APF' report for any "feature patches" in the new BCS load. Give the password to Telco, but do NOT activate the patch at this time unless already ON in the old load.*
    - c. Mate> PATCHEDIT <patch> ON  
*This activates the patch.*
    - d. Repeat this command for each patch to be activated.
    - e. Also determine from comparing the patch lists if any ACT patches should be set to "NA" (no audit) state.
    - f. Mate> PATCHEDIT <patch> NA  
*This sets the patch to "NA" state.*
    - g. Repeat this command for each patch to be set to "NA."
-

**Procedure 16**  
**Restart inactive for patches**

- 1 App** Perform each of three types of restarts (warm, cold, and reload) on the inactive side to satisfy the requirements of any patch(s) needing a restart.

**Note:** Sequence of restarts is not important.

**INACT**

```
Mate> RESTART <restart type>
```

```
Mate> YES {for confirmation}
```

---

- 2** Allow initialization on the inactive side (flashing A1).
- 

- 3** Login on the inactive side.
- 

- 4** Repeat above steps for each type of restart required.
-

**Procedure 17**  
**IPL modules**

- 1 **App/ACT** If from\_BCS 30 and lower, to avoid problems using STATUSCHECK, STATUSUPDATE, and RESTARTSWCT because of device/hardware irregularities, do the following.

- a. > QUERY <module>  
where <module> is:  
NODESTAT STCSTAT IPMLSTAT  
CARRSTAT JCTRSTAT DCHSTAT

Repeat QUERY for each module listed.

**Note:** OPMSTAT, CCS6STAT, RCUSTAT, and CSCSTAT are also status modules, but do not require this procedure. The counts for these modules are set to their maximum values.

- b. If any module is loaded, as indicated by the QUERY command, enter the following:

> RUN <xxxx> IPL  
where <xxxx> is a loaded module.

**Note:** Three or four SWERRS will be generated for each module entered in this step. The SWERRS are expected and indicate that procedures and counts for the hardware are being updated.

---

**Procedure 18**  
**SWCTCHK verification**

- 1 **App/ACT** If from\_BCS 29 and lower, verify Pre-application Engineering has entered the SWCTCHK command (see *Pre-application Report*). If not done earlier complete this step.
    - a. Ensure patch EWW08 is applied on the active (from-side) load.
    - b. > SWCTCHK
-

**Procedure 19**  
**MASSTC**

- 1 **App** Check status in MASSTC level (TOPS office only).
    - a. **ACT**
      - > MASSTC
      - > STATUS
    - b. If the status is INITIAL, then no action is needed.
    - c. **INACT** If the status is DUPLICATED, then *with Telco consent* on the MATE side enter:
      - Mate> ENABLE
      - or, if data is obsolete
      - Mate> SCRAP
    - d. **ACT** If the status is SWITCHED, then *with Telco consent* on the ACTIVE side enter:
      - > PERM
-



---

## Journal file restore procedure

For HYBRID method-This section is required to restore the journal file recorded during the DATA FREEZE period.

Two dialup ports are required, one for the active side processor (label it ACT) and one for the inactive side processor (label it INACT). Remember to acquire a soft copy of the console sessions for both terminals.

### CAUTION

**Ensure no hardware changes or retrofits are in progress. This includes network or memory extensions and peripheral additions/deletions.** These activities are prohibited during the BCS application. Such hardware must be made INB (installation busy), and any further software changes must cease.

### CAUTION

**In case of emergency situations** and if an outage or degradation occurs, call the site supervisor immediately. If not service-affecting, use normal escalation policy.

#### Procedure 1

##### Journal file dump

- 1 Site and App** Locate the FIRST JOURNAL FILE TAPE or JF DISK VOLUME recorded at the beginning of the DATA FREEZE.
  - 2 App** For from\_BCS 28 and higher and if JFFREEZE was used, perform *Journal file dump with JFFREEZE* procedure (to follow).  
Otherwise, for the manual process perform *Manual journal file dump* procedure (to follow).
-

**Procedure 2**  
**Journal file dump with JFFREEZE**

If from\_BCS 28 and higher and if JFFREEZE was used, perform this procedure. Otherwise, perform the *Manual journal file dump* procedure (follows this procedure).

- 1 App/ACT** If currently on BCS33 and lower, enter:

> QUERY JFDUMPF

If the module is already loaded (module information is output) go to step 2 below.

If the module is *not* loaded ("QUERY--module 'JFDUMPF' is not loaded" is output) load the module as follows.

- a. Have site install the appropriate BCSTOOLS tape on a tape drive. Ask for the tape via the identification label (see "Administrative" block on the Pre-application report.)
  - b. > TLIST(MOUNT <x> {BCSTOOLS tape}
  - c. > LOAD JFDUMPF PRPTCHEC
  - d. > DEMOUNT T<x>
- 

- 2 Site and App**

> JFFREEZE HISTORY {site retains for their records}

Locate the FIRST JOURNAL FILE DISK VOLUME.

**CAUTION**

It is of utmost importance to start with the *first* journal file volume (containing the first journal files created since the data freeze).

---

- 3 App** List the JF disk volume as follows.

> DSKUT;LISTVOL <JF\_disk> ALL

*where <JF\_disk> refers to the disk volume(s) containing journal files identified above in step 2. Be extra sure to list all the volumes with JF.*

---

- 4** Locate a scratch DISK volume for the journal file dump (or else have site install a scratch tape with a write enable ring, and MOUNT FORMAT).
- 

-continued-

**Procedure 2**  
**Journal file dump with JFFREEZE (continued)**

- 5.1** Only if coming *from* BCS33 and higher and going *to* BCS35 and higher, enter the following command.

(for example, BCS 33-35, 33-36, 34-35, or 34-36)

```
> JFDUMPF <disk> <from_BCS> <from_BCS>
where <disk> refers to the disk volume (or tape) from step 4.
```

- 5.2** Otherwise, for any other BCS enter the following commands.

```
> RFMT SET <from_BCS> <to_BCS>
```

```
> JFDUMPF <disk> <from_BCS> <to_BCS>
where <disk> refers to the disk volume (or tape) from step 4.
```

---

- 6** Verify that all journal files listed in step 3 are dumped, and retain the output filenames for *Matebind journal files* procedure (to follow).
- 

- 7** > LISTSF ALL

Verify that DMOLIST was output from step 5, and retain the list for *Matebind journal files* procedure (to follow).

---

**Procedure 3**  
**Manual journal file dump**

If from\_BCS 27 and lower, or if JFFREEZE was not used, perform this procedure. Otherwise, perform the *JF dump with JFFREEZE* procedure (precedes this procedure).

- 1 App/ACT** If currently on BCS33 and lower, enter:

> QUERY JFDUMP

If the module is already loaded (module information is output) go to step 2 below.

If the module is *not* loaded ("QUERY--module 'JFDUMP' is not loaded" is output) load the module as follows.

- a. Have site install the appropriate BCSTOOLS tape on a tape drive. Ask for the tape via the identification label (see "Administrative" block on the Pre-application report.)
  - b. > TLIST(MOUNT <x> {BCSTOOLS tape}
  - c. > LOAD JFDUMP PRPTCHEC
  - d. > DEMOUNT T<x>
- 

- 2 Site and App** Locate the FIRST JOURNAL FILE TAPE or JF DISK VOLUME.

**CAUTION**

**It is of utmost importance to start with the *first* journal file volume (containing the first journal files created since the data freeze).**

- a. **App** If journal files are on TAPE, list the JF tape as follows.

Put up the tape *without* a write enable ring.

> MOUNT <x> {journal file tape}

> LIST T<x> {retain file names}

- b. **App** If journal files are on DISK, list the JF disk volume as follows.

> DSKUT;LISTVOL <JF\_disk> ALL

*where <JF\_disk> refers to the disk volume(s) containing journal files.*

*Be extra sure to list all the volumes with JF.*

---

- 3** Locate a scratch DISK volume for the journal file dump (or else have site install a scratch tape with a write enable ring, and MOUNT FORMAT).
- 

-continued-

**Procedure 3**  
**Manual journal file dump (continued)**

- 4.1 Only if coming *from* BCS33 and higher and going *to* BCS35 and higher, enter the following command.

(for example, BCS 33-35, 33-36, 34-35, or 34-36)

**Note:** In the following step the applicator may utilize a file to dump multiple journal files.

```
> JFDUMP <jfin> <jfout> <device> <from_BCS> <from_BCS>
where <jfin> refers to the journal file name. For <jfout> use 'JFA' thru 'JFZ',
then use 'JFAA' thru 'JFZZ' (except Canada) -or use 'JF$100 thru JF$999'
(Canada only). <device> refers to the recording device on which to dump
journal file (disk, tape, or SFDEV).
```

As an example: 'JFDUMP U880405000090JF JFA D000SCRATCH 33 33'  
dumps file U880405000090JF to file JFA onto disk D000SCRATCH  
formatting from BCS33 to BCS35 and higher.

Retain the output filenames for *Matebind journal files* procedure (to follow).

- 4.2 Otherwise, for any other BCS enter the following commands.

(for example, BCS 32-35, 33-33, 33-34, or 34-34)

```
> RFMT SET <from_BCS> <to_BCS>
```

**Note:** In the following step the applicator may utilize a file to dump multiple journal files.

```
> JFDUMP <jfin> <jfout> <device> <from_BCS> <to_BCS>
where <jfin> refers to the journal file name. For <jfout> use 'JFA' thru 'JFZ',
then use 'JFAA' thru 'JFZZ' (except Canada) -or use 'JF$100 thru JF$999'
(Canada only). <device> refers to the recording device on which to dump
journal file (disk, tape, or SFDEV).
```

As an example: 'JFDUMP U880405000090JF JFA D000SCRATCH 29 32'  
dumps file U880405000090JF to file JFA onto disk D000SCRATCH  
formatting from BCS29 to BCS32.

Retain the output filenames for *Matebind journal files* procedure (to follow).

- 5 Repeat step 4 for each journal file listed from step 2 above.

**CAUTION**

**Review the time stamps of the reformatted JF to confirm  
the entire data freeze period is accounted for.**  
-JF active during the entire data freeze with no significant interval  
without journal file

-continued-

**Procedure 3**  
**Manual journal file dump (continued)**

6 > DEMOUNT T<x> *{only if JF was recorded on tape}*

---

7 **Site** If journal file was recorded on tape, remove the previous journal file tape and replace the write enable ring. Install the next tape without a write enable ring.

**CAUTION**  
**Install each journal file tape in the order they were created.**

---

8 **Site and App** For each journal file tape, MOUNT and LIST the tape and repeat steps 4 through 7 above.

---

**Procedure 4**  
**Matebind journal files**

- 1 **App/ACT** Matebind the reformatted journal files.
    - a. **ACT** List the device used for the journal file dump from the jf dump steps (previous procedure).
    - b. > MATEIO
    - c. > MATEBIND <jffile> <jffile>  
*where <jffile> refers to all reformatted JF filenames created in the JF dump steps.*
    - d. Repeat MATEBIND for each filename created in the JF dump steps.
    - e. > MATEBIND DMOLIST DMOLIST  
**Note:** The site is responsible to input all DMOs from the DMOLIST.  
(These are DMOs which were input since datafreeze was suspended.)
    - f. **INACT**  
Mate> MATEIO
-

**Procedure 5**  
**Restore journal files**

- 1 **App** Restore the journal files to the inactive side. If to\_BCS 30 and higher perform substep *a* below. If to\_BCS 29 and lower perform substep *b*.

**Note:** In the following steps, <jffile> refers to all the reformatted JF filenames created previously in the *journal file dump* procedure.

**CAUTION**

**Restore all journal files in the same order they were created.**

- a. For to\_BCS 30 and higher enter:

**ACT**

> TRACECI DEVICE <device\_name>

*where <device\_name> is the name of the device labeled INACT.*

**Note:** This command allows you to monitor the results of the RESTAB command on the INACT terminal.

**INACT**

Mate> RESTAB <jffile> <from\_BCS>

*Correct all errors which may occur.*

Repeat RESTAB for each filename created in the journal file dump.

- b. For to\_BCS 29 and lower enter:

**INACT**

Mate> DMOPRO <jffile>

*Correct all errors which may occur.*

Repeat DMOPRO for each filename created in the journal file dump.

---



## **PRESWACT procedure**

This section details steps required to prepare for the CC activity switch to the new software load.

### **Procedure 1**

#### **BULLETINS before PRESWACT**

- 1 **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning PRESWACT.
-

**Procedure 2**  
**Unload module JCTRSTAT**

If this is an ENET office, perform this procedure. Note carefully the from and to BCS qualifiers.

- 1 **App/ACT** If an ENET office is going from BCS31 to BCS34RTS, the module JCTRSTAT will have to be *unloaded* on the ACTIVE side of the switch *before starting* PRESWACT.

> UNLOAD JCTRSTAT

*System response: The module will be unloaded from the switch.*

**Note:** This is necessary due to a change in the software packaging of JNET and ENET code which occurred between BCS34RTM and BCS34RTS.

---

### Procedure 3 Start PRESWACT

- 1 **App/ACT** Perform PRESWACT of BCSUPDATE.

**Note:** Please logout all users on the inactive side while PRESWACT is running.

```
> BCSUPDATE
> PRESWACT
```

- 2 Read the following notes, and continue the procedure while PRESWACT is running.

**Note 1:** PRESWACT runs all steps required before the CC switch of activity and flags them as completed when they pass. If any error occurs, PRESWACT will stop and give instructions. If this is the case, follow PRESWACT instructions to correct the problem (contact the site supervisor if necessary).

*As an example:*

```
TABLE_DELTA executing
:
Table AMAOPTS *** Checksum incorrect, keys incorrect
:
TABLE_DELTA not complete

ACT - Error: Inactive table data did not match.
Correct error condition. Enter Preswact to continue
```

*For any table in error, investigate the problem by entering:*

```
> DELTA <table> NOFILE {compares new/old tuples}
```

or > DELTA <table> SUB <subtable> NOFILE

*To continue, run PRESWACT again by entering:*

```
> PRESWACT
```

**Note 2:** A hardware conversion (such as LTC/LTCI) scheduled concurrently with the BCS upgrade will require certain table changes, additions or deletions. PRESWACT step TABLE\_DELTA will detect a mismatch between the old and new data, and will stop, indicating an error. If this is the case, confirm the table differences are due to the conversion, resolve any differences, and run PRESWACT again (type >PRESWACT) to continue.

-continued-

**Procedure 3**  
**Start PRESWACT (continued)**

**Note 3:** PRESWACT step TABLE\_DELTA may also display an informative message without stopping. When this occurs, it is not considered an error; rather, it is an indication that something is different in the old and new BCS loads. Note the information displayed, and at a convenient stopping point, compare the old and new loads to understand and validate the differences. *As an example:*

```
TABLE_DELTA executing
:
Table ATTCONS Checksum incorrect, keys match
:
TABLE_DELTA complete
```

---

**Procedure 4**  
**Override module JCTRSTAT**

PRESWACT may STOP with the message "Failed SWACT\_MODULE\_CHECK." If you see this message and it is indicating that JCTRSTAT is the only module missing on the inactive side and if this is an ENET office, perform this procedure. If any other module is reported to be missing from the inactive side please investigate before taking any action. Note carefully the from and to BCS qualifiers.

- 1 App/ACT** If an ENET office is going from BCS32 thru 34RTM to BCS34RTS or higher, PRESWACT step SWACT\_MODULE\_CHECK will have to be *overridden* as follows.

> BCSUPDATE;SWACTCI;MODCHECK OVERRIDE *{for BCS33 and higher}*

> BCSUPDATE;SWCT;MODCHECK OVERRIDE *{for BCS32}*

*System response: The user will be prompted to override module JCTRSTAT.*

**Note:** This is necessary due to a change in the software packaging of JNET and ENET code which occurred between BCS34RTM and BCS34RTS.

---

**Procedure 5**  
**PRESWACT DIRP and billing**

Site and software delivery engineer should work together to prepare both PRIMARY and PARALLEL DIRP billing subsystems for the CC switch of activity (SWACT). This procedure gives the steps to accomplish this preparation.

*Note:* Site can begin doing this procedure while the Applicator continues with other PRESWACT procedures.

**1.0 Disk drive parallel DIRP coming from BCS31 and lower**

- a. **Site/ACT** In table DIRPSSYS determine which disks are being used for parallel DIRP recording.

The result of PRESWACT step CHECK\_DIRP\_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

- b. For a parallel volume that is on DISK, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS by replacing the volume name with nil volume (\$).

- c. Copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.

- d. Erase all closed parallel DIRP files from the disk:

```
> CLEANUP FILE <parallel_filename>
where <parallel_filename> is each file to be erased.
```

- e. Reformat the parallel disk volume:

```
> DIRPPFMT <parallel_volume>
where <parallel_volume> is the original volume name.
```

- f. If to\_BCS 32 and higher, rename the first file on the reformatted parallel volume (created by the "dirppfmt" command). Using the "renamefl" command, change the file name from "DIRPPARALLEL" to "B000000000000" (12 zeros).

- g. **Site and App/INACT** If from\_BCS 31, ensure that parallel disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

---

-continued-

---

**Procedure 5**  
**PRESWACT DIRP and billing (continued)****1.1 Disk drive parallel DIRP coming from BCS32 and higher**

**Note:** If from\_BCS 32 and higher, Site no longer has to take down parallel billing if on disk.

**Site and App/INACT** Ensure that parallel disk volumes are in table DIRPPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPPOOL on the inactive side before SWACT.

If from\_BCS 34 and higher, PRESWACT step DIRPPPOOL\_CHECK displays the datafill for table DIRPPPOOL on the inactive side.

If from\_BCS 33 and lower, PRESWACT step CHECK\_DIRP\_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPPOOL.

DIRP will recover parallel recording to disk on the newly-active side after SWACT.

**CAUTION****Recently recorded parallel data may be overwritten.**

Site should copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.

- If a single parallel volume is in use, information on the volume will be lost over SWACT.
- If more than one parallel volume is allocated to DIRP, DIRP will start recording after SWACT on the volume with the oldest time stamp. Hence information on that volume will be lost over SWACT.

---

**2 Disk drive PRIMARY billing**

- a. Site/ACT** If on disk (DDU), from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR).
- b.** If required by Telco policy copy unprocessed DIRP files to back-up tape (using DIRPAUTO or DIRPCOPY commands).
- c.** Verify that table DIRPHOLD contains no unprocessed billing files (if DIRPAUTO was used above).

-continued-

**Procedure 5**  
**PRESWACT DIRP and billing (continued)**

- d. **Site and App/INACT** If from\_BCS 32 and higher, ensure that regular disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from\_BCS 34 and higher, PRESWACT step DIRPPOOL\_CHECK displays the datafill for table DIRPPOOL on the inactive side.

---

**3 Tape drive PRIMARY billing**

- a. **Site/ACT** If on tape (MTD), from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR), CLOSE the standby file, and DMNT the standby volume.

Example:

```
> ROTATE AMA
> CLOSE AMA STDBY 1
> DMNT AMA T1 {standby volume}
```

- b. Remove the demounted standby tape from the tape drive, and put up a new tape to be used as the next DIRP volume.
- c. Prepare a new standby volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
where <x> is the standby device number, and <volume_id> is the
name of the standby volume.
```

If prompted enter the first filename, or if system response is:  
"request aborted. Tape not expired (use ERASTAPE)"  
then select an unused or expired tape for formatting.

```
> DEMOUNT T<x>
```

Leave the standby volume at load point and ON LINE. Immediately following SWACT, it will become the ACTIVE volume of the appropriate subsystem.

- d. **Site and App/INACT** If from\_BCS 32 and higher, ensure that regular tape volumes are in table DIRPPOOL on the inactive side. This allows the tape to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from\_BCS 34 and higher, PRESWACT step DIRPPOOL\_CHECK displays the datafill for table DIRPPOOL on the inactive side.

---

-continued-



**Procedure 5**  
**PRESWACT DIRP and billing (continued)**

**4.0 DPP/BMC PRIMARY billing coming from BCS31 and lower**

- a. **Site/ACT** If on DPP or BMC, from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR), CLOSE the standby file, and DMNT the standby volume.

**Note:** DIRP sees DPP/BMC as a tape drive port.

- b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

```
> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
```

*This re-establishes the block header on the DPP.*

- c. Display current DPP settings to hardcopy (retain for POSTSWACT).

- d. Prepare a new standby volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
```

*where <x> is the standby device number, and <volume\_id> is the name of the standby volume.*

If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)" then enter:

```
> ERASTAPE <x>
```

*where <x> is the standby device number.*

**Note:** On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

System response is:

```
WARNING, THIS TAPE WILL BE ERASED
```

**CAUTION**

**At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.**

If a mistake is made, a real tape could be erased.

Enter YES to confirm the command.

```
> DEMOUNT T<x>
```

If ERASTAPE command was used, repeat this substep (d) to rename the volume.

*Leave the standby volume demounted. Immediately following SWACT, it will become the ACTIVE volume of the appropriate subsystem.*

-continued-

**Procedure 5  
PRESWACT DIRP and billing (continued)**

- e. **Site and App/INACT** If from\_BCS 31, ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

```
Mate> TABLE DIRPPOOL; POS <pool_#>
where <pool_#> is the number for DPP AMA pool.
```

If going to BCS32 and higher CHANGE field DEVTYPE in table DIRPPOOL to DPP (not TAPE).

**CAUTION**

**Starting in BCS32 in a pool of DPP or BMC volumes,  
field DEVTYPE in table DIRPPOOL should be DPP (not TAPE).**  
Otherwise, if datafilled as TAPE you will have to recover the volume manually after SWACT.

- f. **Site and App/ACT** If SMDR recording is on BMC (datafilled as TAPE in table DIRPSSYS/DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY volume. In table DIRPSSYS/DIRPPOOL add the TAPE device as a standby BMC. Also add the device in DIRP\_REC (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

**Note:** Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

- g. **Site and App/INACT** Verify the DIRP\_REC file on the inactive side is correct for the SWACT to the new BCS load.

```
Mate> LISTSF ALL
```

```
Mate> PRINT DIRP_REC
```

*If necessary, edit DIRP\_REC to make corrections.*

-continued-

## Procedure 5 PRESWACT DIRP and billing (continued)

If going to BCS32 and higher, *delete* the DPP tuple in the DIRP\_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

```
Mate> EDIT DIRP_REC
Mate> DOWN '<poolname>' {name of the pool using the DPP}
Mate> DELETE
Mate> ERASESF DIRP_REC
Mate> FILE SFDEV DIRP_REC
```

### 4.1 DPP/BMC PRIMARY billing coming from BCS32 and higher

- a. **Site/ACT** Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

```
> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
This re-establishes the block header on the DPP.
```

- b. **Site and App/ACT** If SMDR recording is on BMC (datafilled as TAPE in table DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY TAPE volume. In table DIRPPOOL add the TAPE device as a standby BMC. Also add the device on the inactive side (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

**Note:** Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

- c. **Site and App/INACT** Ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

```
Mate> TABLE DIRPPOOL;POS <pool_#>
where <pool_#> is the number for DPP AMA pool.
```

-continued-

**Procedure 5  
PRESWACT DIRP and billing (continued)**

Verify field DEVTYPE in table DIRPPOOL is DPP (not TAPE).

**CAUTION**

**Starting in BCS32 in a pool of DPP or BMC volumes, field DEVTYPE in table DIRPPOOL should be DPP (not TAPE).** Otherwise, if datafilled as TAPE you will have to recover the volume manually after SWACT.

If from\_BCS 34 and higher, PRESWACT step DIRPPOOL\_CHECK displays the datafill for table DIRPPOOL on the inactive side.

---

**5.0 Tape drive parallel DIRP coming from BCS33 and lower**

- a. **Site/ACT** In table DIRPSSYS or DIRPPOOL determine which MTDs are being used for parallel DIRP recording.

The result of PRESWACT step CHECK\_DIRP\_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

**Note:** TAPEX cannot be used for parallel recording.

- b. For a parallel volume that is on TAPE, CLOSE the parallel file and DMNT the volume from the DIRP level. Remove the volume from table DIRPSSYS or DIRPPOOL by replacing the volume name with nil volume (\$). Physically remove the tape from the drive.

- c. Replace these tapes with freshly formatted, empty tapes.

**Note:** This substep can also be done after the CC switch of activity (during POSTSWACT) if the tape drive is needed for other purposes.

Prepare each new parallel volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
where <x> is the parallel device number, and <volume_id> is the name
of the parallel volume.
```

```
> DEMOUNT T<x>
```

Leave the tape at load point and ON LINE so it can be activated as the new PARALLEL device after SWACT.

---

-continued-

## Procedure 5 PRESWACT DIRP and billing (continued)

### 5.1 Tape drive parallel DIRP coming from BCS34 and higher

**Note:** This step can be used to automatically recover parallel volumes after the SWACT. Alternatively, you can do the previous step if you wish to wait until after the SWACT to format the new parallel volumes.

- a. **Site/ACT** In table DIRPPOOL determine which MTDs are being used for parallel DIRP recording. PRESWACT step DIRPPOOL\_CHECK displays the datafill for table DIRPPOOL on the inactive side.
- b. For a parallel volume that is on TAPE, demount all EXCEPT the current parallel volume from table DIRPPOOL by replacing the volume name in DIRPPOOL with nil volume (\$). Then physically remove the tape from the drive.
- c. Replace these tapes with freshly formatted, empty tapes.

Prepare each new parallel volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
where <x> is the parallel device number, and <volume_id> is the name
of the parallel volume.
```

```
> DEMOUNT T<x>
```

Leave the tape at load point and ON LINE so it can be activated as the new PARALLEL device after SWACT.

- d. **Site and App/INACT** Ensure that parallel tape volumes are in table DIRPPOOL on the inactive side. This allows the tape to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

PRESWACT step DIRPPOOL\_CHECK displays the datafill for table DIRPPOOL on the inactive side.

- If a single parallel volume is used for recording, the volume will be dropped over SWACT.

- If multiple tape volumes are in use for parallel recording, the volume in use before the SWACT will be dropped from DIRP and a freshly-formatted, empty volume will be used for recording.

---

### 6.0 DPP/BMC parallel DIRP coming from BCS33 and lower

In BCS32 or BCS33 DIRP no longer supports parallel AMA recording on a DPP or BMC volume, UNLESS device type TAPE is used in table DIRPPOOL (in which case you must manually recover the DPP after SWACT).

- a. **Site/ACT** In table DIRPSSYS or DIRPPOOL identify which DPP/BMC(s) is being used for parallel DIRP recording.

-continued-

**Procedure 5**  
**PRESWACT DIRP and billing (continued)**

The result of PRESWACT step CHECK\_DIRP\_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

- b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

```
> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
This re-establishes the block header on the DPP.
```

- c. Display current DPP settings to hardcopy (retain for POSTSWACT).
- d. For a parallel volume that is on DPP or BMC, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS or DIRPPOOL by replacing the volume name with nil volume (\$).
- e. Prepare each new parallel volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
where <x> is the parallel device number, and <volume_id> is the name of the parallel volume.
```

If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)" then enter:

```
> ERASTAPE <x>
where <x> is the parallel device number.
```

**Note:** On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect data collected by the DPP/BMC. It only resets DMS indicators.

System response is:

```
WARNING, THIS TAPE WILL BE ERASED
```

**CAUTION**

**At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.**  
If a mistake is made, a real tape could be erased.

Enter YES to confirm the command.

```
> DEMOUNT T<x>
```

If ERASTAPE command was used, repeat this substep (e) to rename the volume.

Leave the billing volume in this state so it can be activated as the new PARALLEL volume following SWACT.

-continued-

---

**Procedure 5**  
**PRESWACT DIRP and billing (continued)**

- f. **Site and App/INACT** If to\_BCS 32 and higher, ensure that parallel DPP/BMC volumes are in table DIRPPOOL on the inactive side. This allows the DPP/BMC to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.
- g. **Site and App/INACT** If to\_BCS 32 and higher, for the parallel DPP tuple in table DIRPPOOL change field DEVTYPE to TAPE (not DPP).
- h. **Site and App/INACT** Verify the DIRP\_REC file on the inactive side is correct for the SWACT to the new BCS load.

```
Mate> LISTSF ALL
```

```
Mate> PRINT DIRP_REC
```

*If necessary, edit DIRP\_REC to make corrections.*

If going to BCS32 and higher, *delete* the DPP tuple in the DIRP\_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

```
Mate> EDIT DIRP_REC
```

```
Mate> DOWN '<poolname>' {name of the pool using the DPP}
```

```
Mate> DELETE
```

```
Mate> ERASESF DIRP_REC
```

```
Mate> FILE SFDEV DIRP_REC
```

---

**6.1 DPP/BMC parallel DIRP coming from BCS34 and higher**

In BCS34 and higher DIRP no longer supports parallel AMA recording on a DPP or BMC volume. Table control prohibits the filling of devtype DPP in a parallel pool.

---

**Procedure 6**  
**Data extension**

- 1 **App/INACT** For a DATA EXTENSION only-Once PRESWACT step MATE\_RESTART\_RELOAD (or step MATE\_RESTART prior to BCS35) has completed, perform the following workaround. This allows the new trunks to remain in the INB state after SWACT.
    - a. Log into the inactive side.
    - b. Mate> LISTSF ALL

**Note:** The file 'NEWTRKS' should be in storefile. This file is created by Loadbuild to identify all the trunks added for the Data Extension.
    - c. Mate> MAPCI NODISP;MTC;TRKS;TTP
    - d. Mate> COMMAND PTBI (POST T @1 @2;FRLS;BSY INB)
    - e. Mate> READ NEWTRKS
    - f. Mate> QUIT ALL
-





**Procedure 7**  
**MS\_CHECK failure (continued)**

- 9 > TST <MS#> VIAMATE  
*Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.*

**CAUTION**  
**Do not proceed unless NO faults are reported.**  
Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.

- 
- 10 Monitor MS logs for 5 minutes to ensure stability.

- 
- 11 Continue PRESWACT.

> QUIT MAPCI

> PRESWACT

*{still in BCSUPDATE}*

---

**Procedure 8**  
**STATUSCHECK if MS loaded in PRESWACT**

- 1 **App/ACT** After PRESWACT is completed and only if one MS was loaded during PRESWACT (BCS33 and lower), run a STATUSCHECK (to enable the matelink).

**Note:** STATUSCHECK *may* cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.

- a. > BCSUPDATE ; SWACTCI ; STATUSCHECK        *{for BCS33 and higher}*  
      > BCSUPDATE ; SWCT ; STATUSCHECK        *{for BCS31 or BCS32}*  
      > SWCT ; STATUSCHECK                    *{for BCS30 and lower}*
- b. Ensure the STATUSCHECK passes (with both sides matching).  
*If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.*
-

**Procedure 9**  
**Login inactive**

1 **App/INACT** *Verify a flashing A1 on the inactive processor.*

---

2 Login on the mate side as follows.

a. **ACT**

> MATEIO

> MATELOG <device>

*where <device> is the name of the terminal labeled INACT.*

b. **INACT**

Enter username and password

*{mate-side response}*

Mate> OPERATOR OPERATOR

or Enter username

Mate> OPERATOR

Enter password

Mate> OPERATOR

---

**Procedure 10**  
**Logout DNC**

- 1 **Site and App/ACT** If DNC is in use (feature package NTX560), have Telco confirm that all DNC end users have been contacted and are logged out.
-

**Procedure 11**  
**Table CRSFMT alarm**

- 1 **App/ACT** In table CRSFMT, field ALARM, if any entry is set to 'Y', then the device must also be allocated in table DIRPPOOL. Otherwise, set it to 'N'.

**Note:** If a volume is allocated in DIRPPOOL it is being used.

---

## **SWACT and POSTSWACT procedure**

This section details steps required to perform a CC switch of activity (SWACT), test the new load, and complete the software delivery process.

### **Procedure 1**

#### **BULLETINS before SWACT**

- 1 **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning the SWACT.
-

**Procedure 2**  
**Before SWACT**

- 1 **Site** Do not proceed until both the Telco and NT on-line support agree.

---

- 2 **Site** Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

---

- 3 **Site** Ensure no further activity is performed on the DPP, including DPP polling or disk backup. Inform the downstream processing center.

---

- 4 **Site** Disable all polling and periodic testing. There is to be no activity on the SuperNode CM, MS, and CLOCK or NT40 CC and CMC until cleared by the software delivery engineer. Failure to comply may result in a system restart.

---

- 5 **Site** Dump the SPMS register information to a printer (or other device) according to Telco practice.

---

- 6 **Site** Disconnect any ISDN Digital Test Access (DTA) monitors. (Reference NTP 297-2421-300.)

**CAUTION**

**If DTA monitor is left connected over the SWACT, it will not be possible to reconnect it without first reloading the PM from CC data.**

- a. Enter the LTPDATA level of MAP.
- b. Query all DTA monitors on the switch by issuing the command,  

```
> EQUIP DTA QUERY ALL
```
- c. If the DMS responds with "No DTA equipment reserved on switch" then no further action is needed.
- d. Make note of any connected monitors by looking at the CONNECT field of the query display.  
  
Use the POST command to post each monitored LEN, and then issue the command,  

```
> CONNECT <N> RLS
```

*where <N> is the integer number of the monitor from the first column of the query display.*  
  
Do this for each connected monitor. Repeat substep b as necessary to review DTA status.

-continued-



**Procedure 2**  
**Before SWACT (continued)**

- e. Reset all monitor LENS and DS0 channels by issuing the command,
- ```
> EQUIP DTA RESET <N>
```
- where <N> is the integer number of the monitor from the first column of the query display.
- Do this until no equipment is left "Equipped." Repeat substep b as necessary to review DTA status.
-

- 7 **Site** If BCS35, ensure Bit Error Rate Tester (BERT) is not running. BERT is a manual action used to test the quality of a CCS7 link.

CAUTION

In BCS35 BERT should not be left running during the CC SWACT. Otherwise, the link will hang up over the SWACT.
If BERT is left running over the SWACT, you will have to go into the PM level, post the offending LIU7/MSB7, and BSY and RTS it.

- a. To determine if BERT is on: Go into C7LKSET level and post each linkset in turn. The link state should not indicate 'BERT'.
- b. To turn off BERT, go into the C7LKSET level and post the linkset. Go into C7BERT level and type STOP <linkno>.
-

Procedure 3
Restore special logs

Special logs (suppressed logs or logs with a threshold) are set up in LOGUTIL on a per-site basis. These do not get restored to the new load. This procedure manually restores any special logs on the new load.

Note: A restart/reload on the mate side will cause suppress/threshold settings to be lost. If a mate restart occurs before the switch of activity, verify the settings are present and, if not, repeat this procedure.

- 1 App/ACT** List all special logs on the active side.

```
> LOGUTIL  
> LISTREPS SPECIAL
```

Example output:

```
LINE 138 7 INFO TRMT *thresh= 25*  
PM 189 5 INFO PM SW Information... *supp*
```

- 2 App/INACT** Restore special logs on the mate side.

```
Mate> LOGUTIL  
Mate> LISTREPS SPECIAL
```

Commands to restore above example:

```
Mate> THRESHOLD 25 LINE 138  
Mate> SUPPRESS PM 189
```

- 3 App/INACT** Verify the correct logs are set up and match the active load.

```
Mate> LOGUTIL  
Mate> LISTREPS SPECIAL
```

Procedure 4
Start logs**1 App/ACT** Set up LOGS for the SWACT.

Note: The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.

- a. > LOGUTIL; STOP
 - b. > DELDEVICE <device>
where <device> is where logs are to be routed.
 - c. > ADDRDP <device> SWCT {also add SWNR if on BCS30 and lower}
 - d. > START
This starts logs on "this" device. If a different terminal device was selected above, then use >STARTDEV <device>.
 - e. > LEAVE
-

Procedure 5
Release JAM SNODE

UNJAM the processors in preparation for the CC switch of activity (SWACT).

1 Site and App/INACT Verify the inactive side is flashing A1.

2 Site/INACT From the inactive RTIF enter:

```
RTIF> \RELEASE JAM
```

Procedure 6
Perform TST <MS#> VIAMATE

CAUTION

This procedure, if applicable, must be completed successfully within 15 minutes of the SWACT.

Failure to execute a fault-free TST <MS#> VIAMATE may result in PM clocking faults after the SWACT and possibly eventual failure of PMs (i.e., SYSB PMs).

Note: When the RESTARTSWACT or RESTARTSWCT command is entered, if more than 15 minutes has passed since completing TST <MS#> VIAMATE you will be instructed to repeat the TST <MS#> VIAMATE command.

- 1 App/ACT QUERYMS to verify the Message Switch loads. Complete this step only if either MS load version does not match the BCS level of the inactive CM.**

> MAPCI ; MTC ; MS

> QUERYMS

If MS loads are not identical, ensure the MS with the incompatible load is ManB, then continue.

> MATELINK BSY *{if not done, mate side will restart when matelink RTS'd}*

> TST <MS#> VIAMATE *{on the ManB MS}*

Wait for the test to pass before continuing. Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.

CAUTION

Do not proceed unless NO faults are reported.

Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.

Procedure 7
Establish mate communication SNODE

1 **App/ACT** Establish communication with the mate (inactive) side.

Note: STATUSCHECK *may* cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.

- a. > BCSUPDATE ; SWACTCI ; STATUSCHECK {for BCS33 and higher}
- > BCSUPDATE ; SWCT ; STATUSCHECK {for BCS31 or BCS32}
- > SWCT ; STATUSCHECK {for BCS30 and lower}

b. Ensure the STATUSCHECK passes (with both sides matching).
If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.

Procedure 8 SWACT

Refer to "CC Warm SWACT Summary" in *Appendix A* for a description of the CC warm SWACT process. Also refer to *Appendix B* for a procedure for testing call survivability over a CC warm SWACT and to *Appendix C* for sample test call scripts.

Note: Only "simple" 2-port and echo calls that are in a stable talking state (that is, not in a transition state such as dialing) will survive a CC warm SWACT. Survival means that the call is kept up until the next signaling message is received (usually, for example, a terminate message, but on any other message as well, such as an attempt to use the conference feature).

- 1 **App/ACT** Wait a *minimum* of 10 minutes after the *completion* (flashing A1) of the last RESTART on the inactive side before entering the appropriate switch of activity (SWACT) command (below).

CAUTION

FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a controlled SWACT.
Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

CAUTION

After a CC warm SWACT do not JAM the inactive CPU RTIF.
The system requires the JAM status to be clear on both CPUs in order to recover successfully. Recovery is indicated with a SWCT 101 log.

- 2 **App/ACT** INTERNATIONAL offices switch CC activity (SWACT) as follows. All others go to step 3.

Note: This step is valid if the NTX470AA (International Common Basic) package is built into the load.

> INTLSWCT ; DATE ; RESTARTSWCT {only for INTL offices}

-continued-

Procedure 8
SWACT (continued)

3 App/ACT All other offices switch CC activity (SWACT) with CC warm SWACT as follows.

a. For BCS36 and higher type:

> BCSUPDATE ; SWACTCI ; QUERYSWACT

System prompt will tell you which SWACT command to use, either NORESTARTSWACT or RESTARTSWACT:

> DATE ; NORESTARTSWACT

Respond (yes/no) to system prompt using lower-case.

or else,

> DATE ; RESTARTSWACT

b. For BCS35 and lower type:

> BCSUPDATE ; SWACTCI ; DATE ; RESTARTSWACT *{for BCS33-BCS35}*

> BCSUPDATE ; SWCT ; DATE ; RESTARTSWCT *{for BCS31 or BCS32}*

> SWCT ; DATE ; RESTARTSWCT *{for BCS30 and lower}*

System response varies with the BCS level, but the following prompt is a typical example.

ACTIVE DEFAULT SETTINGS :

FORCESWACT set ON

LOADEXECS set ON

NOMATCH set OFF

Do you wish to continue?

Please confirm ("YES" or "NO"):

...Starting Warm SWACT now.

4 Site/ACT Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

CAUTION

Work quickly to complete the procedures to follow.
The POSTSWACT steps will verify that the office is functioning normally with the new software load.

Procedure 9
Start POSTSWACT**CAUTION**

After a CC warm SWACT do not JAM the inactive CPU RTIF.
The system requires the JAM status to be clear on both CPUs in order to recover successfully. Recovery is indicated with a SWCT 101 log.

App/ACT Login, check the date and time, and start POSTSWACT.

- 1 Type:
<break>

- 2 ?LOGIN
Enter username and password *{system response}*
> <username> <password>
- or > <username>
> <password>

- 3 > DATE
Verify the date and time are correct.

- 4 Reestablish recording onto devices (console session) as required.

- 5 > BCSUPDATE ; POSTSWACT
POSTSWACT runs all steps required after the CC switch of activity and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. If this is the case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue.
If no problems are encountered, POSTSWACT stops after BEGIN_TESTING and waits until the site verifies the sanity of the current load.

Procedure 10
SYSBSY Message Switch

- 1 **App/ACT** If a Message Switch is SYSBSY, make it ManB.
 - a. > MAPCI ;MTC ;MS
 - b. > BSY <MS#> *{for the sysbsy MS}*
 - c. > QUIT MAPCI
-

Procedure 11 Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1 > MAPCI ;MTC ; IOD ; DIRP
> QUERY AMA ALL *{note which volume is ACTIVE}*

2 If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3 TAPEX volumes must be manually remounted using the DIRP MNT command.

4 Assign standby billing devices for TAPE and DPP/BMC.

a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.

b. > MOUNT <x> FORMAT <stdby_volume>
where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.

Example: MOUNT 3 FORMAT DPPAMA

c. Enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then enter:

> ERASTAPE <x>
where <x> is the standby device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

System response is:

WARNING, THIS TAPE WILL BE ERASED

CAUTION

**At this point again confirm the device is a port to a DPP or BMC,
and NOT an unexpired billing tape.**
If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-

Procedure 11
Recover billing (continued)

- d. > DEMOUNT T<x>
 - e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.
 - f. Repeat this entire step for each standby billing subsystem.
-

5 Activate standby devices.

- a. > MNT <subsystem> <x> {still in DIRP level}
Example: MNT AMA 3
Enter YES to confirm the command.
 - b. > QUERY AMA {to confirm standby volume is available}
 - c. Repeat this step for each billing subsystem.
-

6 If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)

* If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

Note: Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

7 Bring up parallel devices (as required) using the preformatted volumes.

- a. For BCS31 and lower:
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.
Example:
TABLE DIRPSSYS;POS AMA
CHA PARVOL T4
or CHA PARVOL D010PAMA
- b. For BCS32 and higher:
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.
Example:
TABLE DIRPSSYS;POS AMA

In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

-continued-

Procedure 11
Recover billing (continued)

Examples:

TABLE DIRPPool; POS 62 (*pool for AMAPOOL*)

CHA VOLUME23 T4

or CHA VOLUME23 D010PAMA

- c.** Repeat substep a or b for each parallel volume to be activated.
 - d.** > QUIT MAPCI
-
- 8** Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
-

Procedure 12
Display DPP settings

App/ACT Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1 > MAPCI NODISP;MTC;IOD;DPP AMA

2 > COLLPSW

Note: If different, perform steps 3 and 4; otherwise go to step 5.

3 > COLLPSW 1 <4_digits> <6_digits>

4 > COLLPSW 2 <4_digits> <6_digits>

5 > AMATPSW

Note: If different, perform step 6; otherwise, go to step 7.

6 > AMATPSW <4_digits> <6_digits>

7 > AMAHRS

Note: If different, perform step 8; otherwise, go to step 9.

8 > AMAHRS <start_hour> <end_hour>

9 > VALPARM INVALID

Note: If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT

Note: If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.

Procedure 13
INI trunks

App/ACT If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1 > MAPCI ; MTC ; TRKS ; TTP

2 > POST A INI

3 > REPEAT <**x**> (FRLS ; RTS ; NEXT)
where <x> is the number of INI trunks in the posted set.

Procedure 14
Restart inactive POST SNODE

Prepare the inactive side for a revert to the old BCS load.

Note: A restart on the inactive side is done at this time in order to save time in the event that a revert to the old load should become necessary.

1 Site/INACT From the CM MAP level, ensure the inactive processor is not under test (ut). If it is, WAIT FOR TESTING TO COMPLETE.

2 Site/INACT From the inactive RTIF perform a restart reload on the *inactive* side.

```
RTIF> \RESTART RELOAD
```

```
RTIF> YES {for confirmation}
```

3 Site/INACT Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

4 App/INACT Confirm that the inactive processor is flashing A1.

Procedure 15
DRTIME statistics

- 1 **App/ACT** Get a hardcopy of DRTIME statistics (if needed).

> DRTIME PRINT

DRTIME provides statistics on the BCS application. If requested, the information should be forwarded to the appropriate Northern Telecom department.

Procedure 16
Do Test Calls

- 1 **Site/ACT** Perform TEST CALLS that were identified ahead-of-time from *Appendix C: Test Call Scripts*.

CAUTION

If an abort becomes necessary due to critical test failures, revert to the old load using the *Revert to the old load* procedure; otherwise, continue.

Note: Verify AMAB logs in conjunction with certain AMA test calls.

Procedure 17
After testing is complete SYNC SNODE

- 1 **App/ACT** POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. After SITE accepts the current load, then put the processors in sync as follows.

Note: Do not enter POSTSWACT again until the processors are in sync.

- a. > MAPCI ; MTC ; CM ; SYNC
> YES *{for confirmation}*
 - b. > QUIT MAPCI
 - c. > POSTSWACT *{still in BCSUPDATE}*
-

Procedure 18
POST_MS_CHECK failure

App/ACT POSTSWACT may STOP with the message "Failed POST_MS_CHECK for active CM load: #." (Both MS loads will be displayed.) *Only if you see this message*, load the MS reported to have an incompatible load with the compatible MS load as follows.

- 1 > DISKUT
> LF S00D<volume> *{or S01D <volume>}*
where <volume> is the SLM disk volume with the correct _MS load file.

- 2 > MAPCI ;MTC ;MS

- 3 > LOADMS <MS#> <filename>
where <MS#> is the MS to be loaded, and <filename> is the name of the _MS load file listed above in step 1.
> YES *{for confirmation}*

- 4 > TST <MS#> *{not VIAMATE}*
Ensure the test passes with no faults.

- 5 > RTS <MS#> *{not OOBAND!}*

- 6 > QUIT MAPCI

Procedure 19
Finish POSTSWACT

- 1 **App/ACT** If necessary run POSTSWACT one more time to completion.
 > BCSUPDATE ; POSTSWACT
 At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

- 2 **Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

- 3 **App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

- 4 **Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

- 5 **Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

- 6 **Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

- 7 **Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

- 8 **Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

- 9 **Site/ACT** Return PORTS and USER information back to original values.

- 10 **Site/ACT** Notify DNC end users to LOGIN the DNC.

- 11 **Site/ACT** For Hybrid and if table DIRPSSYS was changed during the "JFFREEZE procedure" (*Site Preparation* section), change data for position JF in table DIRPSSYS back to the original data.

Procedure 20
Take image SNODE

1 **Site/ACT** DUMP AN IMAGE of the new BCS load for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge.

2 After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to 'OFF' during the ONP.

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.

Procedure 21
Start journal file

- 1 **Site/ACT** If equipped, start journal file and verify started.
 - a. > JF START
 - b. > MAPCI ; MTC ; IOD ; DIRP
 - c. > QUERY JF ALL
QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
 - d. > QUIT ALL
-

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Revert to old load procedure

This section details steps required to revert to the old BCS load.

Perform the following procedure if a controlled REVERT is required after the CC switch of activity (SWACT).

Remember, the CPU with the new BCS load is now *active*. You will be going back to the old BCS load which is now *inactive*.

Procedure 1 **Before REVERT**

- 1 **Site** Do not proceed until both the Telco and NT on-line support agree.

- 2 **Site** Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

Procedure 2
Restart inactive SNODE 2

CAUTION

Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.

- 1 **Site/INACT** Perform a restart reload on the inactive processor (old BCS load).
 - a. From the CM MAP level, ensure the inactive processor is *not* under test (ut). If it is, WAIT FOR THE TESTING TO COMPLETE.
 - b. From the inactive RTIF perform a restart reload on the *inactive* processor (old load).

```
RTIF> \RESTART RELOAD  
RTIF> YES {for confirmation}
```
 - c. Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

 - 2 **App/INACT** Confirm that the inactive processor is flashing A1.
-

Procedure 3
Establish mate communication SNODE

- 1 **App/ACT** Establish communication with the mate (inactive) side.
 - a.
 - > BCSUPDATE ; SWACTCI ; STATUSCHECK *{for BCS33 and higher}*
 - > BCSUPDATE ; SWCT ; STATUSCHECK *{for BCS31 or BCS32}*
 - > SWCT ; STATUSCHECK *{for BCS30 and lower}*
 - b. Ensure the STATUSCHECK passes (with both sides matching).
If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.

Note: STATUSCHECK *may* cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.
-

Procedure 4
Login inactive

1 **App/INACT** *Verify a flashing A1 on the inactive processor.*

2 Login on the mate side as follows.

a. **ACT**

> MATEIO

> MATELOG <device>

where <device> is the name of the terminal labeled INACT.

b. **INACT**

Enter username and password

{mate-side response}

Mate> OPERATOR OPERATOR

or Enter username

Mate> OPERATOR

Enter password

Mate> OPERATOR

Procedure 5
TRACECI close

- 1 **App/INACT** If old load (inactive side) is BCS34 or lower, then close out the old active MOVEBCS/TABXFR message file.

Mat> TRACECI CLOSE

{for BCS34 and lower}

Procedure 6
Configure DIRP billing

- 1 **Site/App** Configure the DIRP billing subsystems for revert SWACT to the old load.

Note: For details for completing the following refer to "PRESWACT DIRP and billing" procedure.

- a. **ACT** Take down billing tapes and format new standby volumes in DIRP. Leave these demounted, they will become the active volumes after SWACT.

Disk volumes will rotate and recover automatically after SWACT.

Parallel volumes on tape (or DPP/BMC) can be recovered manually after SWACT.

- b. **INACT** If reverting to BCS31 or higher:

Ensure datafill is correct on the mate side for tables DIRPPOOL or DIRPSSYS.

- c. **INACT** If DIRP_REC file is present in mate SFDEV, ensure each entry in DIRP_REC is correct for the revert SWACT.

Note: In DIRP_REC the parallel volume assignments for DIRPPOOL should be set to nil (\$) for all pools.

Procedure 7
Start logs

- 1 **App/ACT** Set up LOGS for the SWACT.

Note: The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.

- a. > LOGUTIL; STOP
 - b. > DELDEVICE <device>
where <device> is where logs are to be routed.
 - c. > ADDREP <device> SWCT *{also add SWNR if on BCS30 and lower}*
 - d. > START
This starts logs on "this" device. If a different terminal device was selected above, then use >STARTDEV <device>.
 - e. > LEAVE
-

4-128 Revert to old load procedure

Procedure 8
Ensure inactive unjammed

- 1 Site and App/INACT** Ensure inactive side is *unjammed*.
-

Procedure 9
Perform TST <MS#> VIAMATE for Revert

CAUTION

This procedure, if applicable, must be completed successfully within 15 minutes of the SWACT.

Failure to execute a fault-free TST <MS#> VIAMATE may result in PM clocking faults after the SWACT and possibly eventual failure of PMs (i.e., SYSB PMs).

Note: When the ABORTSWACT command is entered, if more than 15 minutes has passed since completing TST <MS#> VIAMATE you will be instructed to repeat the TST <MS#> VIAMATE command.

- 1 **App/ACT** Test the ManB Message Switch to ensure the MS clocks are in sync. **Complete this step only if one MS load is incompatible with the BCS level of the inactive CM (for example, when reverting to BCS33 or lower).**

> MAPCI ;MTC ;MS

Ensure that the MS corresponding to the inactive CPU is ManB.

> MATELINK BSY {If not done, mate side will restart when matelink RTS'd}

> TST <MS#> VIAMATE {on the ManB MS}

Wait for the test to pass before continuing. Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.

CAUTION

Do not proceed unless NO faults are reported.

Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.

Procedure 10
Establish mate communication SNODE

1 **App/ACT** Establish communication with the mate (inactive) side.

Note: STATUSCHECK *may* cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.

- a. > BCSUPDATE ; SWACTCI ; STATUSCHECK {for BCS33 and higher}
- > BCSUPDATE ; SWCT ; STATUSCHECK {for BCS31 or BCS32}
- > SWCT ; STATUSCHECK {for BCS30 and lower}

b. Ensure the STATUSCHECK passes (with both sides matching).
If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.

Procedure 11 Revert

- 1 **App/ACT** Wait a MINIMUM of 10 minutes after the COMPLETION (flashing A1) of the last restart on the inactive side before entering the ABORT-SWACT, ABORTSWCT, or RESTARTSWCT command.

CAUTION

FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a CC warmSWACT.
Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

- 2 **App/ACT** INTERNATIONAL offices switch CC activity (SWACT) as follows.

Note: This step is valid if the NTX470AA (International Common Basic) package is built into the load.

> INTLSWCT ; DATE ; RESTARTSWCT *{only for INTL offices}*

- 3 **App/ACT** ALL OTHER offices switch CC activity (SWACT) with CC warm-SWACT as follows.

CAUTION

If a SWACT application module exists on the new, active side, but is missing from the old, inactive side, the revert SWACT may fail.

If reverting to BCS32 and higher, any SWACT applications missing from the inactive side will automatically be overridden.

If reverting to BCS31 and lower, SWACT will fail for any SWACT applications missing from the inactive side. In this case, any SWACT application missing from the inactive side must be *unloaded from the active side* in order for the revert-back to succeed. If you are unloading a module in a load prior to BCS30, use the SWCTCHK command before performing the revert-back.

-continued-

Procedure 11
REVERT (continued)

> BCSUPDATE ; SWACTCI ; DATE ; ABORTSWACT *{for BCS33 and higher}*

CAUTION

In BCS34 and higher the ABORTSWACT command has an option called NOCHECK which will allow the CC warm SWACT to continue even if there are bad devices on the active side (such as a CBSY LTC). Use the NOCHECK option *only* as a last resort and with special care taken to ensure office integrity.

> BCSUPDATE ; SWCT ; DATE ; ABORTSWCT *{for BCS31 or BCS32}*

> SWCT ; DATE ; RESTARTSWCT *{for BCS30 and lower}*

System response varies with the BCS level, but the following prompt is a typical example.

```
ACTIVE DEFAULT SETTINGS :
FORCESWACT set ON
LOADEXECS set ON
NOMATCH set OFF
Do you wish to continue?
Please confirm ("YES" or "NO"):
...Starting Warm SWACT now.
```

-
- 4 Site/ACT** Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

CAUTION

Work quickly to complete the procedures to follow.
The POSTSWACT steps will verify that the office is functioning normally with the new software load.

Procedure 12
Start POSTSWACT

App/ACT Login, check the date and time, and start POSTSWACT.

- 1 Type:
<break>

 - 2 ?LOGIN
Enter username and password *{system response}*
> <username> <password>
or > <username>
> <password>

 - 3 > DATE
Verify the date and time are correct.

 - 4 Reestablish recording onto devices (console session) as required.

 - 5 > BCSUPDATE ; POSTSWACT
POSTSWACT runs all steps required after the CC switch of activity and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. If this is the case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue.
If no problems are encountered, POSTSWACT stops after BEGIN_TESTING and waits until the site verifies the sanity of the current load.
-

Procedure 13
SYSBSY Message Switch

- 1 **App/ACT** If a Message Switch is SYSBSY, make it ManB.
 - a. > MAPCI ;MTC ;MS
 - b. > BSY <MS#> *{for the sysbsy MS}*
 - c. > QUIT MAPCI
-

Procedure 14 Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1 > MAPCI ;MTC ; IOD ; DIRP
> QUERY AMA ALL *{note which volume is ACTIVE}*

2 If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3 TAPEX volumes must be manually remounted using the DIRP MNT command.

4 Assign standby billing devices for TAPE and DPP/BMC.

a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.

b. > MOUNT <x> FORMAT <stdby_volume>
where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.

Example: MOUNT 3 FORMAT DPPAMA

c. Enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then enter:

> ERASTAPE <x>
where <x> is the standby device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

System response is:

WARNING, THIS TAPE WILL BE ERASED

CAUTION

**At this point again confirm the device is a port to a DPP or BMC,
and NOT an unexpired billing tape.**
If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-

Procedure 14
Recover billing (continued)

- d. > DEMOUNT T<x>
 - e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.
 - f. Repeat this entire step for each standby billing subsystem.
-

5 Activate standby devices.

- a. > MNT <subsystem> <x> {still in DIRP level}
Example: MNT AMA 3
Enter YES to confirm the command.
 - b. > QUERY AMA {to confirm standby volume is available}
 - c. Repeat this step for each billing subsystem.
-

6 If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)

* If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

Note: Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

7 Bring up parallel devices (as required) using the preformatted volumes.

- a. For BCS31 and lower:
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.
Example:
TABLE DIRPSSYS;POS AMA
CHA PARVOL T4
or CHA PARVOL D010PAMA
- b. For BCS32 and higher:
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.
Example:
TABLE DIRPSSYS;POS AMA

In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

-continued-

Procedure 14
Recover billing (continued)

Examples:

TABLE DIRPPool; POS 62 (*pool for AMAPOOL*)

CHA VOLUME23 T4

or CHA VOLUME23 D010PAMA

- c.** Repeat substep a or b for each parallel volume to be activated.
 - d.** > QUIT MAPCI
-
- 8** Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
-

Procedure 15
Display DPP settings

App/ACT Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1 > MAPCI NODISP;MTC;IOD;DPP AMA

2 > COLLPSW

Note: If different, perform steps 3 and 4; otherwise go to step 5.

3 > COLLPSW 1 <4_digits> <6_digits>

4 > COLLPSW 2 <4_digits> <6_digits>

5 > AMATPSW

Note: If different, perform step 6; otherwise, go to step 7.

6 > AMATPSW <4_digits> <6_digits>

7 > AMAHRS

Note: If different, perform step 8; otherwise, go to step 9.

8 > AMAHRS <start_hour> <end_hour>

9 > VALPARM INVALID

Note: If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT

Note: If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.

Procedure 16
INI trunks

App/ACT If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1 > MAPCI ; MTC ; TRKS ; TTP

2 > POST A INI

3 > REPEAT <**x**> (FRLS ; RTS ; NEXT)
where <x> is the number of INI trunks in the posted set.

Procedure 17
Do Test Calls

- 1 **Site/ACT** Perform TEST CALLS that were identified ahead-of-time from *Appendix C: Test Call Scripts*.
-

Procedure 18
After testing is complete SYNC SNODE

- 1 **App/ACT** POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. After SITE accepts the current load, then put the processors in sync as follows.

Note: Do not enter POSTSWACT again until the processors are in sync.

- a. > MAPCI ; MTC ; CM ; SYNC
> YES *{for confirmation}*
 - b. > QUIT MAPCI
 - c. > POSTSWACT *{still in BCSUPDATE}*
-

Procedure 19
POST_MS_CHECK failure

App/ACT POSTSWACT may STOP with the message "Failed POST_MS_CHECK for active CM load: #." (Both MS loads will be displayed.) *Only if you see this message*, load the MS reported to have an incompatible load with the compatible MS load as follows.

- 1 > DISKUT
> LF S00D<volume> *{or S01D <volume>}*
where <volume> is the SLM disk volume with the correct _MS load file.

- 2 > MAPCI ;MTC ;MS

- 3 > LOADMS <MS#> <filename>
where <MS#> is the MS to be loaded, and <filename> is the name of the _MS load file listed above in step 1.
> YES *{for confirmation}*

- 4 > TST <MS#> *{not VIAMATE}*
Ensure the test passes with no faults.

- 5 > RTS <MS#> *{not OOBAND!}*

- 6 > QUIT MAPCI

Procedure 20
Finish POSTSWACT

- 1 **App/ACT** If necessary run POSTSWACT one more time to completion.

```
> BCSUPDATE ; POSTSWACT
```

At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

- 2 **Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

- 3 **App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

- 4 **Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

- 5 **Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

- 6 **Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

- 7 **Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

- 8 **Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

- 9 **Site/ACT** Return PORTS and USER information back to original values.

- 10 **Site/ACT** Notify DNC end users to LOGIN the DNC.

- 11 **Site/ACT** For Hybrid and if table DIRPSSYS was changed during the "JFFREEZE procedure" (*Site Preparation* section), change data for position JF in table DIRPSSYS back to the original data.

Procedure 21
Take image SNODE

1 **Site/ACT** DUMP AN IMAGE of the new BCS load for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge.

2 After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to 'OFF' during the ONP.

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.

Procedure 22
Start journal file

- 1 **Site/ACT** If equipped, start journal file and verify started.
 - a. > JF START
 - b. > MAPCI ; MTC ; IOD ; DIRP
 - c. > QUERY JF ALL
QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
 - d. > QUIT ALL
-

Procedure 23
More Revert/ABORT steps

- 1 **Site and App/INACT** If asked to do so by technical support take an image of the *inactive* (mate) side load.

- 2 **Site and App/ACT** With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

- 3 **Site and App** Following an ABORT, rescheduling of the software update must be negotiated. Refer to *Procedure for rescheduling aborted applications*.

- 4 **App/ACT** On the ACTIVE side perform the following steps to restore the active side to its original configuration.
 - a. If old load is BCS35 and higher:
 - > BCSUPDATE ; ABORT_PRESWACT
 - > TABXFR ; CANCEL
 - > QUIT ALL
 - b. If old load is BCS34 and lower:
 - > BCSUPDATE ; RESET
 - > QUIT ALL

Emergency abort procedure

CAUTION

Perform the following steps only if a decision has been reached to activate the old load without regard to preserving stable call processing.

Remember, the CPU with the new BCS load is now active. You will be going back to the old BCS load which is now inactive.

Procedure 1
Before EABORT

- 1 **Site** Do not proceed until both the Telco and NT on-line support agree.

- 2 **Site** Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

Procedure 2
Restart inactive SNODE 2

CAUTION

Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.

- 1 **Site/INACT** Perform a restart reload on the inactive processor (old BCS load).
 - a. From the CM MAP level, ensure the inactive processor is *not* under test (ut). If it is, WAIT FOR THE TESTING TO COMPLETE.
 - b. From the inactive RTIF perform a restart reload on the *inactive* processor (old load).

```
RTIF> \RESTART RELOAD  
RTIF> YES {for confirmation}
```
 - c. Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.
-
- 2 **App/INACT** Confirm that the inactive processor is flashing A1.
-

Procedure 3
Ensure inactive unjammed

- 1 **Site and App/INACT** Ensure inactive side is *unjammed*.
-

Procedure 4
Cold SWACT SNODE

- 1** **Site/ACT** JAM active side to force a switch of activity (cold swact).

RTIF> \OVERRIDE

RTIF> \JAM

RTIF> YES *{for confirmation}*

- 2** **Site/ACT** Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.
At this point the CC switch of activity is over.
-

- 3** **Site and App/ACT** *Work quickly to complete the next procedure.* The *POSTSWACT* procedure (to follow) checks that the office is functioning as normal.

Note: Be sure to notify appropriate levels of support of the ABORT before putting the switch back in SYNC.

Procedure 5
Start POSTSWACT

App/ACT Login, check the date and time, and start POSTSWACT.

- 1 Type:
<break>

 - 2 ?LOGIN
Enter username and password *{system response}*
> <username> <password>
or > <username>
> <password>

 - 3 > DATE
Verify the date and time are correct.

 - 4 Reestablish recording onto devices (console session) as required.

 - 5 > BCSUPDATE ; POSTSWACT
POSTSWACT runs all steps required after the CC switch of activity and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. If this is the case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue.
If no problems are encountered, POSTSWACT stops after BEGIN_TESTING and waits until the site verifies the sanity of the current load.
-

Procedure 6
SYSBSY Message Switch

- 1 **App/ACT** If a Message Switch is SYSBSY, make it ManB.
 - a. > MAPCI ;MTC ;MS
 - b. > BSY <MS#> *{for the sysbsy MS}*
 - c. > QUIT MAPCI
-

Procedure 7 Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1 > MAPCI ;MTC ; IOD ; DIRP
> QUERY AMA ALL *{note which volume is ACTIVE}*

2 If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3 TAPEX volumes must be manually remounted using the DIRP MNT command.

4 Assign standby billing devices for TAPE and DPP/BMC.

a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.

b. > MOUNT <x> FORMAT <stdby_volume>
where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.

Example: MOUNT 3 FORMAT DPPAMA

c. Enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then enter:

> ERASTAPE <x>
where <x> is the standby device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

System response is:

WARNING, THIS TAPE WILL BE ERASED

CAUTION

**At this point again confirm the device is a port to a DPP or BMC,
and NOT an unexpired billing tape.**
If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-

Procedure 7
Recover billing (continued)

- d. > DEMOUNT T<x>
 - e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.
 - f. Repeat this entire step for each standby billing subsystem.
-

5 Activate standby devices.

- a. > MNT <subsystem> <x> {still in DIRP level}
Example: MNT AMA 3
Enter YES to confirm the command.
 - b. > QUERY AMA {to confirm standby volume is available}
 - c. Repeat this step for each billing subsystem.
-

6 If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)

* If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

Note: Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

7 Bring up parallel devices (as required) using the preformatted volumes.

- a. For BCS31 and lower:
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.
Example:
TABLE DIRPSSYS;POS AMA
CHA PARVOL T4
or CHA PARVOL D010PAMA
- b. For BCS32 and higher:
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.
Example:
TABLE DIRPSSYS;POS AMA

In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

-continued-

Procedure 7
Recover billing (continued)

Examples:

TABLE DIRPPool; POS 62 (*pool for AMAPOOL*)

CHA VOLUME23 T4

or CHA VOLUME23 D010PAMA

- c.** Repeat substep a or b for each parallel volume to be activated.
 - d.** > QUIT MAPCI
-
- 8** Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
-

Procedure 8
Display DPP settings

App/ACT Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1 > MAPCI NODISP;MTC;IOD;DPP AMA

2 > COLLPSW

Note: If different, perform steps 3 and 4; otherwise go to step 5.

3 > COLLPSW 1 <4_digits> <6_digits>

4 > COLLPSW 2 <4_digits> <6_digits>

5 > AMATPSW

Note: If different, perform step 6; otherwise, go to step 7.

6 > AMATPSW <4_digits> <6_digits>

7 > AMAHRS

Note: If different, perform step 8; otherwise, go to step 9.

8 > AMAHRS <start_hour> <end_hour>

9 > VALPARM INVALID

Note: If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT

Note: If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.

Procedure 9
INI trunks

App/ACT If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1 > MAPCI ; MTC ; TRKS ; TTP

2 > POST A INI

3 > REPEAT <**x**> (FRLS ; RTS ; NEXT)
where <x> is the number of INI trunks in the posted set.

Procedure 10
Do Test Calls

- 1 **Site/ACT** Perform TEST CALLS that were identified ahead-of-time from *Appendix C: Test Call Scripts*.
-

Procedure 11
After testing is complete SYNC SNODE

- 1 **App/ACT** POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. After SITE accepts the current load, then put the processors in sync as follows.

Note: Do not enter POSTSWACT again until the processors are in sync.

- a. > MAPCI ; MTC ; CM ; SYNC
> YES *{for confirmation}*
 - b. > QUIT MAPCI
 - c. > POSTSWACT *{still in BCSUPDATE}*
-

Procedure 12
POST_MS_CHECK failure

App/ACT POSTSWACT may STOP with the message "Failed POST_MS_CHECK for active CM load: #." (Both MS loads will be displayed.) *Only if you see this message*, load the MS reported to have an incompatible load with the compatible MS load as follows.

- 1 > DISKUT
> LF S00D<volume> *{or S01D <volume>}*
where <volume> is the SLM disk volume with the correct _MS load file.

- 2 > MAPCI ;MTC ;MS

- 3 > LOADMS <MS#> <filename>
where <MS#> is the MS to be loaded, and <filename> is the name of the _MS load file listed above in step 1.
> YES *{for confirmation}*

- 4 > TST <MS#> *{not VIAMATE}*
Ensure the test passes with no faults.

- 5 > RTS <MS#> *{not OOBAND!}*

- 6 > QUIT MAPCI

Procedure 13
Finish POSTSWACT

- 1 **App/ACT** If necessary run POSTSWACT one more time to completion.

```
> BCSUPDATE ; POSTSWACT
```

At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

- 2 **Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

- 3 **App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

- 4 **Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

- 5 **Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

- 6 **Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

- 7 **Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

- 8 **Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

- 9 **Site/ACT** Return PORTS and USER information back to original values.

- 10 **Site/ACT** Notify DNC end users to LOGIN the DNC.

- 11 **Site/ACT** For Hybrid and if table DIRPSSYS was changed during the "JFFREEZE procedure" (*Site Preparation* section), change data for position JF in table DIRPSSYS back to the original data.

Procedure 14
Take image SNODE

1 **Site/ACT** DUMP AN IMAGE of the new BCS load for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge.

2 After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to 'OFF' during the ONP.

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.

Procedure 15
Start journal file

- 1 **Site/ACT** If equipped, start journal file and verify started.
 - a. > JF START
 - b. > MAPCI ; MTC ; IOD ; DIRP
 - c. > QUERY JF ALL
QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
 - d. > QUIT ALL
-

Procedure 16
More Revert/ABORT steps

- 1 **Site and App/INACT** If asked to do so by technical support take an image of the *inactive* (mate) side load.

- 2 **Site and App/ACT** With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

- 3 **Site and App** Following an ABORT, rescheduling of the software update must be negotiated. Refer to *Procedure for rescheduling aborted applications*.

- 4 **App/ACT** On the ACTIVE side perform the following steps to restore the active side to its original configuration.
 - a. If old load is BCS35 and higher:
 - > BCSUPDATE ; ABORT_PRESWACT
 - > TABXFR ; CANCEL
 - > QUIT ALL
 - b. If old load is BCS34 and lower:
 - > BCSUPDATE ; RESET
 - > QUIT ALL

ONP NT40 MOP

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Site preparation procedure

Begin this section when the First Shipment of tapes and documentation arrives at the office. Site must complete the following procedures *before* being contacted by Northern Telecom for the pre-application checks (or Preliminary Precheck). In order to qualify the office for a software upgrade the series of prechecks must be successfully completed.

Procedure 1

Take image

- 1 **Site/ACT** Before beginning the front-end testing (processor tests), DUMP AN OFFICE IMAGE for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge, or one NT40 image to disk and copied to tape.
-

Procedure 2
Route logs NT40

This procedure ensures that specific logs are routed to an active log device and are not suppressed.

1 Site/ACT

```
> LOGUTIL  
> LISTREPS SPECIAL
```

If specific logs are suppressed use

```
> RESUME <log>
```

If logs have threshold set use

```
> THRESHOLD 0 <log>
```

where <log> refers to specific CC, CMC and MISM logs.

2 > LISTROUTE DEVICE <printer>

If critical logs are not routed use

```
> ADDREP <printer> <log>
```

```
> STOPDEV <printer>
```

Verify only critical logs are enabled on the device and are correctly routed.

3 > STARTDEV <printer>

```
> LEAVE
```

Procedure 3 Processor tests NT40

To ensure front-end stability Site should complete the following tests before being contacted for the pre-application checks.

Note: Perform the following front-end testing during low traffic periods.

- 1 **Site** Ensure the CPUs are in SYNC and the inactive side is NOT jammed.
On each CCC, at shelf 51, card location 16 (NT1X48), verify the *Enab* switches are down, the *NoSync* LEDs are off (in SYNC), the *Dact* switches are to the left (unjammed), and the thumbwheels are on 5.

- 2 **ACT** Match the memory from the CC level of the MAP.
> MAPCI ;MTC ; CC
> MTCH

- 3 **INACT** On the inactive side, jam the inactive CPU.
 - a. Locate the NT1X48 card with the *Inact* LED lit.
 - b. Move the *Dact* switch to the right (jammed) and the *Enab* switch up.

- 4 **ACT** Drop SYNC from the CC level of the MAP.
> DPSYNC
> YES {for confirmation}

- 5 **INACT** Wait for the inactive CPU to return to flashing A1.

- 6 Test the stability of the inactive CPU from the NT1X48 card.
 - a. **INACT** Set the thumbwheel on 3 and press reset, the hex display will flash 33. Within six seconds, move the thumbwheel to 5, DO NOT PRESS RESET. The hex display will flash 55 and initialize (warm restart).
Confirm inactive CPU flashes A1.
 - b. **INACT** Set the thumbwheel on 3 and press reset, the hex display will flash 33. Within six seconds, move the thumbwheel to 6, DO NOT PRESS RESET. The hex display will flash 66 and initialize (cold restart).
Confirm inactive CPU flashes A1.
 - c. **INACT** Set the thumbwheel on 3 and press reset, the hex display will flash 33. Within six seconds, move the thumbwheel to 7, DO NOT PRESS RESET. The hex display will flash 77 and initialize (restart reload).
Confirm inactive CPU flashes A1.

-continued-

Procedure 3
Processor tests NT40 (continued)

- d. **INACT** Set the thumbwheel on 0 and press reset, the hex display will cycle in (hex), from 00 to 16 repeatedly. Once the test has cycled three times, set the thumbwheel to 7 and press reset.
 - e. **INACT** Set the thumbwheel on 5, DO NOT PRESS RESET. Then put the *Enab* switch down.
-

7 ACT Perform a memory retention test from the DS and PS levels of the MAP.

Note: This test can take up to 2 hours to complete.

```
> DS <i>                                     {from CC level}
where <i> is the inactive DATA store.

> TST MEM RETAIN #AAAA
> YES                                       {for confirmation}

> TST MEM RETAIN #0001
> YES                                       {for confirmation}

> TST MEM RETAIN #5555
> YES                                       {for confirmation}

> QUIT

> PS <i>
where <i> is the inactive PROGRAM store.

> TST MEM RETAIN #AAAA
> YES                                       {for confirmation}

> TST MEM RETAIN #0001
> YES                                       {for confirmation}

> TST MEM RETAIN #5555
> YES                                       {for confirmation}
```

8 After completion of the tests check for CC108 or CC109 logs, indicating the test passed or failed. If the test failed, a CC101 log identifies the failed card. Resolve all problems and repeat step 7.

9 ACT Copy program store.

```
> COPY <m>                                     {still in PS level}
where <m> is the PS module. Start at 0, and repeat for each PS module
equipped.
```

-continued-

Procedure 3
Processor tests NT40 (continued)

- 10 ACT** SYNC the CPUs from the CC level of the MAP.
- > QUIT; SYNC
 - > YES *{for confirmation}*
-
- 11** After receiving the "Synchronization Successful" message, verify no faults are displayed at the CC level of the MAP (shows all dots and no Xs or fs).
-
- 12 INACT** On the inactive side release the jam.
- a. Locate the NT1X48 card with the *Inact* LED lit.
 - b. Move the *Dact* switch to the left (unjammed).
-
- 13 ACT** Switch activity of the CPUs from the CC level.
- > SWACT
-
- 14** Repeat steps 1 through 13 on the newly-inactive CPU.
-
- 15** Verify the CPUs remain in SYNC and the inactive side is NOT jammed.
-
- 16 ACT** Perform REX test from the CC level. Repeat with each CPU initially active.
- > MTCH
 - > REXTST RETENTION
 - > YES *{for confirmation}*
- The CPUs will be out of SYNC during testing. CC activity switches will occur during this time.*
-
- 17 ACT** After completion of the test, verify the test results:
- > QUERYCC RETENTION
- The CPUs should be back in SYNC with no REX alarms at the CC level or on the main MAP display header. If the test failed, contact the site supervisor to resolve any problems and repeat steps 15 and 16.*
-
- 18** Repeat (with the other CPU active) steps 15 through 17.
-

-continued-

5-6 Site preparation procedure (continued)

Procedure 3
Processor tests NT40 (continued)

19 ACT Perform an image test from the CCMNT level of the MAP.

> CCMNT

> IMAGE

> QUIT

20 After completion of the test, check for CC logs indicating pass or fail message. If test failed, clear the problem and repeat step 19.

21 ACT > QUIT ALL

Procedure 4
Responsibilities before pre-application checks NT40

- 1 **Site** Site is encouraged to verify all new software load and patch tapes received in a shipment.

Note: The following steps do not apply to a TAS NONRES tape which is used only by NT technical support to provide access to certain non-resident software tools.

- a. MOUNT and LIST the tape.
 - b. From the tape header or first file verify the tape is correct for the target BCS. For a BCS IMAGE tape also verify the image filename.
Verify a tape is good by listing the tape to the end without any errors.
 - c. If any problems are found notify your NT customer service representative immediately.
 - d. Keep the tapes on-site for use during the scheduled software update.
-
- 2 **Site** Review the D190 document (office feature record) to ensure the software content meets the expected requirements.

Note: Offices receiving feature package NTX218, EADAS, ensure table OMACC has only 25 entries. If table OMACC has more than 25 entries, the site will have to delete the extraneous entries so the five new EADAS Operation Measurement tuples will fit.

- 3 **Site** Load and patch ALL PERIPHERAL MODULES with the to_BCS software loads according to the *Peripheral Software Release Document* ("Application Procedures" section).
Peripheral modules include all PMs, XPMs, DPP, and MPC.

Note: If a cross-reference file (BCSxxXPM\$XREF) is at the beginning of the XPM patch tape, use it to identify patches applicable to each XPM load.

- 4 **Site** Monitor front-end stability watching NT40 CC, CMC, and MISM logs through the day of the software delivery.
-

Procedure 5
Save site files

- 1 Site/ACT** Copy all Telco/site-created files in store file (SFDEV) onto a labeled scratch tape. These files can be manually restored to SFDEV after the BCS application.
*Any patches and files downloaded to SFDEV need to remain in SFDEV for the BCS application-**DO NOT ERASE!***
-

Procedure 6
Peripheral verification NT40

- 1 **Site/ACT** If the office is equipped with DDUs, erase all unwanted files. Then ensure the peripheral loads and peripheral patches for the to_BCS are on the same disk.

- 2 On the DDU used for primary billing collection (such as AMA SMDR OCC CDR), perform routine maintenance on the disk to ensure it is functioning properly. If excessive "bad blocks" are present, reformat the disk.

- 3 Ensure peripherals (including ENET and DPPs) are loaded and patched with the to_BCS software. (Refer to the *Peripheral Software Release Document*.)

Procedure 7
Table ACDGRP

- 1 **App/ACT** Identify any "holes" in table ACDGRP and fill them with dummy tuples. Otherwise, you may be unable to retrieve MIS reports from some ACDGRPs.
 - a. > OMSHOW ACDGRP ACTIVE
 - b. Look for nonconsecutive keys. (example: 0 2 3 5 6 has 1 and 4 missing.)
 - c. If any missing tuples, have Translations personnel datafill with dummy tuples. (This prevents the renumbering of key indexes during the BCS update.)
 - d. Also provide datafill in table DNROUTE for each corresponding dummy tuple added in table ACDGRP.
-

Procedure 8
Fill in Test Call Scripts

- 1 **Site** Fill in and test the *Test Call Scripts* in *Appendix C*.

This is to provide a thorough test plan exercise for testing the new BCS load. You will be asked to make your test calls after switching activity to the new BCS.

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Data consistency check procedure

Procedure 1 is for offices on BCS34 and higher.

Procedure 2 is for offices on BCS33 and lower.

CAUTION

Review Software Delivery Bulletins and any current Warning Bulletins concerning TABAUDIT before using it.

Procedure 1

Run TABAUDIT (BCS34 and higher)

Perform this procedure at 15 days prior to the software delivery date. This allows time to correct any table data problems that might be found. At the insertion minus 10 days pre-check, NT engineers will review the results. The data consistency checks must be successfully completed including any needed data corrections in order for the scheduled application to be completed on schedule.

For all offices on BCS 34 and higher, perform the following steps. These steps are used to verify table data integrity using TABAUDIT.

A complete tutorial of TABAUDIT is provided in *Appendix A*. This includes information on TABAUDIT enhancements (BCS36) which provide automated scheduling capability and facilitate data capture.

Warning: TABAUDIT can take up to 10 hours to run. The length of time will vary from site to site depending on the number and size of tables.

- 1 **Site/ACT** Verify table data using TABAUDIT. Send output to a recording device (e.g. D000SCRATCH). Make note of the device used, since the files will be reviewed by NT prior to BCS application.

TABAUDIT may be set-up to run all the tables using the "ALL" option or to run a range of tables using the "FROM" and "TO" options. TABAUDIT can only be run from only one terminal at a time.

- To use the "FROM" and "TO" options see substep **a** below.
- To use the "ALL" option see substep **b** below.

Warning: If a device is *not* specified when issuing the TABAUDIT ALL command, only a SUMMARY\$FILE will be created in Store File and no separate file will be created for individual failed tables.

-continued-

Procedure 1
Run TABAUDIT (continued)

If necessary, TABAUDIT may be stopped and restarted . To stop TABAUDIT at anytime, use break HX. When restarting TABAUDIT, determine the last table verified by reviewing the "SUMMARY\$FILE " file in SFDEV. The last table verified can also be determined by listing table DART and reviewing the "CHKDATE" and "CHKTIME" fields for the most recently verified table.

Some tables will output information or warning messages as though they are being changed. However, no changes will be made since TABAUDIT does not execute any write procedures.

For example, when TABAUDIT is performed on table DATASIZE the following message is output for every tuple checked:

A restart is needed for this change to take effect. Check the NTP as to which is appropriate warm or cold.

Or for example, when STDPRTCT is checked, the additional output is:
Warning: Changes in table STDPRTCT may alter office billing.

- a. Until the amount of time required to verify all tables is known for a particular site it is recommended to perform the verification on a range of tables using the "FROM" and "TO" options and information found in table DART.

```
> TABAUDIT FROM <start table> [TO <end table>]  
<device name>
```

For example, to obtain table names in increments of 100, enter Table DART, list, go down 100 and list two. Record or print the table names. Continue this until the end of table DART is reached.

```
> TABLE DART; LIST (output will be the "FROM" table name)  
> DOWN 100; LIST 2 (output will be the "TO" table name of the  
first 100 and the "FROM" table name for the second 100)  
> DOWN 100; LIST 2 (repeat until the end of table is reached)  
> LEAVE
```

Perform TABAUDIT on the first 100 tables as shown in the following example:

```
> TABAUDIT FROM DART TO BGDATA <device name>
```

When complete, perform TABAUDIT on the next 100. Repeat until all tables have been verified.

- b. Use the TABAUDIT ALL command to perform the data verification function on all tables listed in table DART using just one command.

```
> TABAUDIT ALL <device name>
```

-continued-

Procedure 1
Run TABAUDIT (continued)

- 2** Review the summary output and any failed table files. If any table fails, contact the translations engineer who can help in resolving any data consistency issues. To verify a corrected table, run TABAUDIT ONLY and specify the corrected table.

```
> TABAUDIT ONLY <table name> <device name>  
Continue until all tables have been corrected.
```

- 3** When all tables have been corrected, if time permits, perform a TABAUDIT on all the tables again by range or by use of the "ALL" command. This is to ensure that no changes performed in step 2 have adversely affected other tables.
-

Procedure 2
Run CHECKTAB (BCS33 and lower)

Perform this procedure at 15 days prior to the software delivery date. This allows time to correct any table data problems that might be found.

For offices on BCS 33 and lower that are scheduled for a complete One Night Process (not Hybrid), please refer to your Site Notification Package (or contact the NT Customer Service Representative) for the appropriate procedure concerning the use of CHECKTAB.

Site responsibilities the day of the software delivery

The following steps must be completed by site personnel *before* the software delivery engineer contacts the site for the scheduled software delivery.

Procedure 1

Day zero checklist

- 1 **Site** Verify that all problems identified from performing table data checks have all been resolved.

- 2 Verify that the front-end processors have been in sync for the past 24 hours and the last REX test has passed.

- 3 Verify an image has been taken in the last 24 hours and backed to tape.

- 4 Ensure you have undertaken your critical test call plan and verified it. (See *Appendix C: Test Call Scripts*.)

- 5 Verify SFDEV has been cleared of all Telco/site-created files.

- 6 Verify all to_BCS patches have been downloaded to site and are present in SFDEV.

7 **LIU7 image with feature AQ1102**

In preparation for the ONP, assuming that the LIU7s have had their software loads upgraded, dump an image of an INSV LIU7. There should be no changes to the tables C7GTT, C7GTTTYPE, C7NETSSN, or C7DCIS6 between the time this image is dumped and when the ONP occurs.

This is to utilize feature AQ1102, which allows faster recovery of LIU7s under certain circumstances. Please refer to the feature description for details of the possible recovery scenarios.

Note: If an image with up-to-date data is not available, then data sync of an LIU7 following the CC Warm SWACT may take considerable time if table C7GTT is very large.

Procedure 2
Patch verification

The Site is responsible for the following patch verification step.

- 1 **Site/ACT** All patches downloaded to SFDEV after the final office review should be copied to tape (or to disk) and LEFT IN SFDEV.
 - *From-side patches that are process-related (affecting ONP tools) will be applied by the BCS Applicator on the night of the BCS application.*
 - *To-side front-end and MS patches in SFDEV will be automatically applied to the new BCS load on the night of the BCS application.*
-

Procedure 3
Run DATADUMP

1 **Site/ACT** Run DATADUMP to output important switch information for future reference.

- a. > LOGUTIL;STOPDEV <printer>
where <printer> is an available printer to be used for recording. This makes sure the logs are stopped on the device.
> LEAVE
- b. > RECORD START ONTO <printer>
- c. > BCSUPDATE;DATADUMP *{for BCS33 and higher}*
When DATADUMP is completed:
> QUIT
- d. > DRCI;RUNEXEC DATA_DUMP *{for BCS32 and lower}*
When DATADUMP is completed:
> QUIT
- e. > RECORD STOP ONTO <printer>
-

5-20 Site responsibilities the day of the software delivery (continued)

Procedure 4
FX voice and data

- 1** **Site** Ensure there will be uninterrupted communication with the software delivery engineer during the software delivery. (Provide FX voice and data lines.)

- 2** Ensure at least two dialup ports are operational-one on each IOC. These should have COMCLASS of ALL.

- 3** Verify user names to be used during the software update have PRIVCLAS of ALL.

Preliminary phase procedure

This section details both SITE and BCS applicator (App) activities required for a One Night Process software delivery.

The actual software delivery begins when the software delivery engineer puts the switch into simplex mode (drops sync) and loads the inactive CPU with the new BCS software load.

Two dialup ports are required, one for the active side processor (label it ACT) and one for the inactive side processor (label it INACT). Remember to acquire a soft copy of the console sessions for both terminals.

Note: Telco may elect to monitor the application process by recording onto printers. This can impact the software delivery time. Site may start recording by issuing the following command for two printers, one for each of the dialup ports to be used by the applicator: "RECORD START FROM <terminal_id> ONTO <printer>."

CAUTION

Ensure no hardware changes or retrofits are in progress. This includes network or memory extensions and peripheral additions/deletions.

These activities are prohibited during the BCS application. Such hardware must be made INB (installation busy), and any further software changes must cease.

Procedure 1
Interrupt/ABORT process

Both SITE and Applicator should be familiar with each of the following steps before continuing with the procedures in this section.

If problems develop during the software delivery, resort to one of the following actions.

- 1 If the MOVEBCS process must be halted or interrupted, use the MOVEBCS HALT option. Refer to "Interrupt MOVEBCS" in *Appendix A* (page A-19).

- 2 If the TABXFR process must be halted or interrupted, use the HALT option. Refer to "Interrupt TABXFR" in *Appendix A* (page A-24).

- 3 It may be necessary to STOP (and reschedule) the application after PRESWACT has been implemented, but before the switch of activity. Refer to "PRESWACT Abort" in *Appendix A* (page A-29).

- 4 If a controlled REVERT is required after the switch of activity (SWACT) refer to "Revert to old load procedure" (page 5-107).

- 5 If an emergency ABORT is required after the switch of activity (SWACT) refer to "Emergency Abort procedure" (page 5-129).

Procedure 2
Remote login

- 1 **App/ACT** Contact the control center (if required) and the site on the voice phone and connect to both dialups. Verify one dialup port is on IOC0 and the other is on IOC1.
-
- 2 **App/ACT** Login the users and if applicable, set LOGINCONTROL.
 - a. <break>
 - b. ?LOGIN
Enter username and password *{system response}*
> <username> <password>
 - or
> <username>
> <password>
where username and password can both be found on the Pre-application report.
 - c. For BCS33 and higher enter:
> BCSUPDATE;DEVICE
> QUIT
 - d. For BCS32 and lower enter:
> LOGUTIL;STOP;STOP *{Note the name of this device}*
> LEAVE
> LOGINCONTROL <device> QUERY
 - e. Verify *Open Condition Logout* is *N*. If not, retain the original status and enter:
> LOGINCONTROL <device> OPENFORCEOUT FALSE
Verify *Max Idle Time* is *Forever*. If not, retain original status and enter:
> LOGINCONTROL <device> MAXIDLETIME FOREVER
> LOGINCONTROL <device> DISABLEON REMOVE
<forceout_conditions> *{conditions obtained in substep d above}*
 - f. Repeat this entire step on the other terminal device.
-

Procedure 3
Check logs NT40

1 App/ACT For BCS33 and higher check logs to verify processor stability.

> BCSUPDATE ; LOGCHECK

> QUIT

Do not continue until all logs have been explained.

2 App/ACT For BCS32 and lower check logs to verify processor stability.

> LOGUTIL

> OPEN <log_buffer> ; WHILE (BACK) ()

where <log_buffer> refers to CC, CMC and MISM logs.

> LEAVE

> TRAPINFO

Check for store parity traps, MISM (mismatch), and store checksum logs. Do not continue until all logs have been explained.

Procedure 4
Stop journal file

- 1 **App/ACT** ROTATE and STOP the Journal File recording.
 - a. > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
Check which JF volume is currently active.
 - b. > CLOSE JF ACTIVE
QUERY again to verify rotation.
 - c. > JF STOP
Verify stopped.
 - d. > QUIT MAPCI
-

Procedure 5
Drop sync NT40

CAUTION
Observe ANTI-STATIC precautions
throughout the NT40 drop sync and initialization procedure.

-
- 1 Site** On each CCC, at shelf 51, card location 16 (NT1X48), verify the *Enab* switches are down, the *NoSync* LEDs are off (in SYNC), the *Dact* switches are to the left (unjammed), and the thumbwheels are on 5.
-
- 2 App/ACT Type:**
> MAPCI ; MTC ; CC
-
- 3 App/ACT** Ensure the CPU you want to load with the new BCS load is currently the *inactive* side.
For example: If you will be loading CC 0 with the new BCS image, then CC 0 must be made inactive.
- b.** If needed switch activity of the CC using SWACT (CC level).
 - c.** Align the CC and CMC clock on the same side (SYNCLK level).
For example: CC 0 inactive with clock 0 slaved.
-
- 4 Site/INACT** Locate the NT1X48 card on the inactive CPU (with the *Inact* LED lit).
-
- 5 Site/INACT** JAM the inactive CPU by moving the *Dact* switch to the right.
-
- 6 Site and App** From the MAP display confirm the JAM is on.
-
- 7 App/ACT** Drop sync from the CC level of the MAP.
> MAPCI ; MTC ; CC ; DPSYNC
> YES *{if prompted to disable AUTO PATCHING}*
> YES *{to confirm DPSYNC}*
-
- 8 Site/INACT** Site must tell the engineer when the inactive CC is flashing A1.
-
- 9 App/ACT**
> QUIT MAPCI
-

-continued-

Procedure 5
Drop sync NT40 (continued)

- 10 Site** Initialize the inactive CPU as follows.
- a. INACT** On the inactive CC put enable switch UP.
 - b. INACT** Move thumbwheel to 7 and press RESET.
Display should immediately freeze on A1.
 - c. INACT** Move thumbwheel to 8 and press RESET.
Display should go to a solid A2, then to flashing D2 when process is complete. (This initializes the program store.)
 - d. INACT** Move thumbwheel to 9 and press RESET.
Display should go to a solid A3, then to flashing D3 when process is complete. (This initializes the data store.)
 - e. INACT** Move thumbwheel to 7 and press RESET.
Display should immediately freeze.
 - f. INACT** Move thumbwheel to 5, but DO NOT PRESS RESET!
 - g. INACT** Put enable switch back DOWN.
-

Procedure 6
BULLETINS before LOADMATE

- 1 **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning LOADMATE.
-

Procedure 7
Loadmate NT40

- 1 **Site/ACT** Load the new BCS IMAGE tape on an available tape drive <x>.
 - a. > MOUNT <x> *{lists the image load file}*
 - b. Verify the image file on the tape is correct.

- 2 > LIST T<x> TO <filename>
where <filename> is the image load file to be loadmated.

- 3 > LDMATE <filename>

- 4 **Site and App/INACT** Wait for loadmate to complete and the inactive processor to flash A1.
While waiting for loadmate, SITE may display the patches in store file (PATCHER; DISPLAY <patch>) or may copy any new patches to the new patch tape (or to disk).

- 5 **App/ACT**
 - > DEMOUNT T<x>

- 6 **Site** Remove the image tape from the tape drive.

Procedure 8
Login inactive after Loadmate NT40

Login on the inactive processor after loadmate is complete.

1 App/ACT Type:

> MCR RTS

2 Allow initialization on the inactive side (flashing A1).

3 LOGOUT of the active side if logged in on the terminal labeled INACT.

4 > MATEIO

> MATELOG <device>

where <device> is the name of the terminal labeled INACT.

5 App/INACT

Enter username and password

{mate-side response}

Mate> OPERATOR OPERATOR

or Enter username

Mate> OPERATOR

Enter password

Mate> OPERATOR

Procedure 9
Set date and header message

- 1 **App/INACT** Set the current date and site header message on the mate side.

```
Mate> SETDATE <dd mm yy> {set today's date}
```

```
Mate> SETLOGMSG '<text>'
```

where <text> becomes the office header on the new software load. Using the old header as the model, change the **Office Order (COEO)**, **office name**, **Product Code** (or BCS level), and **application date**. Ensure all symbols at the beginning and end of the header message remain the same (including spaces).

Note: The "Order/Suborder" (Office Order) and "To Product/Version" (Product Code/BCS) can be found in the *Parmmail*.

Example:

```
94/04/12 00:41 *** H01234 OFFICE LEC00002 120494 ***
```

Procedure 10
Download application files (RTP)

- 1 **App/ACT** Download special application files to active side SFDEV.
If to_BCS 37 and higher the Applicator Package will contain the following files:

- PARMCHGS
*Download PARMCHGS renaming it as "FEATDATA."
Print this file for reference information.*

Note: PARMMAIL is also in the Applicator Package for reference.

- SITEINFO
*Download SITEINFO. This file will be used to update the Inform list
(next step) for the new software load.*
-

- 2 Matecopy the SITEINFO file to the inactive, and read (execute) it.

Note: To allow further calculation of patches for a given office, the site_key must be inserted into the inform list to identify that inform list to patadm. This is done by applying special patches which will correct the patch inform list.

- a. **ACT**
Matecopy SITEINFO to inactive side SFDEV.

- b. **INACT**
Read SITEINFO (to execute) on the inactive side.

Note: When read, SITEINFO will enter patcher, create the "dummy patches" in sfdev, apply the patches to update the inform list, and erase the patches.

Procedure 11
Check logs inactive NT40

- 1 App/INACT** For BCS33 and higher check mate logs to verify processor stability.

```
Mate> BCSUPDATE;LOGCHECK
```

```
Mate> QUIT
```

Do not continue until all logs have been explained.

- 2 App/INACT** For BCS32 and lower check mate CC logs.

```
Mate> LOGUTIL;OPEN CC;WHILE(BACK)()
```

```
Mate> LEAVE
```

```
Mate> TRAPINFO
```

Check for store parity traps. Do not continue until all logs have been explained. Traps from active side (FOOTPRINT) may also be shown.

- 3 App/INACT**

```
Mate> TRAPINFO CLEAR
```

Procedure 12
Mate-side memory check

- 1 **App/ACT** If from_BCS 32 and higher, perform a mate-side memory check.

CAUTION

If this test fails *do not continue*-immediately notify the site supervisor.
The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side.

Note: Entering the RUNSTEP command below gives a warning that the step is done out of process. This is okay-answer YES to the prompt.

- a. > BCSUPDATE;RUNSTEP MATE_MEM_CHECK

Note: This displays on the active side the result of the test, "completed" or "not completed." If it is not completed an error message is also printed on the active side.

- b. Should this check fail, isolate and replace the faulty memory card on the inactive side. For additional information, turn to "MATE_MEM_CHECK failure" in *Appendix B*.
- c. > QUIT
-

Procedure 13
Retain PARM values

1 **App** Obtain a list of the following office parameters for reference.

```
> TABLE OFCVAR
> POS NODEREXCONTROL
> POS LCDREX_CONTROL
> QUIT

> TABLE OFCENG
> POS GUARANTEED_TERMINAL_CPU_SHARE
> QUIT

> TABLE OFCSTD
> POS DUMP_RESTORE_IN_PROGRESS
> QUIT
```

Procedure 14
Patch inactive

PATCH the inactive processor by following this procedure. (Mate patching can instead be done manually if desired.)

Note: Entering the RUNSTEP commands below gives a warning that the step is done out of process. This is okay-answer YES to the prompt.

1 App/INACT If coming from _BCS 31 and lower, on the mate side turn on access to WTAB using TASTOOL procedure.

2 ACT On the active side, ensure table PADNDEV points to the device (typically SFDEV) containing the patches that were downloaded for the to_BCS.

> TABLE PADNDEV;LIST ALL

If there are devices in this table that do not contain to_BCS patches, make a note of the tuples and DELETE them.

Note: MOVEBCS or TABXFR will attempt mate patching again (until this is patched out). After MOVEBCS/TABXFR does this, you will need to restore the original data in table PADNDEV. There are two ways of doing this:

1. In procedure "MOVEBCS/TABXFR setup"-Set a stop point in MOVEBCS/TABXFR to stop before table PADNDEV is moved. (At that point the patching will be completed.) Then when it stops edit the table on the active side and allow the data transfer to continue.

2. In procedure "MOVEBCS/TABXFR completed"-Allow MOVEBCS/TABXFR to run to completion as usual. Then edit table PADNDEV on both the active and inactive sides.

3 > BCSUPDATE;RUNSTEP VERIFY_DSLIMIT

4 > RESET

5 > RUNSTEP DISABLE_AUTOIMAGE

Note: This step is not valid if the AUTOIMAGE feature is not available.

6 > RUNSTEP SET_OFFICE_TUPLES

7 > RUNSTEP SEND_PATCHES

8 > RUNSTEP APPLY_PATCHES

9 > QUIT

-continued-

Procedure 14
Patch inactive (continued)

- 10 Site and App/INACT** Print the PATCH\$FILE and review applied (mate) patches.

```
Mate> LISTSF ALL;PRINT PATCH$FILE
```

If you need to DISPLAY any patches that were applied on the inactive side, these patches can still be accessed from the active side.

- 11** Mate> TRAPINFO

If trap occurred, do not continue until the trap is explained and action taken to correct the error.

Procedure 15
Activate patches inactive

- 1 **App/ACT** Determine which ACT patches are activated in the old load.
 - a. > PATCHEDIT
This command shows a list of 'ACT' patches and which ones are activated (turned on).
 - b. Review the patch list to determine which patches are currently activated (ON) on the active side.
Normally any ACT patch activated in the old load should be manually activated in the new load (see next step).

- 2 **Site and App/INACT** As needed activate ACT patches on the inactive side.
 - a. Mate> PATCHEDIT
 - b. Compare the mate-side patch list with active-side list obtained above. Decide with the site if any patches need to be activated (set "ON") at this time.
Passwords will be provided on the 'APF' report for any "feature patches" in the new BCS load. Give the password to Telco, but do NOT activate the patch at this time unless already ON in the old load.
 - c. Mate> PATCHEDIT <patch> ON
This activates the patch.
 - d. Repeat this command for each patch to be activated.
 - e. Also determine from comparing the patch lists if any ACT patches should be set to "NA" (no audit) state.
 - f. Mate> PATCHEDIT <patch> NA
This sets the patch to "NA" state.
 - g. Repeat this command for each patch to be set to "NA."

Procedure 16
Restart inactive for patches

- 1 App** Perform each of three types of restarts (warm, cold, and reload) on the inactive side to satisfy the requirements of any patch(s) needing a restart.

Note: Sequence of restarts is not important.

INACT

```
Mate> RESTART <restart type>
```

```
Mate> YES {for confirmation}
```

- 2** Allow initialization on the inactive side (flashing A1).
-

- 3** Login on the inactive side.
-

- 4** Repeat above steps for each type of restart required.
-

Procedure 17
IPL modules

- 1 **App/ACT** If from_BCS 30 and lower, to avoid problems using STATUSCHECK, STATUSUPDATE, and RESTARTSWCT because of device/hardware irregularities, do the following.

- a. > QUERY <module>
where <module> is:
NODESTAT STCSTAT IPMLSTAT
CARRSTAT JCTRSTAT DCHSTAT

Repeat QUERY for each module listed.

Note: OPMSTAT, CCS6STAT, RCUSTAT, and CSCSTAT are also status modules, but do not require this procedure. The counts for these modules are set to their maximum values.

- b. If any module is loaded, as indicated by the QUERY command, enter the following:

> RUN <xxxx> IPL
where <xxxx> is a loaded module.

Note: Three or four SWERRS will be generated for each module entered in this step. The SWERRS are expected and indicate that procedures and counts for the hardware are being updated.

Procedure 18
SWCTCHK verification

- 1 **App/ACT** If from_BCS 29 and lower, verify Pre-application Engineering has entered the SWCTCHK command (see *Pre-application Report*). If not done earlier complete this step.
 - a. Ensure patch EWW08 is applied on the active (from-side) load.
 - b. > SWCTCHK
-

Procedure 19
MASSTC

- 1 **App** Check status in MASSTC level (TOPS office only).
 - a. **ACT**
 - > MASSTC
 - > STATUS
 - b. If the status is INITIAL, then no action is needed.
 - c. **INACT** If the status is DUPLICATED, then *with Telco consent* on the MATE side enter:
 - Mate> ENABLE
 - or, if data is obsolete
 - Mate> SCRAP
 - d. **ACT** If the status is SWITCHED, then *with Telco consent* on the ACTIVE side enter:
 - > PERM
-

Procedure 20
BULLETINS before data transfer

- 1 **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning the data transfer (MOVEBCS/TABXFR).
-

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MOVEBCS procedure

For COMPLETE ONP ONLY (NOT HYBRID)-This section details steps required to move the data from the old BCS load to the new BCS load.

For from_BCS 34 and lower, the MOVEBCS is used to perform the data transfer portion of a BCS application.

Procedure 1

Table DART

1 **App** For to_BCS 30 and 31 only, prepare table DART as follows.

a. **ACT** > MATECOPY DRNOW

b. **INACT** Mate> LISTSF ALL

Mate> READ DRNOW

Mate> ERASESF DRNOW

Mate> DARTEDIT

Mate> PRINTDART LONG

{optional list for reference}

Mate> QUIT

Note: For additional DARTEDIT command syntax refer to *MOVEBCS summary* in Appendix A.

2 **App** For to_BCS 29 only, prepare table DART as follows.

a. **ACT** > MATECOPY DRNOW

b. **INACT** Mate> RESTTYPE EXTERNAL

Mate> LISTSF ALL

Mate> READ DRNOW

Mate> ERASESF DRNOW

Procedure 2
Office PARMs

CAUTION

Before beginning read all bulletins concerning changes to office parameters (PARMs).

Some office PARM values, if not already built into the new load, will have to be set during the data transfer. This could involve setting stop points in the MOVEBCS/TABXFR prior to starting.

PARAMETERS RULE-If any office PARMs are found to be different between the old and new software loads, then follow this rule:

- Use the requested PARM value from the *Parmmail* (or *Parm Variance Report*).
- If there is no requested or reformatted PARM value, use the value that is currently in the switch (old load).

Note: A reformatted value is indicated on the Parmmail as the polling value with "R" beside it.

- 1 Office parameters are already set in the undatafilled BCS image.
 - a. Compare (delta) the parm values in the inactive side with the ordered parameters indicated in the *Parm Variance Report*.
 - b. Normally, if any parms need to be corrected, make the required changes *before* beginning the data transfer. Make the parm corrections by changing the appropriate office tables on the inactive side.

Note: On the mate side use commands "MOVEBCS STOP BEFORE <table name>" and "MOVEBCS STOP AFTER <table name>" to cause the MOVEBCS process to stop at specified tables. The "STOP BEFORE" option is safer because it does not involve pre- or post-activities which may be attached to a particular table. (For example, "MOVEBCS STOP AFTER NNASST" is not possible since the post-activity for NNASST may include a restart.)

When using these options remember to use "STOP CLEAR BEFORE <table name>" or "STOP CLEAR AFTER <table name>" before continuing MOVEBCS. This clears the previous stop points.

Procedure 3
Stop after CLLIMITCE\$DIAGDATA

1 App/INACT For from_BCS 26 and to_BCS 29 type:

Mat> MOVEBCS STOP AFTER CLLIMITCE\$DIAGDATA

Procedure 4
MVEBCS setup

- 1 **App** Set up TRACECI to monitor MOVEBCS summary and error messages on the primary terminal (ACT).
 - a. **ACT** > TRACECI DEVICE <device_name>
where <device_name> is the name of the device labeled INACT.
Response on the inactive side:
This device is selected for TRACEing
 - b. **INACT** Mate> TRACECI TEST 'THIS IS A TEST'
"THIS IS A TEST" is output on the device selected above.

- 2 **App/INACT** Set MOVEBCS to stop at each error with a limit of not more than 100.
 - a. Mate> MOVEBCS LIMIT 25 *{limit of 25 is recommended}*
 - b. Mate> MOVEBCS STOPIF 1

Procedure 5 Start MOVEBCS

- 1 **App** Start the data transfer using MOVEBCS as follows.

CAUTION

MOVEBCS will perform a mate-side memory check. If this test fails *do not continue*-immediately notify the site supervisor.
The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side.

- a. **INACT** Mate> MOVEBCS;LOGOUT
MOVEBCS will perform an automatic restart reload after each of the following tables is transferred: DATASIZE, NNASST (or CMSHELF), and (conditionally) TRKMEM. Following the automatic restart, MOVEBCS will automatically start transferring the next table listed in table DART.
- b. Certain tables will fail with the message "This table is Recursive..." *No action is required other than to restart MOVEBCS.*
- Note:** This message means the table will be re-datafilled automatically by MOVEBCS (since data for the table depends upon other tables being datafilled first). Recursive tables may include: XLANAME, ESAPXLA, NCOS, THOUGRP, IBNRTE, OFRT, FNMAP, and others.
- c. **ACT** If any table fails to restore properly on the mate side, MOVEBCS will stop (depending on STOPIF and LIMIT) and will identify the headtable/subtable position in error.

For any table in error investigate the problem by entering on the ACTIVE side:

```
> DELTA <table> NOFILE           {compares old and new tuples}
or
> DELTA <table> SUB <subtable> NOFILE
```

- d. **INACT** Whenever it is necessary to login on the inactive (mate) side to correct an error, first *verify a flashing A1* on the inactive processor; then login on the mate side and make the needed changes.
- e. **INACT** Each time you restart the MOVEBCS, also LOGOUT on the mate side (as above).

```
Mate> MOVEBCS;LOGOUT
```

Note: Avoid unnecessary or prolonged logged-in sessions on the mate side while MOVEBCS is running.

Procedure 6
Copy patches

- 1 **Site/ACT** While the data transfer is running and as time allows, on the active side copy patches in store file to the new patch tape (or to disk) and XPM patches to disk.

Note: Following are steps to copy individual patches to tape or disk. You may instead create a file to automatically copy these patches.

- a. Install the new patch tape on a tape drive (x) with a write enable ring.
 - b. > LISTSF ALL
 - c. > MOUNT <x>;LIST T<x>
 - d. > COPY <sfdev_patch> T<x>
where <sfdev_patch> refers to patches in SFDEV listed in step 1.b.
 - e. Repeat COPY for each patch in SFDEV.
 - f. > DEMOUNT T<x>
 - g. > LISTSF ALL
 - h. List the disk volume where the XPM loads (and patches) normally reside.
 - i. > COPY <xpm_patch> <pload_disk>
where <xpm_patch> refers to XPM patches in SFDEV (format aaannXyy\$PATCH: aaa is alphabetic, nn is numeric, and yy is the BCS number), and where <pload_disk> is the XPM disk volume listed above. Do not perform if there are no XPM patches in SFDEV, if there are no XPMs or if there are no disks.
 - j. Repeat COPY for each XPM patch in SFDEV.
-

Procedure 7
Table CLLIMTCE\$DIAGDATA

- 1 **App/INACT** For from_BCS 26 and to_BCS 29: if a stop point was set previously, expect MOVEBCS to stop after table CLLIMTCE subtable DIAGDATA is restored to allow the following workaround to be done.
 - a. After MOVEBCS stops, login on the inactive (mate) side and enter:
Mate> FIXDIAG
 - b. CLEAR the stop point that was set AFTER CLLIMTCE\$DIAGDATA.
Mate> MOVEBCS STOP CLEAR AFTER CLLIMTCE\$DIAGDATA
 - c. Restart MOVEBCS.
Mate> MOVEBCS;LOGOUT
-

Procedure 8
MVEBCS completed

- 1 MOVEBCS is finished when you receive the following message.

INACT - completed D/R of office

Note: Do not perform the following step if PADNDEV data was manually restored *during* the MOVEBCS. (See procedure "Patch inactive.")

- 2 **ACT and INACT** On BOTH the active and inactive sides, change table PADNDEV back the way it was before patching the mate side.
-

Procedure 9
Login inactive

1 **App/INACT** *Verify a flashing A1 on the inactive processor.*

2 Login on the mate side as follows.

a. ACT

> MATEIO

> MATELOG **<device>**

where <device> is the name of the terminal labeled INACT.

b. INACT

Enter username and password *{mate-side response}*

Mate> OPERATOR OPERATOR

or Enter username

Mate> OPERATOR

Enter password

Mate> OPERATOR

Procedure 10
Print reports

1 **App** Generate a final data transfer report. This will include both the table exception report and the NTX package delta.

a. **ACT** Only if RECORD START was *not* done previously, type the following.

```
> RECORD START FROM <terminal_id> ONTO <printer>  
where <terminal_id> is the terminal device labeled INACT, and  
<printer> refers to a printer used to collect the data transfer  
information.
```

b. **INACT**

```
Mate> MOVEBCS REPORT
```

c. **ACT** Only if RECORD START was done in substep a (above), type the following.

```
> RECORD STOP FROM <terminal_id> ONTO <printer>  
where <terminal_id> and <printer> are the devices used above.
```

Procedure 11
Trapinfo inactive

1 App/INACT Type:

Mat> TRAPINFO

If a trap has occurred, do not continue until the trap is explained.

This page purposely left blank.

TABXFR procedure

For COMPLETE ONP ONLY (NOT HYBRID)-This section details steps required to move the data from the old BCS load to the new BCS load.

For from_BCS 35 and higher, the TABXFR increment is used to perform the data transfer portion of a BCS application.

Procedure 1 Office PARMs with TABXFR

CAUTION

Before beginning read all bulletins concerning changes to office parameters (PARMs).

Some office PARM values, if not already built into the new load, will have to be set during the data transfer. This could involve setting stop points in the MOVEBCS/TABXFR prior to starting.

PARAMETERS RULE-If any office PARMs are found to be different between the old and new software loads, then follow this rule:

- Use the requested PARM value from the *Parmmail* (or *Parm Variance Report*).
- If there is no requested or reformatted PARM value, use the value that is currently in the switch (old load).

Note: A reformatted value is indicated on the Parmmail as the polling value with "R" beside it.

- 1 **If to_BCS36 and lower**-Office parameters are already set in the undatafilled BCS image.
 - a. Compare (delta) the parm values in the inactive side with the ordered parameters indicated in the *Parm Variance Report*.
 - b. Normally, if any parms need to be corrected, make the required changes *before* beginning the data transfer. Make the parm corrections by changing the appropriate office tables on the inactive side.

-continued-

Procedure 1
Office PARMs with TABXFR (continued)

- 2** **If to_BCS37/CSP02 and higher**-With the introduction of CSP02 office parameters will be set as part of the TABXFR.
- a. Compare (delta) the parm changes to be applied by the FEATDATA file with the ordered parameters indicated in the *Parmmail*.
Note: PARMMAIL and PARMCHGS files are in the Applicator Package. All *new* and *changed* parm values as indicated in PARMMAIL are also listed in PARMCHGS (and FEATDATA).
 - b. If any parms need to be changed, edit the FEATDATA file to reflect the corrected parm values. TABXFR will use this file to set the parms.
 - c. **App/ACT** Once the FEATDATA file is verified correct, MATECOPY the file to inactive (mate) side SFDEV. This file will be processed after the parm tables restore.
-

Procedure 2
TABXFR setup

- 1 **App** Set up TRACECI to monitor TABXFR summary and error messages on the primary terminal (ACT).

- a. **ACT** > TRACECI DEVICE <device_name>
where <device_name> is the name of the device labeled INACT.
Response on the inactive side:
This device is selected for TRACEing
- b. **INACT** Mate> TRACECI TEST 'THIS IS A TEST'
"THIS IS A TEST" is output on the device selected above.
-

- 2 **App/INACT** Set up and initialize the TABXFR platform used to perform the table transfers.

- a. Mate> TABXFR
TABXFR: *{system response}*
- b. Mate> STOPIF 1
Table transfer will stop after this number of failures.
- c. Mate> LIMIT 25
Limits the number of failures allowed on a table.
- d. Mate> SETUP STANDARD
TABXFR type set to: STANDARD. *{system response}*

Note: The STATUS command can be used at any time while in the TABXFR increment to display information about the setup and status of the data transfer.

Procedure 3
Start TABXFR

- 1 **App** Start the data transfer using TABXFR as follows.

CAUTION

TABXFR will perform a mate-side memory check. If this test fails do not continue-immediately notify the site supervisor.
The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side.

- a. **INACT** Mate> TABXFR;STARTXFR;LOGOUT
TABXFR will perform an automatic restart reload after each of the following tables is transferred: DATASIZE, NNASST (or CMSHELF), and (conditionally) TRKMEM. Following the automatic restart, TABXFR will automatically start transferring the next table listed in table DART.

Note: A list of empty head tables is sent to the inactive side at the beginning of TABXFR. The applicator may also see empty sub tables that are not on the list being transferred. This is normal and is design intent.

- b. **ACT** If any table fails to restore properly on the mate side, TABXFR will stop (depending on STOPIF and LIMIT) and will identify the headtable/subtable position in error.

For any table in error investigate the problem by entering on the ACTIVE side:

> DELTA <table> NOFILE *{compares old and new tuples}*

or

> DELTA <table> SUB <subtable> NOFILE

- c. **INACT** Whenever it is necessary to login on the inactive (mate) side to correct an error, first *verify a flashing A1* on the inactive processor; then login on the mate side and make the needed changes.

- d. **INACT** Continue theTABXFR as follows. Also LOGOUT on the mate side (as above).

Mate> TABXFR;STARTXFR;LOGOUT

Note: Avoid unnecessary or prolonged logged-in sessions on the mate side while TABXFR is running.

Procedure 4
Copy patches

- 1 **Site/ACT** While the data transfer is running and as time allows, on the active side copy patches in store file to the new patch tape (or to disk) and XPM patches to disk.

Note: Following are steps to copy individual patches to tape or disk. You may instead create a file to automatically copy these patches.

- a. Install the new patch tape on a tape drive (x) with a write enable ring.
 - b. > LISTSF ALL
 - c. > MOUNT <x>;LIST T<x>
 - d. > COPY <sfdev_patch> T<x>
where <sfdev_patch> refers to patches in SFDEV listed in step 1.b.
 - e. Repeat COPY for each patch in SFDEV.
 - f. > DEMOUNT T<x>
 - g. > LISTSF ALL
 - h. List the disk volume where the XPM loads (and patches) normally reside.
 - i. > COPY <xpm_patch> <pload_disk>
where <xpm_patch> refers to XPM patches in SFDEV (format aaannXyy\$PATCH: aaa is alphabetic, nn is numeric, and yy is the BCS number), and where <pload_disk> is the XPM disk volume listed above. Do not perform if there are no XPM patches in SFDEV, if there are no XPMs or if there are no disks.
 - j. Repeat COPY for each XPM patch in SFDEV.
-

Procedure 5
TABXFR completed

- 1 **App** TABXFR is finished when you receive the following message.

INACT - completed D/R of office

Note: Do not perform the following step if PADNDEV data was manually restored *during* the TABXFR. (See procedure "Patch inactive.")

- 2 **ACT and INACT** On BOTH the active and inactive sides, change table PADNDEV back the way it was before patching the mate side.
-

Procedure 6
Login inactive

1 **App/INACT** *Verify a flashing A1 on the inactive processor.*

2 Login on the mate side as follows.

a. ACT

> MATEIO

> MATELOG <**device**>

where <device> is the name of the terminal labeled INACT.

b. INACT

Enter username and password *{mate-side response}*

Mate> OPERATOR OPERATOR

or Enter username

Mate> OPERATOR

Enter password

Mate> OPERATOR

Procedure 7
Print reports TABXFR

1 **App** Generate a final data transfer report. This will include both the table exception report and (with BCS36 and lower) the NTX package delta.

a. **ACT** Only if RECORD START was *not* done previously, type the following.

```
> RECORD START FROM <terminal_id> ONTO <printer>  
where <terminal_id> is the terminal device labeled INACT, and  
<printer> refers to a printer used to collect the data transfer  
information.
```

b. **INACT**

```
Mate> REPORT {still in TABXFR increment}
```

```
Mate> QUIT {quits out of TABXFR}
```

c. **ACT** Only if RECORD START was done in substep a (above), type the following.

```
> RECORD STOP FROM <terminal_id> ONTO <printer>  
where <terminal_id> and <printer> are the devices used above.
```

Procedure 8
Trapinfo inactive

1 App/INACT Type:

Mat> TRAPINFO

If a trap has occurred, do not continue until the trap is explained.

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PRESWACT procedure

This section details steps required to prepare for the CC activity switch to the new software load.

Procedure 1

BULLETINS before PRESWACT

- 1 **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning PRESWACT.
-

Procedure 2
Start PRESWACT

- 1 **App/ACT** Perform PRESWACT of BCSUPDATE.

Note: Please logout all users on the inactive side while PRESWACT is running.

```
> BCSUPDATE
> PRESWACT
```

- 2 Read the following notes, and continue the procedure while PRESWACT is running.

Note 1: PRESWACT runs all steps required before the CC switch of activity and flags them as completed when they pass. If any error occurs, PRESWACT will stop and give instructions. If this is the case, follow PRESWACT instructions to correct the problem (contact the site supervisor if necessary).

As an example:

```
TABLE_DELTA          executing
:
Table AMAOPTS *** Checksum incorrect, keys incorrect
:
TABLE_DELTA          not complete

ACT - Error: Inactive table data did not match.
Correct error condition. Enter Preswact to continue
```

For any table in error, investigate the problem by entering:

```
> DELTA <table> NOFILE          {compares new/old tuples}
```

or > DELTA <table> SUB <subtable> NOFILE

To continue, run PRESWACT again by entering:

```
> PRESWACT
```

Note 2: A hardware conversion (such as LTC/LTCI) scheduled concurrently with the BCS upgrade will require certain table changes, additions or deletions. PRESWACT step TABLE_DELTA will detect a mismatch between the old and new data, and will stop, indicating an error. If this is the case, confirm the table differences are due to the conversion, resolve any differences, and run PRESWACT again (type >PRESWACT) to continue.

-continued-

Procedure 2
Start PRESWACT (continued)

Note 3: PRESWACT step TABLE_DELTA may also display an informative message without stopping. When this occurs, it is not considered an error; rather, it is an indication that something is different in the old and new BCS loads. Note the information displayed, and at a convenient stopping point, compare the old and new loads to understand and validate the differences. *As an example:*

```
TABLE_DELTA           executing
:
Table ATTCONS Checksum incorrect, keys match
:
TABLE_DELTA           complete
```

Procedure 3
PRESWACT DIRP and billing

Site and software delivery engineer should work together to prepare both PRIMARY and PARALLEL DIRP billing subsystems for the CC switch of activity (SWACT). This procedure gives the steps to accomplish this preparation.

Note: Site can begin doing this procedure while the Applicator continues with other PRESWACT procedures.

1.0 Disk drive parallel DIRP coming from BCS31 and lower

- a. **Site/ACT** In table DIRPSSYS determine which disks are being used for parallel DIRP recording.

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

- b. For a parallel volume that is on DISK, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS by replacing the volume name with nil volume (\$).
- c. Copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.
- d. Erase all closed parallel DIRP files from the disk:
> CLEANUP FILE <parallel_filename>
where <parallel_filename> is each file to be erased.
- e. Reformat the parallel disk volume:
> DIRPPFMT <parallel_volume>
where <parallel_volume> is the original volume name.
- f. If to_BCS 32 and higher, rename the first file on the reformatted parallel volume (created by the "dirppfmt" command). Using the "renamefl" command, change the file name from "DIRPPARALLEL" to "B000000000000" (12 zeros).
- g. **Site and App/INACT** If from_BCS 31, ensure that parallel disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

-continued-

Procedure 3
PRESWACT DIRP and billing (continued)

1.1 Disk drive parallel DIRP coming from BCS32 and higher

Note: If from_BCS 32 and higher, Site no longer has to take down parallel billing if on disk.

Site and App/INACT Ensure that parallel disk volumes are in table DIRPPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPPOOL on the inactive side before SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPPOOL_CHECK displays the datafill for table DIRPPPOOL on the inactive side.

If from_BCS 33 and lower, PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPPOOL.

DIRP will recover parallel recording to disk on the newly-active side after SWACT.

CAUTION

Recently recorded parallel data may be overwritten.

Site should copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.

- If a single parallel volume is in use, information on the volume will be lost over SWACT.
- If more than one parallel volume is allocated to DIRP, DIRP will start recording after SWACT on the volume with the oldest time stamp. Hence information on that volume will be lost over SWACT.

2 Disk drive PRIMARY billing

- a. **Site/ACT** If on disk (DDU), from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR).
- b. If required by Telco policy copy unprocessed DIRP files to back-up tape (using DIRPAUTO or DIRPCOPY commands).
- c. Verify that table DIRPHOLD contains no unprocessed billing files (if DIRPAUTO was used above).

-continued-

Procedure 3
PRESWACT DIRP and billing (continued)

- d. **Site and App/INACT** If from_BCS 32 and higher, ensure that regular disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

3 Tape drive PRIMARY billing

- a. **Site/ACT** If on tape (MTD), from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR), CLOSE the standby file, and DMNT the standby volume.

Example:

```
> ROTATE AMA
> CLOSE AMA STDBY 1
> DMNT AMA T1                                     {standby volume}
```

- b. Remove the demounted standby tape from the tape drive, and put up a new tape to be used as the next DIRP volume.
- c. Prepare a new standby volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
where <x> is the standby device number, and <volume_id> is the
name of the standby volume.
```

If prompted enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then select an unused or expired tape for formatting.

```
> DEMOUNT T<x>
```

Leave the standby volume at load point and ON LINE. Immediately following SWACT, it will become the ACTIVE volume of the appropriate subsystem.

- d. **Site and App/INACT** If from_BCS 32 and higher, ensure that regular tape volumes are in table DIRPPOOL on the inactive side. This allows the tape to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

-continued-

Procedure 3
PRESWACT DIRP and billing (continued)

4.0 DPP/BMC PRIMARY billing coming from BCS31 and lower

- a. **Site/ACT** If on DPP or BMC, from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR), CLOSE the standby file, and DMNT the standby volume.

Note: DIRP sees DPP/BMC as a tape drive port.

- b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

```
> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
```

This re-establishes the block header on the DPP.

- c. Display current DPP settings to hardcopy (retain for POSTSWACT).

- d. Prepare a new standby volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
```

where <x> is the standby device number, and <volume_id> is the name of the standby volume.

If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)" then enter:

```
> ERASTAPE <x>
```

where <x> is the standby device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

System response is:

```
***WARNING, THIS TAPE WILL BE ERASED***
```

CAUTION

At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.

If a mistake is made, a real tape could be erased.

Enter YES to confirm the command.

```
> DEMOUNT T<x>
```

If ERASTAPE command was used, repeat this substep (d) to rename the volume.

Leave the standby volume demounted. Immediately following SWACT, it will become the ACTIVE volume of the appropriate subsystem.

-continued-

**Procedure 3
PRESWACT DIRP and billing (continued)**

- e. **Site and App/INACT** If from_BCS 31, ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

```
Mate> TABLE DIRPPOOL; POS <pool_#>  
where <pool_#> is the number for DPP AMA pool.
```

If going to BCS32 and higher CHANGE field DEVTYPE in table DIRPPOOL to DPP (not TAPE).

CAUTION

**Starting in BCS32 in a pool of DPP or BMC volumes,
field DEVTYPE in table DIRPPOOL should be DPP (not TAPE).**
Otherwise, if datafilled as TAPE you will have to recover the volume manually after SWACT.

- f. **Site and App/ACT** If SMDR recording is on BMC (datafilled as TAPE in table DIRPSSYS/DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY volume. In table DIRPSSYS/DIRPPOOL add the TAPE device as a standby BMC. Also add the device in DIRP_REC (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

Note: Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

- g. **Site and App/INACT** Verify the DIRP_REC file on the inactive side is correct for the SWACT to the new BCS load.

```
Mate> LISTSF ALL
```

```
Mate> PRINT DIRP_REC
```

If necessary, edit DIRP_REC to make corrections.

-continued-

Procedure 3 PRESWACT DIRP and billing (continued)

If going to BCS32 and higher, *delete* the DPP tuple in the DIRP_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

```
Mate> EDIT DIRP_REC
Mate> DOWN '<poolname>'      {name of the pool using the DPP}
Mate> DELETE
Mate> ERASESF DIRP_REC
Mate> FILE SFDEV DIRP_REC
```

4.1 DPP/BMC PRIMARY billing coming from BCS32 and higher

- a. **Site/ACT** Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

```
> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
This re-establishes the block header on the DPP.
```

- b. **Site and App/ACT** If SMDR recording is on BMC (datafilled as TAPE in table DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY TAPE volume. In table DIRPPOOL add the TAPE device as a standby BMC. Also add the device on the inactive side (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

Note: Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

- c. **Site and App/INACT** Ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

```
Mate> TABLE DIRPPOOL;POS <pool_#>
where <pool_#> is the number for DPP AMA pool.
```

-continued-

**Procedure 3
PRESWACT DIRP and billing (continued)**

Verify field DEVTYPE in table DIRPPOOL is DPP (not TAPE).

CAUTION

**Starting in BCS32 in a pool of DPP or BMC volumes,
field DEVTYPE in table DIRPPOOL should be DPP (not TAPE).**
Otherwise, if datafilled as TAPE you will have to recover the volume
manually after SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK
displays the datafill for table DIRPPOOL on the inactive side.

5.0 Tape drive parallel DIRP coming from BCS33 and lower

- a. **Site/ACT** In table DIRPSSYS or DIRPPOOL determine which MTDs
are being used for parallel DIRP recording.

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the
parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

Note: TAPEX cannot be used for parallel recording.

- b. For a parallel volume that is on TAPE, CLOSE the parallel file and
DMNT the volume from the DIRP level. Remove the volume from table
DIRPSSYS or DIRPPOOL by replacing the volume name with nil
volume (\$). Physically remove the tape from the drive.

- c. Replace these tapes with freshly formatted, empty tapes.

Note: This substep can also be done after the CC switch of activity
(during POSTSWACT) if the tape drive is needed for other purposes.

Prepare each new parallel volume as follows.

```
> MOUNT <x> FORMAT <volume_id>  
where <x> is the parallel device number, and <volume_id> is the name  
of the parallel volume.
```

```
> DEMOUNT T<x>
```

Leave the tape at load point and ON LINE so it can be activated as the
new PARALLEL device after SWACT.

-continued-

Procedure 3 PRESWACT DIRP and billing (continued)

5.1 Tape drive parallel DIRP coming from BCS34 and higher

Note: This step can be used to automatically recover parallel volumes after the SWACT. Alternatively, you can do the previous step if you wish to wait until after the SWACT to format the new parallel volumes.

- a. **Site/ACT** In table DIRPPOOL determine which MTDs are being used for parallel DIRP recording. PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.
- b. For a parallel volume that is on TAPE, demount all EXCEPT the current parallel volume from table DIRPPOOL by replacing the volume name in DIRPPOOL with nil volume (\$). Then physically remove the tape from the drive.
- c. Replace these tapes with freshly formatted, empty tapes.

Prepare each new parallel volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
where <x> is the parallel device number, and <volume_id> is the name
of the parallel volume.
```

```
> DEMOUNT T<x>
```

Leave the tape at load point and ON LINE so it can be activated as the new PARALLEL device after SWACT.

- d. **Site and App/INACT** Ensure that parallel tape volumes are in table DIRPPOOL on the inactive side. This allows the tape to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

- If a single parallel volume is used for recording, the volume will be dropped over SWACT.

- If multiple tape volumes are in use for parallel recording, the volume in use before the SWACT will be dropped from DIRP and a freshly-formatted, empty volume will be used for recording.

6.0 DPP/BMC parallel DIRP coming from BCS33 and lower

In BCS32 or BCS33 DIRP no longer supports parallel AMA recording on a DPP or BMC volume, UNLESS device type TAPE is used in table DIRPPOOL (in which case you must manually recover the DPP after SWACT).

- a. **Site/ACT** In table DIRPSSYS or DIRPPOOL identify which DPP/BMC(s) is being used for parallel DIRP recording.

-continued-

Procedure 3
PRESWACT DIRP and billing (continued)

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

- b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

```
> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA  
This re-establishes the block header on the DPP.
```

- c. Display current DPP settings to hardcopy (retain for POSTSWACT).
- d. For a parallel volume that is on DPP or BMC, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS or DIRPPOOL by replacing the volume name with nil volume (\$).
- e. Prepare each new parallel volume as follows.

```
> MOUNT <x> FORMAT <volume_id>  
where <x> is the parallel device number, and <volume_id> is the name of the parallel volume.
```

If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)" then enter:

```
> ERASTAPE <x>  
where <x> is the parallel device number.
```

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect data collected by the DPP/BMC. It only resets DMS indicators.

System response is:

```
***WARNING, THIS TAPE WILL BE ERASED***
```

CAUTION

At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
If a mistake is made, a real tape could be erased.

Enter YES to confirm the command.

```
> DEMOUNT T<x>
```

If ERASTAPE command was used, repeat this substep (e) to rename the volume.

Leave the billing volume in this state so it can be activated as the new PARALLEL volume following SWACT.

-continued-

Procedure 3
PRESWACT DIRP and billing (continued)

- f. **Site and App/INACT** If to_BCS 32 and higher, ensure that parallel DPP/BMC volumes are in table DIRPPOOL on the inactive side. This allows the DPP/BMC to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.
- g. **Site and App/INACT** If to_BCS 32 and higher, for the parallel DPP tuple in table DIRPPOOL change field DEVTYPE to TAPE (not DPP).
- h. **Site and App/INACT** Verify the DIRP_REC file on the inactive side is correct for the SWACT to the new BCS load.

```
Mate> LISTSF ALL
```

```
Mate> PRINT DIRP_REC
```

If necessary, edit DIRP_REC to make corrections.

If going to BCS32 and higher, *delete* the DPP tuple in the DIRP_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

```
Mate> EDIT DIRP_REC
```

```
Mate> DOWN '<poolname>'      {name of the pool using the DPP}
```

```
Mate> DELETE
```

```
Mate> ERASESF DIRP_REC
```

```
Mate> FILE SFDEV DIRP_REC
```

6.1 DPP/BMC parallel DIRP coming from BCS34 and higher

In BCS34 and higher DIRP no longer supports parallel AMA recording on a DPP or BMC volume. Table control prohibits the filling of devtype DPP in a parallel pool.

Procedure 4
Data extension

1 **App/INACT** For a DATA EXTENSION only-Once PRESWACT step MATE_RESTART_RELOAD (or step MATE_RESTART prior to BCS35) has completed, perform the following workaround. This allows the new trunks to remain in the INB state after SWACT.

a. Log into the inactive side.

b. Mate> LISTSF ALL

Note: The file 'NEWTRKS' should be in storefile. This file is created by Loadbuild to identify all the trunks added for the Data Extension.

c. Mate> MAPCI NODISP;MTC;TRKS;TTP

d. Mate> COMMAND PTBI (POST T @1 @2;FRLS;BSY INB)

e. Mate> READ NEWTRKS

f. Mate> QUIT ALL

Procedure 5
Login inactive

1 **App/INACT** *Verify a flashing A1 on the inactive processor.*

2 Login on the mate side as follows.

a. ACT

> MATEIO

> MATELOG **<device>**

where <device> is the name of the terminal labeled INACT.

b. INACT

Enter username and password *{mate-side response}*

Mate> OPERATOR OPERATOR

or Enter username

Mate> OPERATOR

Enter password

Mate> OPERATOR

Procedure 6
Logout DNC

- 1 **Site and App/ACT** If DNC is in use (feature package NTX560), have Telco confirm that all DNC end users have been contacted and are logged out.
-

Procedure 7
Table CRSFMT alarm

- 1 **App/ACT** In table CRSFMT, field ALARM, if any entry is set to 'Y', then the device must also be allocated in table DIRPPOOL. Otherwise, set it to 'N'.

Note: If a volume is allocated in DIRPPOOL it is being used.

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SWACT and POSTSWACT procedure

This section details steps required to perform a CC switch of activity (SWACT), test the new load, and complete the software delivery process.

Procedure 1 BULLETINS before SWACT

- 1 **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning the SWACT.
-

Procedure 2
Before SWACT

- 1 **Site** Do not proceed until both the Telco and NT on-line support agree.

- 2 **Site** Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

- 3 **Site** Ensure no further activity is performed on the DPP, including DPP polling or disk backup. Inform the downstream processing center.

- 4 **Site** Disable all polling and periodic testing. There is to be no activity on the SuperNode CM, MS, and CLOCK or NT40 CC and CMC until cleared by the software delivery engineer. Failure to comply may result in a system restart.

- 5 **Site** Dump the SPMS register information to a printer (or other device) according to Telco practice.

- 6 **Site** Disconnect any ISDN Digital Test Access (DTA) monitors. (Reference NTP 297-2421-300.)

CAUTION

If DTA monitor is left connected over the SWACT, it will not be possible to reconnect it without first reloading the PM from CC data.

- a. Enter the LTPDATA level of MAP.
- b. Query all DTA monitors on the switch by issuing the command,

```
> EQUIP DTA QUERY ALL
```
- c. If the DMS responds with "No DTA equipment reserved on switch" then no further action is needed.
- d. Make note of any connected monitors by looking at the CONNECT field of the query display.

Use the POST command to post each monitored LEN, and then issue the command,

```
> CONNECT <N> RLS
```

where <N> is the integer number of the monitor from the first column of the query display.

Do this for each connected monitor. Repeat substep b as necessary to review DTA status.

-continued-

Procedure 2
Before SWACT (continued)

- e. Reset all monitor LENS and DS0 channels by issuing the command,

```
> EQUIP DTA RESET <N>
```

where <N> is the integer number of the monitor from the first column of the query display.
Do this until no equipment is left "Equipped." Repeat substep b as necessary to review DTA status.

-
- 7 Site** If BCS35, ensure Bit Error Rate Tester (BERT) is not running. BERT is a manual action used to test the quality of a CCS7 link.

CAUTION

In BCS35 BERT should not be left running during the CC SWACT. Otherwise, the link will hang up over the SWACT.
If BERT is left running over the SWACT, you will have to go into the PM level, post the offending LIU7/MSB7, and BSY and RTS it.

- a. To determine if BERT is on: Go into C7LKSET level and post each linkset in turn. The link state should not indicate 'BERT'.
 - b. To turn off BERT, go into the C7LKSET level and post the linkset. Go into C7BERT level and type STOP <linkno>.
-
- 8 App** Do not swact during CMC REX test. Failure to comply may result in a system restart.
- a.

```
> TABLE OFCENG;POS CMC_REX_SCHEDULED_HR;QUIT
```

The parameter will range from 0 to 23: 0 being midnight and 23 being 2300 hours.
 - b. Do not swact the office between the CMC_REX_SCHEDULED_HR and 30 minutes after.
Example: If CMC_REX_SCHEDULED_HR is set to 0, then do not swact between 0000 and 0030 hours.
 - c. Verify Telco did complete step 4 above-Disable all polling and periodic testing.
-

Procedure 3
Restore special logs

Special logs (suppressed logs or logs with a threshold) are set up in LOGUTIL on a per-site basis. These do not get restored to the new load. This procedure manually restores any special logs on the new load.

Note: A restart/reload on the mate side will cause suppress/threshold settings to be lost. If a mate restart occurs before the switch of activity, verify the settings are present and, if not, repeat this procedure.

1 App/ACT List all special logs on the active side.

```
> LOGUTIL  
> LISTREPS SPECIAL
```

Example output:

```
LINE 138 7 INFO TRMT *thresh= 25*  
PM 189 5 INFO PM SW Information... *supp*
```

2 App/INACT Restore special logs on the mate side.

```
Mate> LOGUTIL  
Mate> LISTREPS SPECIAL
```

Commands to restore above example:

```
Mate> THRESHOLD 25 LINE 138  
Mate> SUPPRESS PM 189
```

3 App/INACT Verify the correct logs are set up and match the active load.

```
Mate> LOGUTIL  
Mate> LISTREPS SPECIAL
```

Procedure 4
Start logs

- 1 **App/ACT** Set up LOGS for the SWACT.

Note: The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.

- a. > LOGUTIL; STOP
 - b. > DELDEVICE <device>
where <device> is where logs are to be routed.
 - c. > ADDRIP <device> SWCT {also add SWNR if on BCS30 and lower}
 - d. > START
This starts logs on "this" device. If a different terminal device was selected above, then use >STARTDEV <device>.
 - e. > LEAVE
-

Procedure 5
Release JAM NT40

UNJAM the processors in preparation for the CC switch of activity (SWACT).

- 1 **Site and App/INACT** Verify the inactive side is flashing A1.

- 2 **Site/INACT** On inactive CCC, shelf 51, card location 16 (NT1X48), place the *Dact* switch to the *left* (UNJAMMED).

- 3 **Site/ACT and INACT** On both sides (same card), also verify the *Enab* switches are down and the thumbwheels are on 5.

Procedure 6
Establish mate communication NT40

- 1 **App/ACT** Establish communication with the mate (inactive) side.
> MCR RTS
-

Procedure 7
SWACT

Refer to "CC Warm SWACT Summary" in *Appendix A* for a description of the CC warm SWACT process. Also refer to *Appendix B* for a procedure for testing call survivability over a CC warm SWACT and to *Appendix C* for sample test call scripts.

Note: Only "simple" 2-port and echo calls that are in a stable talking state (that is, not in a transition state such as dialing) will survive a CC warm SWACT. Survival means that the call is kept up until the next signaling message is received (usually, for example, a terminate message, but on any other message as well, such as an attempt to use the conference feature).

- 1 **App/ACT** Wait a *minimum* of 10 minutes after the *completion* (flashing A1) of the last RESTART on the inactive side before entering the appropriate switch of activity (SWACT) command (below).

CAUTION
FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a controlled SWACT.
Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

CAUTION
After a CC warm SWACT do not JAM the inactive CPU RTIF.
The system requires the JAM status to be clear on both CPUs in order to recover successfully. Recovery is indicated with a SWCT 101 log.

-
- 2 **App/ACT** INTERNATIONAL offices switch CC activity (SWACT) as follows. All others go to step 3.

Note: This step is valid if the NTX470AA (International Common Basic) package is built into the load.

> INTLSWCT ; DATE ; RESTARTSWCT {only for INTL offices}

-continued-

Procedure 7
SWACT (continued)

3 App/ACT All other offices switch CC activity (SWACT) with CC warm SWACT as follows.

a. For BCS36 and higher type:

> BCSUPDATE ; SWACTCI ; QUERYSWACT

System prompt will tell you which SWACT command to use, either NORESTARTSWACT or RESTARTSWACT:

> DATE ; NORESTARTSWACT

Respond (yes/no) to system prompt using lower-case.

or else,

> DATE ; RESTARTSWACT

b. For BCS35 and lower type:

> BCSUPDATE ; SWACTCI ; DATE ; RESTARTSWACT *{for BCS33-BCS35}*

> BCSUPDATE ; SWCT ; DATE ; RESTARTSWCT *{for BCS31 or BCS32}*

> SWCT ; DATE ; RESTARTSWCT *{for BCS30 and lower}*

System response varies with the BCS level, but the following prompt is a typical example.

ACTIVE DEFAULT SETTINGS :

FORCESWACT set ON

LOADEXECs set ON

NOMATCH set OFF

Do you wish to continue?

Please confirm ("YES" or "NO"):

...Starting Warm SWACT now.

4 Site/ACT Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

CAUTION

Work quickly to complete the procedures to follow.
 The POSTSWACT steps will verify that the office is functioning normally with the new software load.

Procedure 8
Start POSTSWACT

CAUTION

After a CC warm SWACT do not JAM the inactive CPU RTIF.
The system requires the JAM status to be clear on both CPUs in order to recover successfully. Recovery is indicated with a SWCT 101 log.

App/ACT Login, check the date and time, and start POSTSWACT.

- 1 Type:
<break>

 - 2 ?LOGIN
Enter username and password *{system response}*
> <username> <password>
 - or
> <username>
> <password>

 - 3 > DATE
Verify the date and time are correct.

 - 4 Reestablish recording onto devices (console session) as required.

 - 5 > BCSUPDATE ; POSTSWACT
POSTSWACT runs all steps required after the CC switch of activity and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. If this is the case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue.
If no problems are encountered, POSTSWACT stops after BEGIN_TESTING and waits until the site verifies the sanity of the current load.
-

Procedure 9 Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1 > MAPCI ;MTC ; IOD ; DIRP
> QUERY AMA ALL *{note which volume is ACTIVE}*

2 If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3 TAPEX volumes must be manually remounted using the DIRP MNT command.

4 Assign standby billing devices for TAPE and DPP/BMC.

a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.

b. > MOUNT <x> FORMAT <stdby_volume>
where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.

Example: MOUNT 3 FORMAT DPPAMA

c. Enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then enter:

> ERASTAPE <x>
where <x> is the standby device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

System response is:

WARNING, THIS TAPE WILL BE ERASED

CAUTION

**At this point again confirm the device is a port to a DPP or BMC,
and NOT an unexpired billing tape.**

If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-

Procedure 9
Recover billing (continued)

- d. > DEMOUNT T<x>
 - e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.
 - f. Repeat this entire step for each standby billing subsystem.
-

5 Activate standby devices.

- a. > MNT <subsystem> <x> {still in DIRP level}
Example: MNT AMA 3
Enter YES to confirm the command.
 - b. > QUERY AMA {to confirm standby volume is available}
 - c. Repeat this step for each billing subsystem.
-

6 If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)

* If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

Note: Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

7 Bring up parallel devices (as required) using the preformatted volumes.

- a. For BCS31 and lower:
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.
Example:
TABLE DIRPSSYS;POS AMA
CHA PARVOL T4
or CHA PARVOL D010PAMA
- b. For BCS32 and higher:
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.
Example:
TABLE DIRPSSYS;POS AMA

In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

-continued-

Procedure 9
Recover billing (continued)

Examples:

TABLE DIRPPool; POS 62 (*pool for AMAPOOL*)

CHA VOLUME23 T4

or CHA VOLUME23 D010PAMA

- c.** Repeat substep a or b for each parallel volume to be activated.
 - d.** > QUIT MAPCI
-
- 8** Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
-

Procedure 10
Display DPP settings

App/ACT Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1 > MAPCI NODISP;MTC;IOD;DPP AMA

2 > COLLPSW

Note: If different, perform steps 3 and 4; otherwise go to step 5.

3 > COLLPSW 1 <4_digits> <6_digits>

4 > COLLPSW 2 <4_digits> <6_digits>

5 > AMATPSW

Note: If different, perform step 6; otherwise, go to step 7.

6 > AMATPSW <4_digits> <6_digits>

7 > AMAHRS

Note: If different, perform step 8; otherwise, go to step 9.

8 > AMAHRS <start_hour> <end_hour>

9 > VALPARM INVALID

Note: If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT

Note: If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.

Procedure 11
INI trunks

App/ACT If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1 > MAPCI ; MTC ; TRKS ; TTP

2 > POST A INI

3 > REPEAT <**x**> (FRLS ; RTS ; NEXT)
where <x> is the number of INI trunks in the posted set.

Procedure 12
Restart inactive POST NT40

Prepare the inactive side for a revert to the old BCS load.

Note: A restart on the inactive side is done at this time in order to save time in the event that a revert to the old load should become necessary.

- 1 **Site/INACT** Locate the NT1X48 card with the *Inact* LED lit. Move the *enab* switch up.

- 2 **Site/INACT** Perform a restart reload on the inactive processor (old BCS load).
 - a. Thumbwheel 3, RESET
flashes 33
 - b. Thumbwheel 7, NO RESET
flashes 77, then initializes
 - c. When the inactive processor starts to initialize, set thumbwheel back on 5, NO RESET.

- 3 **Site/INACT** Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

- 4 **Site/INACT** Move the *Enab* switch back down.

- 5 **App/INACT** Confirm that the inactive processor is flashing A1.

Procedure 13
DRTIME statistics

- 1 **App/ACT** Get a hardcopy of DRTIME statistics (if needed).

> DRTIME PRINT

DRTIME provides statistics on the BCS application. If requested, the information should be forwarded to the appropriate Northern Telecom department.

Procedure 14
Do Test Calls

- 1 **Site/ACT** Perform TEST CALLS that were identified ahead-of-time from *Appendix C: Test Call Scripts*.

CAUTION

If an abort becomes necessary due to critical test failures, revert to the old load using the *Revert to the old load* procedure; otherwise, continue.

Note: Verify AMAB logs in conjunction with certain AMA test calls.

Procedure 15
After testing is complete SYNC NT40

POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. After SITE accepts the current load, then put the processors in sync as follows.

Note: Do not enter POSTSWACT again until the processors are in sync.

- 1 **Site/ACT and INACT** On each CCC, shelf 51, card location 16 (NT1X48), ensure the *Enab* switches are down, the *Dact* switches are to the left (unjammed), and the thumbwheels are on 5.

- 2 **App/ACT** > MAPCI;MTC;CC;PS <i>
where <i> is the inactive program store.

- 3 > COPY <m>
where <m> is the PS module. Start at zero (0).

- 4 Repeat substep 3 for each PS module equipped.

- 5 > QUIT;SYNC NOTTRACEPOINT *{if BCS31 and higher}*
> YES *{for confirmation}*
Note: The SYNC NOTTRACEPOINT command should be used in BCS31 and higher (patch is required if BCS31 or 32). If lower than BCS31 then use SYNC command as usual.

- 6 > QUIT MAPCI

Procedure 16
Finish POSTSWACT

- 1 **App/ACT** If necessary run POSTSWACT one more time to completion.
 > BCSUPDATE ; POSTSWACT
 At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

- 2 **Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

- 3 **App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

- 4 **Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

- 5 **Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

- 6 **Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

- 7 **Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

- 8 **Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

- 9 **Site/ACT** Return PORTS and USER information back to original values.

- 10 **Site/ACT** Notify DNC end users to LOGIN the DNC.

Procedure 17
Take image NT40

- 1** **Site/ACT** DUMP AN IMAGE of the new BCS load for backup-one NT40 IMAGE to disk and backup image copied to tape.

- 2** After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to 'OFF' during the ONP.

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.

Procedure 18
Start journal file

- 1 **Site/ACT** If equipped, start journal file and verify started.
 - a. > JF START
 - b. > MAPCI ; MTC ; IOD ; DIRP
 - c. > QUERY JF ALL
QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
 - d. > QUIT ALL
-

Revert to old load procedure

This section details steps required to revert to the old BCS load.

Perform the following procedure if a controlled REVERT is required after the CC switch of activity (SWACT).

Remember, the CPU with the new BCS load is now *active*. You will be going back to the old BCS load which is now *inactive*.

Procedure 1 **Before REVERT**

- 1 **Site** Do not proceed until both the Telco and NT on-line support agree.

- 2 **Site** Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

Procedure 2
Restart inactive NT40 2

CAUTION

Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.

- 1 **Site/INACT** Perform a restart reload on the inactive processor (old BCS load).
 - a. Thumbwheel 3, RESET
flashes 33
 - b. Thumbwheel 7, NO RESET
flashes 77, then initializes
 - c. When the inactive processor starts to initialize, set thumbwheel back on 5, NO RESET.
 - d. Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.
-
- 2 **App/INACT** Confirm that the inactive processor is flashing A1.
-

Procedure 3
Establish mate communication NT40

- 1 **App/ACT** Establish communication with the mate (inactive) side.
 > MCR RTS
-

Procedure 4
Login inactive

1 **App/INACT** *Verify a flashing A1 on the inactive processor.*

2 Login on the mate side as follows.

a. **ACT**

> MATEIO

> MATELOG <device>

where <device> is the name of the terminal labeled INACT.

b. **INACT**

Enter username and password *{mate-side response}*

Mate> OPERATOR OPERATOR

or Enter username

Mate> OPERATOR

Enter password

Mate> OPERATOR

Procedure 5
TRACECI close

- 1 **App/INACT** If old load (inactive side) is BCS34 or lower, then close out the old active MOVEBCS/TABXFR message file.

Mat> TRACECI CLOSE

{for BCS34 and lower}

Procedure 6
Configure DIRP billing

- 1 **Site/App** Configure the DIRP billing subsystems for revert SWACT to the old load.

Note: For details for completing the following refer to "PRESWACT DIRP and billing" procedure.

- a. **ACT** Take down billing tapes and format new standby volumes in DIRP. Leave these demounted, they will become the active volumes after SWACT.

Disk volumes will rotate and recover automatically after SWACT.

Parallel volumes on tape (or DPP/BMC) can be recovered manually after SWACT.

- b. **INACT** If reverting to BCS31 or higher:

Ensure datafill is correct on the mate side for tables DIRPPOOL or DIRPSSYS.

- c. **INACT** If DIRP_REC file is present in mate SFDEV, ensure each entry in DIRP_REC is correct for the revert SWACT.

Note: In DIRP_REC the parallel volume assignments for DIRPPOOL should be set to nil (\$) for all pools.

Procedure 7
Start logs

- 1 **App/ACT** Set up LOGS for the SWACT.

Note: The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.

- a. > LOGUTIL; STOP
 - b. > DELDEVICE <device>
where <device> is where logs are to be routed.
 - c. > ADDREP <device> SWCT *{also add SWNR if on BCS30 and lower}*
 - d. > START
This starts logs on "this" device. If a different terminal device was selected above, then use >STARTDEV <device>.
 - e. > LEAVE
-

5-114 Revert to old load procedure (continued)

Procedure 8
Ensure inactive unjammed

- 1** **Site and App/INACT** Ensure inactive side is *unjammed*.
-

Procedure 9 Revert

- 1 **App/ACT** Wait a MINIMUM of 10 minutes after the COMPLETION (flashing A1) of the last restart on the inactive side before entering the ABORT-SWACT, ABORTSWCT, or RESTARTSWCT command.

CAUTION

FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a CC warmSWACT.
Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

- 2 **App/ACT** INTERNATIONAL offices switch CC activity (SWACT) as follows.

Note: This step is valid if the NTX470AA (International Common Basic) package is built into the load.

> INTLSWCT ; DATE ; RESTARTSWCT *{only for INTL offices}*

- 3 **App/ACT** ALL OTHER offices switch CC activity (SWACT) with CC warm-SWACT as follows.

CAUTION

If a SWACT application module exists on the new, active side, but is missing from the old, inactive side, the revert SWACT may fail.

If reverting to BCS32 and higher, any SWACT applications missing from the inactive side will automatically be overridden.

If reverting to BCS31 and lower, SWACT will fail for any SWACT applications missing from the inactive side. In this case, any SWACT application missing from the inactive side must be *unloaded from the active side* in order for the revert-back to succeed. If you are unloading a module in a load prior to BCS30, use the SWCTCHK command before performing the revert-back.

-continued-

Procedure 9
REVERT (continued)

> BCSUPDATE ; SWACTCI ; DATE ; ABORTSWACT *{for BCS33 and higher}*

CAUTION

In BCS34 and higher the ABORTSWACT command has an option called NOCHECK which will allow the CC warm SWACT to continue even if there are bad devices on the active side (such as a CBSY LTC). Use the NOCHECK option *only* as a last resort and with special care taken to ensure office integrity.

> BCSUPDATE ; SWCT ; DATE ; ABORTSWCT *{for BCS31 or BCS32}*

> SWCT ; DATE ; RESTARTSWCT *{for BCS30 and lower}*

System response varies with the BCS level, but the following prompt is a typical example.

```
ACTIVE DEFAULT SETTINGS :
FORCESWACT set ON
LOADEXECES set ON
NOMATCH set OFF
Do you wish to continue?
Please confirm ("YES" or "NO"):
...Starting Warm SWACT now.
```

-
- 4 Site/ACT** Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

CAUTION

Work quickly to complete the procedures to follow.
The POSTSWACT steps will verify that the office is functioning normally with the new software load.

Procedure 10
Start POSTSWACT

App/ACT Login, check the date and time, and start POSTSWACT.

- 1 Type:
<break>

 - 2 ?LOGIN
Enter username and password *{system response}*
> <username> <password>
or > <username>
> <password>

 - 3 > DATE
Verify the date and time are correct.

 - 4 Reestablish recording onto devices (console session) as required.

 - 5 > BCSUPDATE ; POSTSWACT
POSTSWACT runs all steps required after the CC switch of activity and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. If this is the case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue.
If no problems are encountered, POSTSWACT stops after BEGIN_TESTING and waits until the site verifies the sanity of the current load.
-

Procedure 11
Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1 > MAPCI ; MTC ; IOD ; DIRP
> QUERY AMA ALL *{note which volume is ACTIVE}*

2 If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3 TAPEX volumes must be manually remounted using the DIRP MNT command.

4 Assign standby billing devices for TAPE and DPP/BMC.

a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.

b. > MOUNT <x> FORMAT <stdby_volume>
where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.

Example: MOUNT 3 FORMAT DPPAMA

c. Enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then enter:

> ERASTAPE <x>
where <x> is the standby device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

System response is:

WARNING, THIS TAPE WILL BE ERASED

CAUTION

**At this point again confirm the device is a port to a DPP or BMC,
and NOT an unexpired billing tape.**

If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-

Procedure 11
Recover billing (continued)

- d. > DEMOUNT T<x>
 - e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.
 - f. Repeat this entire step for each standby billing subsystem.
-
- 5** Activate standby devices.
- a. > MNT <subsystem> <x> {still in DIRP level}
Example: MNT AMA 3
 Enter YES to confirm the command.
 - b. > QUERY AMA {to confirm standby volume is available}
 - c. Repeat this step for each billing subsystem.
-
- 6** If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)
- * If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.
- Note:** Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).
-
- 7** Bring up parallel devices (as required) using the preformatted volumes.
- a. For BCS31 and lower:
 In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.
Example:
 TABLE DIRPSSYS;POS AMA
 CHA PARVOL T4
 or CHA PARVOL D010PAMA
 - b. For BCS32 and higher:
 In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.
Example:
 TABLE DIRPSSYS;POS AMA

 In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

-continued-

Procedure 11
Recover billing (continued)

Examples:

TABLE DIRPPPOOL; POS 62 (*pool for AMAPOOL*)

CHA VOLUME23 T4

or CHA VOLUME23 D010PAMA

- c. Repeat substep a or b for each parallel volume to be activated.
 - d. > QUIT MAPCI
-
- 8** Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
-

Procedure 12
Display DPP settings

App/ACT Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1 > MAPCI NODISP;MTC;IOD;DPP AMA

2 > COLLPSW

Note: If different, perform steps 3 and 4; otherwise go to step 5.

3 > COLLPSW 1 <4_digits> <6_digits>

4 > COLLPSW 2 <4_digits> <6_digits>

5 > AMATPSW

Note: If different, perform step 6; otherwise, go to step 7.

6 > AMATPSW <4_digits> <6_digits>

7 > AMAHRS

Note: If different, perform step 8; otherwise, go to step 9.

8 > AMAHRS <start_hour> <end_hour>

9 > VALPARM INVALID

Note: If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT

Note: If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.

Procedure 13
INI trunks

App/ACT If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1 > MAPCI ; MTC ; TRKS ; TTP

2 > POST A INI

3 > REPEAT <**x**> (FRLS ; RTS ; NEXT)
where <x> is the number of INI trunks in the posted set.

Procedure 14
Do Test Calls

- 1 **Site/ACT** Perform TEST CALLS that were identified ahead-of-time from *Appendix C: Test Call Scripts*.
-

Procedure 15

After testing is complete SYNC NT40

POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. *After SITE accepts the current load*, then put the processors in sync as follows.

Note: Do not enter POSTSWACT again until the processors are in sync.

1 Site/ACT and INACT On each CCC, shelf 51, card location 16 (NT1X48), ensure the *Enab* switches are down, the *Dact* switches are to the left (unjammed), and the thumbwheels are on 5.

2 App/ACT > MAPCI;MTC;CC;PS <i>
where <i> is the inactive program store.

3 > COPY <m>
where <m> is the PS module. Start at zero (0).

4 Repeat substep 3 for each PS module equipped.

5 > QUIT;SYNC NOTTRACEPOINT *{if BCS31 and higher}*
> YES *{for confirmation}*

Note: The SYNC NOTTRACEPOINT command should be used in BCS31 and higher (patch is required if BCS31 or 32). If lower than BCS31 then use SYNC command as usual.

6 > QUIT MAPCI

Procedure 16
Finish POSTSWACT

- 1 App/ACT** If necessary run POSTSWACT one more time to completion.

```
> BCSUPDATE ; POSTSWACT
```

At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

- 2 Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

- 3 App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

- 4 Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

- 5 Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

- 6 Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

- 7 Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

- 8 Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

- 9 Site/ACT** Return PORTS and USER information back to original values.

- 10 Site/ACT** Notify DNC end users to LOGIN the DNC.

Procedure 17
Take image NT40

- 1 **Site/ACT** DUMP AN IMAGE of the new BCS load for backup-one NT40 IMAGE to disk and backup image copied to tape.
-
- 2 After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to 'OFF' during the ONP.

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.

Procedure 18
Start journal file

- 1 **Site/ACT** If equipped, start journal file and verify started.
 - a. > JF START
 - b. > MAPCI ; MTC ; IOD ; DIRP
 - c. > QUERY JF ALL
QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
 - d. > QUIT ALL
-

Procedure 19
More Revert/ABORT steps

- 1 **Site and App/INACT** If asked to do so by technical support take an image of the *inactive* (mate) side load.

- 2 **Site and App/ACT** With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

- 3 **Site and App** Following an ABORT, rescheduling of the software update must be negotiated. Refer to *Procedure for rescheduling aborted applications*.

- 4 **App/ACT** On the ACTIVE side perform the following steps to restore the active side to its original configuration.
 - a. If old load is BCS35 and higher:
 - > BCSUPDATE ; ABORT_PRESWACT
 - > TABXFR ; CANCEL
 - > QUIT ALL
 - b. If old load is BCS34 and lower:
 - > BCSUPDATE ; RESET
 - > QUIT ALL

Emergency abort procedure

CAUTION

Perform the following steps only if a decision has been reached to activate the old load without regard to preserving stable call processing.

Remember, the CPU with the new BCS load is now active. You will be going back to the old BCS load which is now inactive.

**Procedure 1
Before EABORT**

- 1 **Site** Do not proceed until both the Telco and NT on-line support agree.

- 2 **Site** Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

Procedure 2
Restart inactive NT40 2

CAUTION

Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.

- 1 Site/INACT** Perform a restart reload on the inactive processor (old BCS load).
 - a.** Thumbwheel 3, RESET
flashes 33
 - b.** Thumbwheel 7, NO RESET
flashes 77, then initializes
 - c.** When the inactive processor starts to initialize, set thumbwheel back on 5, NO RESET.
 - d.** Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.
-
- 2 App/INACT** Confirm that the inactive processor is flashing A1.
-

Procedure 3
Ensure inactive unjammed

- 1 Site and App/INACT** Ensure inactive side is *unjammed*.
-

Procedure 4
Cold SWACT NT40

- 1 **Site/ACT** JAM active side to force a switch of activity (cold swact).

- 2 **Site/ACT** Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.
At this point the CC switch of activity is over.

- 3 **Site and App/ACT** *Work quickly to complete the next procedure.* The *POSTSWACT* procedure (to follow) checks that the office is functioning as normal.

Note: Be sure to notify appropriate levels of support of the ABORT before putting the switch back in SYNC.

Procedure 5
Start POSTSWACT

App/ACT Login, check the date and time, and start POSTSWACT.

- 1 Type:
<break>

 - 2 ?LOGIN
Enter username and password *{system response}*
> <username> <password>
 - or > <username>
> <password>

 - 3 > DATE
Verify the date and time are correct.

 - 4 Reestablish recording onto devices (console session) as required.

 - 5 > BCSUPDATE ; POSTSWACT
POSTSWACT runs all steps required after the CC switch of activity and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. If this is the case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue.
If no problems are encountered, POSTSWACT stops after BEGIN_TESTING and waits until the site verifies the sanity of the current load.
-

Procedure 6
Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1 > MAPCI ;MTC ; IOD ; DIRP
> QUERY AMA ALL *{note which volume is ACTIVE}*

2 If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3 TAPEX volumes must be manually remounted using the DIRP MNT command.

4 Assign standby billing devices for TAPE and DPP/BMC.

a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.

b. > MOUNT <x> FORMAT <stdby_volume>
where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.

Example: MOUNT 3 FORMAT DPPAMA

c. Enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then enter:

> ERASTAPE <x>
where <x> is the standby device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

System response is:

WARNING, THIS TAPE WILL BE ERASED

CAUTION

**At this point again confirm the device is a port to a DPP or BMC,
and NOT an unexpired billing tape.**

If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-

Procedure 6
Recover billing (continued)

- d. > DEMOUNT T<x>
 - e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.
 - f. Repeat this entire step for each standby billing subsystem.
-
- 5** Activate standby devices.
- a. > MNT <subsystem> <x> {still in DIRP level}
Example: MNT AMA 3
 Enter YES to confirm the command.
 - b. > QUERY AMA {to confirm standby volume is available}
 - c. Repeat this step for each billing subsystem.
-
- 6** If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)
- * If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.
- Note:** Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).
-
- 7** Bring up parallel devices (as required) using the preformatted volumes.
- a. For BCS31 and lower:
 In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.
Example:
 TABLE DIRPSSYS;POS AMA
 CHA PARVOL T4
 or CHA PARVOL D010PAMA
 - b. For BCS32 and higher:
 In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.
Example:
 TABLE DIRPSSYS;POS AMA

 In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

-continued-

Procedure 6
Recover billing (continued)

Examples:

TABLE DIRPPPOOL; POS 62 (*pool for AMAPOOL*)

CHA VOLUME23 T4

or CHA VOLUME23 D010PAMA

- c.** Repeat substep a or b for each parallel volume to be activated.
 - d.** > QUIT MAPCI
-
- 8** Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
-

Procedure 7
Display DPP settings

App/ACT Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1 > MAPCI NODISP;MTC;IOD;DPP AMA

2 > COLLPSW

Note: If different, perform steps 3 and 4; otherwise go to step 5.

3 > COLLPSW 1 <4_digits> <6_digits>

4 > COLLPSW 2 <4_digits> <6_digits>

5 > AMATPSW

Note: If different, perform step 6; otherwise, go to step 7.

6 > AMATPSW <4_digits> <6_digits>

7 > AMAHRS

Note: If different, perform step 8; otherwise, go to step 9.

8 > AMAHRS <start_hour> <end_hour>

9 > VALPARM INVALID

Note: If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT

Note: If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.

Procedure 8
INI trunks

App/ACT If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1 > MAPCI ; MTC ; TRKS ; TTP

2 > POST A INI

3 > REPEAT <**x**> (FRLS ; RTS ; NEXT)
where <x> is the number of INI trunks in the posted set.

Procedure 9
Do Test Calls

- 1 **Site/ACT** Perform TEST CALLS that were identified ahead-of-time from *Appendix C: Test Call Scripts*.
-

Procedure 10

After testing is complete SYNC NT40

POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. After SITE accepts the current load, then put the processors in sync as follows.

Note: Do not enter POSTSWACT again until the processors are in sync.

1 Site/ACT and INACT On each CCC, shelf 51, card location 16 (NT1X48), ensure the *Enab* switches are down, the *Dact* switches are to the left (unjammed), and the thumbwheels are on 5.

2 App/ACT > MAPCI;MTC;CC;PS <i>
where <i> is the inactive program store.

3 > COPY <m>
where <m> is the PS module. Start at zero (0).

4 Repeat substep 3 for each PS module equipped.

5 > QUIT;SYNC NOTTRACEPOINT *{if BCS31 and higher}*
> YES *{for confirmation}*

Note: The SYNC NOTTRACEPOINT command should be used in BCS31 and higher (patch is required if BCS31 or 32). If lower than BCS31 then use SYNC command as usual.

6 > QUIT MAPCI

Procedure 11
Finish POSTSWACT

- 1 App/ACT** If necessary run POSTSWACT one more time to completion.

```
> BCSUPDATE ; POSTSWACT
```

At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

- 2 Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

- 3 App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

- 4 Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

- 5 Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

- 6 Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

- 7 Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

- 8 Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

- 9 Site/ACT** Return PORTS and USER information back to original values.

- 10 Site/ACT** Notify DNC end users to LOGIN the DNC.

Procedure 12
Take image NT40

- 1 **Site/ACT** DUMP AN IMAGE of the new BCS load for backup-one NT40 IMAGE to disk and backup image copied to tape.

- 2 After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to 'OFF' during the ONP.

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.

Procedure 13
Start journal file

- 1 **Site/ACT** If equipped, start journal file and verify started.
 - a. > JF START
 - b. > MAPCI ; MTC ; IOD ; DIRP
 - c. > QUERY JF ALL
QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
 - d. > QUIT ALL
-

Procedure 14
More Revert/ABORT steps

- 1 **Site and App/INACT** If asked to do so by technical support take an image of the *inactive* (mate) side load.

- 2 **Site and App/ACT** With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

- 3 **Site and App** Following an ABORT, rescheduling of the software update must be negotiated. Refer to *Procedure for rescheduling aborted applications*.

- 4 **App/ACT** On the ACTIVE side perform the following steps to restore the active side to its original configuration.
 - a. If old load is BCS35 and higher:
 - > BCSUPDATE ; ABORT_PRESWACT
 - > TABXFR ; CANCEL
 - > QUIT ALL
 - b. If old load is BCS34 and lower:
 - > BCSUPDATE ; RESET
 - > QUIT ALL

Hybrid NT40 MOP

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Site preparation procedure

Begin this section when the First Shipment of tapes and documentation arrives at the office. Site must complete the following procedures *before* being contacted by Northern Telecom for the pre-application checks (or Preliminary Precheck). In order to qualify the office for a software upgrade the series of prechecks must be successfully completed.

Procedure 1

Take image

- 1 **Site/ACT** Before beginning the front-end testing (processor tests), DUMP AN OFFICE IMAGE for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge, or one NT40 image to disk and copied to tape.
-

Procedure 2
Route logs NT40

This procedure ensures that specific logs are routed to an active log device and are not suppressed.

1 Site/ACT

```
> LOGUTIL  
> LISTREPS SPECIAL
```

If specific logs are suppressed use

```
> RESUME <log>
```

If logs have threshold set use

```
> THRESHOLD 0 <log>
```

where <log> refers to specific CC, CMC and MISM logs.

2 > LISTROUTE DEVICE <printer>

If critical logs are not routed use

```
> ADDREP <printer> <log>
```

```
> STOPDEV <printer>
```

Verify only critical logs are enabled on the device and are correctly routed.

3 > STARTDEV <printer>

```
> LEAVE
```

Procedure 3 Processor tests NT40

To ensure front-end stability Site should complete the following tests before being contacted for the pre-application checks.

Note: Perform the following front-end testing during low traffic periods.

- 1 **Site** Ensure the CPUs are in SYNC and the inactive side is NOT jammed.
On each CCC, at shelf 51, card location 16 (NT1X48), verify the *Enab* switches are down, the *NoSync* LEDs are off (in SYNC), the *Dact* switches are to the left (unjammed), and the thumbwheels are on 5.

- 2 **ACT** Match the memory from the CC level of the MAP.
> MAPCI ; MTC ; CC
> MTCH

- 3 **INACT** On the inactive side, jam the inactive CPU.
 - a. Locate the NT1X48 card with the *Inact* LED lit.
 - b. Move the *Dact* switch to the right (jammed) and the *Enab* switch up.

- 4 **ACT** Drop SYNC from the CC level of the MAP.
> DPSYNC
> YES {for confirmation}

- 5 **INACT** Wait for the inactive CPU to return to flashing A1.

- 6 Test the stability of the inactive CPU from the NT1X48 card.
 - a. **INACT** Set the thumbwheel on 3 and press reset, the hex display will flash 33. Within six seconds, move the thumbwheel to 5, DO NOT PRESS RESET. The hex display will flash 55 and initialize (warm restart).
Confirm inactive CPU flashes A1.
 - b. **INACT** Set the thumbwheel on 3 and press reset, the hex display will flash 33. Within six seconds, move the thumbwheel to 6, DO NOT PRESS RESET. The hex display will flash 66 and initialize (cold restart).
Confirm inactive CPU flashes A1.
 - c. **INACT** Set the thumbwheel on 3 and press reset, the hex display will flash 33. Within six seconds, move the thumbwheel to 7, DO NOT PRESS RESET. The hex display will flash 77 and initialize (restart reload).
Confirm inactive CPU flashes A1.

-continued-

Procedure 3
Processor tests NT40 (continued)

- d. **INACT** Set the thumbwheel on 0 and press reset, the hex display will cycle in (hex), from 00 to 16 repeatedly. Once the test has cycled three times, set the thumbwheel to 7 and press reset.
 - e. **INACT** Set the thumbwheel on 5, DO NOT PRESS RESET. Then put the *Enab* switch down.
-

7 ACT Perform a memory retention test from the DS and PS levels of the MAP.

Note: This test can take up to 2 hours to complete.

```
> DS <i>                                     {from CC level}
where <i> is the inactive DATA store.

> TST MEM RETAIN #AAAA
> YES                                         {for confirmation}

> TST MEM RETAIN #0001
> YES                                         {for confirmation}

> TST MEM RETAIN #5555
> YES                                         {for confirmation}

> QUIT

> PS <i>
where <i> is the inactive PROGRAM store.

> TST MEM RETAIN #AAAA
> YES                                         {for confirmation}

> TST MEM RETAIN #0001
> YES                                         {for confirmation}

> TST MEM RETAIN #5555
> YES                                         {for confirmation}
```

8 After completion of the tests check for CC108 or CC109 logs, indicating the test passed or failed. If the test failed, a CC101 log identifies the failed card. Resolve all problems and repeat step 7.

9 ACT Copy program store.

```
> COPY <m>                                     {still in PS level}
where <m> is the PS module. Start at 0, and repeat for each PS module
equipped.
```

-continued-

Procedure 3
Processor tests NT40 (continued)

- 10 ACT** SYNC the CPUs from the CC level of the MAP.
- > QUIT; SYNC
 - > YES *{for confirmation}*
-
- 11** After receiving the "Synchronization Successful" message, verify no faults are displayed at the CC level of the MAP (shows all dots and no Xs or fs).
-
- 12 INACT** On the inactive side release the jam.
- a. Locate the NT1X48 card with the *Inact* LED lit.
 - b. Move the *Dact* switch to the left (unjammed).
-
- 13 ACT** Switch activity of the CPUs from the CC level.
- > SWACT
-
- 14** Repeat steps 1 through 13 on the newly-inactive CPU.
-
- 15** Verify the CPUs remain in SYNC and the inactive side is NOT jammed.
-
- 16 ACT** Perform REX test from the CC level. Repeat with each CPU initially active.
- > MTCH
 - > REXTST RETENTION
 - > YES *{for confirmation}*
- The CPUs will be out of SYNC during testing. CC activity switches will occur during this time.*
-
- 17 ACT** After completion of the test, verify the test results:
- > QUERYCC RETENTION
- The CPUs should be back in SYNC with no REX alarms at the CC level or on the main MAP display header. If the test failed, contact the site supervisor to resolve any problems and repeat steps 15 and 16.*
-
- 18** Repeat (with the other CPU active) steps 15 through 17.
-

-continued-

6-6 Site preparation procedure (continued)

Procedure 3
Processor tests NT40 (continued)

19 ACT Perform an image test from the CCMNT level of the MAP.

> CCMNT

> IMAGE

> QUIT

20 After completion of the test, check for CC logs indicating pass or fail message. If test failed, clear the problem and repeat step 19.

21 ACT > QUIT ALL

Procedure 4
Responsibilities before pre-application checks NT40

- 1 **Site** Site is encouraged to verify all new software load and patch tapes received in a shipment.

Note: The following steps do not apply to a TAS NONRES tape which is used only by NT technical support to provide access to certain non-resident software tools.

- a. MOUNT and LIST the tape.
 - b. From the tape header or first file verify the tape is correct for the target BCS. For a BCS IMAGE tape also verify the image filename.
Verify a tape is good by listing the tape to the end without any errors.
 - c. If any problems are found notify your NT customer service representative immediately.
 - d. Keep the tapes on-site for use during the scheduled software update.
-
- 2 **Site** Review the D190 document (office feature record) to ensure the software content meets the expected requirements.

Note: Offices receiving feature package NTX218, EADAS, ensure table OMACC has only 25 entries. If table OMACC has more than 25 entries, the site will have to delete the extraneous entries so the five new EADAS Operation Measurement tuples will fit.

- 3 **Site** Load and patch ALL PERIPHERAL MODULES with the to_BCS software loads according to the *Peripheral Software Release Document* ("Application Procedures" section).
Peripheral modules include all PMs, XPMs, DPP, and MPC.

Note: If a cross-reference file (BCSxxXPM\$XREF) is at the beginning of the XPM patch tape, use it to identify patches applicable to each XPM load.

- 4 **Site** Monitor front-end stability watching NT40 CC, CMC, and MISM logs through the day of the software delivery.
-

Procedure 5
Save site files

- 1 **Site/ACT** Copy all Telco/site-created files in store file (SFDEV) onto a labeled scratch tape. These files can be manually restored to SFDEV after the BCS application.
*Any patches and files downloaded to SFDEV need to remain in SFDEV for the BCS application-**DO NOT ERASE!***
-

Procedure 6
Peripheral verification NT40

- 1 **Site/ACT** If the office is equipped with DDUs, erase all unwanted files. Then ensure the peripheral loads and peripheral patches for the to_BCS are on the same disk.

- 2 On the DDU used for primary billing collection (such as AMA SMDR OCC CDR), perform routine maintenance on the disk to ensure it is functioning properly. If excessive "bad blocks" are present, reformat the disk.

- 3 Ensure peripherals (including ENET and DPPs) are loaded and patched with the to_BCS software. (Refer to the *Peripheral Software Release Document*.)

Procedure 7
Table ACDGRP

- 1 **App/ACT** Identify any "holes" in table ACDGRP and fill them with dummy tuples. Otherwise, you may be unable to retrieve MIS reports from some ACDGRPs.
 - a. > OMSHOW ACDGRP ACTIVE
 - b. Look for nonconsecutive keys. (example: 0 2 3 5 6 has 1 and 4 missing.)
 - c. If any missing tuples, have Translations personnel datafill with dummy tuples. (This prevents the renumbering of key indexes during the BCS update.)
 - d. Also provide datafill in table DNROUTE for each corresponding dummy tuple added in table ACDGRP.
-

Procedure 8
Fill in Test Call Scripts

- 1 **Site** Fill in and test the *Test Call Scripts* in *Appendix C*.

This is to provide a thorough test plan exercise for testing the new BCS load. You will be asked to make your test calls after switching activity to the new BCS.

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Data consistency check procedure

Procedure 1 is for offices on BCS34 and higher.

CAUTION

Review Software Delivery Bulletins and any current Warning Bulletins concerning TABAUDIT before using it.

Procedure 1 Run TABAUDIT (BCS34 and higher)

Perform this procedure at 15 days prior to the software delivery date. This allows time to correct any table data problems that might be found. At the insertion minus 10 days pre-check, NT engineers will review the results. The data consistency checks must be successfully completed including any needed data corrections in order for the scheduled application to be completed on schedule.

For all offices on BCS 34 and higher, perform the following steps. These steps are used to verify table data integrity using TABAUDIT.

A complete tutorial of TABAUDIT is provided in *Appendix A*. This includes information on TABAUDIT enhancements (BCS36) which provide automated scheduling capability and facilitate data capture.

Warning: TABAUDIT can take up to 10 hours to run. The length of time will vary from site to site depending on the number and size of tables.

- 1 Site/ACT** Verify table data using TABAUDIT. Send output to a recording device (e.g. D000SCRATCH). Make note of the device used, since the files will be reviewed by NT prior to BCS application.

TABAUDIT may be set-up to run all the tables using the "ALL" option or to run a range of tables using the "FROM" and "TO" options. TABAUDIT can only be run from only one terminal at a time.

- To use the "FROM" and "TO" options see substep **a** below.
- To use the "ALL" option see substep **b** below.

Warning: If a device is *not* specified when issuing the TABAUDIT ALL command, only a SUMMARY\$FILE will be created in Store File and no separate file will be created for individual failed tables.

-continued-

Procedure 1
Run TABAUDIT (continued)

If necessary, TABAUDIT may be stopped and restarted . To stop TABAUDIT at anytime, use break HX. When restarting TABAUDIT, determine the last table verified by reviewing the "SUMMARY\$FILE " file in SFDEV. The last table verified can also be determined by listing table DART and reviewing the "CHKDATE" and "CHKTIME" fields for the most recently verified table.

Some tables will output information or warning messages as though they are being changed. However, no changes will be made since TABAUDIT does not execute any write procedures.

For example, when TABAUDIT is performed on table DATASIZE the following message is output for every tuple checked:

A restart is needed for this change to take effect. Check the NTP as to which is appropriate warm or cold.

Or for example, when STDPRTCT is checked, the additional output is:
Warning: Changes in table STDPRTCT may alter office billing.

- a. Until the amount of time required to verify all tables is known for a particular site it is recommended to perform the verification on a range of tables using the "FROM" and "TO" options and information found in table DART.

```
> TABAUDIT FROM <start table> [TO <end table>]  
<device name>
```

For example, to obtain table names in increments of 100, enter Table DART, list, go down 100 and list two. Record or print the table names. Continue this until the end of table DART is reached.

```
> TABLE DART; LIST (output will be the "FROM" table name)  
> DOWN 100; LIST 2 (output will be the "TO" table name of the  
first 100 and the "FROM" table name for the second 100)  
> DOWN 100; LIST 2 (repeat until the end of table is reached)  
> LEAVE
```

Perform TABAUDIT on the first 100 tables as shown in the following example:

```
> TABAUDIT FROM DART TO BGDATA <device name>
```

When complete, perform TABAUDIT on the next 100. Repeat until all tables have been verified.

- b. Use the TABAUDIT ALL command to perform the data verification function on all tables listed in table DART using just one command.

```
> TABAUDIT ALL <device name>
```

-continued-

Procedure 1
Run TABAUDIT (continued)

- 2** Review the summary output and any failed table files. If any table fails, contact the translations engineer who can help in resolving any data consistency issues. To verify a corrected table, run TABAUDIT ONLY and specify the corrected table.

```
> TABAUDIT ONLY <table name> <device name>  
Continue until all tables have been corrected.
```

- 3** When all tables have been corrected, if time permits, perform a TABAUDIT on all the tables again by range or by use of the "ALL" command. This is to ensure that no changes performed in step 2 have adversely affected other tables.
-

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JFFREEZE procedure

This procedures in this section are required only when the office is scheduled for a Hybrid process software delivery. Site personnel should perform the procedure at 10 days prior to the software delivery date, or when instructed to do so by Northern Telecom.

Whenever possible JFFREEZE should be used to take the "frozen image" and begin the data freeze. Northern Telecom must receive the frozen image by 8 days prior to the software delivery date to allow enough time to complete the dump and restore.

Procedure 1 **Stop activities**

- 1 **Site/ACT** Advise all personnel that all activities must stop (including service orders, translations, trunking, and other data modification) until told otherwise.

- 2 Verify that no hardware changes or retrofits are in progress (such as network and memory extensions).

Procedure 2
Patch verification before frozen image

The Site is responsible for the following patch verification steps.

- 1 **Site/ACT** Ensure any from-side patches recently downloaded to SFDEV are applied *before* dumping the frozen image (Hybrid method). NOTIFY THE SITE SUPERVISOR of any new from-side patches not yet applied.

- 2 Review a current list of from-side patches needed for the BCS application. This list can be obtained from your patch administrator.

- 3 Verify all required patches on the list are applied *before* dumping the frozen image (Hybrid method).

- 4 The front-end and MS patches should be copied to the patch tape (or to disk) and LEFT IN SFDEV.

Procedure 3
Stop journal file for freeze

- 1 **Site/ACT** CLOSE and STOP the Journal File recording.
 - a. > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
Check which JF volume is currently active.
 - b. > CLOSE JF ACTIVE
> CLOSE JF ACTIVE
*JF is closed twice to ensure current timestamp on active journal file.
QUERY again to verify rotation.*
 - c. > JF STOP
Verify stopped.
 - d. > QUIT MAPCI
-

Procedure 4
Setup for frozen image

1 **Site/ACT** Ensure user OPERATOR is correctly permitted.

a. > SHOW USERS

```
NAME          PRIO STACK NRDEV LANGUAGE  PRIV
OPERATOR      4      5000          ENGLISH  ALL
```

b. If OPERATOR is not permitted as stated above, change with the "PERMIT" command.

If OPERATOR is logged in, logout the user and use the "PERMIT" command from another user. Then again login as OPERATOR.

c. **Important:** Also change the PASSWORD to "OPERATOR" for the image. This is only temporary and can be changed back after the frozen image.

2 **Site/ACT** Delete MAP log device from table LOGDEV to ensure logs are not sent to to the MAP terminal.

> TABLE LOGDEV;POS MAP

Retain position MAP data for a later step.

> DELETE

> QUIT

Note: This tuple can be added back at the end of this procedure.

3 **Site/ACT** Verify MAP datafill in table TERMDEV.

a. > TABLE TERMDEV;LIS

Retain position MAP data for a later step.

```
MAP 0 8 VT100 B1200 CL 1X67BC NONE N NONE ALL
```

System response with a new IOC, 1X61AB.

or

```
MAP 0 20 VT100 B1200 CL 1X67BC NONE N NONE ALL
```

System response with an old IOC, 1X61AA.

b. Change any fields which do not match. The **bold** type (fields IOCNO, CKTNO, BAUDRT, and INTYP) is a must, other fields are not critical.

CAUTION

**Do not "<break>/STOP" or "HX" because it will
cause the table changes to take effect.**

The tuple can be changed back at the end of this procedure.

-continued-

Procedure 4
Setup for frozen image (continued)

- 4 Verify the MAP device is in service.
- a. > MAPCI;MTC;IOD;LISDEV CONS
 - b. Verify MAP position is in service as follows.
 - > IOC 0;CARD 2 *{with a new IOC, 1X61AB}*
 - or
 - > IOC 0;CARD 5 *{with an old IOC, 1X61AA}*
- If port 0 (MAP) is not in service (a dot represents in service) then do:
- > BSY 0;RTS 0
 - c. > QUIT ALL
-

- 5 Verify tuple JF datafill in table DIRPSSYS.
- a. > TABLE DIRPSSYS;POS JF
Example system response:

JF Y 2 1 JFPOOL \$ CR MJ NA NA **30 30** \$ N NA
FIRSTACT NNNNNNN 0 NOROTATE BOTH NONE
 - b. Retain the original datafill to restore to the new load before the images are dumped in the *SWACT/POSTSWACT* procedures.
 - c. Change the fields which do not match. The **bold** type (fields RETPD, CRETPD, FILEDATE, SHEDDAYS, ROTACLOS, and AUTOXFER) is a must. Other fields are not critical. (JFFREEZE automatically daily rotates journal file at approximately 0300 hours.)
 - d. > QUIT
-

Procedure 5
Cleanup journal files

Copy journal files to tape and ERASE them from disk with this procedure.

- 1** **Site/ACT** > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
Retain the volume names located under the VOLUME field for step 4 and step 8.

 - 2** > QUIT MAPCI

 - 3** > DSKUT

 - 4** LISTVOL <volume> ALL
where <volume> refers to the journal file volume(s) noted in step 1. Retain all filenames for step 6.

 - 5** Repeat step 4 for each volume found in step 1.

 - 6** If the site does not require copying unprocessed journal files, go to step 8; otherwise, continue.
Put up a tape on MTD 0. Either enter
> DIRPAUTO JF *{steps you through the process}*
or MOUNT the tape and enter
> DIRPCOPY JF <unprocessed files> <T0>
where <unprocessed files> refers to JF files that begin with the letter "U" (e.g. U890327133614JF) and which were listed in step 4.

 - 7** Repeat step 6 for each unprocessed journal file.

 - 8** > LISTVOL <volume> ALL
where <volume> refers to the journal file volume(s) noted in step 1. Retain all filenames for step 10.

 - 9** Repeat step 8 for each volume found in step 1.

 - 10** > MAPCI;MTC;IOD;DIRP *{BCS24 and higher}*
> CLEANUP FILE <filename>
> YES *{for confirmation}*
or
> ERASEFL <filename> *{BCS23 and lower}*
where <filename> is all files except DIRP_FILESEG and active files. Active files start with the letter "A" (e.g. A890327133614JF).
-

-continued-

Procedure 5
Cleanup journal files (continued)

- 11 Repeat step 10 for each filename found in step 4 or step 8 above.
-

Procedure 6
Start JFFREEZE

- 1 **Site/ACT** Start JFFREEZE. To see a complete console session of JFFREEZE, see *Using JFFREEZE, Appendix A: Command Summaries*.

Note: Verify the normal image disk volume has enough space for a new image (erase the oldest image on the volume if necessary).

- a. > JFFREEZE ON

DO YOU WISH TO CONTINUE? *{system response}*
Please confirm ("YES" or "NO"):

- b. > YES

ENTER THE FREE IOC OR SLM DISK VOLUME TO RECEIVE
THE SYSTEM IMAGE FILE(S):

- c. > <disk>

where <disk> is the normal image disk volume.

JFFREEZE: THE SYSTEM...COMMENCE IN 2 MINUTES

DO YOU WISH TO PROCEED?
Please confirm ("YES" or "NO"):

- d. > YES

JFFREEZE image dump commences in 2 minutes...
Dump START time: yyyy/dd/mm hh:mm:ss.sss ddd..
JFFREEZE image dump information is output, followed by Journal file information.

Procedure 7
Duplicate image NT40

- 1 **Site/ACT** Make three copies of the frozen image on tape as follows.
 - a. List the disk volume with the frozen image.
Retain the filenames for below.
 - b. Install a blank tape (with a write enable ring) on an MTD.
 - c. > MOUNT <x> FORMAT FROZEN
 - d. > COPY <filename> DR_IMG_<yymmdd> <Tx>
where <filename> is the name of the image file listed above, and <yymmdd> is the year, month and day (e.g. DR_IMG_920918).
 - e. > TAPE <x> REW
 - f. > LIST <Tx>
 - g. > DEMOUNT <Tx>
where <filename> is the name of the file listed above, and <yymmdd> is the year, month and day (e.g. DR_IMG_921808).
Note: Verify the message "Device error" did *not* appear during copying or listing the tape. If it *does*, then the tape may be bad.
 - h. Repeat substeps b through g until three image copies are made.
-

Procedure 8
Resume work

- 1 **Site/ACT** Advise change order personnel that service order activity may resume only by following *Journal file rules* procedure (to follow).
-

Procedure 9
Print table TERMDEV

- 1 Site/ACT** Print a hard copy of table TERMDEV. Set the printout aside for the moment.
This printout will to be sent to Northern Telecom for use by the Dump and Restore engineer.
-

Procedure 10
Send in frozen image

- 1 **Site/ACT** Send *two* "frozen images" to the appropriate Northern Telecom facility.
 - a. Label the tapes as "Frozen image."
 - b. Send the image tapes to the following address:

PLEASE CONTACT YOUR NT CUSTOMER SERVICE REPRESENTATIVE FOR THE CORRECT ADDRESS.
 - c. Safely store the remaining tape at the DMS site.
 - d. Also include in the shipment the printout of table TERMDEV that was set aside above.

- 2 Safely store the remaining tape at the DMS site.

Procedure 11
Original data

- 1 **Site/ACT** If any changes were made above (for the frozen image) to user OPERATOR or to the MAP device, restore the original data if desired as follows.
 - a. If a permit option was changed for user OPERATOR, change it back if desired.

```
> SHOW USERS
```

If OPERATOR is logged in, logout the user and use the "PERMIT" command from another user. Then again login as OPERATOR.
 - b. The original password for user OPERATOR can also be restored at this time.
 - c. If MAP tuple was changed in table TERMDEV, restore the original data if desired.
 - d. If MAP device was deleted in table LOGDEV, restore the original data if desired.
-

Procedure 12
Journal file rules

Site FOLLOW THESE RULES through the entire data freeze period (normally up to the night of the BCS application). The data freeze begins once the frozen image is completed. Please inform control center and craftsperson personnel of the following restrictions.

- 1 LIMIT SERVORD ACTIVITY and TABLE CHANGES during the data freeze.

Warning: Whenever possible use SERVORD, not table control, to make data changes.

- 2 Journal file is never to be stopped, even during journal file rotations. *If the AUTOIMAGE feature is used to take regular office images, the journal file starts and stops automatically as the image is dumped. This is the only exception to the rule.*
-

3 ACTIVITIES WHICH **ARE NOT** PERMITTED

- changes to "restricted tables" (including tables C7LKSET, C7RTESET, and C7LINKSET)

Note: A list of all the RESTRICTED TABLES can be seen by listing entries in table FREEZTAB.

- network changes, additions, and deletions (tables NETWORK and NETJUNCT)
- PM changes, additions, and deletions (all tables ending with 'INV')
- trunk group changes, additions, and deletions (tables TRKGRP and TRKSGRP)
- trunk member changes, additions, and deletions (table TRKMEM)
- table TRKNAME changes, additions, and deletions
- IBN customer group changes, additions, and deletions
- OM and EADAS changes, additions, and deletions (tables OMACCTAB, OMCLASS, OMACCGRP, OMACCFLD, OMACCKEY, OMDDELTA, and OMSET)
- DRAMREC changes, additions, and deletions (that is, ASSIGN and RECORD)
- table changes, additions, and deletions from store files, and using OVERRIDE (OVE) or VERIFY OFF (VER OFF)
- use of the RENAMECLLI command
- use of the DMOPRO command
- use of the JF STOP command

-continued-

Procedure 12
Journal file rules (continued)

- erasing journal files from disk
 - use of DIRP CLEANUP command. This could change 'R' journal files to 'P' status, and these may not be processed when JFDUMPF step is done. If file space is required then cleanup only non-journal files.
-

4 ACTIVITIES WHICH **ARE** PERMITTED

- all SERVORD commands
 - table changes must be made with VERIFY ON and kept on hard copy
 - emergency translation changes
-

- 5** If JFFREEZE is *not* activated, CLOSE and ROTATE journal files daily (whenever the number of records exceeds 1000). KEEP THE FILENAMES IN CHRONOLOGICAL ORDER IN A JOURNAL FILE LOGBOOK.
-

Procedure 13
System restart with JFFREEZE on

Site If BCS29 and lower with JFFREEZE activated and a system restart occurs for some reason, observe the following procedure.

1 ACT Rotate the journal file:

- a. > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
Check which JF volume is currently active.
 - b. > ROTATE JF
QUERY again to verify rotation.
 - c. > QUIT ALL
-

2 Print the journal file HISTORY file.

> JFFREEZE HISTORY

3 Copy all journal file records listed in the HISTORY file to tape. Use the DIRPAUTO JF command (if available) or DIRPCOPY JF to copy the files. Keep the tape for backup the night of the BCS update.

4 Verify tuple JF datafill in table DIRPSSYS:

- a. > TABLE DIRPSSYS;POS JF
Example system response:

JF Y 2 1 JFPOOL \$ CR MJ NA NA **30 30** TAPE \$
FIRSTACT YYYYYYY 3 X24 BOTH NONE
 - b. Change all fields which do not match. The **bold** type (fields RETPD, CRETPD, FILEDATE, SHEDDAYS, SHEDBASE, SHEDINCR, ROTACLOS, and AUTOXFER) is a must. Other fields are not critical. (This daily rotates journal file at approximately 0300 hours.)
 - c. > QUIT
-

5 Manually START journal file if not already started.

6 DO NOT STOP JOURNAL FILE. Rotate journal file daily and archive all journal file tapes for use on the night of the BCS update. Keep a chronological record of each journal file for use by the update engineer.

7 Observe *Journal file rules* procedure from this point on.

Procedure 14
Changing DRAMREC with JFFREEZE on

Site When JFFREEZE is activated and it is necessary to do DRAMREC changes, additions or deletions (that is, ASSIGN or RECORD), observe the following procedure.

- 1 **ACT** Rotate the journal file:
 - a. > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
Check which JF volume is currently active.
 - b. > ROTATE JF
QUERY again to verify rotation.
 - c. > QUIT ALL

- 2 Contact TAS to SUSPEND JFFREEZE.

- 3 Print the journal file HISTORY file.


```
> JFFREEZE HISTORY
```

- 4 Copy all journal file records listed in the HISTORY file to tape. Use the DIRPAUTO JF command (if available) or DIRPCOPY JF to copy the files. Keep the tape for backup the night of the BCS update.

- 5 Contact TAS to STOP JFFREEZE.

- 6 Verify tuple JF datafill in table DIRPSSYS:
 - a. > TABLE DIRPSSYS;POS JF
Example system response:

```
JF Y 2 1 JFPOOL $ CR MJ NA NA 30 30 TAPE $
FIRSTACT YYYYYYY 3 X24 BOTH NONE
```
 - b. Change all fields which do not match. The **bold** type (fields RETPD, CRETPD, FILEDATE, SHEDDAYS, SHEDBASE, SHEDINCR, ROTACLOS, and AUTOXFER) is a must. Other fields are not critical. (This daily rotates journal file at approximately 0300 hours.)
 - c. > QUIT

- 7 Manually START journal file if not already started.

- 8 Make DRAMREC changes as required.

- 9 **DO NOT STOP JOURNAL FILE.** Rotate journal file daily and archive all journal file tapes for use on the night of the BCS update. Keep a chronological record of each journal file for use by the update engineer.

-continued-

6-34 JFFREEZE procedure (continued)

Procedure 14
Changing DRAMREC with JFFREEZE on (continued)

10 Observe *Journal file rules* procedure from this point on.

Site responsibilities the day of the software delivery

The following steps must be completed by site personnel *before* the software delivery engineer contacts the site for the scheduled software delivery.

Procedure 1

Day zero checklist

- 1 **Site** Verify that all problems identified from performing table data checks have all been resolved.

- 2 Verify that the front-end processors have been in sync for the past 24 hours and the last REX test has passed.

- 3 Verify an image has been taken in the last 24 hours and backed to tape.

- 4 Ensure you have undertaken your critical test call plan and verified it. (See *Appendix C: Test Call Scripts*.)

- 5 Verify SFDEV has been cleared of all Telco/site-created files.

- 6 Verify all to_BCS patches have been downloaded to site and are present in SFDEV.

7 **LIU7 image with feature AQ1102**

In preparation for the ONP, assuming that the LIU7s have had their software loads upgraded, dump an image of an INSV LIU7. There should be no changes to the tables C7GTT, C7GTTYPE, C7NETSSN, or C7DCIS6 between the time this image is dumped and when the ONP occurs.

This is to utilize feature AQ1102, which allows faster recovery of LIU7s under certain circumstances. Please refer to the feature description for details of the possible recovery scenarios.

Note: If an image with up-to-date data is not available, then data sync of an LIU7 following the CC Warm SWACT may take considerable time if table C7GTT is very large.

Procedure 2
Patch verification

The Site is responsible for the following patch verification step.

- 1 **Site/ACT** All patches downloaded to SFDEV after the final office review should be copied to tape (or to disk) and LEFT IN SFDEV.
 - *From-side patches that are process-related (affecting ONP tools) will be applied by the BCS Applicator on the night of the BCS application.*
 - *To-side front-end and MS patches in SFDEV will be automatically applied to the new BCS load on the night of the BCS application.*
-

Procedure 3
Run DATADUMP

1 **Site/ACT** Run DATADUMP to output important switch information for future reference.

- a. > LOGUTIL;STOPDEV <printer>
where <printer> is an available printer to be used for recording. This makes sure the logs are stopped on the device.
> LEAVE
 - b. > RECORD START ONTO <printer>
 - c. > BCSUPDATE;DATADUMP *{for BCS33 and higher}*
When DATADUMP is completed:
> QUIT
 - d. > DRCI;RUNEXEC DATA_DUMP *{for BCS32 and lower}*
When DATADUMP is completed:
> QUIT
 - e. > RECORD STOP ONTO <printer>
-

Procedure 4
FX voice and data

- 1 **Site** Ensure there will be uninterrupted communication with the software delivery engineer during the software delivery. (Provide FX voice and data lines.)

- 2 Ensure at least two dialup ports are operational-one on each IOC. These should have COMCLASS of ALL.

- 3 Verify user names to be used during the software update have PRIVCLAS of ALL.

Preliminary phase procedure

This section details both SITE and BCS applicator (App) activities required for a Hybrid process software delivery. The data transfer should already be completed.

The actual software delivery begins when the software delivery engineer puts the switch into simplex mode (drops sync) and loads the inactive CPU with the datafilled BCS software load.

Two dialup ports are required, one for the active side processor (label it ACT) and one for the inactive side processor (label it INACT). Remember to acquire a soft copy of the console sessions for both terminals.

Note: Telco may elect to monitor the application process by recording onto printers. This can impact the software delivery time. Site may start recording by issuing the following command for two printers, one for each of the dialup ports to be used by the applicator: "RECORD START FROM <terminal_id> ONTO <printer>."

CAUTION

Ensure no hardware changes or retrofits are in progress. This includes network or memory extensions and peripheral additions/deletions. These activities are prohibited during the BCS application. Such hardware must be made INB (installation busy), and any further software changes must cease.

Procedure 1
Interrupt/ABORT process

Both SITE and Applicator should be familiar with each of the following steps before continuing with the procedures in this section.

If problems develop during the software delivery, resort to one of the following actions.

- 1 It may be necessary to STOP (and reschedule) the application after PRESWACT has been implemented, but before the switch of activity. Refer to "PRESWACT Abort" in *Appendix A* (page A-29).

- 2 If a controlled REVERT is required after the switch of activity (SWACT) refer to "Revert to old load procedure" (page 6-109).

- 3 If an emergency ABORT is required after the switch of activity (SWACT) refer to "Emergency Abort procedure" (page 6-131).

Procedure 2
Remote login

- 1 **App/ACT** Contact the control center (if required) and the site on the voice phone and connect to both dialups. Verify one dialup port is on IOC0 and the other is on IOC1.
-
- 2 **App/ACT** Login the users and if applicable, set LOGINCONTROL.
 - a. <break>
 - b. ?LOGIN
Enter username and password *{system response}*
> <username> <password>
 - or > <username>
> <password>
where username and password can both be found on the Pre-application report.
 - c. For BCS33 and higher enter:
> BCSUPDATE;DEVICE
> QUIT
 - d. For BCS32 and lower enter:
> LOGUTIL;STOP;STOP *{Note the name of this device}*
> LEAVE
> LOGINCONTROL <device> QUERY
 - e. Verify *Open Condition Logout* is *N*. If not, retain the original status and enter:
> LOGINCONTROL <device> OPENFORCEOUT FALSE
Verify *Max Idle Time* is *Forever*. If not, retain original status and enter:
> LOGINCONTROL <device> MAXIDLETIME FOREVER
> LOGINCONTROL <device> DISABLEON REMOVE
<forceout_conditions> *{conditions obtained in substep d above}*
 - f. Repeat this entire step on the other terminal device.
-

Procedure 3
Check logs NT40

1 App/ACT For BCS33 and higher check logs to verify processor stability.

> BCSUPDATE ; LOGCHECK

> QUIT

Do not continue until all logs have been explained.

2 App/ACT For BCS32 and lower check logs to verify processor stability.

> LOGUTIL

> OPEN <log_buffer> ; WHILE (BACK) ()

where <log_buffer> refers to CC, CMC and MISM logs.

> LEAVE

> TRAPINFO

Check for store parity traps, MISM (mismatch), and store checksum logs. Do not continue until all logs have been explained.

Procedure 4
Stop journal file

- 1 **App/ACT** ROTATE and STOP the Journal File recording.
 - a. > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
Check which JF volume is currently active.
 - b. > CLOSE JF ACTIVE
QUERY again to verify rotation.
 - c. > JF STOP
Verify stopped.
 - d. > QUIT MAPCI
-

Procedure 5
Drop sync NT40

CAUTION
Observe ANTI-STATIC precautions
throughout the NT40 drop sync and initialization procedure.

-
- 1 Site** On each CCC, at shelf 51, card location 16 (NT1X48), verify the *Enab* switches are down, the *NoSync* LEDs are off (in SYNC), the *Dact* switches are to the left (unjammed), and the thumbwheels are on 5.
-
- 2 App/ACT Type:**
> MAPCI ; MTC ; CC
-
- 3 App/ACT** Ensure the CPU you want to load with the new BCS load is currently the *inactive* side.
For example: If you will be loading CC 0 with the new BCS image, then CC 0 must be made inactive.
- b.** If needed switch activity of the CC using SWACT (CC level).
 - c.** Align the CC and CMC clock on the same side (SYNCLK level).
For example: CC 0 inactive with clock 0 slaved.
-
- 4 Site/INACT** Locate the NT1X48 card on the inactive CPU (with the *Inact* LED lit).
-
- 5 Site/INACT** JAM the inactive CPU by moving the *Dact* switch to the right.
-
- 6 Site and App** From the MAP display confirm the JAM is on.
-
- 7 App/ACT** Drop sync from the CC level of the MAP.
> MAPCI ; MTC ; CC ; DPSYNC
> YES *{if prompted to disable AUTO PATCHING}*
> YES *{to confirm DPSYNC}*
-
- 8 Site/INACT** Site must tell the engineer when the inactive CC is flashing A1.
-
- 9 App/ACT**
> QUIT MAPCI
-

-continued-

Procedure 5
Drop sync NT40 (continued)

- 10 Site** Initialize the inactive CPU as follows.
- a. INACT** On the inactive CC put enable switch UP.
 - b. INACT** Move thumbwheel to 7 and press RESET.
Display should immediately freeze on A1.
 - c. INACT** Move thumbwheel to 8 and press RESET.
Display should go to a solid A2, then to flashing D2 when process is complete. (This initializes the program store.)
 - d. INACT** Move thumbwheel to 9 and press RESET.
Display should go to a solid A3, then to flashing D3 when process is complete. (This initializes the data store.)
 - e. INACT** Move thumbwheel to 7 and press RESET.
Display should immediately freeze.
 - f. INACT** Move thumbwheel to 5, but DO NOT PRESS RESET!
 - g. INACT** Put enable switch back DOWN.
-

Procedure 6
BULLETINS before LOADMATE

- 1 **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning LOADMATE.
-

Procedure 7
Loadmate NT40

- 1 **Site/ACT** Load the new BCS IMAGE tape on an available tape drive <x>.
 - a. > MOUNT <x> *{lists the image load file}*
 - b. Verify the image file on the tape is correct.

- 2 > LIST T<x> TO <filename>
where <filename> is the image load file to be loadmated.

- 3 > LDMATE <filename>

- 4 **Site and App/INACT** Wait for loadmate to complete and the inactive processor to flash A1.
While waiting for loadmate, SITE may display the patches in store file (PATCHER; DISPLAY <patch>) or may copy any new patches to the new patch tape (or to disk).

- 5 **App/ACT**
> DEMOUNT T<x>

- 6 **Site** Remove the image tape from the tape drive.

Procedure 8
Login inactive after Loadmate NT40

Login on the inactive processor after loadmate is complete.

1 App/ACT Type:

> MCR RTS

2 Allow initialization on the inactive side (flashing A1).

3 LOGOUT of the active side if logged in on the terminal labeled INACT.

4 > MATEIO

> MATELOG <device>

where <device> is the name of the terminal labeled INACT.

5 App/INACT

Enter username and password

{mate-side response}

Mate> OPERATOR OPERATOR

or Enter username

Mate> OPERATOR

Enter password

Mate> OPERATOR

Procedure 9
Set date and header message

- 1 **App/INACT** Set the current date and site header message on the mate side.

```
Mate> SETDATE <dd mm yy> {set today's date}
```

```
Mate> SETLOGMSG '<text>'
```

where <text> becomes the office header on the new software load. Using the old header as the model, change the **Office Order (COEO)**, **office name**, **Product Code** (or BCS level), and **application date**. Ensure all symbols at the beginning and end of the header message remain the same (including spaces).

Note: The "Order/Suborder" (Office Order) and "To Product/Version" (Product Code/BCS) can be found in the *Parmmail*.

Example:

```
94/04/12 00:41 *** H01234 OFFICE LEC00002 120494 ***
```

Procedure 10
Check logs inactive NT40

- 1 App/INACT** For BCS33 and higher check mate logs to verify processor stability.

```
Mate> BCSUPDATE;LOGCHECK
```

```
Mate> QUIT
```

Do not continue until all logs have been explained.

- 2 App/INACT** For BCS32 and lower check mate CC logs.

```
Mate> LOGUTIL;OPEN CC;WHILE(BACK)()
```

```
Mate> LEAVE
```

```
Mate> TRAPINFO
```

Check for store parity traps. Do not continue until all logs have been explained. Traps from active side (FOOTPRINT) may also be shown.

- 3 App/INACT**

```
Mate> TRAPINFO CLEAR
```

Procedure 11
Mate-side memory check

- 1 **App/ACT** If from_BCS 32 and higher, perform a mate-side memory check.

CAUTION

If this test fails *do not continue*-immediately notify the site supervisor.
The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side.

Note: Entering the RUNSTEP command below gives a warning that the step is done out of process. This is okay-answer YES to the prompt.

- a. > BCSUPDATE;RUNSTEP MATE_MEM_CHECK

Note: This displays on the active side the result of the test, "completed" or "not completed." If it is not completed an error message is also printed on the active side.

- b. Should this check fail, isolate and replace the faulty memory card on the inactive side. For additional information, turn to "MATE_MEM_CHECK failure" in *Appendix B*.
- c. > QUIT
-

Procedure 12
Retain PARM values

1 **App** Obtain a list of the following office parameters for reference.

```
> TABLE OFCVAR
> POS NODEREXCONTROL
> POS LCDREX_CONTROL
> QUIT

> TABLE OFCENG
> POS GUARANTEED_TERMINAL_CPU_SHARE
> QUIT

> TABLE OFCSTD
> POS DUMP_RESTORE_IN_PROGRESS
> QUIT
```

Procedure 13
Patch inactive

PATCH the inactive processor by following this procedure. (Mate patching can instead be done manually if desired.)

Note: Entering the RUNSTEP commands below gives a warning that the step is done out of process. This is okay-answer YES to the prompt.

- 1 **App/INACT** If coming from _BCS 31 and lower, on the mate side turn on access to WTAB using TASTOOL procedure.

- 2 **ACT** On the active side, ensure table PADNDEV points to the device (typically SFDEV) containing the patches that were downloaded for the to_BCS.

```
> TABLE PADNDEV;LIST ALL
```

If there are devices in this table that do not contain to_BCS patches, make a note of the tuples and DELETE them.

Note: MOVEBCS or TABXFR will attempt mate patching again (until this is patched out). After MOVEBCS/TABXFR does this, you will need to restore the original data in table PADNDEV. There are two ways of doing this:

1. In procedure "MOVEBCS/TABXFR setup"-Set a stop point in MOVEBCS/TABXFR to stop before table PADNDEV is moved. (At that point the patching will be completed.) Then when it stops edit the table on the active side and allow the data transfer to continue.
2. In procedure "MOVEBCS/TABXFR completed"-Allow MOVEBCS/TABXFR to run to completion as usual. Then edit table PADNDEV on both the active and inactive sides.

- 3

```
> BCSUPDATE;RUNSTEP VERIFY_DSLIMIT
```

- 4

```
> RESET
```

- 5

```
> RUNSTEP DISABLE_AUTOIMAGE
```

Note: This step is not valid if the AUTOIMAGE feature is not available.

- 6

```
> RUNSTEP SET_OFFICE_TUPLES
```

- 7

```
> RUNSTEP SEND_PATCHES
```

- 8

```
> RUNSTEP APPLY_PATCHES
```

- 9

```
> QUIT
```

-continued-

Procedure 13
Patch inactive (continued)

- 10 Site and App/INACT** Print the PATCH\$FILE and review applied (mate) patches.

```
Mate> LISTSF ALL;PRINT PATCH$FILE
```

If you need to DISPLAY any patches that were applied on the inactive side, these patches can still be accessed from the active side.

- 11** Mate> TRAPINFO

If trap occurred, do not continue until the trap is explained and action taken to correct the error.

Procedure 14
Activate patches inactive

- 1 **App/ACT** Determine which ACT patches are activated in the old load.
 - a. > PATCHEDIT
This command shows a list of 'ACT' patches and which ones are activated (turned on).
 - b. Review the patch list to determine which patches are currently activated (ON) on the active side.
Normally any ACT patch activated in the old load should be manually activated in the new load (see next step).
-
- 2 **Site and App/INACT** As needed activate ACT patches on the inactive side.
 - a. Mate> PATCHEDIT
 - b. Compare the mate-side patch list with active-side list obtained above. Decide with the site if any patches need to be activated (set "ON") at this time.
Passwords will be provided on the 'APF' report for any "feature patches" in the new BCS load. Give the password to Telco, but do NOT activate the patch at this time unless already ON in the old load.
 - c. Mate> PATCHEDIT <patch> ON
This activates the patch.
 - d. Repeat this command for each patch to be activated.
 - e. Also determine from comparing the patch lists if any ACT patches should be set to "NA" (no audit) state.
 - f. Mate> PATCHEDIT <patch> NA
This sets the patch to "NA" state.
 - g. Repeat this command for each patch to be set to "NA."
-

Procedure 15
Restart inactive for patches

- 1 App** Perform each of three types of restarts (warm, cold, and reload) on the inactive side to satisfy the requirements of any patch(s) needing a restart.

Note: Sequence of restarts is not important.

INACT

```
Mate> RESTART <restart type>
```

```
Mate> YES {for confirmation}
```

- 2** Allow initialization on the inactive side (flashing A1).
-

- 3** Login on the inactive side.
-

- 4** Repeat above steps for each type of restart required.
-

Procedure 16
IPL modules

- 1 **App/ACT** If from_BCS 30 and lower, to avoid problems using STATUSCHECK, STATUSUPDATE, and RESTARTSWCT because of device/hardware irregularities, do the following.

- a. > QUERY <module>
where <module> is:
NODESTAT STCSTAT IPMLSTAT
CARRSTAT JCTRSTAT DCHSTAT

Repeat QUERY for each module listed.

Note: OPMSTAT, CCS6STAT, RCUSTAT, and CSCSTAT are also status modules, but do not require this procedure. The counts for these modules are set to their maximum values.

- b. If any module is loaded, as indicated by the QUERY command, enter the following:

> RUN <xxxx> IPL
where <xxxx> is a loaded module.

Note: Three or four SWERRS will be generated for each module entered in this step. The SWERRS are expected and indicate that procedures and counts for the hardware are being updated.

Procedure 17
SWCTCHK verification

- 1 **App/ACT** If from_BCS 29 and lower, verify Pre-application Engineering has entered the SWCTCHK command (see *Pre-application Report*). If not done earlier complete this step.
 - a. Ensure patch EWW08 is applied on the active (from-side) load.
 - b. > SWCTCHK
-

Procedure 18
MASSTC

- 1 **App** Check status in MASSTC level (TOPS office only).
 - a. **ACT**
 - > MASSTC
 - > STATUS
 - b. If the status is INITIAL, then no action is needed.
 - c. **INACT** If the status is DUPLICATED, then *with Telco consent* on the MATE side enter:
 - Mate> ENABLE
 - or, if data is obsolete
 - Mate> SCRAP
 - d. **ACT** If the status is SWITCHED, then *with Telco consent* on the ACTIVE side enter:
 - > PERM
-

This page purposely left blank.

Journal file restore procedure

For HYBRID method-This section is required to restore the journal file recorded during the DATA FREEZE period.

Two dialup ports are required, one for the active side processor (label it ACT) and one for the inactive side processor (label it INACT). Remember to acquire a soft copy of the console sessions for both terminals.

CAUTION

Ensure no hardware changes or retrofits are in progress. This includes network or memory extensions and peripheral additions/deletions. These activities are prohibited during the BCS application. Such hardware must be made INB (installation busy), and any further software changes must cease.

CAUTION

In case of emergency situations and if an outage or degradation occurs, call the site supervisor immediately. If not service-affecting, use normal escalation policy.

Procedure 1

Journal file dump

- 1 Site and App** Locate the FIRST JOURNAL FILE TAPE or JF DISK VOLUME recorded at the beginning of the DATA FREEZE.
- 2 App** For from_BCS 28 and higher and if JFFREEZE was used, perform *Journal file dump with JFFREEZE* procedure (to follow).
Otherwise, for the manual process perform *Manual journal file dump* procedure (to follow).

Procedure 2
Journal file dump with JFFREEZE

If from_BCS 28 and higher and if JFFREEZE was used, perform this procedure. Otherwise, perform the *Manual journal file dump* procedure (follows this procedure).

- 1 App/ACT** If currently on BCS33 and lower, enter:

> QUERY JFDUMPF

If the module is already loaded (module information is output) go to step 2 below.

If the module is *not* loaded ("QUERY--module 'JFDUMPF' is not loaded" is output) load the module as follows.

- a. Have site install the appropriate BCSTOOLS tape on a tape drive. Ask for the tape via the identification label (see "Administrative" block on the Pre-application report.)
 - b. > TLIST(MOUNT <x> {BCSTOOLS tape}
 - c. > LOAD JFDUMPF PRPTCHEC
 - d. > DEMOUNT T<x>
-

- 2 Site and App**

> JFFREEZE HISTORY {site retains for their records}

Locate the FIRST JOURNAL FILE DISK VOLUME.

CAUTION

It is of utmost importance to start with the *first* journal file volume (containing the first journal files created since the data freeze).

- 3 App** List the JF disk volume as follows.

> DSKUT;LISTVOL <JF_disk> ALL

where <JF_disk> refers to the disk volume(s) containing journal files identified above in step 2. Be extra sure to list all the volumes with JF.

- 4** Locate a scratch DISK volume for the journal file dump (or else have site install a scratch tape with a write enable ring, and MOUNT FORMAT).
-

-continued-

Procedure 2
Journal file dump with JFFREEZE (continued)

- 5.1** Only if coming *from* BCS33 and higher and going *to* BCS35 and higher, enter the following command.

(for example, BCS 33-35, 33-36, 34-35, or 34-36)

```
> JFDUMPF <disk> <from_BCS> <from_BCS>  
where <disk> refers to the disk volume (or tape) from step 4.
```

- 5.2** Otherwise, for any other BCS enter the following commands.

```
> RFMT SET <from_BCS> <to_BCS>  
> JFDUMPF <disk> <from_BCS> <to_BCS>  
where <disk> refers to the disk volume (or tape) from step 4.
```

- 6** Verify that all journal files listed in step 3 are dumped, and retain the output filenames for *Matebind journal files* procedure (to follow).
-

- 7** > LISTSF ALL

Verify that DMOLIST was output from step 5, and retain the list for *Matebind journal files* procedure (to follow).

Procedure 3
Manual journal file dump

If from_BCS 27 and lower, or if JFFREEZE was not used, perform this procedure. Otherwise, perform the *JF dump with JFFREEZE* procedure (precedes this procedure).

- 1 App/ACT** If currently on BCS33 and lower, enter:

> QUERY JFDUMP

If the module is already loaded (module information is output) go to step 2 below.

If the module is *not* loaded ("QUERY--module 'JFDUMP' is not loaded" is output) load the module as follows.

- a. Have site install the appropriate BCSTOOLS tape on a tape drive. Ask for the tape via the identification label (see "Administrative" block on the Pre-application report.)
 - b. > TLIST(MOUNT <x> {BCSTOOLS tape}
 - c. > LOAD JFDUMP PRPTCHEC
 - d. > DEMOUNT T<x>
-

- 2 Site and App** Locate the FIRST JOURNAL FILE TAPE or JF DISK VOLUME.

CAUTION

It is of utmost importance to start with the *first* journal file volume (containing the first journal files created since the data freeze).

- a. **App** If journal files are on TAPE, list the JF tape as follows.

Put up the tape *without* a write enable ring.

> MOUNT <x> {journal file tape}

> LIST T<x> {retain file names}

- b. **App** If journal files are on DISK, list the JF disk volume as follows.

> DSKUT;LISTVOL <JF_disk> ALL

where <JF_disk> refers to the disk volume(s) containing journal files.

Be extra sure to list all the volumes with JF.

- 3** Locate a scratch DISK volume for the journal file dump (or else have site install a scratch tape with a write enable ring, and MOUNT FORMAT).
-

-continued-

Procedure 3
Manual journal file dump (continued)

- 4.1 Only if coming *from* BCS33 and higher and going *to* BCS35 and higher, enter the following command.

(for example, BCS 33-35, 33-36, 34-35, or 34-36)

Note: In the following step the applicator may utilize a file to dump multiple journal files.

```
> JFDUMP <jfin> <jfout> <device> <from_BCS> <from_BCS>
where <jfin> refers to the journal file name. For <jfout> use 'JFA' thru 'JFZ',
then use 'JFAA' thru 'JFZZ' (except Canada) -or use 'JF$100 thru JF$999'
(Canada only). <device> refers to the recording device on which to dump
journal file (disk, tape, or SFDEV).
```

As an example: 'JFDUMP U880405000090JF JFA D000SCRATCH 33 33'
dumps file U880405000090JF to file JFA onto disk D000SCRATCH
formatting from BCS33 to BCS35 and higher.

Retain the output filenames for *Matebind journal files* procedure (to follow).

- 4.2 Otherwise, for any other BCS enter the following commands.

(for example, BCS 32-35, 33-33, 33-34, or 34-34)

```
> RFMT SET <from_BCS> <to_BCS>
```

Note: In the following step the applicator may utilize a file to dump multiple journal files.

```
> JFDUMP <jfin> <jfout> <device> <from_BCS> <to_BCS>
where <jfin> refers to the journal file name. For <jfout> use 'JFA' thru 'JFZ',
then use 'JFAA' thru 'JFZZ' (except Canada) -or use 'JF$100 thru JF$999'
(Canada only). <device> refers to the recording device on which to dump
journal file (disk, tape, or SFDEV).
```

As an example: 'JFDUMP U880405000090JF JFA D000SCRATCH 29 32'
dumps file U880405000090JF to file JFA onto disk D000SCRATCH
formatting from BCS29 to BCS32.

Retain the output filenames for *Matebind journal files* procedure (to follow).

- 5 Repeat step 4 for each journal file listed from step 2 above.

CAUTION

**Review the time stamps of the reformatted JF to confirm
the entire data freeze period is accounted for.**
-JF active during the entire data freeze with no significant interval
without journal file

-continued-

Procedure 3
Manual journal file dump (continued)

6 > DEMOUNT T<x> *{only if JF was recorded on tape}*

7 **Site** If journal file was recorded on tape, remove the previous journal file tape and replace the write enable ring. Install the next tape without a write enable ring.

CAUTION
Install each journal file tape in the order they were created.

8 **Site and App** For each journal file tape, MOUNT and LIST the tape and repeat steps 4 through 7 above.

Procedure 4
Matebind journal files

- 1 **App/ACT** Matebind the reformatted journal files.
 - a. **ACT** List the device used for the journal file dump from the jf dump steps (previous procedure).
 - b. > MATEIO
 - c. > MATEBIND <jffile> <jffile>
where <jffile> refers to all reformatted JF filenames created in the JF dump steps.
 - d. Repeat MATEBIND for each filename created in the JF dump steps.
 - e. > MATEBIND DMOLIST DMOLIST
Note: The site is responsible to input all DMOs from the DMOLIST.
(These are DMOs which were input since datafreeze was suspended.)
 - f. **INACT**
Mate> MATEIO
-

Procedure 5
Restore journal files

- 1 **App** Restore the journal files to the inactive side. If to_BCS 30 and higher perform substep *a* below. If to_BCS 29 and lower perform substep *b*.

Note: In the following steps, <jffile> refers to all the reformatted JF filenames created previously in the *journal file dump* procedure.

CAUTION

Restore all journal files in the same order they were created.

- a. For to_BCS 30 and higher enter:

ACT

> TRACECI ME

Note: This command allows you to monitor the results of the RESTAB command on the ACT terminal.

INACT

Mate> RESTAB <jffile> <from_BCS>

Correct all errors which may occur.

Repeat RESTAB for each filename created in the journal file dump.

- b. For to_BCS 29 and lower enter:

INACT

Mate> DMOPRO <jffile>

Correct all errors which may occur.

Repeat DMOPRO for each filename created in the journal file dump.

PRESWACT procedure

This section details steps required to prepare for the CC activity switch to the new software load.

Procedure 1

BULLETINS before PRESWACT

- 1 **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning PRESWACT.
-

Procedure 2
Start PRESWACT

- 1 **App/ACT** Perform PRESWACT of BCSUPDATE.

Note: Please logout all users on the inactive side while PRESWACT is running.

```
> BCSUPDATE
> PRESWACT
```

- 2 Read the following notes, and continue the procedure while PRESWACT is running.

Note 1: PRESWACT runs all steps required before the CC switch of activity and flags them as completed when they pass. If any error occurs, PRESWACT will stop and give instructions. If this is the case, follow PRESWACT instructions to correct the problem (contact the site supervisor if necessary).

As an example:

```
TABLE_DELTA          executing
:
Table AMAOPTS *** Checksum incorrect, keys incorrect
:
TABLE_DELTA          not complete

ACT - Error: Inactive table data did not match.
Correct error condition. Enter Preswact to continue
```

For any table in error, investigate the problem by entering:

```
> DELTA <table> NOFILE           {compares new/old tuples}
```

or > DELTA <table> SUB <subtable> NOFILE

To continue, run PRESWACT again by entering:

```
> PRESWACT
```

Note 2: A hardware conversion (such as LTC/LTCI) scheduled concurrently with the BCS upgrade will require certain table changes, additions or deletions. PRESWACT step TABLE_DELTA will detect a mismatch between the old and new data, and will stop, indicating an error. If this is the case, confirm the table differences are due to the conversion, resolve any differences, and run PRESWACT again (type >PRESWACT) to continue.

-continued-

Procedure 2
Start PRESWACT (continued)

Note 3: PRESWACT step TABLE_DELTA may also display an informative message without stopping. When this occurs, it is not considered an error; rather, it is an indication that something is different in the old and new BCS loads. Note the information displayed, and at a convenient stopping point, compare the old and new loads to understand and validate the differences. *As an example:*

```
TABLE_DELTA           executing
:
Table ATTCONS Checksum incorrect, keys match
:
TABLE_DELTA           complete
```

Procedure 3
PRESWACT DIRP and billing

Site and software delivery engineer should work together to prepare both PRIMARY and PARALLEL DIRP billing subsystems for the CC switch of activity (SWACT). This procedure gives the steps to accomplish this preparation.

Note: Site can begin doing this procedure while the Applicator continues with other PRESWACT procedures.

1.0 Disk drive parallel DIRP coming from BCS31 and lower

- a. **Site/ACT** In table DIRPSSYS determine which disks are being used for parallel DIRP recording.

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

- b. For a parallel volume that is on DISK, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS by replacing the volume name with nil volume (\$).

- c. Copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.

- d. Erase all closed parallel DIRP files from the disk:

```
> CLEANUP FILE <parallel_filename>  
where <parallel_filename> is each file to be erased.
```

- e. Reformat the parallel disk volume:

```
> DIRPPFMT <parallel_volume>  
where <parallel_volume> is the original volume name.
```

- f. If to_BCS 32 and higher, rename the first file on the reformatted parallel volume (created by the "dirppfmt" command). Using the "renamefl" command, change the file name from "DIRPPARALLEL" to "B000000000000" (12 zeros).

- g. **Site and App/INACT** If from_BCS 31, ensure that parallel disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

-continued-

Procedure 3
PRESWACT DIRP and billing (continued)**1.1 Disk drive parallel DIRP coming from BCS32 and higher**

Note: If from_BCS 32 and higher, Site no longer has to take down parallel billing if on disk.

Site and App/INACT Ensure that parallel disk volumes are in table DIRPPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPPOOL on the inactive side before SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPPOOL_CHECK displays the datafill for table DIRPPPOOL on the inactive side.

If from_BCS 33 and lower, PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPPOOL.

DIRP will recover parallel recording to disk on the newly-active side after SWACT.

CAUTION**Recently recorded parallel data may be overwritten.**

Site should copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.

- If a single parallel volume is in use, information on the volume will be lost over SWACT.
- If more than one parallel volume is allocated to DIRP, DIRP will start recording after SWACT on the volume with the oldest time stamp. Hence information on that volume will be lost over SWACT.

2 Disk drive PRIMARY billing

- a. **Site/ACT** If on disk (DDU), from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR).
- b. If required by Telco policy copy unprocessed DIRP files to back-up tape (using DIRPAUTO or DIRPCOPY commands).
- c. Verify that table DIRPHOLD contains no unprocessed billing files (if DIRPAUTO was used above).

-continued-

Procedure 3
PRESWACT DIRP and billing (continued)

- d. **Site and App/INACT** If from_BCS 32 and higher, ensure that regular disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

3 Tape drive PRIMARY billing

- a. **Site/ACT** If on tape (MTD), from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR), CLOSE the standby file, and DMNT the standby volume.

Example:

```
> ROTATE AMA
> CLOSE AMA STDBY 1
> DMNT AMA T1                                     {standby volume}
```

- b. Remove the demounted standby tape from the tape drive, and put up a new tape to be used as the next DIRP volume.
- c. Prepare a new standby volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
where <x> is the standby device number, and <volume_id> is the
name of the standby volume.
```

If prompted enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then select an unused or expired tape for formatting.

```
> DEMOUNT T<x>
```

Leave the standby volume at load point and ON LINE. Immediately following SWACT, it will become the ACTIVE volume of the appropriate subsystem.

- d. **Site and App/INACT** If from_BCS 32 and higher, ensure that regular tape volumes are in table DIRPPOOL on the inactive side. This allows the tape to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

-continued-

Procedure 3
PRESWACT DIRP and billing (continued)

4.0 DPP/BMC PRIMARY billing coming from BCS31 and lower

- a. **Site/ACT** If on DPP or BMC, from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR), CLOSE the standby file, and DMNT the standby volume.

Note: DIRP sees DPP/BMC as a tape drive port.

- b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

```
> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
```

This re-establishes the block header on the DPP.

- c. Display current DPP settings to hardcopy (retain for POSTSWACT).

- d. Prepare a new standby volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
```

where <x> is the standby device number, and <volume_id> is the name of the standby volume.

If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)" then enter:

```
> ERASTAPE <x>
```

where <x> is the standby device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

System response is:

```
***WARNING, THIS TAPE WILL BE ERASED***
```

CAUTION

At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.

If a mistake is made, a real tape could be erased.

Enter YES to confirm the command.

```
> DEMOUNT T<x>
```

If ERASTAPE command was used, repeat this substep (d) to rename the volume.

Leave the standby volume demounted. Immediately following SWACT, it will become the ACTIVE volume of the appropriate subsystem.

-continued-

**Procedure 3
PRESWACT DIRP and billing (continued)**

- e. **Site and App/INACT** If from_BCS 31, ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

```
Mate> TABLE DIRPPOOL; POS <pool_#>  
where <pool_#> is the number for DPP AMA pool.
```

If going to BCS32 and higher CHANGE field DEVTYPE in table DIRPPOOL to DPP (not TAPE).

CAUTION

**Starting in BCS32 in a pool of DPP or BMC volumes,
field DEVTYPE in table DIRPPOOL should be DPP (not TAPE).**
Otherwise, if datafilled as TAPE you will have to recover the volume manually after SWACT.

- f. **Site and App/ACT** If SMDR recording is on BMC (datafilled as TAPE in table DIRPSSYS/DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY volume. In table DIRPSSYS/DIRPPOOL add the TAPE device as a standby BMC. Also add the device in DIRP_REC (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

Note: Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

- g. **Site and App/INACT** Verify the DIRP_REC file on the inactive side is correct for the SWACT to the new BCS load.

```
Mate> LISTSF ALL
```

```
Mate> PRINT DIRP_REC
```

If necessary, edit DIRP_REC to make corrections.

-continued-

Procedure 3 PRESWACT DIRP and billing (continued)

If going to BCS32 and higher, *delete* the DPP tuple in the DIRP_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

```
Mate> EDIT DIRP_REC
Mate> DOWN '<poolname>'      {name of the pool using the DPP}
Mate> DELETE
Mate> ERASESF DIRP_REC
Mate> FILE SFDEV DIRP_REC
```

4.1 DPP/BMC PRIMARY billing coming from BCS32 and higher

- a. **Site/ACT** Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

```
> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
This re-establishes the block header on the DPP.
```

- b. **Site and App/ACT** If SMDR recording is on BMC (datafilled as TAPE in table DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY TAPE volume. In table DIRPPOOL add the TAPE device as a standby BMC. Also add the device on the inactive side (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

Note: Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

- c. **Site and App/INACT** Ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

```
Mate> TABLE DIRPPOOL;POS <pool_#>
where <pool_#> is the number for DPP AMA pool.
```

-continued-

**Procedure 3
PRESWACT DIRP and billing (continued)**

Verify field DEVTYPE in table DIRPPOOL is DPP (not TAPE).

CAUTION

Starting in BCS32 in a pool of DPP or BMC volumes, field DEVTYPE in table DIRPPOOL should be DPP (not TAPE). Otherwise, if datafilled as TAPE you will have to recover the volume manually after SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

5.0 Tape drive parallel DIRP coming from BCS33 and lower

- a. **Site/ACT** In table DIRPSSYS or DIRPPOOL determine which MTDs are being used for parallel DIRP recording.

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

Note: TAPEX cannot be used for parallel recording.

- b. For a parallel volume that is on TAPE, CLOSE the parallel file and DMNT the volume from the DIRP level. Remove the volume from table DIRPSSYS or DIRPPOOL by replacing the volume name with nil volume (\$). Physically remove the tape from the drive.

- c. Replace these tapes with freshly formatted, empty tapes.

Note: This substep can also be done after the CC switch of activity (during POSTSWACT) if the tape drive is needed for other purposes.

Prepare each new parallel volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
where <x> is the parallel device number, and <volume_id> is the name
of the parallel volume.
```

```
> DEMOUNT T<x>
```

Leave the tape at load point and ON LINE so it can be activated as the new PARALLEL device after SWACT.

-continued-

Procedure 3 PRESWACT DIRP and billing (continued)

5.1 Tape drive parallel DIRP coming from BCS34 and higher

Note: This step can be used to automatically recover parallel volumes after the SWACT. Alternatively, you can do the previous step if you wish to wait until after the SWACT to format the new parallel volumes.

- a. **Site/ACT** In table DIRPPOOL determine which MTDs are being used for parallel DIRP recording. PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.
- b. For a parallel volume that is on TAPE, demount all EXCEPT the current parallel volume from table DIRPPOOL by replacing the volume name in DIRPPOOL with nil volume (\$). Then physically remove the tape from the drive.
- c. Replace these tapes with freshly formatted, empty tapes.

Prepare each new parallel volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
where <x> is the parallel device number, and <volume_id> is the name
of the parallel volume.
```

```
> DEMOUNT T<x>
```

Leave the tape at load point and ON LINE so it can be activated as the new PARALLEL device after SWACT.

- d. **Site and App/INACT** Ensure that parallel tape volumes are in table DIRPPOOL on the inactive side. This allows the tape to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

- If a single parallel volume is used for recording, the volume will be dropped over SWACT.

- If multiple tape volumes are in use for parallel recording, the volume in use before the SWACT will be dropped from DIRP and a freshly-formatted, empty volume will be used for recording.

6.0 DPP/BMC parallel DIRP coming from BCS33 and lower

In BCS32 or BCS33 DIRP no longer supports parallel AMA recording on a DPP or BMC volume, UNLESS device type TAPE is used in table DIRPPOOL (in which case you must manually recover the DPP after SWACT).

- a. **Site/ACT** In table DIRPSSYS or DIRPPOOL identify which DPP/BMC(s) is being used for parallel DIRP recording.

-continued-

Procedure 3
PRESWACT DIRP and billing (continued)

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

- b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

```
> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA  
This re-establishes the block header on the DPP.
```

- c. Display current DPP settings to hardcopy (retain for POSTSWACT).
- d. For a parallel volume that is on DPP or BMC, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS or DIRPPOOL by replacing the volume name with nil volume (\$).
- e. Prepare each new parallel volume as follows.

```
> MOUNT <x> FORMAT <volume_id>  
where <x> is the parallel device number, and <volume_id> is the name of the parallel volume.
```

If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)" then enter:

```
> ERASTAPE <x>  
where <x> is the parallel device number.
```

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect data collected by the DPP/BMC. It only resets DMS indicators.

System response is:

```
***WARNING, THIS TAPE WILL BE ERASED***
```

CAUTION

At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
If a mistake is made, a real tape could be erased.

Enter YES to confirm the command.

```
> DEMOUNT T<x>
```

If ERASTAPE command was used, repeat this substep (e) to rename the volume.

Leave the billing volume in this state so it can be activated as the new PARALLEL volume following SWACT.

-continued-

Procedure 3
PRESWACT DIRP and billing (continued)

- f. **Site and App/INACT** If to_BCS 32 and higher, ensure that parallel DPP/BMC volumes are in table DIRPPOOL on the inactive side. This allows the DPP/BMC to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.
- g. **Site and App/INACT** If to_BCS 32 and higher, for the parallel DPP tuple in table DIRPPOOL change field DEVTYPE to TAPE (not DPP).
- h. **Site and App/INACT** Verify the DIRP_REC file on the inactive side is correct for the SWACT to the new BCS load.

```
Mate> LISTSF ALL
```

```
Mate> PRINT DIRP_REC
```

If necessary, edit DIRP_REC to make corrections.

If going to BCS32 and higher, *delete* the DPP tuple in the DIRP_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

```
Mate> EDIT DIRP_REC
```

```
Mate> DOWN '<poolname>'      {name of the pool using the DPP}
```

```
Mate> DELETE
```

```
Mate> ERASESF DIRP_REC
```

```
Mate> FILE SFDEV DIRP_REC
```

6.1 DPP/BMC parallel DIRP coming from BCS34 and higher

In BCS34 and higher DIRP no longer supports parallel AMA recording on a DPP or BMC volume. Table control prohibits the filling of devtype DPP in a parallel pool.

Procedure 4
Data extension

1 **App/INACT** For a DATA EXTENSION only-Once PRESWACT step MATE_RESTART_RELOAD (or step MATE_RESTART prior to BCS35) has completed, perform the following workaround. This allows the new trunks to remain in the INB state after SWACT.

a. Log into the inactive side.

b. Mate> LISTSF ALL

Note: The file 'NEWTRKS' should be in storefile. This file is created by Loadbuild to identify all the trunks added for the Data Extension.

c. Mate> MAPCI NODISP;MTC;TRKS;TTP

d. Mate> COMMAND PTBI (POST T @1 @2;FRLS;BSY INB)

e. Mate> READ NEWTRKS

f. Mate> QUIT ALL

Procedure 5
Login inactive

1 **App/INACT** *Verify a flashing A1 on the inactive processor.*

2 Login on the mate side as follows.

a. ACT

```
> MATEIO
```

```
> MATELOG <device>
```

where <device> is the name of the terminal labeled INACT.

b. INACT

```
Enter username and password {mate-side response}
```

```
Mate> OPERATOR OPERATOR
```

or Enter username

```
Mate> OPERATOR
```

```
Enter password
```

```
Mate> OPERATOR
```

Procedure 6
Logout DNC

- 1 **Site and App/ACT** If DNC is in use (feature package NTX560), have Telco confirm that all DNC end users have been contacted and are logged out.
-

Procedure 7
Table CRSFMT alarm

- 1 **App/ACT** In table CRSFMT, field ALARM, if any entry is set to 'Y', then the device must also be allocated in table DIRPPOOL. Otherwise, set it to 'N'.

Note: If a volume is allocated in DIRPPOOL it is being used.

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SWACT and POSTSWACT procedure

This section details steps required to perform a CC switch of activity (SWACT), test the new load, and complete the software delivery process.

Procedure 1

BULLETINS before SWACT

- 1 **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning the SWACT.
-

Procedure 2
Before SWACT

- 1 **Site** Do not proceed until both the Telco and NT on-line support agree.

- 2 **Site** Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

- 3 **Site** Ensure no further activity is performed on the DPP, including DPP polling or disk backup. Inform the downstream processing center.

- 4 **Site** Disable all polling and periodic testing. There is to be no activity on the SuperNode CM, MS, and CLOCK or NT40 CC and CMC until cleared by the software delivery engineer. Failure to comply may result in a system restart.

- 5 **Site** Dump the SPMS register information to a printer (or other device) according to Telco practice.

- 6 **Site** Disconnect any ISDN Digital Test Access (DTA) monitors. (Reference NTP 297-2421-300.)

CAUTION

If DTA monitor is left connected over the SWACT, it will not be possible to reconnect it without first reloading the PM from CC data.

- a. Enter the LTPDATA level of MAP.
- b. Query all DTA monitors on the switch by issuing the command,
> EQUIP DTA QUERY ALL
- c. If the DMS responds with "No DTA equipment reserved on switch" then no further action is needed.
- d. Make note of any connected monitors by looking at the CONNECT field of the query display.

Use the POST command to post each monitored LEN, and then issue the command,

> CONNECT <N> RLS
where <N> is the integer number of the monitor from the first column of the query display.

Do this for each connected monitor. Repeat substep b as necessary to review DTA status.

-continued-

Procedure 2
Before SWACT (continued)

- e. Reset all monitor LENS and DS0 channels by issuing the command,
 > EQUIP DTA RESET <N>
 where <N> is the integer number of the monitor from the first column of the query display.
- Do this until no equipment is left "Equipped." Repeat substep b as necessary to review DTA status.

- 7 **Site** If BCS35, ensure Bit Error Rate Tester (BERT) is not running. BERT is a manual action used to test the quality of a CCS7 link.

CAUTION

**In BCS35 BERT should not be left running during the CC SWACT.
 Otherwise, the link will hang up over the SWACT.**
 If BERT is left running over the SWACT, you will have to go into the PM level, post the offending LIU7/MSB7, and BSY and RTS it.

- a. To determine if BERT is on: Go into C7LKSET level and post each linkset in turn. The link state should not indicate 'BERT'.
- b. To turn off BERT, go into the C7LKSET level and post the linkset. Go into C7BERT level and type STOP <linkno>.
- 8 **App** Do not swact during CMC REX test. Failure to comply may result in a system restart.
- a. > TABLE OFCENG;POS CMC_REX_SCHEDULED_HR;QUIT
 The parameter will range from 0 to 23: 0 being midnight and 23 being 2300 hours.
- b. Do not swact the office between the CMC_REX_SCHEDULED_HR and 30 minutes after.
 Example: If CMC_REX_SCHEDULED_HR is set to 0, then do not swact between 0000 and 0030 hours.
- c. Verify Telco did complete step 4 above-Disable all polling and periodic testing.

Procedure 3
Restore special logs

Special logs (suppressed logs or logs with a threshold) are set up in LOGUTIL on a per-site basis. These do not get restored to the new load. This procedure manually restores any special logs on the new load.

Note: A restart/reload on the mate side will cause suppress/threshold settings to be lost. If a mate restart occurs before the switch of activity, verify the settings are present and, if not, repeat this procedure.

1 App/ACT List all special logs on the active side.

```
> LOGUTIL  
> LISTREPS SPECIAL
```

Example output:

```
LINE 138 7 INFO TRMT *thresh= 25*  
PM 189 5 INFO PM SW Information... *supp*
```

2 App/INACT Restore special logs on the mate side.

```
Mate> LOGUTIL  
Mate> LISTREPS SPECIAL
```

Commands to restore above example:

```
Mate> THRESHOLD 25 LINE 138  
Mate> SUPPRESS PM 189
```

3 App/INACT Verify the correct logs are set up and match the active load.

```
Mate> LOGUTIL  
Mate> LISTREPS SPECIAL
```

Procedure 4
Start logs

- 1 **App/ACT** Set up LOGS for the SWACT.

Note: The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.

- a. > LOGUTIL; STOP
 - b. > DELDEVICE <device>
where <device> is where logs are to be routed.
 - c. > ADDRIP <device> SWCT {also add SWNR if on BCS30 and lower}
 - d. > START
This starts logs on "this" device. If a different terminal device was selected above, then use >STARTDEV <device>.
 - e. > LEAVE
-

Procedure 5
Release JAM NT40

UNJAM the processors in preparation for the CC switch of activity (SWACT).

- 1 **Site and App/INACT** Verify the inactive side is flashing A1.

- 2 **Site/INACT** On inactive CCC, shelf 51, card location 16 (NT1X48), place the *Dact* switch to the *left* (UNJAMMED).

- 3 **Site/ACT and INACT** On both sides (same card), also verify the *Enab* switches are down and the thumbwheels are on 5.

Procedure 6
Establish mate communication NT40

- 1 **App/ACT** Establish communication with the mate (inactive) side.
> MCR RTS
-

Procedure 7
SWACT

Refer to "CC Warm SWACT Summary" in *Appendix A* for a description of the CC warm SWACT process. Also refer to *Appendix B* for a procedure for testing call survivability over a CC warm SWACT and to *Appendix C* for sample test call scripts.

Note: Only "simple" 2-port and echo calls that are in a stable talking state (that is, not in a transition state such as dialing) will survive a CC warm SWACT. Survival means that the call is kept up until the next signaling message is received (usually, for example, a terminate message, but on any other message as well, such as an attempt to use the conference feature).

- 1 **App/ACT** Wait a *minimum* of 10 minutes after the *completion* (flashing A1) of the last RESTART on the inactive side before entering the appropriate switch of activity (SWACT) command (below).

CAUTION
FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a controlled SWACT.
Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

CAUTION
After a CC warm SWACT do not JAM the inactive CPU RTIF.
The system requires the JAM status to be clear on both CPUs in order to recover successfully. Recovery is indicated with a SWCT 101 log.

-
- 2 **App/ACT** INTERNATIONAL offices switch CC activity (SWACT) as follows. All others go to step 3.

Note: This step is valid if the NTX470AA (International Common Basic) package is built into the load.

> INTLSWCT ; DATE ; RESTARTSWCT *{only for INTL offices}*

-continued-

Procedure 7
SWACT (continued)

3 App/ACT All other offices switch CC activity (SWACT) with CC warm SWACT as follows.

a. For BCS36 and higher type:

> BCSUPDATE ; SWACTCI ; QUERYSWACT

System prompt will tell you which SWACT command to use, either NORESTARTSWACT or RESTARTSWACT:

> DATE ; NORESTARTSWACT

Respond (yes/no) to system prompt using lower-case.

or else,

> DATE ; RESTARTSWACT

b. For BCS35 and lower type:

> BCSUPDATE ; SWACTCI ; DATE ; RESTARTSWACT *{for BCS33-BCS35}*

> BCSUPDATE ; SWCT ; DATE ; RESTARTSWCT *{for BCS31 or BCS32}*

> SWCT ; DATE ; RESTARTSWCT *{for BCS30 and lower}*

System response varies with the BCS level, but the following prompt is a typical example.

ACTIVE DEFAULT SETTINGS :

FORCESWACT set ON

LOADEXECS set ON

NOMATCH set OFF

Do you wish to continue?

Please confirm ("YES" or "NO"):

...Starting Warm SWACT now.

4 Site/ACT Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

CAUTION

Work quickly to complete the procedures to follow.
 The POSTSWACT steps will verify that the office is functioning normally with the new software load.

Procedure 8
Start POSTSWACT

CAUTION

After a CC warm SWACT do not JAM the inactive CPU RTIF.
The system requires the JAM status to be clear on both CPUs in order to recover successfully. Recovery is indicated with a SWCT 101 log.

App/ACT Login, check the date and time, and start POSTSWACT.

- 1 Type:
<break>

 - 2 ?LOGIN
Enter username and password *{system response}*
> <username> <password>
 - or > <username>
> <password>

 - 3 > DATE
Verify the date and time are correct.

 - 4 Reestablish recording onto devices (console session) as required.

 - 5 > BCSUPDATE ; POSTSWACT
POSTSWACT runs all steps required after the CC switch of activity and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. If this is the case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue.
If no problems are encountered, POSTSWACT stops after BEGIN_TESTING and waits until the site verifies the sanity of the current load.
-

Procedure 9 Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1 > MAPCI ;MTC ; IOD ; DIRP
> QUERY AMA ALL *{note which volume is ACTIVE}*

2 If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3 TAPEX volumes must be manually remounted using the DIRP MNT command.

4 Assign standby billing devices for TAPE and DPP/BMC.

a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.

b. > MOUNT <x> FORMAT <stdby_volume>
where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.

Example: MOUNT 3 FORMAT DPPAMA

c. Enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then enter:

> ERASTAPE <x>
where <x> is the standby device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

System response is:

WARNING, THIS TAPE WILL BE ERASED

CAUTION

**At this point again confirm the device is a port to a DPP or BMC,
and NOT an unexpired billing tape.**

If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-

Procedure 9
Recover billing (continued)

- d. > DEMOUNT T<x>
 - e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.
 - f. Repeat this entire step for each standby billing subsystem.
-

5 Activate standby devices.

- a. > MNT <subsystem> <x> {still in DIRP level}
Example: MNT AMA 3
Enter YES to confirm the command.
 - b. > QUERY AMA {to confirm standby volume is available}
 - c. Repeat this step for each billing subsystem.
-

6 If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)

* If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

Note: Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

7 Bring up parallel devices (as required) using the preformatted volumes.

- a. For BCS31 and lower:
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.
Example:
TABLE DIRPSSYS;POS AMA
CHA PARVOL T4
or CHA PARVOL D010PAMA
- b. For BCS32 and higher:
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.
Example:
TABLE DIRPSSYS;POS AMA

In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

-continued-

Procedure 9
Recover billing (continued)

Examples:

TABLE DIRPPool; POS 62 (*pool for AMAPOOL*)

CHA VOLUME23 T4

or CHA VOLUME23 D010PAMA

- c.** Repeat substep a or b for each parallel volume to be activated.
 - d.** > QUIT MAPCI
-
- 8** Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
-

Procedure 10
Display DPP settings

App/ACT Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1 > MAPCI NODISP;MTC;IOD;DPP AMA

2 > COLLPSW

Note: If different, perform steps 3 and 4; otherwise go to step 5.

3 > COLLPSW 1 <4_digits> <6_digits>

4 > COLLPSW 2 <4_digits> <6_digits>

5 > AMATPSW

Note: If different, perform step 6; otherwise, go to step 7.

6 > AMATPSW <4_digits> <6_digits>

7 > AMAHRS

Note: If different, perform step 8; otherwise, go to step 9.

8 > AMAHRS <start_hour> <end_hour>

9 > VALPARM INVALID

Note: If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT

Note: If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.

Procedure 11
INI trunks

App/ACT If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1 > MAPCI ; MTC ; TRKS ; TTP

2 > POST A INI

3 > REPEAT <**x**> (FRLS ; RTS ; NEXT)
where <x> is the number of INI trunks in the posted set.

Procedure 12
Restart inactive POST NT40

Prepare the inactive side for a revert to the old BCS load.

Note: A restart on the inactive side is done at this time in order to save time in the event that a revert to the old load should become necessary.

- 1 **Site/INACT** Locate the NT1X48 card with the *Inact* LED lit. Move the *enab* switch up.

- 2 **Site/INACT** Perform a restart reload on the inactive processor (old BCS load).
 - a. Thumbwheel 3, RESET
flashes 33
 - b. Thumbwheel 7, NO RESET
flashes 77, then initializes
 - c. When the inactive processor starts to initialize, set thumbwheel back on 5, NO RESET.

- 3 **Site/INACT** Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

- 4 **Site/INACT** Move the *Enab* switch back down.

- 5 **App/INACT** Confirm that the inactive processor is flashing A1.

Procedure 13
DRTIME statistics

- 1 **App/ACT** Get a hardcopy of DRTIME statistics (if needed).

> DRTIME PRINT

DRTIME provides statistics on the BCS application. If requested, the information should be forwarded to the appropriate Northern Telecom department.

Procedure 14
Do Test Calls

- 1 **Site/ACT** Perform TEST CALLS that were identified ahead-of-time from *Appendix C: Test Call Scripts*.

CAUTION

If an abort becomes necessary due to critical test failures, revert to the old load using the *Revert to the old load* procedure; otherwise, continue.

Note: Verify AMAB logs in conjunction with certain AMA test calls.

Procedure 15
After testing is complete SYNC NT40

POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. After SITE accepts the current load, then put the processors in sync as follows.

Note: Do not enter POSTSWACT again until the processors are in sync.

- 1 **Site/ACT and INACT** On each CCC, shelf 51, card location 16 (NT1X48), ensure the *Enab* switches are down, the *Dact* switches are to the left (unjammed), and the thumbwheels are on 5.

- 2 **App/ACT** > MAPCI;MTC;CC;PS <i>
where <i> is the inactive program store.

- 3 > COPY <m>
where <m> is the PS module. Start at zero (0).

- 4 Repeat substep 3 for each PS module equipped.

- 5 > QUIT;SYNC NOTTRACEPOINT *{if BCS31 and higher}*
> YES *{for confirmation}*
Note: The SYNC NOTTRACEPOINT command should be used in BCS31 and higher (patch is required if BCS31 or 32). If lower than BCS31 then use SYNC command as usual.

- 6 > QUIT MAPCI

Procedure 16
Finish POSTSWACT

- 1 **App/ACT** If necessary run POSTSWACT one more time to completion.
 > BCSUPDATE ; POSTSWACT
 At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

- 2 **Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

- 3 **App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

- 4 **Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

- 5 **Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

- 6 **Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

- 7 **Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

- 8 **Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

- 9 **Site/ACT** Return PORTS and USER information back to original values.

- 10 **Site/ACT** Notify DNC end users to LOGIN the DNC.

- 11 **Site/ACT** For Hybrid and if table DIRPSSYS was changed during the "JFFREEZE procedure" (*Site Preparation* section), change data for position JF in table DIRPSSYS back to the original data.

Procedure 17
Take image NT40

- 1 **Site/ACT** DUMP AN IMAGE of the new BCS load for backup-one NT40 IMAGE to disk and backup image copied to tape.

- 2 After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to 'OFF' during the ONP.

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.

Procedure 18
Start journal file

- 1 **Site/ACT** If equipped, start journal file and verify started.
 - a. > JF START
 - b. > MAPCI ; MTC ; IOD ; DIRP
 - c. > QUERY JF ALL
QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
 - d. > QUIT ALL
-

Revert to old load procedure

This section details steps required to revert to the old BCS load.

Perform the following procedure if a controlled REVERT is required after the CC switch of activity (SWACT).

Remember, the CPU with the new BCS load is now *active*. You will be going back to the old BCS load which is now *inactive*.

Procedure 1 **Before REVERT**

- 1 **Site** Do not proceed until both the Telco and NT on-line support agree.

- 2 **Site** Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

Procedure 2
Restart inactive NT40 2

CAUTION

Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.

- 1 **Site/INACT** Perform a restart reload on the inactive processor (old BCS load).
 - a. Thumbwheel 3, RESET
flashes 33
 - b. Thumbwheel 7, NO RESET
flashes 77, then initializes
 - c. When the inactive processor starts to initialize, set thumbwheel back on 5, NO RESET.
 - d. Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.
-
- 2 **App/INACT** Confirm that the inactive processor is flashing A1.
-

Procedure 3
Establish mate communication NT40

- 1 **App/ACT** Establish communication with the mate (inactive) side.
> MCR RTS
-

Procedure 4
Login inactive

1 **App/INACT** *Verify a flashing A1 on the inactive processor.*

2 Login on the mate side as follows.

a. **ACT**

> MATEIO

> MATELOG <device>

where <device> is the name of the terminal labeled INACT.

b. **INACT**

Enter username and password *{mate-side response}*

Mate> OPERATOR OPERATOR

or Enter username

Mate> OPERATOR

Enter password

Mate> OPERATOR

Procedure 5
TRACECI close

- 1 **App/INACT** If old load (inactive side) is BCS34 or lower, then close out the old active MOVEBCS/TABXFR message file.

Mat> TRACECI CLOSE

{for BCS34 and lower}

Procedure 6
Configure DIRP billing

- 1 **Site/App** Configure the DIRP billing subsystems for revert SWACT to the old load.

Note: For details for completing the following refer to "PRESWACT DIRP and billing" procedure.

- a. **ACT** Take down billing tapes and format new standby volumes in DIRP. Leave these demounted, they will become the active volumes after SWACT.

Disk volumes will rotate and recover automatically after SWACT.

Parallel volumes on tape (or DPP/BMC) can be recovered manually after SWACT.

- b. **INACT** If reverting to BCS31 or higher:

Ensure datafill is correct on the mate side for tables DIRPPOOL or DIRPSSYS.

- c. **INACT** If DIRP_REC file is present in mate SFDEV, ensure each entry in DIRP_REC is correct for the revert SWACT.

Note: In DIRP_REC the parallel volume assignments for DIRPPOOL should be set to nil (\$) for all pools.

Procedure 7
Start logs

- 1 **App/ACT** Set up LOGS for the SWACT.

Note: The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.

- a. > LOGUTIL; STOP
 - b. > DELDEVICE <device>
where <device> is where logs are to be routed.
 - c. > ADDRIP <device> SWCT {also add SWNR if on BCS30 and lower}
 - d. > START
This starts logs on "this" device. If a different terminal device was selected above, then use >STARTDEV <device>.
 - e. > LEAVE
-

Procedure 8
Ensure inactive unjammed

- 1 **Site and App/INACT** Ensure inactive side is *unjammed*.
-

Procedure 9 Revert

- 1 **App/ACT** Wait a MINIMUM of 10 minutes after the COMPLETION (flashing A1) of the last restart on the inactive side before entering the ABORT-SWACT, ABORTSWCT, or RESTARTSWCT command.

CAUTION

FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a CC warmSWACT.
Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

- 2 **App/ACT** INTERNATIONAL offices switch CC activity (SWACT) as follows.

Note: This step is valid if the NTX470AA (International Common Basic) package is built into the load.

> INTLSWCT ; DATE ; RESTARTSWCT *{only for INTL offices}*

- 3 **App/ACT** ALL OTHER offices switch CC activity (SWACT) with CC warm-SWACT as follows.

CAUTION

If a SWACT application module exists on the new, active side, but is missing from the old, inactive side, the revert SWACT may fail.

If reverting to BCS32 and higher, any SWACT applications missing from the inactive side will automatically be overridden.

If reverting to BCS31 and lower, SWACT will fail for any SWACT applications missing from the inactive side. In this case, any SWACT application missing from the inactive side must be *unloaded from the active side* in order for the revert-back to succeed. If you are unloading a module in a load prior to BCS30, use the SWCTCHK command before performing the revert-back.

-continued-

Procedure 9
REVERT (continued)

> BCSUPDATE ; SWACTCI ; DATE ; ABORTSWACT *{for BCS33 and higher}*

CAUTION

In BCS34 and higher the ABORTSWACT command has an option called NOCHECK which will allow the CC warm SWACT to continue even if there are bad devices on the active side (such as a CBSY LTC). Use the NOCHECK option *only* as a last resort and with special care taken to ensure office integrity.

> BCSUPDATE ; SWCT ; DATE ; ABORTSWCT *{for BCS31 or BCS32}*

> SWCT ; DATE ; RESTARTSWCT *{for BCS30 and lower}*

System response varies with the BCS level, but the following prompt is a typical example.

```
ACTIVE DEFAULT SETTINGS :
FORCESWACT set ON
LOADEXECS set ON
NOMATCH set OFF
Do you wish to continue?
Please confirm ("YES" or "NO"):
...Starting Warm SWACT now.
```

-
- 4 Site/ACT** Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

CAUTION

Work quickly to complete the procedures to follow.
The POSTSWACT steps will verify that the office is functioning normally with the new software load.

Procedure 10
Start POSTSWACT

App/ACT Login, check the date and time, and start POSTSWACT.

- 1 Type:
<break>

 - 2 ?LOGIN
Enter username and password *{system response}*
> <username> <password>
 - or > <username>
> <password>

 - 3 > DATE
Verify the date and time are correct.

 - 4 Reestablish recording onto devices (console session) as required.

 - 5 > BCSUPDATE ; POSTSWACT
POSTSWACT runs all steps required after the CC switch of activity and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. If this is the case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue.
If no problems are encountered, POSTSWACT stops after BEGIN_TESTING and waits until the site verifies the sanity of the current load.
-

Procedure 11
Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1 > MAPCI ;MTC ; IOD ; DIRP
> QUERY AMA ALL *{note which volume is ACTIVE}*

2 If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3 TAPEX volumes must be manually remounted using the DIRP MNT command.

4 Assign standby billing devices for TAPE and DPP/BMC.

a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.

b. > MOUNT <x> FORMAT <stdby_volume>
where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.

Example: MOUNT 3 FORMAT DPPAMA

c. Enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then enter:

> ERASTAPE <x>
where <x> is the standby device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

System response is:

WARNING, THIS TAPE WILL BE ERASED

CAUTION

**At this point again confirm the device is a port to a DPP or BMC,
and NOT an unexpired billing tape.**

If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-

Procedure 11
Recover billing (continued)

-
- d. > DEMOUNT T<x>
- e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.
- f. Repeat this entire step for each standby billing subsystem.
-
- 5 Activate standby devices.
- a. > MNT <subsystem> <x> {still in DIRP level}
Example: MNT AMA 3
 Enter YES to confirm the command.
- b. > QUERY AMA {to confirm standby volume is available}
- c. Repeat this step for each billing subsystem.
-
- 6 If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)
- * If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.
- Note:** Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).
-
- 7 Bring up parallel devices (as required) using the preformatted volumes.
- a. For BCS31 and lower:
 In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.
Example:
 TABLE DIRPSSYS;POS AMA
 CHA PARVOL T4
 or CHA PARVOL D010PAMA
- b. For BCS32 and higher:
 In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.
Example:
 TABLE DIRPSSYS;POS AMA
 In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

-continued-

Procedure 11
Recover billing (continued)

Examples:

TABLE DIRPPPOOL; POS 62 (*pool for AMAPOOL*)

CHA VOLUME23 T4

or CHA VOLUME23 D010PAMA

- c. Repeat substep a or b for each parallel volume to be activated.
 - d. > QUIT MAPCI
-
- 8** Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
-

Procedure 12
Display DPP settings

App/ACT Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1 > MAPCI NODISP;MTC;IOD;DPP AMA

2 > COLLPSW

Note: If different, perform steps 3 and 4; otherwise go to step 5.

3 > COLLPSW 1 <4_digits> <6_digits>

4 > COLLPSW 2 <4_digits> <6_digits>

5 > AMATPSW

Note: If different, perform step 6; otherwise, go to step 7.

6 > AMATPSW <4_digits> <6_digits>

7 > AMAHRS

Note: If different, perform step 8; otherwise, go to step 9.

8 > AMAHRS <start_hour> <end_hour>

9 > VALPARM INVALID

Note: If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT

Note: If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.

Procedure 13
INI trunks

App/ACT If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1 > MAPCI ; MTC ; TRKS ; TTP

2 > POST A INI

3 > REPEAT <**x**> (FRLS ; RTS ; NEXT)
where <x> is the number of INI trunks in the posted set.

Procedure 14
Do Test Calls

- 1 **Site/ACT** Perform TEST CALLS that were identified ahead-of-time from *Appendix C: Test Call Scripts*.
-

Procedure 15
After testing is complete SYNC NT40

POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. *After SITE accepts the current load*, then put the processors in sync as follows.

Note: Do not enter POSTSWACT again until the processors are in sync.

1 Site/ACT and INACT On each CCC, shelf 51, card location 16 (NT1X48), ensure the *Enab* switches are down, the *Dact* switches are to the left (unjammed), and the thumbwheels are on 5.

2 App/ACT > MAPCI;MTC;CC;PS <i>
where <i> is the inactive program store.

3 > COPY <m>
where <m> is the PS module. Start at zero (0).

4 Repeat substep 3 for each PS module equipped.

5 > QUIT;SYNC NOTTRACEPOINT *{if BCS31 and higher}*
> YES *{for confirmation}*

Note: The SYNC NOTTRACEPOINT command should be used in BCS31 and higher (patch is required if BCS31 or 32). If lower than BCS31 then use SYNC command as usual.

6 > QUIT MAPCI

Procedure 16
Finish POSTSWACT

- 1 **App/ACT** If necessary run POSTSWACT one more time to completion.

```
> BCSUPDATE ; POSTSWACT
```

At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

- 2 **Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

- 3 **App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

- 4 **Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

- 5 **Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

- 6 **Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

- 7 **Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

- 8 **Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

- 9 **Site/ACT** Return PORTS and USER information back to original values.

- 10 **Site/ACT** Notify DNC end users to LOGIN the DNC.

- 11 **Site/ACT** For Hybrid and if table DIRPSSYS was changed during the "JFFREEZE procedure" (*Site Preparation* section), change data for position JF in table DIRPSSYS back to the original data.

Procedure 17
Take image NT40

- 1 **Site/ACT** DUMP AN IMAGE of the new BCS load for backup-one NT40 IMAGE to disk and backup image copied to tape.

- 2 After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to 'OFF' during the ONP.

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.

Procedure 18
Start journal file

- 1 **Site/ACT** If equipped, start journal file and verify started.
 - a. > JF START
 - b. > MAPCI ; MTC ; IOD ; DIRP
 - c. > QUERY JF ALL
QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
 - d. > QUIT ALL
-

Procedure 19
More Revert/ABORT steps

- 1 **Site and App/INACT** If asked to do so by technical support take an image of the *inactive* (mate) side load.

- 2 **Site and App/ACT** With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

- 3 **Site and App** Following an ABORT, rescheduling of the software update must be negotiated. Refer to *Procedure for rescheduling aborted applications*.

- 4 **App/ACT** On the ACTIVE side perform the following steps to restore the active side to its original configuration.
 - a. If old load is BCS35 and higher:
 - > BCSUPDATE ; ABORT_PRESWACT
 - > TABXFR ; CANCEL
 - > QUIT ALL
 - b. If old load is BCS34 and lower:
 - > BCSUPDATE ; RESET
 - > QUIT ALL

Emergency abort procedure

CAUTION

Perform the following steps only if a decision has been reached to activate the old load without regard to preserving stable call processing.

Remember, the CPU with the new BCS load is now active. You will be going back to the old BCS load which is now inactive.

Procedure 1
Before EABORT

- 1 **Site** Do not proceed until both the Telco and NT on-line support agree.

- 2 **Site** Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

Procedure 2
Restart inactive NT40 2

CAUTION

Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.

- 1 **Site/INACT** Perform a restart reload on the inactive processor (old BCS load).
 - a. Thumbwheel 3, RESET
flashes 33
 - b. Thumbwheel 7, NO RESET
flashes 77, then initializes
 - c. When the inactive processor starts to initialize, set thumbwheel back on 5, NO RESET.
 - d. Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.
-
- 2 **App/INACT** Confirm that the inactive processor is flashing A1.
-

Procedure 3
Ensure inactive unjammed

- 1 **Site and App/INACT** Ensure inactive side is *unjammed*.
-

Procedure 4
Cold SWACT NT40

- 1 **Site/ACT** JAM active side to force a switch of activity (cold swact).

- 2 **Site/ACT** Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.
At this point the CC switch of activity is over.

- 3 **Site and App/ACT** *Work quickly to complete the next procedure.* The *POSTSWACT* procedure (to follow) checks that the office is functioning as normal.
Note: Be sure to notify appropriate levels of support of the ABORT before putting the switch back in SYNC.

Procedure 5
Start POSTSWACT

App/ACT Login, check the date and time, and start POSTSWACT.

- 1 Type:
<break>

 - 2 ?LOGIN
Enter username and password *{system response}*
> <username> <password>
or > <username>
> <password>

 - 3 > DATE
Verify the date and time are correct.

 - 4 Reestablish recording onto devices (console session) as required.

 - 5 > BCSUPDATE ; POSTSWACT
POSTSWACT runs all steps required after the CC switch of activity and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. If this is the case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue.
If no problems are encountered, POSTSWACT stops after BEGIN_TESTING and waits until the site verifies the sanity of the current load.
-

Procedure 6
Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1 > MAPCI ; MTC ; IOD ; DIRP
> QUERY AMA ALL *{note which volume is ACTIVE}*

2 If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3 TAPEX volumes must be manually remounted using the DIRP MNT command.

4 Assign standby billing devices for TAPE and DPP/BMC.

a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.

b. > MOUNT <x> FORMAT <stdby_volume>
where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.

Example: MOUNT 3 FORMAT DPPAMA

c. Enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then enter:

> ERASTAPE <x>
where <x> is the standby device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

System response is:

WARNING, THIS TAPE WILL BE ERASED

CAUTION

**At this point again confirm the device is a port to a DPP or BMC,
and NOT an unexpired billing tape.**

If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-

Procedure 6
Recover billing (continued)

- d. > DEMOUNT T<x>
 - e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.
 - f. Repeat this entire step for each standby billing subsystem.
-
- 5** Activate standby devices.
- a. > MNT <subsystem> <x> {still in DIRP level}
Example: MNT AMA 3
 Enter YES to confirm the command.
 - b. > QUERY AMA {to confirm standby volume is available}
 - c. Repeat this step for each billing subsystem.
-
- 6** If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)
- * If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.
- Note:** Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).
-
- 7** Bring up parallel devices (as required) using the preformatted volumes.
- a. For BCS31 and lower:
 In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.
Example:
 TABLE DIRPSSYS;POS AMA
 CHA PARVOL T4
 or CHA PARVOL D010PAMA
 - b. For BCS32 and higher:
 In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.
Example:
 TABLE DIRPSSYS;POS AMA

 In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

-continued-

Procedure 6
Recover billing (continued)

Examples:

TABLE DIRPPPOOL; POS 62 (*pool for AMAPOOL*)

CHA VOLUME23 T4

or CHA VOLUME23 D010PAMA

- c. Repeat substep a or b for each parallel volume to be activated.
 - d. > QUIT MAPCI
-
- 8** Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
-

Procedure 7
Display DPP settings

App/ACT Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1 > MAPCI NODISP;MTC;IOD;DPP AMA

2 > COLLPSW

Note: If different, perform steps 3 and 4; otherwise go to step 5.

3 > COLLPSW 1 <4_digits> <6_digits>

4 > COLLPSW 2 <4_digits> <6_digits>

5 > AMATPSW

Note: If different, perform step 6; otherwise, go to step 7.

6 > AMATPSW <4_digits> <6_digits>

7 > AMAHRS

Note: If different, perform step 8; otherwise, go to step 9.

8 > AMAHRS <start_hour> <end_hour>

9 > VALPARM INVALID

Note: If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT

Note: If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.

Procedure 8
INI trunks

App/ACT If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1 > MAPCI ; MTC ; TRKS ; TTP

2 > POST A INI

3 > REPEAT <**x**> (FRLS ; RTS ; NEXT)
where <x> is the number of INI trunks in the posted set.

Procedure 9
Do Test Calls

- 1 **Site/ACT** Perform TEST CALLS that were identified ahead-of-time from *Appendix C: Test Call Scripts*.
-

Procedure 10

After testing is complete SYNC NT40

POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. After SITE accepts the current load, then put the processors in sync as follows.

Note: Do not enter POSTSWACT again until the processors are in sync.

1 Site/ACT and INACT On each CCC, shelf 51, card location 16 (NT1X48), ensure the *Enab* switches are down, the *Dact* switches are to the left (unjammed), and the thumbwheels are on 5.

2 App/ACT > MAPCI;MTC;CC;PS <i>
where <i> is the inactive program store.

3 > COPY <m>
where <m> is the PS module. Start at zero (0).

4 Repeat substep 3 for each PS module equipped.

5 > QUIT;SYNC NOTTRACEPOINT *{if BCS31 and higher}*
> YES *{for confirmation}*

Note: The SYNC NOTTRACEPOINT command should be used in BCS31 and higher (patch is required if BCS31 or 32). If lower than BCS31 then use SYNC command as usual.

6 > QUIT MAPCI

Procedure 11
Finish POSTSWACT

- 1 **App/ACT** If necessary run POSTSWACT one more time to completion.

```
> BCSUPDATE ; POSTSWACT
```

At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

- 2 **Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

- 3 **App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

- 4 **Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

- 5 **Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

- 6 **Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

- 7 **Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

- 8 **Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

- 9 **Site/ACT** Return PORTS and USER information back to original values.

- 10 **Site/ACT** Notify DNC end users to LOGIN the DNC.

- 11 **Site/ACT** For Hybrid and if table DIRPSSYS was changed during the "JFFREEZE procedure" (*Site Preparation* section), change data for position JF in table DIRPSSYS back to the original data.

Procedure 12
Take image NT40

- 1 **Site/ACT** DUMP AN IMAGE of the new BCS load for backup-one NT40 IMAGE to disk and backup image copied to tape.

- 2 After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to 'OFF' during the ONP.

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.

Procedure 13
Start journal file

- 1 **Site/ACT** If equipped, start journal file and verify started.
 - a. > JF START
 - b. > MAPCI ; MTC ; IOD ; DIRP
 - c. > QUERY JF ALL
QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
 - d. > QUIT ALL
-

Procedure 14
More Revert/ABORT steps

- 1 **Site and App/INACT** If asked to do so by technical support take an image of the *inactive* (mate) side load.

- 2 **Site and App/ACT** With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

- 3 **Site and App** Following an ABORT, rescheduling of the software update must be negotiated. Refer to *Procedure for rescheduling aborted applications*.

- 4 **App/ACT** On the ACTIVE side perform the following steps to restore the active side to its original configuration.
 - a. If old load is BCS35 and higher:
 - > BCSUPDATE ; ABORT_PRESWACT
 - > TABXFR ; CANCEL
 - > QUIT ALL
 - b. If old load is BCS34 and lower:
 - > BCSUPDATE ; RESET
 - > QUIT ALL

Two Night Process SNODE MOP

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Site preparation procedure

Begin this section when the First Shipment of tapes and documentation arrives at the office. Site must complete the following procedures *before* being contacted by Northern Telecom for the pre-application checks (or Preliminary Precheck). In order to qualify the office for a software upgrade the series of prechecks must be successfully completed.

Procedure 1

Take image

- 1 **Site/ACT** Before beginning the front-end testing (processor tests), DUMP AN OFFICE IMAGE for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge, or one NT40 image to disk and copied to tape.
-

Procedure 2
Route logs SNODE

This procedure ensures that specific logs are routed to an active log device and are not suppressed.

1 Site/ACT

```
> LOGUTIL  
> LISTREPS SPECIAL
```

If specific logs are suppressed use

```
> RESUME <log>
```

If logs have threshold set use

```
> THRESHOLD 0 <log>
```

where <log> refers to specific CM, MS, SLM, and MM logs.

2 > LISTROUTE DEVICE <printer>

If critical logs are not routed use

```
> ADDREP <printer> <log>
```

```
> STOPDEV <printer>
```

Verify only critical logs are enabled on the device and are correctly routed.

3 > STARTDEV <printer>

```
> LEAVE
```

Procedure 3
Processor tests SNODE

To ensure front-end stability Site should complete the following tests before being contacted for the pre-application checks.

Note: Perform the following front-end testing during low traffic periods.

-
- 1 Site** Ensure the CPUs are in SYNC and the inactive side is NOT jammed.
-
- 2 ACT** Match the memory from the Memory level of the MAP.
- ```
> MAPCI ; MTC ; CM ; MEMORY
> MATCH ALL
> QUIT
```
- 
- 3 INACT** From the inactive RTIF (remote terminal interface), jam the inactive CPU.
- ```
RTIF> \JAM
RTIF> YES {for confirmation}
```
-
- 4 ACT** Drop SYNC from the CM level of the MAP.
- ```
> DPSYNC
> YES {for confirmation}
```
- 
- 5 INACT** Wait for the inactive CPU to return to flashing A1.
- 
- 6** Test the CM stability with each of the following restarts on ONLY the *inactive* RTIF.
- a. INACT** RTIF> \RESTART WARM
- ```
RTIF> YES {for confirmation}
Wait for a flashing A1.
```
- b. INACT** RTIF> \RESTART COLD
- ```
RTIF> YES {for confirmation}
Wait for a flashing A1.
```
- c. INACT** RTIF> \RESTART RELOAD
- ```
RTIF> YES {for confirmation}
Wait for a flashing A1.
```
-

-continued-

Procedure 3
Processor tests SNODE (continued)

7 ACT Test the memory cards from the Memory level of the MAP.

```
> MEMORY;TST ALL  
> QUIT
```

8 After completion of the test, check any logs indicating pass or fail. If above test failed, clear the problem and repeat the test.

9 ACT SYNC the CPUs from the CM level of the MAP.

```
> SYNC
```

10 After receiving the "Synchronization Successful" message, verify no faults are displayed at the CM or Memory levels of the MAP (shows all dots and no Xs or fs).

11 INACT At the inactive RTIF release the jam.

```
RTIF> \RELEASE JAM
```

12 ACT Switch activity of the CPUs from the CM level.

```
> SWACT
```

13 INACT Repeat steps 1 through 12 on the newly-inactive CPU.

14 Verify the CPUs remain in SYNC and the inactive side is NOT jammed.

15 ACT Match the memory from the Memory level of the MAP.

```
> MEMORY;MATCH ALL  
> QUIT
```

16 ACT Perform a REX test long from the CM level.

```
> REXTST LONG  
> YES {for confirmation}  
CPU SYNC, Message Controller (MC), and Subsystem Clock (SSC) states  
will change. The SuperNode will be out of SYNC for at least 60 minutes.
```

-continued-

Procedure 3
Processor tests SNODE (continued)

17 ACT After completion of the test, verify the test results:

> QUERYCM REXRESULT

The CPUs should be back in SYNC with no REX alarms at the CM level or on the main MAP display header. If the test failed, contact the site supervisor to resolve any problems and repeat steps 16 and 17.

18 Repeat (with the other CPU active) steps 16 and 17.

19 ACT Perform an image test from the CMMNT level of the MAP.

> CMMNT

> IMAGE

> QUIT

20 After completion of the test, check any logs indicating pass or fail. If above test failed, clear the problem and repeat the test.

Note: If on BCS 26-28 and patch BKR24C<xx> is present and activated (PATCHEDIT shows it ON), then skip over the rest of this procedure and go to the next procedure.

21 ACT Busy the Slave MS from the MS level of the MAP.

> MS;BSY <x>

where <x> refers to the Slave MS (look under Clock field).

22 ACT Test the MS from the MS level.

> TST <x>

23 After completion of the test the results of the test are displayed. If the test failed, resolve any problems and repeat the test.

24 ACT Return the busied MS to service.

> RTS <x>

25 Wait 5 minutes to ensure the clocks are stable and to allow the hardware audit to run. Both MS should be inservice.

-continued-

Procedure 3
Processor tests SNODE (continued)

26 ACT Switch MS clock mastership.

> SWMAST

27 Test the other MS by repeating steps 21 through 26.

28 ACT > QUIT ALL

Procedure 4
Responsibilities before pre-application checks SN

- 1 **Site** Site is encouraged to verify all new software load and patch tapes received in a shipment.

Note: The following steps do not apply to a TAS NONRES tape which is used only by NT technical support to provide access to certain non-resident software tools.

- a. INSERT (or MOUNT) and LIST each tape.
 - b. From the tape header or first file verify the header matches the tape label and the tape is correct for the to_BCS. For a BCS IMAGE tape also verify the image filename is correct.
Verify a tape is good by listing the tape to the end without any errors.
 - c. If any problems are found notify your NT customer service representative immediately.
 - d. Keep the tapes on-site for use during the scheduled software update.
-
- 2 **Site** Review the D190 document (office feature record) to ensure the software content meets the expected requirements.

Note: Offices receiving feature package NTX218, EADAS, ensure table OMACC has only 25 entries. If table OMACC has more than 25 entries, the site will have to delete the extraneous entries so the five new EADAS Operation Measurement tuples will fit.

CAUTION

For MS preloading it is recommended that the MS be loaded using the new BCS IMAGE tape, and NOT the PM load tape. The MS load provided on the IMAGE tape contains a more current patch set.

Richardson customers may require loading of the MS prior to the arrival of the IMAGE tape. Contact Richardson BCS Applications for MS loading procedures.

If problems are encountered during loading, contact the appropriate TAS group for assistance.

The recommended procedure for MS preloading is found in section *Updating loads in the Message Switch* of this MOP. Wait to upgrade the MS until the new BCS IMAGE tape arrives on site.

- 3 **Site** Load and patch ALL PERIPHERAL MODULES with the to_BCS software loads according to the *Peripheral Software Release Document* ("Application Procedures" section).

-continued-

Procedure 4

Responsibilities before pre-application checks SN (continued)

Peripheral modules include all PMs, XPMs, DPP, MPC, and the various application processors associated with a DMS-SCP/STP/SSP such as the ENET, LPP (including EIUs, LIUs and LIMs) and the FP.

Note: If a cross-reference file (BCSxxXPM\$XREF) is at the beginning of the XPM patch tape, use it to identify patches applicable to each XPM load.

- 4 Site** Monitor front-end stability watching SuperNode CM,MM, and MS logs through the day of the software delivery.
-

Procedure 5
Save site files

- 1 Site/ACT** Copy all Telco/site-created files in store file (SFDEV) onto a labeled scratch tape. These files can be manually restored to SFDEV after the BCS application.
*Any patches and files downloaded to SFDEV need to remain in SFDEV for the BCS application-**DO NOT ERASE!***
-

Procedure 6
Peripheral verification SNODE

- 1 **Site/ACT** If the office is equipped with DDUs, erase all unwanted files. Then ensure the peripheral loads and peripheral patches for the to_BCS are on the same disk.

- 2 On the DDU used for primary billing collection (such as AMA SMDR OCC CDR), perform routine maintenance on the disk to ensure it is functioning properly. If excessive "bad blocks" are present, reformat the disk.

- 3 Ensure peripherals (including ENET and DPPs) are loaded and patched with the to_BCS software. (Refer to the *Peripheral Software Release Document*.)
Note: Procedures for preloading the MSs are in section *Updating loads in the Message Switch* of this MOP.

Procedure 7
Table ACDGRP

- 1 App/ACT** Identify any "holes" in table ACDGRP and fill them with dummy tuples. Otherwise, you may be unable to retrieve MIS reports from some ACDGRPs.
 - a.** > OMSHOW ACDGRP ACTIVE
 - b.** Look for nonconsecutive keys. (example: 0 2 3 5 6 has 1 and 4 missing.)
 - c.** If any missing tuples, have Translations personnel datafill with dummy tuples. (This prevents the renumbering of key indexes during the BCS update.)
 - d.** Also provide datafill in table DNROUTE for each corresponding dummy tuple added in table ACDGRP.
-

Procedure 8
Fill in Test Call Scripts

- 1 **Site** Fill in and test the *Test Call Scripts* in *Appendix C*.

This is to provide a thorough test plan exercise for testing the new BCS load. You will be asked to make your test calls after switching activity to the new BCS.

Data consistency check procedure

Procedure 1 is for offices on BCS34 and higher.

Procedure 2 is for offices on BCS33 and lower.

CAUTION

Review Software Delivery Bulletins and any current Warning Bulletins concerning TABAUDIT before using it.

Procedure 1

Run TABAUDIT (BCS34 and higher)

Perform this procedure at 15 days prior to the software delivery date. This allows time to correct any table data problems that might be found. At the insertion minus 10 days pre-check, NT engineers will review the results. The data consistency checks must be successfully completed including any needed data corrections in order for the scheduled application to be completed on schedule.

For all offices on BCS 34 and higher, perform the following steps. These steps are used to verify table data integrity using TABAUDIT.

A complete tutorial of TABAUDIT is provided in *Appendix A*. This includes information on TABAUDIT enhancements (BCS36) which provide automated scheduling capability and facilitate data capture.

Warning: TABAUDIT can take up to 10 hours to run. The length of time will vary from site to site depending on the number and size of tables.

- 1 **Site/ACT** Verify table data using TABAUDIT. Send output to a recording device (e.g. D000SCRATCH). Make note of the device used, since the files will be reviewed by NT prior to BCS application.

TABAUDIT may be set-up to run all the tables using the "ALL" option or to run a range of tables using the "FROM" and "TO" options. TABAUDIT can only be run from only one terminal at a time.

- To use the "FROM" and "TO" options see substep **a** below.
- To use the "ALL" option see substep **b** below.

Warning: If a device is *not* specified when issuing the TABAUDIT ALL command, only a SUMMARY\$FILE will be created in Store File and no separate file will be created for individual failed tables.

-continued-

Procedure 1
Run TABAUDIT (continued)

If necessary, TABAUDIT may be stopped and restarted . To stop TABAUDIT at anytime, use break HX. When restarting TABAUDIT, determine the last table verified by reviewing the "SUMMARY\$FILE " file in SFDEV. The last table verified can also be determined by listing table DART and reviewing the "CHKDATE" and "CHKTIME" fields for the most recently verified table.

Some tables will output information or warning messages as though they are being changed. However, no changes will be made since TABAUDIT does not execute any write procedures.

For example, when TABAUDIT is performed on table DATASIZE the following message is output for every tuple checked:

A restart is needed for this change to take effect. Check the NTP as to which is appropriate warm or cold.

Or for example, when STDPRTCT is checked, the additional output is:
Warning: Changes in table STDPRTCT may alter office billing.

- a. Until the amount of time required to verify all tables is known for a particular site it is recommended to perform the verification on a range of tables using the "FROM" and "TO" options and information found in table DART.

```
> TABAUDIT FROM <start table> [TO <end table>]  
<device name>
```

For example, to obtain table names in increments of 100, enter Table DART, list, go down 100 and list two. Record or print the table names. Continue this until the end of table DART is reached.

```
> TABLE DART; LIST (output will be the "FROM" table name)  
> DOWN 100; LIST 2 (output will be the "TO" table name of the  
first 100 and the "FROM" table name for the second 100)  
> DOWN 100; LIST 2 (repeat until the end of table is reached)  
> LEAVE
```

Perform TABAUDIT on the first 100 tables as shown in the following example:

```
> TABAUDIT FROM DART TO BGDATA <device name>
```

When complete, perform TABAUDIT on the next 100. Repeat until all tables have been verified.

- b. Use the TABAUDIT ALL command to perform the data verification function on all tables listed in table DART using just one command.

```
> TABAUDIT ALL <device name>
```

-continued-

Procedure 1
Run TABAUDIT (continued)

- 2 Review the summary output and any failed table files. If any table fails, contact the translations engineer who can help in resolving any data consistency issues. To verify a corrected table, run TABAUDIT ONLY and specify the corrected table.

```
> TABAUDIT ONLY <table name> <device name>  
Continue until all tables have been corrected.
```

- 3 When all tables have been corrected, if time permits, perform a TABAUDIT on all the tables again by range or by use of the "ALL" command. This is to ensure that no changes performed in step 2 have adversely affected other tables.
-

Procedure 2
Run CHECKTAB (BCS33 and lower)

Perform this procedure at 15 days prior to the software delivery date. This allows time to correct any table data problems that might be found.

For offices on BCS 33 and lower that are scheduled for a complete One Night Process (not Hybrid), please refer to your Site Notification Package (or contact the NT Customer Service Representative) for the appropriate procedure concerning the use of CHECKTAB.

Updating loads in the Message Switch

Begin this section as soon as the new BCS IMAGE tape arrives on site (normally two to three days before the software delivery).

Procedure 1 is to copy the new CM and MS loads onto a SLM disk. This is for all offices, and is required in order to load the MS and to enable loading the mate CM from SLM disk.

Procedure 2 is only for offices on BCS34 and higher. Procedure 2 is to preload the MSs with the new MS load. (For offices on BCS33 and lower, the MSs will be loaded by the BCS Applicator on the night of the software delivery.)

Note: When scheduled for a BCS-n to BCS-n application (for example, BCS34 to BCS34) Telco may choose to NOT preload MSs as long as the present MS load is patched current.

Procedure 1 **Restore CM and MS loads**

Restore (that is, copy) the new CM and MS loads onto a SLM disk.

- 1 **Site/ACT** List the SLM tape cartridge with the new BCS IMAGE files (both _MS and _CM loads).
 - a. Place the cartridge into the SLM tape drive on the same side as the inactive CPU.
 - b. > DISKUT
 - c. > IT <tape_device>
*Inserts the tape into the inactive-side SLM, for example:
IT S00T or IT S01T*
 - d. > LF <tape_device>
for example, LF S00T or LF S01T. May take up to one hour to list.
 - e. Verify the MS and CM load files are the correct ones to use.
*To help understand the image filenames, you may use CI command
DISPMS <filename> which displays the image header information.
(Refer to Appx. A for more details of this command.)*
-

-continued-

Procedure 1
Restore CM and MS loads (continued)

- 2 Select a SLM disk volume onto which to restore the new BCS IMAGE.
- The volume selected should not be on the same SLM with active DIRP billing.
 - The volume should not be the same volume normally used to take images. (This is so that AUTOIMAGE won't fail for lack of disk space.)

If there is a problem completing this step, please contact the next level of support.

- 3 Restore both the CM load and the appropriate MS load onto the selected SLM disk volume.
- a. > RE FILE <disk_volume><tape_device><filename_CM>
Restores the CM load onto the SLM, for example:
RE FILE S01DIMG0 S01T LD101015ND36_CM
 - b. > RE FILE <disk_volume><tape_device><filename_MS>
Restores the MS load onto the SLM, for example:
RE FILE S01DIMG0 S01T LD101015MS36CR_MS
 - c. > ET <tape_device>
Ejects the SLM tape, for example:
ET S01T
 - d. > QUIT
-

Procedure 2
Preload both MSs

As of BCS34, backward-compatibility is supported in the Message Switch (MS). This means, if the office is on BCS34 or higher, then it is possible to PRELOAD *both* MSs with the new MS load before the CM is upgraded to the new BCS.

CAUTION

Do not attempt to upgrade the Message Switch at this time unless the office is currently on BCS34 or higher.

Failure to heed this caution could result in degradation of the switch since the MS load is not backward compatible until the office is on BCS34.

CAUTION

If the office is on BCS34 or higher, both MSs must be loaded with the MS load provided on the BCS IMAGE tape prior to starting the BCS application.

The following procedure assumes the proper MS load was successfully copied to a SLM disk volume.

Note: The BCS IMAGE provided is patched current. If any new patches are required, these will be downloaded to SFDEV and applied on the night of the BCS application.

- 1 **Site/ACT** List the SLM disk volume onto which the new BCS IMAGE files (both _MS and _CM loads) were previously restored (copied).
 - a. > DISKUT
 > LF SOOD<volume> {or SO1D<volume>}
where <volume> is the SLM disk volume with the BCS IMAGE.
 - b. Verify the image files (both _MS and _CM) on the SLM disk volume are correct. Be sure to use the image files provided on the new BCS IMAGE tape.
To help understand the image filenames, you may use the DISPMS <filename> command which displays the image header information. (Refer to Appx. A for more details of this command.)
-
- 2 At the MS level of the MAP, determine which MS contains the SLAVE clock. (Look for "slave" under the CLOCK field.)
 > MAPCI ;MTC ;MS

-continued-

Procedure 2
Preload both MSs (continued)

3 > BSY <MS#> *{the MS with the slave clock}*

4 > LOADMS <MS#> <filename>
where <filename> is the name of the _MS load file listed above in step 1.
> YES *{for confirmation}*

5 When prompted, perform an out-of-service test on the MS just loaded.
> TST <MS#> *{on the OOS MS}*
Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.

CAUTION
Do not proceed unless NO faults are reported.
Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.

6 > RTS <MS#> *{not OOBAND!}*

7 Wait 5 minutes to ensure the clocks are stable and to allow the hardware audit to run. Both MSs should be inservice.
Note: The MS load on the CM image tape is patched as current as possible. Copies of all MS patches that were applied to this load will be in mate SFDEV when the CM image is loaded for the BCS application. Once the CM load is made active (by the SWACT) the MATCHALL MS (PATCHER) will function as intended.

8 Switch MS clock mastership.
> SWMAST

9 Monitor MS logs for 10 minutes to ensure stability.

10 Repeat steps 3 through 9 to update the load in the other MS.

11 > QUIT MAPCI

Site responsibilities the day of the software delivery

The following steps must be completed by site personnel *before* the software delivery engineer contacts the site for the scheduled software delivery.

Procedure 1

Day zero checklist

- 1 **Site** Verify that all problems identified from performing table data checks have all been resolved.

- 2 Verify that the front-end processors have been in sync for the past 24 hours and the last REX test has passed.

- 3 Verify an image has been taken in the last 24 hours and backed to tape.

- 4 Ensure you have undertaken your critical test call plan and verified it. (See *Appendix C: Test Call Scripts*.)

- 5 Verify SFDEV has been cleared of all Telco/site-created files.

- 6 Verify all to_BCS patches have been downloaded to site and are present in SFDEV.

7 **LIU7 image with feature AQ1102**

In preparation for the ONP, assuming that the LIU7s have had their software loads upgraded, dump an image of an INSV LIU7. There should be no changes to the tables C7GTT, C7GTTYPE, C7NETSSN, or C7DCIS6 between the time this image is dumped and when the ONP occurs.

This is to utilize feature AQ1102, which allows faster recovery of LIU7s under certain circumstances. Please refer to the feature description for details of the possible recovery scenarios.

Note: If an image with up-to-date data is not available, then data sync of an LIU7 following the CC Warm SWACT may take considerable time if table C7GTT is very large.

Procedure 2
Patch verification

The Site is responsible for the following patch verification step.

- 1 **Site/ACT** All patches downloaded to SFDEV after the final office review should be copied to tape (or to disk) and LEFT IN SFDEV.
 - *From-side patches that are process-related (affecting ONP tools) will be applied by the BCS Applicator on the night of the BCS application.*
 - *To-side front-end and MS patches in SFDEV will be automatically applied to the new BCS load on the night of the BCS application.*
-

Procedure 3
Run DATADUMP

1 **Site/ACT** Run DATADUMP to output important switch information for future reference.

- a.** > LOGUTIL;STOPDEV **<printer>**
where <printer> is an available printer to be used for recording. This makes sure the logs are stopped on the device.
> LEAVE
 - b.** > RECORD START ONTO **<printer>**
 - c.** > BCSUPDATE;DATADUMP *{for BCS33 and higher}*
When DATADUMP is completed:
> QUIT
 - d.** > DRCI;RUNEXEC DATA_DUMP *{for BCS32 and lower}*
When DATADUMP is completed:
> QUIT
 - e.** > RECORD STOP ONTO **<printer>**
-

Procedure 4
FX voice and data

- 1 **Site** Ensure there will be uninterrupted communication with the software delivery engineer during the software delivery. (Provide FX voice and data lines.)

- 2 Ensure at least two dialup ports are operational-one on each IOC. These should have COMCLASS of ALL.

- 3 Verify user names to be used during the software update have PRIVCLAS of ALL.

First Night

Preliminary phase procedure

This section details both SITE and BCS applicator (App) activities required for a Two Night Process software delivery.

The actual software delivery begins when the software delivery engineer puts the switch into simplex mode (drops sync) and loads the inactive CPU with the new BCS software load.

Two dialup ports are required, one for the active side processor (label it ACT) and one for the inactive side processor (label it INACT). Remember to acquire a soft copy of the console sessions for both terminals.

Note: Telco may elect to monitor the application process by recording onto printers. This can impact the software delivery time. Site may start recording by issuing the following command for two printers, one for each of the dialup ports to be used by the applicator: "RECORD START FROM <terminal_id> ONTO <printer>."

CAUTION

Ensure no hardware changes or retrofits are in progress. This includes network or memory extensions and peripheral additions/deletions. These activities are prohibited during the BCS application. Such hardware must be made INB (installation busy), and any further software changes must cease.

Procedure 1
Interrupt/ABORT process

Both SITE and Applicator should be familiar with each of the following steps before continuing with the procedures in this section.

If problems develop during the software delivery, resort to one of the following actions.

- 1 If the MOVEBCS process must be halted or interrupted, use the MOVEBCS HALT option. Refer to "Interrupt MOVEBCS" in *Appendix A* (page A-19).

- 2 If the TABXFR process must be halted or interrupted, use the HALT option. Refer to "Interrupt TABXFR" in *Appendix A* (page A-24).

- 3 It may be necessary to STOP (and reschedule) the application after PRESWACT has been implemented, but before the switch of activity. Refer to "PRESWACT Abort" in *Appendix A* (page A-29).

- 4 If a controlled REVERT is required after the switch of activity (SWACT) refer to "Revert to old load procedure" (page 7-147).

- 5 If an emergency ABORT is required after the switch of activity (SWACT) refer to "Emergency Abort procedure" (page 7-173).

Procedure 2
Remote login

- 1 **App/ACT** Contact the control center (if required) and the site on the voice phone and connect to both dialups. Verify one dialup port is on IOC0 and the other is on IOC1.

- 2 **App/ACT** Login the users and if applicable, set LOGINCONTROL.
 - a. <break>
 - b. ?LOGIN
Enter username and password *{system response}*
> <username> <password>
 - or > <username>
> <password>
where username and password can both be found on the Pre-application report.
 - c. For BCS33 and higher enter:
> BCSUPDATE;DEVICE
> QUIT
 - d. For BCS32 and lower enter:
> LOGUTIL;STOP;STOP *{Note the name of this device}*
> LEAVE
> LOGINCONTROL <device> QUERY
 - e. Verify *Open Condition Logout* is *N*. If not, retain the original status and enter:
> LOGINCONTROL <device> OPENFORCEOUT FALSE
Verify *Max Idle Time* is *Forever*. If not, retain original status and enter:
> LOGINCONTROL <device> MAXIDLETIME FOREVER
> LOGINCONTROL <device> DISABLEON REMOVE
<forceout_conditions> *{conditions obtained in substep d above}*
 - f. Repeat this entire step on the other terminal device.

Procedure 3
Check logs SNODE

1 App/ACT For BCS33 and higher check logs to verify processor stability.

> BCSUPDATE ; LOGCHECK

> QUIT

Do not continue until all logs have been explained.

2 App/ACT For BCS32 and lower check logs to verify processor stability.

> LOGUTIL

> OPEN <log_buffer> ; WHILE (BACK) ()

where <log_buffer> refers to CM, MS, SLM and MM logs.

> LEAVE

> TRAPINFO

Check for store parity traps, MM (mismatch), and store checksum logs. Do not continue until all logs have been explained.

Procedure 4
Stop journal file

- 1 **App/ACT** ROTATE and STOP the Journal File recording.
 - a. > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
Check which JF volume is currently active.
 - b. > CLOSE JF ACTIVE
QUERY again to verify rotation.
 - c. > JF STOP
Verify stopped.
 - d. > QUIT MAPCI
-

Procedure 5
Ensure MSs loaded

As of BCS34, backward-compatibility is supported in the Message Switch. This means, if the office is on BCS34 or higher, then it is possible to PRELOAD *both* MSs with the new MS load before the CM is upgraded to the new BCS.

- 1 **App/ACT** If the office is on BCS34 or higher, then ensure both MSs are loaded with the new MS load that was provided on the new BCS IMAGE tape.
-

Procedure 6
Drop sync SNODE**1 App/ACT Type:**

> MAPCI ; MTC ; CM

2 App/ACT Ensure the CM you want to load with the new BCS load is *inactive* and the corresponding MS and SLM components are used.

For example: if the new BCS image resides on SLM disk 0, then CM 0 should be the inactive side, and the MS 0 clock should be the slave clock.

- a. Determine where the new BCS image resides (normally SLM disk 0).
 - b. If needed to align the CM with the SLM, you may switch activity of the CM using SWACT (CM level).
 - c. If needed to align the MS clock with the CM, you may switch MS clock mastership using SWMAST (MS level). If you do, wait five minutes to continue.
-

3 Site/INACT From the inactive RTIF enter:

RTIF> \JAM

RTIF> YES *{for confirmation}*

4 App/ACT

> DPSYNC *{from CM level}*

> YES *{if prompted to disable AUTO PATCHING}*

> YES *{to confirm DPSYNC}*

5 Site/INACT Site must tell the engineer when the inactive CM is flashing A1.**6 App/ACT**

> QUIT MAPCI

Procedure 7
BULLETINS before LOADMATE

- 1 **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning LOADMATE.
-

Procedure 8
Loadmate SNODE

- 1 **App/ACT** List the SLM disk volume onto which the new BCS IMAGE files (both _MS and _CM load files) were previously restored (copied).
 - a. > DISKUT
> LF SOOD<volume> {or SO1D<volume>}
where <volume> is the SLM disk volume with the BCS IMAGE.
 - b. Verify the image files (both _MS and _CM) on the SLM disk volume are correct. Be sure to use the image files that were provided on the new BCS IMAGE tape.
To help understand the image filenames, you may use the DISPMS <filename> command which displays the image header information. (Refer to Appx. A for details of this command.)
-
- 2 **App/ACT** If the _CM image file was not previously restored to the SLM disk, you can instead loadmate from SLM tape as follows. (Otherwise, go on to with the next step to load from disk.)

CAUTION

The _MS file will have to be restored to the SLM disk in order to load the MS (during PRESWACT if not already done).
However, since loadmate can be done using SLM disk or tape, you may wait until loadmate is done to restore the _MS file to SLM disk.

Insert the new BCS IMAGE cartridge into the SLM tape drive corresponding to the inactive CM.

> LDMATE DIRECT TAPE 2 {loads 2nd file on the tape}

-continued-

Procedure 8
Loadmate SNODE (continued)

3 App/ACT If BCS28 and higher, loadmate using the SLM disk as follows.

a. Ensure no DIRP files are opened on the SLM disk with the image.

```
> DIRP;QUERY <subsystem> ALL
where <subsystem> is AMA, OM, JF, or DLOG.
```

If any opened files, close the files (or rotate the information to the active side).

CAUTION

LDMATE DIRECT (below) will fail if there are any opened files on the SLM device with the image.

"DIRECT LOADMATE OPERATION FAILED: File System operations must be halted before initiating loadmate."

b. > LDMATE DIRECT DISK <filename_CM>

If you get the above message, either close the opened file(s), or else loadmate using the VIAMS option as follows.

```
> LDMATE VIAMS <filename_CM>
```

4 App/ACT If BCS27 loadmate using the SLM disk as follows.

a. Activate patch SSY05C27.

```
> PATCHEDIT SSY05C27 ON
```

b. > LDMATE <filename_CM>

5 App/ACT If BCS26 loadmate using the SLM disk as follows.

```
> LDMATE <filename_CM>
```

6 Site and App/INACT Wait for loadmate to complete and the inactive processor to flash A1.

While waiting for loadmate, SITE may display the patches in store file (PATCHER; DISPLAY <patch>) or may copy any new patches to the new patch tape (or to disk).

Procedure 9
Login inactive after Loadmate SNODE

Login on the inactive processor after loadmate is complete.

1 App/ACT Type:

```
> MATELINK RTS
```

2 Allow initialization on the inactive side (flashing A1).

3 LOGOUT of the active side if logged in on the terminal labeled INACT.

4 > MATEIO

```
> MATELOG <device>
```

where <device> is the name of the terminal labeled INACT.

5 App/INACT

```
Enter username and password
```

{mate-side response}

```
Mate> OPERATOR OPERATOR
```

or Enter username

```
Mate> OPERATOR
```

```
Enter password
```

```
Mate> OPERATOR
```

Procedure 10
Set date and header message

- 1 **App/INACT** Set the current date and site header message on the mate side.

Mate> SETDATE <dd mm yy> *{set today's date}*

Mate> SETLOGMSG '<text>'

*where <text> becomes the office header on the new software load. Using the old header as the model, change the **Office Order (COEO)**, **office name**, **Product Code** (or BCS level), and **application date**. Ensure all symbols at the beginning and end of the header message remain the same (including spaces).*

Note: The "Order/Suborder" (Office Order) and "To Product/Version" (Product Code/BCS) can be found in the *Parmmail*.

Example:

94/04/12 00:41 *** H01234 OFFICE LEC00002 120494 ***

Procedure 11
Download application files (RTP)

- 1 **App/ACT** Download special application files to active side SFDEV.
If to_BCS 37 and higher the Applicator Package will contain the following files:

- PARMCHGS
*Download PARMCHGS renaming it as "FEATDATA."
Print this file for reference information.*

Note: PARMMAIL is also in the Applicator Package for reference.

- SITEINFO
*Download SITEINFO. This file will be used to update the Inform list
(next step) for the new software load.*
-

- 2 Matecopy the SITEINFO file to the inactive, and read (execute) it.

Note: To allow further calculation of patches for a given office, the site_key must be inserted into the inform list to identify that inform list to patadm. This is done by applying special patches which will correct the patch inform list.

- a. **ACT**
Matecopy SITEINFO to inactive side SFDEV.

- b. **INACT**
Read SITEINFO (to execute) on the inactive side.

Note: When read, SITEINFO will enter patcher, create the "dummy patches" in sfdev, apply the patches to update the inform list, and erase the patches.

Procedure 12
Check logs inactive SNODE

- 1 App/INACT** For to_BCS 33 and higher check mate logs to verify processor stability.

```
Mate> BCSUPDATE;LOGCHECK
```

```
Mate> QUIT
```

Do not continue until all logs have been explained.

- 2 App/INACT** For to_BCS 32 and lower check mate CM logs.

```
Mate> LOGUTIL;OPEN CM;WHILE(BACK)()
```

```
Mate> LEAVE
```

```
Mate> TRAPINFO
```

Check for store parity traps. Do not continue until all logs have been explained. Traps from active side (FOOTPRINT) may also be shown.

- 3 App/INACT**

```
Mate> TRAPINFO CLEAR
```

Procedure 13
Mate-side memory check

- 1 **App/ACT** If from_BCS 32 and higher, perform a mate-side memory check.

CAUTION

If this test fails *do not continue*-immediately notify the site supervisor.
The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side.

Note: Entering the RUNSTEP command below gives a warning that the step is done out of process. This is okay-answer YES to the prompt.

- a. > BCSUPDATE;RUNSTEP MATE_MEM_CHECK

Note: This displays on the active side the result of the test, "completed" or "not completed." If it is not completed an error message is also printed on the active side.

- b. Should this check fail, isolate and replace the faulty memory card on the inactive side. For additional information, turn to "MATE_MEM_CHECK failure" in *Appendix B*.

- c. > QUIT
-

Procedure 14
Retain PARM values

1 **App** Obtain a list of the following office parameters for reference.

```
> TABLE OFCVAR
> POS NODEREXCONTROL
> POS LCDREX_CONTROL
> QUIT

> TABLE OFCENG
> POS GUARANTEED_TERMINAL_CPU_SHARE
> QUIT

> TABLE OFCSTD
> POS DUMP_RESTORE_IN_PROGRESS
> QUIT
```

Procedure 15
Patch inactive

PATCH the inactive processor by following this procedure. (Mate patching can instead be done manually if desired.)

Note: Entering the RUNSTEP commands below gives a warning that the step is done out of process. This is okay-answer YES to the prompt.

1 App/INACT If coming from _BCS 31 and lower, on the mate side turn on access to WTAB using TASTOOL procedure.

2 ACT On the active side, ensure table PADNDEV points to the device (typically SFDEV) containing the patches that were downloaded for the to_BCS.

```
> TABLE PADNDEV;LIST ALL
```

If there are devices in this table that do not contain to_BCS patches, make a note of the tuples and DELETE them.

Note: MOVEBCS or TABXFR will attempt mate patching again (until this is patched out). After MOVEBCS/TABXFR does this, you will need to restore the original data in table PADNDEV. There are two ways of doing this:

1. In procedure "MOVEBCS/TABXFR setup"-Set a stop point in MOVEBCS/TABXFR to stop before table PADNDEV is moved. (At that point the patching will be completed.) Then when it stops edit the table on the active side and allow the data transfer to continue.

2. In procedure "MOVEBCS/TABXFR completed"-Allow MOVEBCS/TABXFR to run to completion as usual. Then edit table PADNDEV on both the active and inactive sides.

```
3 > BCSUPDATE;RUNSTEP VERIFY_DSLIMIT
```

```
4 > RESET
```

```
5 > RUNSTEP DISABLE_AUTOIMAGE
```

Note: This step is not valid if the AUTOIMAGE feature is not available.

```
6 > RUNSTEP SET_OFFICE_TUPLES
```

```
7 > RUNSTEP SEND_PATCHES
```

```
8 > RUNSTEP APPLY_PATCHES
```

```
9 > QUIT
```

-continued-

Procedure 15
Patch inactive (continued)

- 10 Site and App/INACT** Print the PATCH\$FILE and review applied (mate) patches.

```
Mate> LISTSF ALL;PRINT PATCH$FILE
```

If you need to DISPLAY any patches that were applied on the inactive side, these patches can still be accessed from the active side.

- 11** Mate> TRAPINFO

If trap occurred, do not continue until the trap is explained and action taken to correct the error.

Procedure 16
Activate patches inactive

- 1 **App/ACT** Determine which ACT patches are activated in the old load.
 - a. > PATCHEDIT
This command shows a list of 'ACT' patches and which ones are activated (turned on).
 - b. Review the patch list to determine which patches are currently activated (ON) on the active side.
Normally any ACT patch activated in the old load should be manually activated in the new load (see next step).

- 2 **Site and App/INACT** As needed activate ACT patches on the inactive side.
 - a. Mate> PATCHEDIT
 - b. Compare the mate-side patch list with active-side list obtained above. Decide with the site if any patches need to be activated (set "ON") at this time.
Passwords will be provided on the 'APF' report for any "feature patches" in the new BCS load. Give the password to Telco, but do NOT activate the patch at this time unless already ON in the old load.
 - c. Mate> PATCHEDIT <patch> ON
This activates the patch.
 - d. Repeat this command for each patch to be activated.
 - e. Also determine from comparing the patch lists if any ACT patches should be set to "NA" (no audit) state.
 - f. Mate> PATCHEDIT <patch> NA
This sets the patch to "NA" state.
 - g. Repeat this command for each patch to be set to "NA."

Procedure 17
Restart inactive for patches

- 1 **App** Perform each of three types of restarts (warm, cold, and reload) on the inactive side to satisfy the requirements of any patch(s) needing a restart.

Note: Sequence of restarts is not important.

INACT

```
Mate> RESTART <restart type>
```

```
Mate> YES {for confirmation}
```

- 2 Allow initialization on the inactive side (flashing A1).
-

- 3 Login on the inactive side.
-

- 4 Repeat above steps for each type of restart required.
-

Procedure 18
IPL modules

- 1 **App/ACT** If from_BCS 30 and lower, to avoid problems using STATUSCHECK, STATUSUPDATE, and RESTARTSWCT because of device/hardware irregularities, do the following.

- a. > QUERY <module>
where <module> is:
NODESTAT STCSTAT IPMLSTAT
CARRSTAT JCTRSTAT DCHSTAT

Repeat QUERY for each module listed.

Note: OPMSTAT, CCS6STAT, RCUSTAT, and CSCSTAT are also status modules, but do not require this procedure. The counts for these modules are set to their maximum values.

- b. If any module is loaded, as indicated by the QUERY command, enter the following:

> RUN <xxxx> IPL
where <xxxx> is a loaded module.

Note: Three or four SWERRS will be generated for each module entered in this step. The SWERRS are expected and indicate that procedures and counts for the hardware are being updated.

Procedure 19
SWCTCHK verification

- 1 **App/ACT** If from_BCS 29 and lower, verify Pre-application Engineering has entered the SWCTCHK command (see *Pre-application Report*). If not done earlier complete this step.
 - a. Ensure patch EWW08 is applied on the active (from-side) load.
 - b. > SWCTCHK
-

Procedure 20
MASSTC

- 1 **App** Check status in MASSTC level (TOPS office only).
 - a. **ACT**
 - > MASSTC
 - > STATUS
 - b. If the status is INITIAL, then no action is needed.
 - c. **INACT** If the status is DUPLICATED, then *with Telco consent* on the MATE side enter:
 - Mate> ENABLE
 - or, if data is obsolete
 - Mate> SCRAP
 - d. **ACT** If the status is SWITCHED, then *with Telco consent* on the ACTIVE side enter:
 - > PERM
-

Procedure 21
BULLETINS before data transfer

- 1 **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning the data transfer (MOVEBCS/TABXFR).
-

MOVEBCS procedure

For Two Night Process-This section details steps required to move the data from the old BCS load to the new BCS load.

For from_BCS 34 and lower, the MOVEBCS is used to perform the data transfer portion of a BCS application.

Procedure 1

Table DART

1 **App** For to_BCS 30 and 31 only, prepare table DART as follows.

a. **ACT** > MATECOPY DRNOW

b. **INACT** Mate> LISTSF ALL

Mate> READ DRNOW

Mate> ERASESF DRNOW

Mate> DARTEDIT

Mate> PRINTDART LONG

{optional list for reference}

Mate> QUIT

Note: For additional DARTEDIT command syntax refer to *MOVEBCS summary* in Appendix A.

2 **App** For to_BCS 29 only, prepare table DART as follows.

a. **ACT** > MATECOPY DRNOW

b. **INACT** Mate> RESTTYPE EXTERNAL

Mate> LISTSF ALL

Mate> READ DRNOW

Mate> ERASESF DRNOW

**Procedure 2
Office PARMs**

CAUTION

Before beginning read all bulletins concerning changes to office parameters (PARMs).

Some office PARM values, if not already built into the new load, will have to be set during the data transfer. This could involve setting stop points in the MOVEBCS/TABXFR prior to starting.

PARAMETERS RULE-If any office PARMs are found to be different between the old and new software loads, then follow this rule:

- Use the requested PARM value from the *Parmmail* (or *Parm Variance Report*).
- If there is no requested or reformatted PARM value, use the value that is currently in the switch (old load).

Note: A reformatted value is indicated on the Parmmail as the polling value with "R" beside it.

- 1 Office parameters are already set in the undatafilled BCS image.
 - a. Compare (delta) the parm values in the inactive side with the ordered parameters indicated in the *Parm Variance Report*.
 - b. Normally, if any parms need to be corrected, make the required changes *before* beginning the data transfer. Make the parm corrections by changing the appropriate office tables on the inactive side.

Note: On the mate side use commands "MOVEBCS STOP BEFORE <table name>" and "MOVEBCS STOP AFTER <table name>" to cause the MOVEBCS process to stop at specified tables. The "STOP BEFORE" option is safer because it does not involve pre- or post-activities which may be attached to a particular table. (For example, "MOVEBCS STOP AFTER NNASST" is not possible since the post-activity for NNASST may include a restart.)

When using these options remember to use "STOP CLEAR BEFORE <table name>" or "STOP CLEAR AFTER <table name>" before continuing MOVEBCS. This clears the previous stop points.

Procedure 3
Stop after CLLIMITCE\$DIAGDATA

1 App/INACT For from_BCS 26 and to_BCS 29 type:

Mat> MOVEBCS STOP AFTER CLLIMITCE\$DIAGDATA

Procedure 4
MVEBCS setup

- 1 **App** Set up TRACECI to monitor MOVEBCS summary and error messages on the primary terminal (ACT).
 - a. **ACT** > TRACECI DEVICE <device_name>
where <device_name> is the name of the device labeled INACT.
Response on the inactive side:
This device is selected for TRACEing
 - b. **INACT** Mate> TRACECI TEST 'THIS IS A TEST'
"THIS IS A TEST" is output on the device selected above.

- 2 **App/INACT** Set MOVEBCS to stop at each error with a limit of not more than 100.
 - a. Mate> MOVEBCS LIMIT 25 *{limit of 25 is recommended}*
 - b. Mate> MOVEBCS STOPIF 1

Procedure 5 Start MOVEBCS

- 1 App Start the data transfer using MOVEBCS as follows.

CAUTION

MOVEBCS will perform a mate-side memory check. If this test fails *do not continue*-immediately notify the site supervisor.
The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side.

- a. **INACT** Mate> MOVEBCS;LOGOUT
MOVEBCS will perform an automatic restart reload after each of the following tables is transferred: DATASIZE, NNASST (or CMSHELF), and (conditionally) TRKMEM. Following the automatic restart, MOVEBCS will automatically start transferring the next table listed in table DART.
- b. Certain tables will fail with the message "This table is Recursive..." *No action is required other than to restart MOVEBCS.*
- Note:** This message means the table will be re-datafilled automatically by MOVEBCS (since data for the table depends upon other tables being datafilled first). Recursive tables may include: XLANAME, ESAPXLA, NCOS, THOUGRP, IBNRTE, OFRT, FNMAP, and others.
- c. **ACT** If any table fails to restore properly on the mate side, MOVEBCS will stop (depending on STOPIF and LIMIT) and will identify the headtable/subtable position in error.

For any table in error investigate the problem by entering on the ACTIVE side:

```
> DELTA <table> NOFILE           {compares old and new tuples}
or
> DELTA <table> SUB <subtable> NOFILE
```

- d. **INACT** Whenever it is necessary to login on the inactive (mate) side to correct an error, first *verify a flashing A1* on the inactive processor; then login on the mate side and make the needed changes.
- e. **INACT** Each time you restart the MOVEBCS, also LOGOUT on the mate side (as above).

```
Mate> MOVEBCS;LOGOUT
```

Note: Avoid unnecessary or prolonged logged-in sessions on the mate side while MOVEBCS is running.

Procedure 6
Copy patches

- 1 **Site/ACT** While the data transfer is running and as time allows, on the active side copy patches in store file to the new patch tape (or to disk) and XPM patches to disk.

Note: Following are steps to copy individual patches to tape or disk. You may instead create a file to automatically copy these patches.

- a. Install the new patch tape on a tape drive (x) with a write enable ring.
 - b. > LISTSF ALL
 - c. > MOUNT <x>;LIST T<x>
 - d. > COPY <sfdev_patch> T<x>
where <sfdev_patch> refers to patches in SFDEV listed in step 1.b.
 - e. Repeat COPY for each patch in SFDEV.
 - f. > DEMOUNT T<x>
 - g. > LISTSF ALL
 - h. List the disk volume where the XPM loads (and patches) normally reside.
 - i. > COPY <xpm_patch> <pload_disk>
where <xpm_patch> refers to XPM patches in SFDEV (format aaannXyy\$PATCH: aaa is alphabetic, nn is numeric, and yy is the BCS number), and where <pload_disk> is the XPM disk volume listed above. Do not perform if there are no XPM patches in SFDEV, if there are no XPMs or if there are no disks.
 - j. Repeat COPY for each XPM patch in SFDEV.
-

Procedure 7
Table CLLIMTCE\$DIAGDATA

- 1 App/INACT** For from_BCS 26 and to_BCS 29: if a stop point was set previously, expect MOVEBCS to stop after table CLLIMTCE subtable DIAGDATA is restored to allow the following workaround to be done.
 - a.** After MOVEBCS stops, login on the inactive (mate) side and enter:
Mate> FIXDIAG
 - b.** CLEAR the stop point that was set AFTER CLLIMTCE\$DIAGDATA.
Mate> MOVEBCS STOP CLEAR AFTER CLLIMTCE\$DIAGDATA
 - c.** Restart MOVEBCS.
Mate> MOVEBCS;LOGOUT
-

Procedure 8
MVEBCS completed

- 1 MOVEBCS is finished when you receive the following message.

INACT - completed D/R of office

Note: Do not perform the following step if PADNDEV data was manually restored *during* the MOVEBCS. (See procedure "Patch inactive.")

- 2 **ACT and INACT** On BOTH the active and inactive sides, change table PADNDEV back the way it was before patching the mate side.
-

Procedure 9
Login inactive

1 App/INACT *Verify a flashing A1 on the inactive processor.*

2 Login on the mate side as follows.

a. ACT

> MATEIO

> MATELOG <device>

where <device> is the name of the terminal labeled INACT.

b. INACT

Enter username and password *{mate-side response}*

Mate> OPERATOR OPERATOR

or Enter username

Mate> OPERATOR

Enter password

Mate> OPERATOR

Procedure 10
Print reports

- 1 **App** Generate a final data transfer report. This will include both the table exception report and the NTX package delta.
 - a. **ACT** Only if RECORD START was *not* done previously, type the following.

```
> RECORD START FROM <terminal_id> ONTO <printer>
```

where <terminal_id> is the terminal device labeled INACT, and <printer> refers to a printer used to collect the data transfer information.
 - b. **INACT**
Mate> MOVEBCS REPORT
 - c. **ACT** Only if RECORD START was done in substep a (above), type the following.

```
> RECORD STOP FROM <terminal_id> ONTO <printer>
```

where <terminal_id> and <printer> are the devices used above.
-

Procedure 11
Trapinfo inactive

1 App/INACT Type:

Mat> TRAPINFO

If a trap has occurred, do not continue until the trap is explained.

Procedure 12
Take MATE IMAGE

- 1 App/ACT** Determine which SLM volume to use to dump the image.

Note: Ensure adequate disk space is available.

- 2 App/ACT** From the active side enter MATEIO, and MATEBIND the SLM volume you have chosen. See the example below.

> MATEIO

> MATEBIND S00DIMAGE S00DIMAGE *{example}*

- 3 App/INACT** From the inactive side enter MATEIO, and DUMP the inactive (Mate) image. See the example below.

Mate> MATEIO

Mate> DUMP IMAGE S00DIMAGE ACTIVE RETAIN NODE CM *{example}*

If time allows LDMATE the mate image to verify it. Approximate LDMATE time will be 10 to 15 minutes.

Procedure 13
Stop after MOVEBCS

- 1 **ACT** Stop the application and return OFFICE PARAMETERS to their pre-application value.
 - a. **OVERIDE** certain POSTSWACT steps as follows.
 - > BCSUPDATE
 - > STATUS POSTSWACT
This will list all POSTSWACT steps.
 - > OVERRIDE <procedure_name>

OVERIDE each POSTSWACT step listed above *except* for the following steps:

 - RESET_OFFICE_TUPLES
 - ENABLE_AUTO_IMAGE
 - RESUME_ATT
 - b. **Run POSTSWACT** as follows.
 - > POSTSWACT
This will execute ONLY the three exceptions above.
 - c. **RESET** both PRESWACT and POSTSWACT with:
 - > RESET
 - d. In table OFCSTD manually set DUMP_RESTORE_IN_PROGRESS bool to 'N'.
-

Procedure 14
Data freeze

1 App/ACT Inform Telco personnel that a DATA FREEZE period begins and will remain in effect until the SDE dials back in to complete the software delivery. ONLY LIMITED DATA CHANGES WILL BE ALLOWED. See *Journal file rules* below.

2 Site/ACT Start journal file and verify started.

a. > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
Check which JF volume is currently active.

Note: QUERY should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."

b. > CLOSE JF ACTIVE
> CLOSE JF ACTIVE
JF is closed twice to ensure current timestamp on active journal file. QUERY again to verify rotation.

c. > JF START

d. > JF STATUS
Verify JF started.

e. > QUIT MAPCI

Procedure 15
SYNC

Perform this procedure after completing the MATE IMAGE and resetting office parameters.

1 Site and App/INACT Verify the inactive side is flashing A1.

2 Site/INACT From the inactive RTIF enter:

```
RTIF> \RELEASE JAM
```

3 App/ACT From the active side put the processors in sync as follows.

a. > MATEIO

b. > MATERESET
> YES

{for confirmation}

c. > MAPCI ; MTC ; CM ; SYNC
> YES

{for confirmation}

Note: The switch is now in data freeze.

Procedure 16
Journal file rules

Site FOLLOW THESE RULES through the entire data freeze period (normally up to the night of the BCS application). The data freeze begins once the mate image is completed and the journal file is started. Please inform control center and craftsperson personnel of the following restrictions.

- 1 LIMIT SERVORD ACTIVITY and TABLE CHANGES during the data freeze.

Warning: Whenever possible use SERVORD, not table control, to make data changes.

- 2 Journal file is never to be stopped, even during journal file rotations. *If the AUTOIMAGE feature is used to take regular office images, the journal file starts and stops automatically as the image is dumped. This is the only exception to the rule.*
-

- 3 ACTIVITIES WHICH **ARE NOT** PERMITTED

- changes to "restricted tables" (including tables C7LKSET, C7RTESET, and C7LINKSET)

Note: A list of all the RESTRICTED TABLES can be seen by listing entries in table FREEZTAB.

- network changes, additions, and deletions (tables NETWORK and NETJUNCT)
- PM changes, additions, and deletions (all tables ending with 'INV')
- trunk group changes, additions, and deletions (tables TRKGRP and TRKSGRP)
- trunk member changes, additions, and deletions (table TRKMEM)
- table TRKNAME changes, additions, and deletions
- IBN customer group changes, additions, and deletions
- OM and EADAS changes, additions, and deletions (tables OMACCTAB, OMCLASS, OMACCGRP, OMACCFLD, OMACCKEY, OMDDELTA, and OMSET)
- DRAMREC changes, additions, and deletions (that is, ASSIGN and RECORD)
- table changes, additions, and deletions from store files, and using OVERRIDE (OVE) or VERIFY OFF (VER OFF)
- use of the RENAMECLLI command
- use of the DMOPRO command
- use of the JF STOP command

-continued-

Procedure 16
Journal file rules (continued)

- erasing journal files from disk
 - use of DIRP CLEANUP command. This could change 'R' journal files to 'P' status, and these may not be processed when JFDUMPF step is done. If file space is required then cleanup only non-journal files.
-

4 ACTIVITIES WHICH **ARE** PERMITTED

- all SERVORD commands
 - table changes must be made with VERIFY ON and kept on hard copy
 - emergency translation changes
-

5 CLOSE and ROTATE journal files daily (whenever the number of records exceeds 1000). KEEP THE FILENAMES IN CHRONOLOGICAL ORDER IN A JOURNAL FILE LOGBOOK.

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TABXFR procedure

For Two Night Process-This section details steps required to move the data from the old BCS load to the new BCS load.

For from_BCS 35 and higher, the TABXFR increment is used to perform the data transfer portion of a BCS application.

Procedure 1 Office PARMs with TABXFR

CAUTION

Before beginning read all bulletins concerning changes to office parameters (PARMs).

Some office PARM values, if not already built into the new load, will have to be set during the data transfer. This could involve setting stop points in the MOVEBCS/TABXFR prior to starting.

PARAMETERS RULE-If any office PARMs are found to be different between the old and new software loads, then follow this rule:

- Use the requested PARM value from the *Parmmail* (or *Parm Variance Report*).
- If there is no requested or reformatted PARM value, use the value that is currently in the switch (old load).

Note: A reformatted value is indicated on the Parmmail as the polling value with "R" beside it.

- 1 **If to_BCS36 and lower**-Office parameters are already set in the undatafilled BCS image.
 - a. Compare (delta) the parm values in the inactive side with the ordered parameters indicated in the *Parm Variance Report*.
 - b. Normally, if any parms need to be corrected, make the required changes *before* beginning the data transfer. Make the parm corrections by changing the appropriate office tables on the inactive side.

-continued-

Procedure 1
Office PARMs with TABXFR (continued)

- 2** **If to_BCS37/CSP02 and higher**-With the introduction of CSP02 office parameters will be set as part of the TABXFR.
- a.** Compare (delta) the parm changes to be applied by the FEATDATA file with the ordered parameters indicated in the *Parmmail*.
Note: PARMMAIL and PARMCHGS files are in the Applicator Package. All *new* and *changed* parm values as indicated in PARMMAIL are also listed in PARMCHGS (and FEATDATA).
 - b.** If any parms need to be changed, edit the FEATDATA file to reflect the corrected parm values. TABXFR will use this file to set the parms.
 - c.** **App/ACT** Once the FEATDATA file is verified correct, MATECOPY the file to inactive (mate) side SFDEV. This file will be processed after the parm tables restore.
-

Procedure 2
TABXFR setup

- 1 **App** Set up TRACECI to monitor TABXFR summary and error messages on the primary terminal (ACT).

- a. **ACT** > TRACECI DEVICE <device_name>
where <device_name> is the name of the device labeled INACT.
Response on the inactive side:
This device is selected for TRACEing
- b. **INACT** Mate> TRACECI TEST 'THIS IS A TEST'
"THIS IS A TEST" is output on the device selected above.
-

- 2 **App/INACT** Set up and initialize the TABXFR platform used to perform the table transfers.

- a. Mate> TABXFR
TABXFR: *{system response}*
- b. Mate> STOPIF 1
Table transfer will stop after this number of failures.
- c. Mate> LIMIT 25
Limits the number of failures allowed on a table.
- d. Mate> SETUP STANDARD
TABXFR type set to: STANDARD. *{system response}*

Note: The STATUS command can be used at any time while in the TABXFR increment to display information about the setup and status of the data transfer.

Procedure 3
Start TABXFR

- 1 **App** Start the data transfer using TABXFR as follows.

CAUTION

TABXFR will perform a mate-side memory check. If this test fails do not continue-immediately notify the site supervisor.
The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side.

- a. **INACT** Mate> TABXFR;STARTXFR;LOGOUT
TABXFR will perform an automatic restart reload after each of the following tables is transferred: DATASIZE, NNASST (or CMSHELF), and (conditionally) TRKMEM. Following the automatic restart, TABXFR will automatically start transferring the next table listed in table DART.

Note: A list of empty head tables is sent to the inactive side at the beginning of TABXFR. The applicator may also see empty sub tables that are not on the list being transferred. This is normal and is design intent.

- b. **ACT** If any table fails to restore properly on the mate side, TABXFR will stop (depending on STOPIF and LIMIT) and will identify the headtable/subtable position in error.

For any table in error investigate the problem by entering on the ACTIVE side:

> DELTA <table> NOFILE *{compares old and new tuples}*

or

> DELTA <table> SUB <subtable> NOFILE

- c. **INACT** Whenever it is necessary to login on the inactive (mate) side to correct an error, first *verify a flashing A1* on the inactive processor; then login on the mate side and make the needed changes.

- d. **INACT** Continue theTABXFR as follows. Also LOGOUT on the mate side (as above).

Mate> TABXFR;STARTXFR;LOGOUT

Note: Avoid unnecessary or prolonged logged-in sessions on the mate side while TABXFR is running.

Procedure 4
Copy patches

- 1 **Site/ACT** While the data transfer is running and as time allows, on the active side copy patches in store file to the new patch tape (or to disk) and XPM patches to disk.

Note: Following are steps to copy individual patches to tape or disk. You may instead create a file to automatically copy these patches.

- a. Install the new patch tape on a tape drive (x) with a write enable ring.
 - b. > LISTSF ALL
 - c. > MOUNT <x>;LIST T<x>
 - d. > COPY <sfdev_patch> T<x>
where <sfdev_patch> refers to patches in SFDEV listed in step 1.b.
 - e. Repeat COPY for each patch in SFDEV.
 - f. > DEMOUNT T<x>
 - g. > LISTSF ALL
 - h. List the disk volume where the XPM loads (and patches) normally reside.
 - i. > COPY <xpm_patch> <pload_disk>
where <xpm_patch> refers to XPM patches in SFDEV (format aaannXyy\$PATCH: aaa is alphabetic, nn is numeric, and yy is the BCS number), and where <pload_disk> is the XPM disk volume listed above. Do not perform if there are no XPM patches in SFDEV, if there are no XPMs or if there are no disks.
 - j. Repeat COPY for each XPM patch in SFDEV.
-

Procedure 5
TABXFR completed

- 1 **App** TABXFR is finished when you receive the following message.

INACT - completed D/R of office

Note: Do not perform the following step if PADNDEV data was manually restored *during* the TABXFR. (See procedure "Patch inactive.")

- 2 **ACT and INACT** On BOTH the active and inactive sides, change table PADNDEV back the way it was before patching the mate side.
-

Procedure 6
Login inactive

1 App/INACT *Verify a flashing A1 on the inactive processor.*

2 Login on the mate side as follows.

a. ACT

> MATEIO

> MATELOG <device>

where <device> is the name of the terminal labeled INACT.

b. INACT

Enter username and password

{mate-side response}

Mate> OPERATOR OPERATOR

or Enter username

Mate> OPERATOR

Enter password

Mate> OPERATOR

Procedure 7
Print reports TABXFR

- 1 **App** Generate a final data transfer report. This will include both the table exception report and (with BCS36 and lower) the NTX package delta.
 - a. **ACT** Only if RECORD START was *not* done previously, type the following.

```
> RECORD START FROM <terminal_id> ONTO <printer>
```

where <terminal_id> is the terminal device labeled INACT, and <printer> refers to a printer used to collect the data transfer information.
 - b. **INACT**

```
Mate> REPORT {still in TABXFR increment}
```

```
Mate> QUIT {quits out of TABXFR}
```
 - c. **ACT** Only if RECORD START was done in substep a (above), type the following.

```
> RECORD STOP FROM <terminal_id> ONTO <printer>
```

where <terminal_id> and <printer> are the devices used above.
-

Procedure 8
Trapinfo inactive

1 App/INACT Type:

Mat> TRAPINFO

If a trap has occurred, do not continue until the trap is explained.

Procedure 9
Take MATE IMAGE

- 1 App/ACT** Determine which SLM volume to use to dump the image.

Note: Ensure adequate disk space is available.

- 2 App/ACT** From the active side enter MATEIO, and MATEBIND the SLM volume you have chosen. See the example below.

> MATEIO

> MATEBIND S00DIMAGE S00DIMAGE *{example}*

- 3 App/INACT** From the inactive side enter MATEIO, and DUMP the inactive (Mate) image. See the example below.

Mate> MATEIO

Mate> DUMP IMAGE S00DIMAGE ACTIVE RETAIN NODE CM *{example}*

If time allows LDMATE the mate image to verify it. Approximate LDMATE time will be 10 to 15 minutes.

Procedure 10
Stop after TABXFR

- 1 **ACT** Stop the application and return OFFICE PARAMETERS to their pre-application value.

> BCSUPDATE ; ABORT_PRESWACT

Resets DUMP_RESTORE_IN_PROGRESS bool in OFCSTD to 'N'

> TABXFR ; CANCEL

Enables PATCHER and turns back on AUTODUMP and AUTOPATCH

> QUIT ALL

Procedure 11
Data freeze

1 App/ACT Inform Telco personnel that a DATA FREEZE period begins and will remain in effect until the SDE dials back in to complete the software delivery. ONLY LIMITED DATA CHANGES WILL BE ALLOWED. See *Journal file rules* below.

2 Site/ACT Start journal file and verify started.

a. > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
Check which JF volume is currently active.

Note: QUERY should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."

b. > CLOSE JF ACTIVE
> CLOSE JF ACTIVE
JF is closed twice to ensure current timestamp on active journal file. QUERY again to verify rotation.

c. > JF START

d. > JF STATUS
Verify JF started.

e. > QUIT MAPCI

Procedure 12
SYNC

- 1 **App/ACT** After completing the MATE IMAGE and resetting office parameters, then put the processors in sync as follows.
 - a. > MATEIO
 - b. > MATERESET
> YES *{for confirmation}*
 - c. > MAPCI ; MTC ; CM ; SYNC
> YES *{for confirmation}*

Note: The switch is now in data freeze.

Procedure 13
Journal file rules

Site FOLLOW THESE RULES through the entire data freeze period (normally up to the night of the BCS application). The data freeze begins once the mate image is completed and the journal file is started. Please inform control center and craftsperson personnel of the following restrictions.

- 1 LIMIT SERVORD ACTIVITY and TABLE CHANGES during the data freeze.

Warning: Whenever possible use SERVORD, not table control, to make data changes.

- 2 Journal file is never to be stopped, even during journal file rotations. *If the AUTOIMAGE feature is used to take regular office images, the journal file starts and stops automatically as the image is dumped. This is the only exception to the rule.*
-

- 3 ACTIVITIES WHICH **ARE NOT** PERMITTED

- changes to "restricted tables" (including tables C7LKSET, C7RTESET, and C7LINKSET)

Note: A list of all the RESTRICTED TABLES can be seen by listing entries in table FREEZTAB.

- network changes, additions, and deletions (tables NETWORK and NETJUNCT)
- PM changes, additions, and deletions (all tables ending with 'INV')
- trunk group changes, additions, and deletions (tables TRKGRP and TRKSGRP)
- trunk member changes, additions, and deletions (table TRKMEM)
- table TRKNAME changes, additions, and deletions
- IBN customer group changes, additions, and deletions
- OM and EADAS changes, additions, and deletions (tables OMACCTAB, OMCLASS, OMACCGRP, OMACCFLD, OMACCKEY, OMDDELTA, and OMSET)
- DRAMREC changes, additions, and deletions (that is, ASSIGN and RECORD)
- table changes, additions, and deletions from store files, and using OVERRIDE (OVE) or VERIFY OFF (VER OFF)
- use of the RENAMECLLI command
- use of the DMOPRO command
- use of the JF STOP command

-continued-

Procedure 13
Journal file rules (continued)

- erasing journal files from disk
 - use of DIRP CLEANUP command. This could change 'R' journal files to 'P' status, and these may not be processed when JFDUMPF step is done. If file space is required then cleanup only non-journal files.
-

4 ACTIVITIES WHICH **ARE** PERMITTED

- all SERVORD commands
 - table changes must be made with VERIFY ON and kept on hard copy
 - emergency translation changes
-

5 CLOSE and ROTATE journal files daily (whenever the number of records exceeds 1000). KEEP THE FILENAMES IN CHRONOLOGICAL ORDER IN A JOURNAL FILE LOGBOOK.

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Second Night

Journal file restore procedure

For Two Night Process-This section is required to restore the journal file recorded during the DATA FREEZE period.

Two dialup ports are required, one for the active side processor (label it ACT) and one for the inactive side processor (label it INACT). Remember to acquire a soft copy of the console sessions for both terminals.

CAUTION

Ensure no hardware changes or retrofits are in progress. This includes network or memory extensions and peripheral additions/deletions. These activities are prohibited during the BCS application. Such hardware must be made INB (installation busy), and any further software changes must cease.

CAUTION

In case of emergency situations
and if an outage or degradation occurs, call the site supervisor immediately. If not service-affecting, use normal escalation policy.

Procedure 1 Interrupt/ABORT process

Both SITE and Applicator should be familiar with each of the following steps before continuing with the procedures in this section.

If problems develop during the software delivery, resort to one of the following actions.

- 1 It may be necessary to STOP (and reschedule) the application after PRESWACT has been implemented, but before the switch of activity. Refer to "PRESWACT Abort" in *Appendix A* (page A-29).

- 2 If a controlled REVERT is required after the switch of activity (SWACT) refer to "Revert to old load procedure" (page 7-147).

- 3 If an emergency ABORT is required after the switch of activity (SWACT) refer to "Emergency Abort procedure" (page 7-173).

Procedure 2
Remote login

1 App/ACT Contact the control center (if required) and the site on the voice phone and connect to both dialups. Verify one dialup port is on IOC0 and the other is on IOC1.

2 App/ACT Login the users and if applicable, set LOGINCONTROL.

a. <break>

b. ?LOGIN

Enter username and password *{system response}*

> <username> <password>

or > <username>

> <password>

where username and password can both be found on the Pre-application report.

c. For BCS33 and higher enter:

> BCSUPDATE;DEVICE

> QUIT

d. For BCS32 and lower enter:

> LOGUTIL;STOP;STOP *{Note the name of this device}*

> LEAVE

> LOGINCONTROL <device> QUERY

e. Verify *Open Condition Logout* is *N*. If not, retain the original status and enter:

> LOGINCONTROL <device> OPENFORCEOUT FALSE

Verify *Max Idle Time* is *Forever*. If not, retain original status and enter:

> LOGINCONTROL <device> MAXIDLETIME FOREVER

> LOGINCONTROL <device> DISABLEON REMOVE

<forceout_conditions> *{conditions obtained in substep d above}*

f. Repeat this entire step on the other terminal device.

Procedure 3
Check logs SNODE

1 App/ACT For BCS33 and higher check logs to verify processor stability.

> BCSUPDATE ; LOGCHECK

> QUIT

Do not continue until all logs have been explained.

2 App/ACT For BCS32 and lower check logs to verify processor stability.

> LOGUTIL

> OPEN <log_buffer> ; WHILE (BACK) ()

where <log_buffer> refers to CM, MS, SLM and MM logs.

> LEAVE

> TRAPINFO

Check for store parity traps, MM (mismatch), and store checksum logs. Do not continue until all logs have been explained.

Procedure 4
Stop journal file

- 1 **App/ACT** ROTATE and STOP the Journal File recording.
 - a. > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
Check which JF volume is currently active.
 - b. > CLOSE JF ACTIVE
QUERY again to verify rotation.
 - c. > JF STOP
Verify stopped.
 - d. > QUIT MAPCI
-

Procedure 5
Drop sync SNODE**1 App/ACT Type:**

> MAPCI ; MTC ; CM

2 App/ACT Ensure the CM you want to load with the new BCS load is *inactive* and the corresponding MS and SLM components are used.

For example: if the new BCS image resides on SLM disk 0, then CM 0 should be the inactive side, and the MS 0 clock should be the slave clock.

- a. Determine where the new BCS image resides (normally SLM disk 0).
 - b. If needed to align the CM with the SLM, you may switch activity of the CM using SWACT (CM level).
 - c. If needed to align the MS clock with the CM, you may switch MS clock mastership using SWMAST (MS level). If you do, wait five minutes to continue.
-

3 Site/INACT From the inactive RTIF enter:

RTIF> \JAM

RTIF> YES *{for confirmation}*

4 App/ACT

> DPSYNC *{from CM level}*

> YES *{if prompted to disable AUTO PATCHING}*

> YES *{to confirm DPSYNC}*

5 Site/INACT Site must tell the engineer when the inactive CM is flashing A1.**6 App/ACT**

> QUIT MAPCI

Procedure 6
Loadmate SNODE

- 1 **App/ACT** List the SLM disk volume onto which the new BCS IMAGE files (both _MS and _CM load files) were previously restored (copied).
 - a. > DISKUT
> LF SOOD<volume> {or SO1D<volume>}
where <volume> is the SLM disk volume with the BCS IMAGE.
 - b. Verify the image files (both _MS and _CM) on the SLM disk volume are correct. Be sure to use the image files that were provided on the new BCS IMAGE tape.
To help understand the image filenames, you may use the DISPMS <filename> command which displays the image header information. (Refer to Appx. A for details of this command.)
-
- 2 **App/ACT** If the _CM image file was not previously restored to the SLM disk, you can instead loadmate from SLM tape as follows. (Otherwise, go on to with the next step to load from disk.)

CAUTION

The _MS file will have to be restored to the SLM disk in order to load the MS (during PRESWACT if not already done).
However, since loadmate can be done using SLM disk or tape, you may wait until loadmate is done to restore the _MS file to SLM disk.

Insert the new BCS IMAGE cartridge into the SLM tape drive corresponding to the inactive CM.

> LDMATE DIRECT TAPE 2 {loads 2nd file on the tape}

-continued-

Procedure 6
Loadmate SNODE (continued)

3 App/ACT If BCS28 and higher, loadmate using the SLM disk as follows.

a. Ensure no DIRP files are opened on the SLM disk with the image.

```
> DIRP;QUERY <subsystem> ALL
where <subsystem> is AMA, OM, JF, or DLOG.
```

If any opened files, close the files (or rotate the information to the active side).

CAUTION

LDMATE DIRECT (below) will fail if there are any opened files on the SLM device with the image.

"DIRECT LOADMATE OPERATION FAILED: File System operations must be halted before initiating loadmate."

b. > LDMATE DIRECT DISK <filename_CM>

If you get the above message, either close the opened file(s), or else loadmate using the VIAMS option as follows.

```
> LDMATE VIAMS <filename_CM>
```

4 App/ACT If BCS27 loadmate using the SLM disk as follows.

a. Activate patch SSY05C27.

```
> PATCHEDIT SSY05C27 ON
```

b. > LDMATE <filename_CM>

5 App/ACT If BCS26 loadmate using the SLM disk as follows.

```
> LDMATE <filename_CM>
```

6 Site and App/INACT Wait for loadmate to complete and the inactive processor to flash A1.

While waiting for loadmate, SITE may display the patches in store file (PATCHER; DISPLAY <patch>) or may copy any new patches to the new patch tape (or to disk).

Procedure 7
Login inactive after Loadmate SNODE

Login on the inactive processor after loadmate is complete.

1 App/ACT Type:

> MATELINK RTS

2 Allow initialization on the inactive side (flashing A1).

3 LOGOUT of the active side if logged in on the terminal labeled INACT.

4 > MATEIO

> MATELOG <device>

where <device> is the name of the terminal labeled INACT.

5 App/INACT

Enter username and password

{mate-side response}

Mate> OPERATOR OPERATOR

or Enter username

Mate> OPERATOR

Enter password

Mate> OPERATOR

Procedure 8
Set date and header message

- 1 **App/INACT** Set the current date and site header message on the mate side.

```
Mate> SETDATE <dd mm yy> {set today's date}
```

```
Mate> SETLOGMSG '<text>'
```

where <text> becomes the office header on the new software load. Using the old header as the model, change the **Office Order (COEO)**, **office name**, **Product Code** (or BCS level), and **application date**. Ensure all symbols at the beginning and end of the header message remain the same (including spaces).

Note: The "Order/Suborder" (Office Order) and "To Product/Version" (Product Code/BCS) can be found in the *Parmmail*.

Example:

```
94/04/12 00:41 *** H01234 OFFICE LEC00002 120494 ***
```

Procedure 9
Check logs inactive SNODE

- 1 App/INACT** For BCS33 and higher check mate logs to verify processor stability.

```
Mate> BCSUPDATE;LOGCHECK
```

```
Mate> QUIT
```

Do not continue until all logs have been explained.

- 2 App/INACT** For BCS32 and lower check mate CM logs.

```
Mate> LOGUTIL;OPEN CM;WHILE(BACK)()
```

```
Mate> LEAVE
```

```
Mate> TRAPINFO
```

Check for store parity traps. Do not continue until all logs have been explained. Traps from active side (FOOTPRINT) may also be shown.

- 3 App/INACT**

```
Mate> TRAPINFO CLEAR
```

Procedure 10 Manual journal file dump

- 1 App/ACT** If currently on BCS33 and lower, enter:

```
> QUERY JFDUMP
```

If the module is already loaded (module information is output) go to step 2 below.

If the module is *not* loaded ("QUERY--module 'JFDUMP' is not loaded" is output) load the module as follows.

- a. Have site install the appropriate BCSTOOLS tape on a tape drive. Ask for the tape via the identification label (see "Administrative" block on the Pre-application report.)
- b.

```
> TLIST(MOUNT <x>
```

{BCSTOOLS tape}
- c.

```
> LOAD JFDUMP PRPTCHEC
```
- d.

```
> DEMOUNT T<x>
```

- 2 Site and App** Locate the FIRST JOURNAL FILE TAPE or JF DISK VOLUME.

CAUTION

It is of utmost importance to start with the *first* journal file volume (containing the first journal files created since the data freeze).

- a. **App** If journal files are on TAPE, list the JF tape as follows.

Put up the tape *without* a write enable ring.

```
> MOUNT <x>
```

{journal file tape}

```
> LIST T<x>
```

{retain file names}

- b. **App** If journal files are on DISK, list the JF disk volume as follows.

```
> DSKUT;LISTVOL <JF_disk> ALL
```

where <JF_disk> refers to the disk volume(s) containing journal files.

Be extra sure to list all the volumes with JF.

- 3** Locate a scratch DISK volume for the journal file dump (or else have site install a scratch tape with a write enable ring, and MOUNT FORMAT).

-continued-

Procedure 10
Manual journal file dump (continued)

- 4.1 Only if coming *from* BCS33 and higher and going *to* BCS35 and higher, enter the following command.

(for example, BCS 33-35, 33-36, 34-35, or 34-36)

Note: In the following step the applicator may utilize a file to dump multiple journal files.

```
> JFDUMP <jfin> <jfout> <device> <from_BCS> <from_BCS>
where <jfin> refers to the journal file name. For <jfout> use 'JFA' thru 'JFZ',
then use 'JFAA' thru 'JFZZ' (except Canada) -or use 'JF$100 thru JF$999'
(Canada only). <device> refers to the recording device on which to dump
journal file (disk, tape, or SFDEV).
```

As an example: 'JFDUMP U880405000090JF JFA D000SCRATCH 33 33'
dumps file U880405000090JF to file JFA onto disk D000SCRATCH
formatting from BCS33 to BCS35 and higher.

Retain the output filenames for *Matebind journal files* procedure (to follow).

- 4.2 Otherwise, for any other BCS enter the following commands.

(for example, BCS 32-35, 33-33, 33-34, or 34-34)

```
> RFMT SET <from_BCS> <to_BCS>
```

Note: In the following step the applicator may utilize a file to dump multiple journal files.

```
> JFDUMP <jfin> <jfout> <device> <from_BCS> <to_BCS>
where <jfin> refers to the journal file name. For <jfout> use 'JFA' thru 'JFZ',
then use 'JFAA' thru 'JFZZ' (except Canada) -or use 'JF$100 thru JF$999'
(Canada only). <device> refers to the recording device on which to dump
journal file (disk, tape, or SFDEV).
```

As an example: 'JFDUMP U880405000090JF JFA D000SCRATCH 29 32'
dumps file U880405000090JF to file JFA onto disk D000SCRATCH
formatting from BCS29 to BCS32.

Retain the output filenames for *Matebind journal files* procedure (to follow).

- 5 Repeat step 4 for each journal file listed from step 2 above.

CAUTION

**Review the time stamps of the reformatted JF to confirm
the entire data freeze period is accounted for.**
-JF active during the entire data freeze with no significant interval
without journal file

-continued-

Procedure 10
Manual journal file dump (continued)

6 > DEMOUNT T<x> *{only if JF was recorded on tape}*

7 **Site** If journal file was recorded on tape, remove the previous journal file tape and replace the write enable ring. Install the next tape without a write enable ring.

CAUTION

Install each journal file tape in the order they were created.

8 **Site and App** For each journal file tape, MOUNT and LIST the tape and repeat steps 4 through 7 above.

Procedure 11
Matebind journal files

- 1 **App/ACT** Matebind the reformatted journal files.
 - a. **ACT** List the device used for the journal file dump from the jf dump steps (previous procedure).
 - b. > MATEIO
 - c. > MATEBIND <jffile> <jffile>
where <jffile> refers to all reformatted JF filenames created in the JF dump steps.
 - d. Repeat MATEBIND for each filename created in the JF dump steps.
 - e. > MATEBIND DMOLIST DMOLIST
Note: The site is responsible to input all DMOs from the DMOLIST.
(These are DMOs which were input since datafreeze was suspended.)
 - f. **INACT**
Mate> MATEIO
-

Procedure 12
Restore journal files

- 1 **App** Restore the journal files to the inactive side. If to_BCS 30 and higher perform substep *a* below. If to_BCS 29 and lower perform substep *b*.

Note: In the following steps, <jffile> refers to all the reformatted JF filenames created previously in the *journal file dump* procedure.

CAUTION

Restore all journal files in the same order they were created.

- a. For to_BCS 30 and higher enter:

ACT

> TRACECI DEVICE <device_name>

where <device_name> is the name of the device labeled INACT.

Note: This command allows you to monitor the results of the RESTAB command on the INACT terminal.

INACT

Mate> RESTAB <jffile> <from_BCS>

Correct all errors which may occur.

Repeat RESTAB for each filename created in the journal file dump.

- b. For to_BCS 29 and lower enter:

INACT

Mate> DMOPRO <jffile>

Correct all errors which may occur.

Repeat DMOPRO for each filename created in the journal file dump.

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PRESWACT procedure

This section details steps required to prepare for the CC activity switch to the new software load.

Procedure 1

BULLETINS before PRESWACT

- 1 **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning PRESWACT.
-

Procedure 2
Unload module JCTRSTAT

If this is an ENET office, perform this procedure. Note carefully the from and to BCS qualifiers.

- 1 **App/ACT** If an ENET office is going from BCS31 to BCS34RTS, the module JCTRSTAT will have to be *unloaded* on the ACTIVE side of the switch *before starting* PRESWACT.

> UNLOAD JCTRSTAT

System response: The module will be unloaded from the switch.

Note: This is necessary due to a change in the software packaging of JNET and ENET code which occurred between BCS34RTM and BCS34RTS.

Procedure 3
Start PRESWACT

- 1 **App/ACT** Perform PRESWACT of BCSUPDATE.

Note: Please logout all users on the inactive side while PRESWACT is running.

```
> BCSUPDATE
> PRESWACT
```

- 2 Read the following notes, and continue the procedure while PRESWACT is running.

Note 1: PRESWACT runs all steps required before the CC switch of activity and flags them as completed when they pass. If any error occurs, PRESWACT will stop and give instructions. If this is the case, follow PRESWACT instructions to correct the problem (contact the site supervisor if necessary).

As an example:

```
TABLE_DELTA          executing
:
Table AMAOPTS *** Checksum incorrect, keys incorrect
:
TABLE_DELTA          not complete

ACT - Error: Inactive table data did not match.
Correct error condition. Enter Preswact to continue
```

For any table in error, investigate the problem by entering:

```
> DELTA <table> NOFILE          {compares new/old tuples}
```

or > DELTA <table> SUB <subtable> NOFILE

To continue, run PRESWACT again by entering:

```
> PRESWACT
```

Note 2: A hardware conversion (such as LTC/LTCI) scheduled concurrently with the BCS upgrade will require certain table changes, additions or deletions. PRESWACT step TABLE_DELTA will detect a mismatch between the old and new data, and will stop, indicating an error. If this is the case, confirm the table differences are due to the conversion, resolve any differences, and run PRESWACT again (type >PRESWACT) to continue.

-continued-

Procedure 3
Start PRESWACT (continued)

Note 3: PRESWACT step TABLE_DELTA may also display an informative message without stopping. When this occurs, it is not considered an error; rather, it is an indication that something is different in the old and new BCS loads. Note the information displayed, and at a convenient stopping point, compare the old and new loads to understand and validate the differences. *As an example:*

```
TABLE_DELTA           executing
:
Table ATTCONS Checksum incorrect, keys match
:
TABLE_DELTA           complete
```

Procedure 4
Override module JCTRSTAT

PRESWACT may STOP with the message "Failed SWACT_MODULE_CHECK." If you see this message and it is indicating that JCTRSTAT is the only module missing on the inactive side and if this is an ENET office, perform this procedure. If any other module is reported to be missing from the inactive side please investigate before taking any action. Note carefully the from and to BCS qualifiers.

- 1 App/ACT** If an ENET office is going from BCS32 thru 34RTM to BCS34RTS or higher, PRESWACT step SWACT_MODULE_CHECK will have to be *overridden* as follows.

> BCSUPDATE;SWACTCI;MODCHECK OVERRIDE *{for BCS33 and higher}*

> BCSUPDATE;SWCT;MODCHECK OVERRIDE *{for BCS32}*

System response: The user will be prompted to override module JCTRSTAT.

Note: This is necessary due to a change in the software packaging of JNET and ENET code which occurred between BCS34RTM and BCS34RTS.

**Procedure 5
PRESWACT DIRP and billing**

Site and software delivery engineer should work together to prepare both PRIMARY and PARALLEL DIRP billing subsystems for the CC switch of activity (SWACT). This procedure gives the steps to accomplish this preparation.

Note: Site can begin doing this procedure while the Applicator continues with other PRESWACT procedures.

1.0 Disk drive parallel DIRP coming from BCS31 and lower

- a. **Site/ACT** In table DIRPSSYS determine which disks are being used for parallel DIRP recording.

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

- b. For a parallel volume that is on DISK, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS by replacing the volume name with nil volume (\$).

- c. Copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.

- d. Erase all closed parallel DIRP files from the disk:

```
> CLEANUP FILE <parallel_filename>  
where <parallel_filename> is each file to be erased.
```

- e. Reformat the parallel disk volume:

```
> DIRPPFMT <parallel_volume>  
where <parallel_volume> is the original volume name.
```

- f. If to_BCS 32 and higher, rename the first file on the reformatted parallel volume (created by the "dirppfmt" command). Using the "renamefl" command, change the file name from "DIRPPARALLEL" to "B000000000000" (12 zeros).

- g. **Site and App/INACT** If from_BCS 31, ensure that parallel disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

-continued-

Procedure 5
PRESWACT DIRP and billing (continued)**1.1 Disk drive parallel DIRP coming from BCS32 and higher**

Note: If from_BCS 32 and higher, Site no longer has to take down parallel billing if on disk.

Site and App/INACT Ensure that parallel disk volumes are in table DIRPPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPPOOL on the inactive side before SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPPOOL_CHECK displays the datafill for table DIRPPPOOL on the inactive side.

If from_BCS 33 and lower, PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPPOOL.

DIRP will recover parallel recording to disk on the newly-active side after SWACT.

CAUTION**Recently recorded parallel data may be overwritten.**

Site should copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.

- If a single parallel volume is in use, information on the volume will be lost over SWACT.
- If more than one parallel volume is allocated to DIRP, DIRP will start recording after SWACT on the volume with the oldest time stamp. Hence information on that volume will be lost over SWACT.

2 Disk drive PRIMARY billing

- a. **Site/ACT** If on disk (DDU), from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR).
- b. If required by Telco policy copy unprocessed DIRP files to back-up tape (using DIRPAUTO or DIRPCOPY commands).
- c. Verify that table DIRPHOLD contains no unprocessed billing files (if DIRPAUTO was used above).

-continued-

**Procedure 5
PRESWACT DIRP and billing (continued)**

- d. **Site and App/INACT** If from_BCS 32 and higher, ensure that regular disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

3 Tape drive PRIMARY billing

- a. **Site/ACT** If on tape (MTD), from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR), CLOSE the standby file, and DMNT the standby volume.

Example:

```
> ROTATE AMA
> CLOSE AMA STDBY 1
> DMNT AMA T1                                     {standby volume}
```

- b. Remove the demounted standby tape from the tape drive, and put up a new tape to be used as the next DIRP volume.
- c. Prepare a new standby volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
where <x> is the standby device number, and <volume_id> is the
name of the standby volume.
```

If prompted enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then select an unused or expired tape for formatting.

```
> DEMOUNT T<x>
```

Leave the standby volume at load point and ON LINE. Immediately following SWACT, it will become the ACTIVE volume of the appropriate subsystem.

- d. **Site and App/INACT** If from_BCS 32 and higher, ensure that regular tape volumes are in table DIRPPOOL on the inactive side. This allows the tape to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

-continued-

Procedure 5
PRESWACT DIRP and billing (continued)

4.0 DPP/BMC PRIMARY billing coming from BCS31 and lower

- a. **Site/ACT** If on DPP or BMC, from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR), CLOSE the standby file, and DMNT the standby volume.

Note: DIRP sees DPP/BMC as a tape drive port.

- b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

```
> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
```

This re-establishes the block header on the DPP.

- c. Display current DPP settings to hardcopy (retain for POSTSWACT).

- d. Prepare a new standby volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
```

where <x> is the standby device number, and <volume_id> is the name of the standby volume.

If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)" then enter:

```
> ERASTAPE <x>
```

where <x> is the standby device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

System response is:

```
***WARNING, THIS TAPE WILL BE ERASED***
```

CAUTION

At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.

If a mistake is made, a real tape could be erased.

Enter YES to confirm the command.

```
> DEMOUNT T<x>
```

If ERASTAPE command was used, repeat this substep (d) to rename the volume.

Leave the standby volume demounted. Immediately following SWACT, it will become the ACTIVE volume of the appropriate subsystem.

-continued-

**Procedure 5
PRESWACT DIRP and billing (continued)**

- e. **Site and App/INACT** If from_BCS 31, ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

```
Mate> TABLE DIRPPOOL;POS <pool_#>  
where <pool_#> is the number for DPP AMA pool.
```

If going to BCS32 and higher CHANGE field DEVTYPE in table DIRPPOOL to DPP (not TAPE).

CAUTION

**Starting in BCS32 in a pool of DPP or BMC volumes,
field DEVTYPE in table DIRPPOOL should be DPP (not TAPE).**
Otherwise, if datafilled as TAPE you will have to recover the volume manually after SWACT.

- f. **Site and App/ACT** If SMDR recording is on BMC (datafilled as TAPE in table DIRPSSYS/DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY volume. In table DIRPSSYS/DIRPPOOL add the TAPE device as a standby BMC. Also add the device in DIRP_REC (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

Note: Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

- g. **Site and App/INACT** Verify the DIRP_REC file on the inactive side is correct for the SWACT to the new BCS load.

```
Mate> LISTSF ALL
```

```
Mate> PRINT DIRP_REC
```

If necessary, edit DIRP_REC to make corrections.

-continued-

Procedure 5 PRESWACT DIRP and billing (continued)

If going to BCS32 and higher, *delete* the DPP tuple in the DIRP_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

```
Mate> EDIT DIRP_REC
Mate> DOWN '<poolname>'      {name of the pool using the DPP}
Mate> DELETE
Mate> ERASESF DIRP_REC
Mate> FILE SFDEV DIRP_REC
```

4.1 DPP/BMC PRIMARY billing coming from BCS32 and higher

- a. **Site/ACT** Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

```
> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
This re-establishes the block header on the DPP.
```

- b. **Site and App/ACT** If SMDR recording is on BMC (datafilled as TAPE in table DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY TAPE volume. In table DIRPPOOL add the TAPE device as a standby BMC. Also add the device on the inactive side (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

Note: Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

- c. **Site and App/INACT** Ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

```
Mate> TABLE DIRPPOOL;POS <pool_#>
where <pool_#> is the number for DPP AMA pool.
```

-continued-

**Procedure 5
PRESWACT DIRP and billing (continued)**

Verify field DEVTYPE in table DIRPPOOL is DPP (not TAPE).

CAUTION

**Starting in BCS32 in a pool of DPP or BMC volumes,
field DEVTYPE in table DIRPPOOL should be DPP (not TAPE).**
Otherwise, if datafilled as TAPE you will have to recover the volume
manually after SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK
displays the datafill for table DIRPPOOL on the inactive side.

5.0 Tape drive parallel DIRP coming from BCS33 and lower

- a. **Site/ACT** In table DIRPSSYS or DIRPPOOL determine which MTDs
are being used for parallel DIRP recording.

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the
parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

Note: TAPEX cannot be used for parallel recording.

- b. For a parallel volume that is on TAPE, CLOSE the parallel file and
DMNT the volume from the DIRP level. Remove the volume from table
DIRPSSYS or DIRPPOOL by replacing the volume name with nil
volume (\$). Physically remove the tape from the drive.

- c. Replace these tapes with freshly formatted, empty tapes.

Note: This substep can also be done after the CC switch of activity
(during POSTSWACT) if the tape drive is needed for other purposes.

Prepare each new parallel volume as follows.

```
> MOUNT <x> FORMAT <volume_id>  
where <x> is the parallel device number, and <volume_id> is the name  
of the parallel volume.
```

```
> DEMOUNT T<x>
```

Leave the tape at load point and ON LINE so it can be activated as the
new PARALLEL device after SWACT.

-continued-

Procedure 5 PRESWACT DIRP and billing (continued)

5.1 Tape drive parallel DIRP coming from BCS34 and higher

Note: This step can be used to automatically recover parallel volumes after the SWACT. Alternatively, you can do the previous step if you wish to wait until after the SWACT to format the new parallel volumes.

- a. **Site/ACT** In table DIRPPOOL determine which MTDs are being used for parallel DIRP recording. PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.
- b. For a parallel volume that is on TAPE, demount all EXCEPT the current parallel volume from table DIRPPOOL by replacing the volume name in DIRPPOOL with nil volume (\$). Then physically remove the tape from the drive.
- c. Replace these tapes with freshly formatted, empty tapes.

Prepare each new parallel volume as follows.

```
> MOUNT <x> FORMAT <volume_id>
where <x> is the parallel device number, and <volume_id> is the name
of the parallel volume.
```

```
> DEMOUNT T<x>
```

Leave the tape at load point and ON LINE so it can be activated as the new PARALLEL device after SWACT.

- d. **Site and App/INACT** Ensure that parallel tape volumes are in table DIRPPOOL on the inactive side. This allows the tape to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

- If a single parallel volume is used for recording, the volume will be dropped over SWACT.

- If multiple tape volumes are in use for parallel recording, the volume in use before the SWACT will be dropped from DIRP and a freshly-formatted, empty volume will be used for recording.

6.0 DPP/BMC parallel DIRP coming from BCS33 and lower

In BCS32 or BCS33 DIRP no longer supports parallel AMA recording on a DPP or BMC volume, UNLESS device type TAPE is used in table DIRPPOOL (in which case you must manually recover the DPP after SWACT).

- a. **Site/ACT** In table DIRPSSYS or DIRPPOOL identify which DPP/BMC(s) is being used for parallel DIRP recording.

-continued-

Procedure 5
PRESWACT DIRP and billing (continued)

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

- b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

```
> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA  
This re-establishes the block header on the DPP.
```

- c. Display current DPP settings to hardcopy (retain for POSTSWACT).

- d. For a parallel volume that is on DPP or BMC, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS or DIRPPOOL by replacing the volume name with nil volume (\$).

- e. Prepare each new parallel volume as follows.

```
> MOUNT <x> FORMAT <volume_id>  
where <x> is the parallel device number, and <volume_id> is the name  
of the parallel volume.
```

If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)" then enter:

```
> ERASTAPE <x>  
where <x> is the parallel device number.
```

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect data collected by the DPP/BMC. It only resets DMS indicators.

System response is:

```
***WARNING, THIS TAPE WILL BE ERASED***
```

CAUTION

**At this point again confirm the device is a port to a DPP or BMC,
and NOT an unexpired billing tape.**
If a mistake is made, a real tape could be erased.

Enter YES to confirm the command.

```
> DEMOUNT T<x>
```

If ERASTAPE command was used, repeat this substep (e) to rename the volume.

Leave the billing volume in this state so it can be activated as the new PARALLEL volume following SWACT.

-continued-

Procedure 5
PRESWACT DIRP and billing (continued)

- f. **Site and App/INACT** If to_BCS 32 and higher, ensure that parallel DPP/BMC volumes are in table DIRPPOOL on the inactive side. This allows the DPP/BMC to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.
- g. **Site and App/INACT** If to_BCS 32 and higher, for the parallel DPP tuple in table DIRPPOOL change field DEVTYPE to TAPE (not DPP).
- h. **Site and App/INACT** Verify the DIRP_REC file on the inactive side is correct for the SWACT to the new BCS load.

```
Mate> LISTSF ALL
```

```
Mate> PRINT DIRP_REC
```

If necessary, edit DIRP_REC to make corrections.

If going to BCS32 and higher, *delete* the DPP tuple in the DIRP_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

```
Mate> EDIT DIRP_REC
```

```
Mate> DOWN '<poolname>'      {name of the pool using the DPP}
```

```
Mate> DELETE
```

```
Mate> ERASESF DIRP_REC
```

```
Mate> FILE SFDEV DIRP_REC
```

6.1 DPP/BMC parallel DIRP coming from BCS34 and higher

In BCS34 and higher DIRP no longer supports parallel AMA recording on a DPP or BMC volume. Table control prohibits the filling of devtype DPP in a parallel pool.

Procedure 6
Data extension

- 1 **App/INACT** For a DATA EXTENSION only-Once PRESWACT step MATE_RESTART_RELOAD (or step MATE_RESTART prior to BCS35) has completed, perform the following workaround. This allows the new trunks to remain in the INB state after SWACT.
 - a. Log into the inactive side.
 - b. Mate> LISTSF ALL
Note: The file 'NEWTRKS' should be in storefile. This file is created by Loadbuild to identify all the trunks added for the Data Extension.
 - c. Mate> MAPCI NODISP;MTC;TRKS;TTP
 - d. Mate> COMMAND PTBI (POST T @1 @2;FRLS;BSY INB)
 - e. Mate> READ NEWTRKS
 - f. Mate> QUIT ALL
-

Procedure 7
MS_CHECK failure (continued)

- 9** > TST <MS#> VIAMATE
Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.

CAUTION
Do not proceed unless NO faults are reported.
Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.

-
- 10** Monitor MS logs for 5 minutes to ensure stability.

-
- 11** Continue PRESWACT.

> QUIT MAPCI

> PRESWACT

{still in BCSUPDATE}

Procedure 8
STATUSCHECK if MS loaded in PRESWACT

- 1 **App/ACT** After PRESWACT is completed and only if one MS was loaded during PRESWACT (BCS33 and lower), run a STATUSCHECK (to enable the matelink).

Note: STATUSCHECK *may* cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.

- a.
 - > BCSUPDATE ; SWACTCI ; STATUSCHECK *{for BCS33 and higher}*
 - > BCSUPDATE ; SWCT ; STATUSCHECK *{for BCS31 or BCS32}*
 - > SWCT ; STATUSCHECK *{for BCS30 and lower}*
 - b. Ensure the STATUSCHECK passes (with both sides matching).
If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.
-

Procedure 9
Login inactive

1 **App/INACT** *Verify a flashing A1 on the inactive processor.*

2 Login on the mate side as follows.

a. **ACT**

> MATEIO

> MATELOG <**device**>

where <device> is the name of the terminal labeled INACT.

b. **INACT**

Enter username and password *{mate-side response}*

Mate> OPERATOR OPERATOR

or Enter username

Mate> OPERATOR

Enter password

Mate> OPERATOR

Procedure 10
Logout DNC

- 1 **Site and App/ACT** If DNC is in use (feature package NTX560), have Telco confirm that all DNC end users have been contacted and are logged out.
-

Procedure 11
Table CRSFMT alarm

- 1 **App/ACT** In table CRSFMT, field ALARM, if any entry is set to 'Y', then the device must also be allocated in table DIRPPOOL. Otherwise, set it to 'N'.

Note: If a volume is allocated in DIRPPOOL it is being used.

SWACT and POSTSWACT procedure

This section details steps required to perform a CC switch of activity (SWACT), test the new load, and complete the software delivery process.

Procedure 1

BULLETINS before SWACT

- 1 **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning the SWACT.
-

**Procedure 2
Before SWACT**

- 1 **Site** Do not proceed until both the Telco and NT on-line support agree.

- 2 **Site** Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

- 3 **Site** Ensure no further activity is performed on the DPP, including DPP polling or disk backup. Inform the downstream processing center.

- 4 **Site** Disable all polling and periodic testing. There is to be no activity on the SuperNode CM, MS, and CLOCK or NT40 CC and CMC until cleared by the software delivery engineer. Failure to comply may result in a system restart.

- 5 **Site** Dump the SPMS register information to a printer (or other device) according to Telco practice.

- 6 **Site** Disconnect any ISDN Digital Test Access (DTA) monitors. (Reference NTP 297-2421-300.)

CAUTION

If DTA monitor is left connected over the SWACT, it will not be possible to reconnect it without first reloading the PM from CC data.

- a. Enter the LTPDATA level of MAP.
- b. Query all DTA monitors on the switch by issuing the command,
> EQUIP DTA QUERY ALL
- c. If the DMS responds with "No DTA equipment reserved on switch" then no further action is needed.
- d. Make note of any connected monitors by looking at the CONNECT field of the query display.

Use the POST command to post each monitored LEN, and then issue the command,

> CONNECT <N> RLS
where <N> is the integer number of the monitor from the first column of the query display.

Do this for each connected monitor. Repeat substep b as necessary to review DTA status.

-continued-

Procedure 2
Before SWACT (continued)

- e. Reset all monitor LENS and DS0 channels by issuing the command,
 > EQUIP DTA RESET <N>
 where <N> is the integer number of the monitor from the first column of the query display.

 Do this until no equipment is left "Equipped." Repeat substep b as necessary to review DTA status.

-
- 7 **Site** If BCS35, ensure Bit Error Rate Tester (BERT) is not running. BERT is a manual action used to test the quality of a CCS7 link.

CAUTION

**In BCS35 BERT should not be left running during the CC SWACT.
Otherwise, the link will hang up over the SWACT.**
If BERT is left running over the SWACT, you will have to go into the PM level, post the offending LIU7/MSB7, and BSY and RTS it.

- a. To determine if BERT is on: Go into C7LKSET level and post each linkset in turn. The link state should not indicate 'BERT'.
 - b. To turn off BERT, go into the C7LKSET level and post the linkset. Go into C7BERT level and type STOP <linkno>.
-

Procedure 3
Restore special logs

Special logs (suppressed logs or logs with a threshold) are set up in LOGUTIL on a per-site basis. These do not get restored to the new load. This procedure manually restores any special logs on the new load.

Note: A restart/reload on the mate side will cause suppress/threshold settings to be lost. If a mate restart occurs before the switch of activity, verify the settings are present and, if not, repeat this procedure.

1 App/ACT List all special logs on the active side.

```
> LOGUTIL  
> LISTREPS SPECIAL
```

Example output:

```
LINE 138 7 INFO TRMT *thresh= 25*  
PM 189 5 INFO PM SW Information... *supp*
```

2 App/INACT Restore special logs on the mate side.

```
Mate> LOGUTIL  
Mate> LISTREPS SPECIAL
```

Commands to restore above example:

```
Mate> THRESHOLD 25 LINE 138  
Mate> SUPPRESS PM 189
```

3 App/INACT Verify the correct logs are set up and match the active load.

```
Mate> LOGUTIL  
Mate> LISTREPS SPECIAL
```

Procedure 4
Start logs

- 1 **App/ACT** Set up LOGS for the SWACT.

Note: The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.

- a. > LOGUTIL; STOP
 - b. > DELDEVICE <device>
where <device> is where logs are to be routed.
 - c. > ADDREP <device> SWCT *{also add SWNR if on BCS30 and lower}*
 - d. > START
This starts logs on "this" device. If a different terminal device was selected above, then use >STARTDEV <device>.
 - e. > LEAVE
-

Procedure 5
Release JAM SNODE

UNJAM the processors in preparation for the CC switch of activity (SWACT).

1 Site and App/INACT Verify the inactive side is flashing A1.

2 Site/INACT From the inactive RTIF enter:

```
RTIF> \RELEASE JAM
```

Procedure 6
Perform TST <MS#> VIAMATE

CAUTION

This procedure, if applicable, must be completed successfully within 15 minutes of the SWACT.

Failure to execute a fault-free TST <MS#> VIAMATE may result in PM clocking faults after the SWACT and possibly eventual failure of PMs (i.e., SYSB PMs).

Note: When the RESTARTSWACT or RESTARTSWCT command is entered, if more than 15 minutes has passed since completing TST <MS#> VIAMATE you will be instructed to repeat the TST <MS#> VIAMATE command.

- 1 App/ACT QUERYMS to verify the Message Switch loads. Complete this step only if either MS load version does not match the BCS level of the inactive CM.**

> MAPCI ; MTC ; MS

> QUERYMS

If MS loads are not identical, ensure the MS with the incompatible load is ManB, then continue.

> MATELINK BSY *{if not done, mate side will restart when matelink RTS'd}*

> TST <MS#> VIAMATE *{on the ManB MS}*

Wait for the test to pass before continuing. Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.

CAUTION

Do not proceed unless NO faults are reported.

Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.

Procedure 7
Establish mate communication SNODE

1 **App/ACT** Establish communication with the mate (inactive) side.

Note: STATUSCHECK *may* cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.

- a. > BCSUPDATE ; SWACTCI ; STATUSCHECK *{for BCS33 and higher}*
- > BCSUPDATE ; SWCT ; STATUSCHECK *{for BCS31 or BCS32}*
- > SWCT ; STATUSCHECK *{for BCS30 and lower}*

b. Ensure the STATUSCHECK passes (with both sides matching).
If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.

Procedure 8 SWACT

Refer to "CC Warm SWACT Summary" in *Appendix A* for a description of the CC warm SWACT process. Also refer to *Appendix B* for a procedure for testing call survivability over a CC warm SWACT and to *Appendix C* for sample test call scripts.

Note: Only "simple" 2-port and echo calls that are in a stable talking state (that is, not in a transition state such as dialing) will survive a CC warm SWACT. Survival means that the call is kept up until the next signaling message is received (usually, for example, a terminate message, but on any other message as well, such as an attempt to use the conference feature).

- 1 **App/ACT** Wait a *minimum* of 10 minutes after the *completion* (flashing A1) of the last RESTART on the inactive side before entering the appropriate switch of activity (SWACT) command (below).

CAUTION

FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a controlled SWACT.
Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

CAUTION

After a CC warm SWACT do not JAM the inactive CPU RTIF.
The system requires the JAM status to be clear on both CPUs in order to recover successfully. Recovery is indicated with a SWCT 101 log.

- 2 **App/ACT** INTERNATIONAL offices switch CC activity (SWACT) as follows. All others go to step 3.

Note: This step is valid if the NTX470AA (International Common Basic) package is built into the load.

> INTLSWCT ; DATE ; RESTARTSWCT {only for INTL offices}

-continued-

Procedure 8
SWACT (continued)

3 App/ACT All other offices switch CC activity (SWACT) with CC warm SWACT as follows.

a. For BCS36 and higher type:

> BCSUPDATE ; SWACTCI ; QUERYSWACT

System prompt will tell you which SWACT command to use, either NORESTARTSWACT or RESTARTSWACT:

> DATE ; NORESTARTSWACT

Respond (yes/no) to system prompt using lower-case.

or else,

> DATE ; RESTARTSWACT

b. For BCS35 and lower type:

> BCSUPDATE ; SWACTCI ; DATE ; RESTARTSWACT *{for BCS33-BCS35}*

> BCSUPDATE ; SWCT ; DATE ; RESTARTSWCT *{for BCS31 or BCS32}*

> SWCT ; DATE ; RESTARTSWCT *{for BCS30 and lower}*

System response varies with the BCS level, but the following prompt is a typical example.

ACTIVE DEFAULT SETTINGS :

FORCESWACT set ON

LOADEXECS set ON

NOMATCH set OFF

Do you wish to continue?

Please confirm ("YES" or "NO"):

...Starting Warm SWACT now.

4 Site/ACT Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

CAUTION

Work quickly to complete the procedures to follow.
The POSTSWACT steps will verify that the office is functioning normally with the new software load.

Procedure 9
Start POSTSWACT**CAUTION**

After a CC warm SWACT do not JAM the inactive CPU RTIF.
The system requires the JAM status to be clear on both CPUs in order to recover successfully. Recovery is indicated with a SWCT 101 log.

App/ACT Login, check the date and time, and start POSTSWACT.

- 1 Type:
<break>

- 2 ?LOGIN
Enter username and password *{system response}*
> <username> <password>
- or > <username>
> <password>

- 3 > DATE
Verify the date and time are correct.

- 4 Reestablish recording onto devices (console session) as required.

- 5 > BCSUPDATE ; POSTSWACT
POSTSWACT runs all steps required after the CC switch of activity and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. If this is the case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue.
If no problems are encountered, POSTSWACT stops after BEGIN_TESTING and waits until the site verifies the sanity of the current load.

Procedure 10
SYSBSY Message Switch

- 1 **App/ACT** If a Message Switch is SYSBSY, make it ManB.
 - a. > MAPCI ;MTC ;MS
 - b. > BSY <MS#> *{for the sysbsy MS}*
 - c. > QUIT MAPCI
-

Procedure 11 Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1 > MAPCI ;MTC ; IOD ; DIRP
> QUERY AMA ALL *{note which volume is ACTIVE}*

2 If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3 TAPEX volumes must be manually remounted using the DIRP MNT command.

4 Assign standby billing devices for TAPE and DPP/BMC.

a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.

b. > MOUNT <x> FORMAT <stdby_volume>
where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.

Example: MOUNT 3 FORMAT DPPAMA

c. Enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then enter:

> ERASTAPE <x>
where <x> is the standby device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

System response is:

WARNING, THIS TAPE WILL BE ERASED

CAUTION

**At this point again confirm the device is a port to a DPP or BMC,
and NOT an unexpired billing tape.**
If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-

Procedure 11
Recover billing (continued)

- d. > DEMOUNT T<x>
 - e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.
 - f. Repeat this entire step for each standby billing subsystem.
-

5 Activate standby devices.

- a. > MNT <subsystem> <x> {still in DIRP level}
Example: MNT AMA 3
Enter YES to confirm the command.
 - b. > QUERY AMA {to confirm standby volume is available}
 - c. Repeat this step for each billing subsystem.
-

6 If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)

* If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

Note: Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

7 Bring up parallel devices (as required) using the preformatted volumes.

- a. For BCS31 and lower:
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.
Example:
TABLE DIRPSSYS;POS AMA
CHA PARVOL T4
or CHA PARVOL D010PAMA
- b. For BCS32 and higher:
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.
Example:
TABLE DIRPSSYS;POS AMA

In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

-continued-

Procedure 11
Recover billing (continued)

Examples:

TABLE DIRPPPOOL; POS 62 (*pool for AMAPOOL*)

CHA VOLUME23 T4

or CHA VOLUME23 D010PAMA

- c.** Repeat substep a or b for each parallel volume to be activated.
 - d.** > QUIT MAPCI
-
- 8** Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
-

Procedure 12
Display DPP settings

App/ACT Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1 > MAPCI NODISP;MTC;IOD;DPP AMA

2 > COLLPSW

Note: If different, perform steps 3 and 4; otherwise go to step 5.

3 > COLLPSW 1 <4_digits> <6_digits>

4 > COLLPSW 2 <4_digits> <6_digits>

5 > AMATPSW

Note: If different, perform step 6; otherwise, go to step 7.

6 > AMATPSW <4_digits> <6_digits>

7 > AMAHRS

Note: If different, perform step 8; otherwise, go to step 9.

8 > AMAHRS <start_hour> <end_hour>

9 > VALPARM INVALID

Note: If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT

Note: If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.

Procedure 13
INI trunks

App/ACT If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1 > MAPCI ; MTC ; TRKS ; TTP

2 > POST A INI

3 > REPEAT <**x**> (FRLS ; RTS ; NEXT)
where <x> is the number of INI trunks in the posted set.

Procedure 14
Restart inactive POST SNODE

Prepare the inactive side for a revert to the old BCS load.

Note: A restart on the inactive side is done at this time in order to save time in the event that a revert to the old load should become necessary.

1 Site/INACT From the CM MAP level, ensure the inactive processor is not under test (ut). If it is, WAIT FOR TESTING TO COMPLETE.

2 Site/INACT From the inactive RTIF perform a restart reload on the *inactive* side.

```
RTIF> \RESTART RELOAD
```

```
RTIF> YES {for confirmation}
```

3 Site/INACT Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

4 App/INACT Confirm that the inactive processor is flashing A1.

Procedure 15
DRTIME statistics

- 1 **App/ACT** Get a hardcopy of DRTIME statistics (if needed).

> DRTIME PRINT

DRTIME provides statistics on the BCS application. If requested, the information should be forwarded to the appropriate Northern Telecom department.

Procedure 16
Do Test Calls

- 1 **Site/ACT** Perform TEST CALLS that were identified ahead-of-time from *Appendix C: Test Call Scripts*.

CAUTION

If an abort becomes necessary due to critical test failures, revert to the old load using the *Revert to the old load* procedure; otherwise, continue.

Note: Verify AMAB logs in conjunction with certain AMA test calls.

Procedure 17
After testing is complete SYNC SNODE

- 1 **App/ACT** POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. *After SITE accepts the current load*, then put the processors in sync as follows.

Note: Do not enter POSTSWACT again until the processors are in sync.

- a. > MAPCI ; MTC ; CM ; SYNC
> YES *{for confirmation}*
 - b. > QUIT MAPCI
 - c. > POSTSWACT *{still in BCSUPDATE}*
-

Procedure 18
POST_MS_CHECK failure

App/ACT POSTSWACT may STOP with the message "Failed POST_MS_CHECK for active CM load: #." (Both MS loads will be displayed.) *Only if you see this message*, load the MS reported to have an incompatible load with the compatible MS load as follows.

- 1 > DISKUT
> LF S00D<volume> *{or S01D <volume>}*
where <volume> is the SLM disk volume with the correct _MS load file.

- 2 > MAPCI ;MTC ;MS

- 3 > LOADMS <MS#> <filename>
where <MS#> is the MS to be loaded, and <filename> is the name of the _MS load file listed above in step 1.
> YES *{for confirmation}*

- 4 > TST <MS#> *{not VIAMATE}*
Ensure the test passes with no faults.

- 5 > RTS <MS#> *{not OOBAND!}*

- 6 > QUIT MAPCI

Procedure 19
Finish POSTSWACT

- 1 App/ACT** If necessary run POSTSWACT one more time to completion.

> BCSUPDATE ; POSTSWACT

At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

- 2 Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

- 3 App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

- 4 Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

- 5 Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

- 6 Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

- 7 Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

- 8 Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

- 9 Site/ACT** Return PORTS and USER information back to original values.

- 10 Site/ACT** Notify DNC end users to LOGIN the DNC.

Procedure 20
Take image SNODE

1 **Site/ACT** DUMP AN IMAGE of the new BCS load for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge.

2 After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to 'OFF' during the ONP.

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.

Procedure 21
Start journal file

- 1 **Site/ACT** If equipped, start journal file and verify started.
 - a. > JF START
 - b. > MAPCI ; MTC ; IOD ; DIRP
 - c. > QUERY JF ALL
QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
 - d. > QUIT ALL
-

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Revert to old load procedure

This section details steps required to revert to the old BCS load.

Perform the following procedure if a controlled REVERT is required after the CC switch of activity (SWACT).

Remember, the CPU with the new BCS load is now *active*. You will be going back to the old BCS load which is now *inactive*.

Procedure 1 **Before REVERT**

- 1 **Site** Do not proceed until both the Telco and NT on-line support agree.

- 2 **Site** Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

Procedure 2
Restart inactive SNODE 2

CAUTION

Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.

- 1 **Site/INACT** Perform a restart reload on the inactive processor (old BCS load).
 - a. From the CM MAP level, ensure the inactive processor is *not* under test (ut). If it is, WAIT FOR THE TESTING TO COMPLETE.
 - b. From the inactive RTIF perform a restart reload on the *inactive* processor (old load).

```
RTIF> \RESTART RELOAD  
RTIF> YES {for confirmation}
```
 - c. Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.
-
- 2 **App/INACT** Confirm that the inactive processor is flashing A1.
-

Procedure 3
Establish mate communication SNODE

- 1 **App/ACT** Establish communication with the mate (inactive) side.
 - a.
 - > BCSUPDATE ; SWACTCI ; STATUSCHECK *{for BCS33 and higher}*
 - > BCSUPDATE ; SWCT ; STATUSCHECK *{for BCS31 or BCS32}*
 - > SWCT ; STATUSCHECK *{for BCS30 and lower}*
 - b. Ensure the STATUSCHECK passes (with both sides matching).
If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.

Note: STATUSCHECK *may* cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.
-

Procedure 4
Login inactive

1 **App/INACT** *Verify a flashing A1 on the inactive processor.*

2 Login on the mate side as follows.

a. ACT

> MATEIO

> MATELOG <**device**>

where <device> is the name of the terminal labeled INACT.

b. INACT

Enter username and password

{mate-side response}

Mate> OPERATOR OPERATOR

or Enter username

Mate> OPERATOR

Enter password

Mate> OPERATOR

Procedure 5
TRACECI close

- 1 **App/INACT** If old load (inactive side) is BCS34 or lower, then close out the old active MOVEBCS/TABXFR message file.

Mat> TRACECI CLOSE

{for BCS34 and lower}

Procedure 6
Configure DIRP billing

- 1 **Site/App** Configure the DIRP billing subsystems for revert SWACT to the old load.

Note: For details for completing the following refer to "PRESWACT DIRP and billing" procedure.

- a. **ACT** Take down billing tapes and format new standby volumes in DIRP. Leave these demounted, they will become the active volumes after SWACT.

Disk volumes will rotate and recover automatically after SWACT.

Parallel volumes on tape (or DPP/BMC) can be recovered manually after SWACT.

- b. **INACT** If reverting to BCS31 or higher:

Ensure datafill is correct on the mate side for tables DIRPPOOL or DIRPSSYS.

- c. **INACT** If DIRP_REC file is present in mate SFDEV, ensure each entry in DIRP_REC is correct for the revert SWACT.

Note: In DIRP_REC the parallel volume assignments for DIRPPOOL should be set to nil (\$) for all pools.

Procedure 7
Start logs

- 1 **App/ACT** Set up LOGS for the SWACT.

Note: The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.

- a. > LOGUTIL; STOP
 - b. > DELDEVICE <device>
where <device> is where logs are to be routed.
 - c. > ADDRIP <device> SWCT *{also add SWNR if on BCS30 and lower}*
 - d. > START
This starts logs on "this" device. If a different terminal device was selected above, then use >STARTDEV <device>.
 - e. > LEAVE
-

7-154 Revert to old load procedure

Procedure 8
Ensure inactive unjammed

- 1 Site and App/INACT** Ensure inactive side is *unjammed*.
-

Procedure 9
Perform TST <MS#> VIAMATE for Revert

CAUTION

This procedure, if applicable, must be completed successfully within 15 minutes of the SWACT.

Failure to execute a fault-free TST <MS#> VIAMATE may result in PM clocking faults after the SWACT and possibly eventual failure of PMs (i.e., SYSB PMs).

Note: When the ABORTSWACT command is entered, if more than 15 minutes has passed since completing TST <MS#> VIAMATE you will be instructed to repeat the TST <MS#> VIAMATE command.

- 1 **App/ACT** Test the ManB Message Switch to ensure the MS clocks are in sync. **Complete this step only if one MS load is incompatible with the BCS level of the inactive CM (for example, when reverting to BCS33 or lower).**

> MAPCI ;MTC ;MS

Ensure that the MS corresponding to the inactive CPU is ManB.

> MATELINK BSY {If not done, mate side will restart when matelink RTS'd}

> TST <MS#> VIAMATE {on the ManB MS}

Wait for the test to pass before continuing. Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.

CAUTION

Do not proceed unless NO faults are reported.

Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.

Procedure 10
Establish mate communication SNODE

1 **App/ACT** Establish communication with the mate (inactive) side.

Note: STATUSCHECK *may* cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.

- a. > BCSUPDATE ; SWACTCI ; STATUSCHECK {for BCS33 and higher}
- > BCSUPDATE ; SWCT ; STATUSCHECK {for BCS31 or BCS32}
- > SWCT ; STATUSCHECK {for BCS30 and lower}

b. Ensure the STATUSCHECK passes (with both sides matching).
If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.

Procedure 11
Revert

- 1 **App/ACT** Wait a MINIMUM of 10 minutes after the COMPLETION (flashing A1) of the last restart on the inactive side before entering the ABORT-SWACT, ABORTSWCT, or RESTARTSWCT command.

CAUTION

FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a CC warmSWACT.
Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

- 2 **App/ACT** INTERNATIONAL offices switch CC activity (SWACT) as follows.

Note: This step is valid if the NTX470AA (International Common Basic) package is built into the load.

> INTLSWCT ; DATE ; RESTARTSWCT *{only for INTL offices}*

- 3 **App/ACT** ALL OTHER offices switch CC activity (SWACT) with CC warm-SWACT as follows.

CAUTION

If a SWACT application module exists on the new, active side, but is missing from the old, inactive side, the revert SWACT may fail.

If reverting to BCS32 and higher, any SWACT applications missing from the inactive side will automatically be overridden.

If reverting to BCS31 and lower, SWACT will fail for any SWACT applications missing from the inactive side. In this case, any SWACT application missing from the inactive side must be *unloaded from the active side* in order for the revert-back to succeed. If you are unloading a module in a load prior to BCS30, use the SWCTCHK command before performing the revert-back.

-continued-

Procedure 11
REVERT (continued)

> BCSUPDATE ; SWACTCI ; DATE ; ABORTSWACT *{for BCS33 and higher}*

CAUTION

In BCS34 and higher the ABORTSWACT command has an option called NOCHECK which will allow the CC warm SWACT to continue even if there are bad devices on the active side (such as a CBSY LTC). Use the NOCHECK option *only* as a last resort and with special care taken to ensure office integrity.

> BCSUPDATE ; SWCT ; DATE ; ABORTSWCT *{for BCS31 or BCS32}*

> SWCT ; DATE ; RESTARTSWCT *{for BCS30 and lower}*

System response varies with the BCS level, but the following prompt is a typical example.

```
ACTIVE DEFAULT SETTINGS :
FORCESWACT set ON
LOADEXECES set ON
NOMATCH set OFF
Do you wish to continue?
Please confirm ("YES" or "NO"):
...Starting Warm SWACT now.
```

-
- 4 Site/ACT** Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

CAUTION

Work quickly to complete the procedures to follow.
The POSTSWACT steps will verify that the office is functioning normally with the new software load.

Procedure 12
Start POSTSWACT

App/ACT Login, check the date and time, and start POSTSWACT.

- 1 Type:
<break>

 - 2 ?LOGIN
Enter username and password *{system response}*
> <username> <password>
or > <username>
> <password>

 - 3 > DATE
Verify the date and time are correct.

 - 4 Reestablish recording onto devices (console session) as required.

 - 5 > BCSUPDATE ; POSTSWACT
POSTSWACT runs all steps required after the CC switch of activity and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. If this is the case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue.
If no problems are encountered, POSTSWACT stops after BEGIN_TESTING and waits until the site verifies the sanity of the current load.
-

Procedure 13
SYSBSY Message Switch

- 1 **App/ACT** If a Message Switch is SYSBSY, make it ManB.
 - a. > MAPCI ;MTC ;MS
 - b. > BSY <MS#> *{for the sysbsy MS}*
 - c. > QUIT MAPCI
-

Procedure 14 Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1 > MAPCI ; MTC ; IOD ; DIRP
> QUERY AMA ALL *{note which volume is ACTIVE}*

2 If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3 TAPEX volumes must be manually remounted using the DIRP MNT command.

4 Assign standby billing devices for TAPE and DPP/BMC.

a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.

b. > MOUNT <x> FORMAT <stdby_volume>
where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.

Example: MOUNT 3 FORMAT DPPAMA

c. Enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then enter:

> ERASTAPE <x>
where <x> is the standby device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

System response is:

WARNING, THIS TAPE WILL BE ERASED

CAUTION

**At this point again confirm the device is a port to a DPP or BMC,
and NOT an unexpired billing tape.**
If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-

Procedure 14
Recover billing (continued)

- d. > DEMOUNT T<x>
 - e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.
 - f. Repeat this entire step for each standby billing subsystem.
-

5 Activate standby devices.

- a. > MNT <subsystem> <x> {still in DIRP level}
Example: MNT AMA 3
Enter YES to confirm the command.
 - b. > QUERY AMA {to confirm standby volume is available}
 - c. Repeat this step for each billing subsystem.
-

6 If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)

* If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

Note: Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

7 Bring up parallel devices (as required) using the preformatted volumes.

- a. For BCS31 and lower:
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.
Example:
TABLE DIRPSSYS;POS AMA
CHA PARVOL T4
or CHA PARVOL D010PAMA
- b. For BCS32 and higher:
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.
Example:
TABLE DIRPSSYS;POS AMA

In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

-continued-

Procedure 14
Recover billing (continued)

Examples:

TABLE DIRPPool; POS 62 (*pool for AMAPOOL*)

CHA VOLUME23 T4

or CHA VOLUME23 D010PAMA

- c.** Repeat substep a or b for each parallel volume to be activated.
 - d.** > QUIT MAPCI
-
- 8** Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
-

Procedure 15
Display DPP settings

App/ACT Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1 > MAPCI NODISP;MTC;IOD;DPP AMA

2 > COLLPSW

Note: If different, perform steps 3 and 4; otherwise go to step 5.

3 > COLLPSW 1 <4_digits> <6_digits>

4 > COLLPSW 2 <4_digits> <6_digits>

5 > AMATPSW

Note: If different, perform step 6; otherwise, go to step 7.

6 > AMATPSW <4_digits> <6_digits>

7 > AMAHRS

Note: If different, perform step 8; otherwise, go to step 9.

8 > AMAHRS <start_hour> <end_hour>

9 > VALPARM INVALID

Note: If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT

Note: If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.

Procedure 16
INI trunks

App/ACT If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1 > MAPCI ; MTC ; TRKS ; TTP

2 > POST A INI

3 > REPEAT <**x**> (FRLS ; RTS ; NEXT)
where <x> is the number of INI trunks in the posted set.

Procedure 17
Do Test Calls

- 1 **Site/ACT** Perform TEST CALLS that were identified ahead-of-time from *Appendix C: Test Call Scripts.*
-

Procedure 18
After testing is complete SYNC SNODE

- 1 **App/ACT** POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. *After SITE accepts the current load*, then put the processors in sync as follows.

Note: Do not enter POSTSWACT again until the processors are in sync.

- a. > MAPCI ; MTC ; CM ; SYNC
> YES *{for confirmation}*
 - b. > QUIT MAPCI
 - c. > POSTSWACT *{still in BCSUPDATE}*
-

Procedure 19
POST_MS_CHECK failure

App/ACT POSTSWACT may STOP with the message "Failed POST_MS_CHECK for active CM load: #." (Both MS loads will be displayed.) *Only if you see this message*, load the MS reported to have an incompatible load with the compatible MS load as follows.

- 1 > DISKUT
> LF S00D<volume> *{or S01D <volume>}*
where <volume> is the SLM disk volume with the correct _MS load file.

- 2 > MAPCI ;MTC ;MS

- 3 > LOADMS <MS#> <filename>
where <MS#> is the MS to be loaded, and <filename> is the name of the _MS load file listed above in step 1.
> YES *{for confirmation}*

- 4 > TST <MS#> *{not VIAMATE}*
Ensure the test passes with no faults.

- 5 > RTS <MS#> *{not OOBAND!}*

- 6 > QUIT MAPCI

Procedure 20
Finish POSTSWACT

- 1 App/ACT** If necessary run POSTSWACT one more time to completion.

```
> BCSUPDATE ; POSTSWACT
```

At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

- 2 Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

- 3 App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

- 4 Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

- 5 Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

- 6 Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

- 7 Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

- 8 Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

- 9 Site/ACT** Return PORTS and USER information back to original values.

- 10 Site/ACT** Notify DNC end users to LOGIN the DNC.

Procedure 21
Take image SNODE

1 **Site/ACT** DUMP AN IMAGE of the new BCS load for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge.

2 After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to 'OFF' during the ONP.

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.

Procedure 22
Start journal file

- 1 **Site/ACT** If equipped, start journal file and verify started.
 - a. > JF START
 - b. > MAPCI ; MTC ; IOD ; DIRP
 - c. > QUERY JF ALL
QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
 - d. > QUIT ALL
-

Procedure 23
More Revert/ABORT steps

- 1 **Site and App/INACT** If asked to do so by technical support take an image of the *inactive* (mate) side load.

- 2 **Site and App/ACT** With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

- 3 **Site and App** Following an ABORT, rescheduling of the software update must be negotiated. Refer to *Procedure for rescheduling aborted applications*.

- 4 **App/ACT** On the ACTIVE side perform the following steps to restore the active side to its original configuration.
 - a. If old load is BCS35 and higher:
 - > BCSUPDATE ; ABORT_PRESWACT
 - > TABXFR ; CANCEL
 - > QUIT ALL
 - b. If old load is BCS34 and lower:
 - > BCSUPDATE ; RESET
 - > QUIT ALL

Emergency abort procedure

CAUTION

Perform the following steps only if a decision has been reached to activate the old load without regard to preserving stable call processing.

Remember, the CPU with the new BCS load is now active. You will be going back to the old BCS load which is now inactive.

Procedure 1 Before EABORT

- 1 Site** Do not proceed until both the Telco and NT on-line support agree.

- 2 Site** Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

Procedure 2
Restart inactive SNODE 2

CAUTION

Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.

- 1 **Site/INACT** Perform a restart reload on the inactive processor (old BCS load).
 - a. From the CM MAP level, ensure the inactive processor is *not* under test (ut). If it is, WAIT FOR THE TESTING TO COMPLETE.
 - b. From the inactive RTIF perform a restart reload on the *inactive* processor (old load).

```
RTIF> \RESTART RELOAD  
RTIF> YES {for confirmation}
```
 - c. Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

-
- 2 **App/INACT** Confirm that the inactive processor is flashing A1.
-

Procedure 3
Ensure inactive unjammed

- 1 **Site and App/INACT** Ensure inactive side is *unjammed*.
-

Procedure 4
Cold SWACT SNODE

- 1** **Site/ACT** JAM active side to force a switch of activity (cold swact).

RTIF> \OVERRIDE

RTIF> \JAM

RTIF> YES *{for confirmation}*

- 2** **Site/ACT** Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.
At this point the CC switch of activity is over.
-

- 3** **Site and App/ACT** *Work quickly to complete the next procedure.* The *POSTSWACT* procedure (to follow) checks that the office is functioning as normal.

Note: Be sure to notify appropriate levels of support of the ABORT before putting the switch back in SYNC.

Procedure 6
SYSBSY Message Switch

- 1 **App/ACT** If a Message Switch is SYSBSY, make it ManB.
 - a. > MAPCI ;MTC ;MS
 - b. > BSY <MS#> *{for the sysbsy MS}*
 - c. > QUIT MAPCI
-

Procedure 7 Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1 > MAPCI ;MTC ; IOD ; DIRP
> QUERY AMA ALL *{note which volume is ACTIVE}*

2 If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3 TAPEX volumes must be manually remounted using the DIRP MNT command.

4 Assign standby billing devices for TAPE and DPP/BMC.

a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.

b. > MOUNT <x> FORMAT <stdby_volume>
where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.

Example: MOUNT 3 FORMAT DPPAMA

c. Enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then enter:

> ERASTAPE <x>
where <x> is the standby device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

System response is:

WARNING, THIS TAPE WILL BE ERASED

CAUTION

**At this point again confirm the device is a port to a DPP or BMC,
and NOT an unexpired billing tape.**
If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-

Procedure 7
Recover billing (continued)

- d. > DEMOUNT T<x>
 - e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.
 - f. Repeat this entire step for each standby billing subsystem.
-

5 Activate standby devices.

- a. > MNT <subsystem> <x> {still in DIRP level}
Example: MNT AMA 3
Enter YES to confirm the command.
 - b. > QUERY AMA {to confirm standby volume is available}
 - c. Repeat this step for each billing subsystem.
-

6 If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)

* If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

Note: Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

7 Bring up parallel devices (as required) using the preformatted volumes.

- a. For BCS31 and lower:
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.
Example:
TABLE DIRPSSYS;POS AMA
CHA PARVOL T4
or CHA PARVOL D010PAMA
- b. For BCS32 and higher:
In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.
Example:
TABLE DIRPSSYS;POS AMA

In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

-continued-

Procedure 7
Recover billing (continued)

Examples:

TABLE DIRPPool; POS 62 (*pool for AMAPOOL*)

CHA VOLUME23 T4

or CHA VOLUME23 D010PAMA

- c.** Repeat substep a or b for each parallel volume to be activated.
 - d.** > QUIT MAPCI
-
- 8** Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
-

Procedure 8
Display DPP settings

App/ACT Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1 > MAPCI NODISP;MTC;IOD;DPP AMA

2 > COLLPSW

Note: If different, perform steps 3 and 4; otherwise go to step 5.

3 > COLLPSW 1 <4_digits> <6_digits>

4 > COLLPSW 2 <4_digits> <6_digits>

5 > AMATPSW

Note: If different, perform step 6; otherwise, go to step 7.

6 > AMATPSW <4_digits> <6_digits>

7 > AMAHRS

Note: If different, perform step 8; otherwise, go to step 9.

8 > AMAHRS <start_hour> <end_hour>

9 > VALPARM INVALID

Note: If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT

Note: If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.

Procedure 9
INI trunks

App/ACT If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1 > MAPCI ; MTC ; TRKS ; TTP

2 > POST A INI

3 > REPEAT <**x**> (FRLS ; RTS ; NEXT)
where <x> is the number of INI trunks in the posted set.

Procedure 10
Do Test Calls

- 1 **Site/ACT** Perform TEST CALLS that were identified ahead-of-time from *Appendix C: Test Call Scripts*.
-

Procedure 11
After testing is complete SYNC SNODE

- 1 **App/ACT** POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. *After SITE accepts the current load*, then put the processors in sync as follows.

Note: Do not enter POSTSWACT again until the processors are in sync.

- a. > MAPCI ; MTC ; CM ; SYNC
> YES *{for confirmation}*
 - b. > QUIT MAPCI
 - c. > POSTSWACT *{still in BCSUPDATE}*
-

Procedure 12
POST_MS_CHECK failure

App/ACT POSTSWACT may STOP with the message "Failed POST_MS_CHECK for active CM load: #." (Both MS loads will be displayed.) *Only if you see this message*, load the MS reported to have an incompatible load with the compatible MS load as follows.

- 1 > DISKUT
> LF S00D<volume> *{or S01D <volume>}*
where <volume> is the SLM disk volume with the correct _MS load file.

- 2 > MAPCI ;MTC ;MS

- 3 > LOADMS <MS#> <filename>
where <MS#> is the MS to be loaded, and <filename> is the name of the _MS load file listed above in step 1.
> YES *{for confirmation}*

- 4 > TST <MS#> *{not VIAMATE}*
Ensure the test passes with no faults.

- 5 > RTS <MS#> *{not OOBAND!}*

- 6 > QUIT MAPCI

Procedure 13
Finish POSTSWACT

- 1 App/ACT** If necessary run POSTSWACT one more time to completion.

```
> BCSUPDATE ; POSTSWACT
```

At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

- 2 Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

- 3 App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

- 4 Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

- 5 Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

- 6 Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

- 7 Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

- 8 Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

- 9 Site/ACT** Return PORTS and USER information back to original values.

- 10 Site/ACT** Notify DNC end users to LOGIN the DNC.

Procedure 14
Take image SNODE

1 **Site/ACT** DUMP AN IMAGE of the new BCS load for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge.

2 After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to 'OFF' during the ONP.

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.

Procedure 15
Start journal file

- 1 **Site/ACT** If equipped, start journal file and verify started.
 - a. > JF START
 - b. > MAPCI ; MTC ; IOD ; DIRP
 - c. > QUERY JF ALL
QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
 - d. > QUIT ALL
-

Procedure 16
More Revert/ABORT steps

- 1 **Site and App/INACT** If asked to do so by technical support take an image of the *inactive* (mate) side load.

- 2 **Site and App/ACT** With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

- 3 **Site and App** Following an ABORT, rescheduling of the software update must be negotiated. Refer to *Procedure for rescheduling aborted applications*.

- 4 **App/ACT** On the ACTIVE side perform the following steps to restore the active side to its original configuration.
 - a. If old load is BCS35 and higher:
 - > BCSUPDATE ; ABORT_PRESWACT
 - > TABXFR ; CANCEL
 - > QUIT ALL
 - b. If old load is BCS34 and lower:
 - > BCSUPDATE ; RESET
 - > QUIT ALL

Appendix A: Command Summaries

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Using TABAUDIT

Checking tables for data inconsistencies prior to a software delivery is necessary to ensure that all tables are free of data problems and each table has valid data. This is accomplished by running TABAUDIT. This feature provides the ability to verify table data integrity on a DMS switch. The Table Auditor will be initialized and run by using the TABAUDIT CI command. TABAUDIT will be run with the DMS switch in sync. TABAUDIT will only allow one session to be active at any one time.

This BCS34 feature replaces the existing data verification tool, CHECKTAB. TABAUDIT, like CHECKTAB, will be used to identify data inconsistencies in the tables in the DMS switch. The checker will run with the switch in sync as a CI process.

CAUTION

Review Software Delivery Bulletins and all current Warning Bulletins concerning TABAUDIT before using it.

How TABAUDIT operates

TABAUDIT will verify DMS tables by performing a series of checks on the tables and on the data in the tables. Following is a list of the types of checks that will be performed on each table:

- Generic table checks,
- Syntax checks,
- Table specific checks, including routing checks

The generic table integrity checks consist of verifying that each table has a top and a bottom and that no tuples exist beyond these boundaries. Tables are also checked to ensure that no infinite tuple loops exist.

Syntax checks are done on a per tuple basis. Each field in a tuple is checked against its data dictionary definition in order to ensure data validity. These checks are modified to use the logical tuple definition and not the custflds representation.

The routing checks are only performed on tuples that reference routing tables. This type of check verifies the tuple being referenced in the routing tables.

Table specific checks are done on a per tuple basis. This type of check verifies the tuple's data for valid data options, and is implemented via verify procedures in table control software.

TABAUDIT help

```
> HELP TABAUDIT
TABAUDIT Command
```

```
-----
The TABAUDIT options are:
```

- ONLY - Checks a single table. The output can be redirected to a specific device and filename.
- ALL - Checks all tables listed in table DART. The output can be redirected to a specific device.
- FROM - Checks all tables following and including a given table listed in table DART. The output can be redirected to a specific device. The FROM command can also be followed by a TO option to specify where TABAUDIT should stop checking. The table following the TO option will be included in the check.

The default output device is the screen and the default filename is the table name concatenated with the string \$FILE. If the ALL or FROM option is chosen, TABAUDIT creates a SUMMARY\$FILE that lists the results of the tables it has checked.

The results can be sent to SFDEV, disk, or tape. The summary file will always be sent first to SFDEV and then later copied to the user specified device and not erased from SFDEV.

```
eg1: TABAUDIT ONLY ofcstd
eg2: TABAUDIT ONLY ofcstd sfdev temp
eg3: TABAUDIT ALL sfdev
eg4: TABAUDIT FROM ofcstd d000scratch
eg5: TABAUDIT FROM custab TO ofcstd sfdev
```

WARNING: Only one TABAUDIT should be running with the ALL or FROM option.

```
Parms: <Function> {ONLY <Table Name> STRING
                  [<Device Name> DEVICE name]
                  [<File Name> STRING],
                ALL [<Device Name> DEVICE name],
                FROM <Start table Name> {(otherwise)
                  [{TO <End Table Name> STRING}]}
                  [<Device Name> DEVICE name]}
```

TABAUDIT examples

```
> TABAUDIT ALL D000SCRATCH
```

```
Starting DMS Data Verification...
DATA VERIFICATION COMPLETED.

> LIST D000SCRATCH
SUMMARY$FILE
CCTR$FILE (NOTE: This table failed the data check)

> PRINT SUMMARY$FILE
Tbl DART      : tuples checked  859,  passed 859,  failed  0.
                .
                .
Tbl DDU       : tuples checked   5,  passed  5,  failed  0.
                .
                .
Tbl CCTR      : tuples checked  15,  passed 14,  failed  1.

> PRINT CCTR$FILE
TABLE CCTR: New Table Control.
DATA IN ASSOCIATED ROUTING TABLE NOT PRESENT
---ERROR: Data does not verify.
      POSITION: 55
Completed tuple checking.
SUMMARY: Tbl CCTR: tuples checked 15, passed 14, failed 1.
```

TABAUDIT enhancements

In BCS36 features were introduced to facilitate TABAUDIT's usage by:

- automating TABAUDIT based on a scheduled time table.
- implementing a report facility that will
 - report tables that have not been checked.
 - report the time and date of the last check performed on a table.
 - report table specific data errors including routing errors.
 - report syntax errors.
 - report generic table integrity errors such as false tops, bottoms and holes in tables.
- linking TABAUDIT and TABXFR in order to identify data issues before data move is started.
- adding a PRECHECK step that verifies that all tables in DART have been verified.

TABAUDIT help (BCS36)

TABAUDIT:

> HELP

The TABAUDIT increment is used to setup a standard session of TABAUDIT.

The increment consists of the following subcommands:

INCLUDE EXCLUDE STATUS REPORT CLEAR EXECUTE
AUTO QUIT HELP INFO

From within the TABAUDIT increment type:

HELP <subcommand>
for further help on subcommand.

Note: The AUTO subcommand is used to enter the AUTOTABAUDIT increment.

> HELP AUTO

AUTO command

Command to enter the AUTOTABAUDIT level of TABAUDIT.

Note: Only one user may occupy this level at a time.

eg1: AUTO

All TABAUDIT commands entered fromTo BCSUPDATEAUTOTABAUDIT.
Use the TIMEFRAME
command to schedule the verification of tables.

Automated TABAUDIT

This BCS36 feature provides an automated TABAUDIT process. Once the initial parameters are entered, automated TABAUDIT has the ability to check data integrity without external guidance. The results of the data checks are maintained, and can later be displayed via a report utility.

Automated TABAUDIT does not generate reports for each table as the table is being verified the way TABAUDIT does. Instead, all report data may be accessed via the report utility. TABAUDIT, in addition to generating reports as tables are verified, is altered so that such data may be accessed in the same manner as automated TABAUDIT's data, via the report utility.

The parameters required to initiate the automated tabaudit are entered via the CI increment TABAUDIT. The original TABAUDIT command is moved into the TABAUDIT command increment. A second level containing the automated TABAUDIT commands is accessible from within the TABAUDIT increment.

The automation of TABAUDIT via a schedule provides the user with the ability to set a time frame within which TABAUDIT should be running. The schedule that governs TABAUDIT's execution is based on a 24 hour clock cycle. TABAUDIT activates daily to verify tables' data integrity during a specified time frame until all data is verified. The user may also specify the date on which the TABAUDIT is to be started and stopped by the scheduler.

Automated TABAUDIT is setup from within the CI increment, TABAUDIT, which allows the user to specify tables to be verified, when the verification is to take place, the type of data integrity report¹, and the report's destination. The following lists the various functions added by this feature via the TABAUDIT increment to facilitate the use of TABAUDIT:

- Schedule the verification of a single table in DART.
- Schedule the verification of a range of tables in DART.
- Schedule the verification of all tables in DART.
- Generate a data integrity report for all tables in DART.
- Generate a data integrity report for all verified tables.
- Generate a list of tables that have not been checked by TABAUDIT.
- Generate a data integrity report for a single table.
- Display the status of the scheduler.
- Activate or deactivate the scheduler.
- Clear scheduling information.
- Have the ability to specify select tables to be included in a table range
- Have the ability to specify select tables not to be checked.

Automated TABAUDIT uses table DART for the order in which to verify tables' data integrity. Table DART, if not previously sorted, is sorted using the dump and restore ordering in advance of any data integrity checks.

Automated TABAUDIT may be in one of two states:

- Active: The scheduler is executing TABAUDIT during specified time frames.
- Inactive: The scheduler is not executing TABAUDIT, and execution of TABAUDIT is not scheduled.

¹A data integrity report consists of the results of the three types of checks mentioned under "How TABAUDIT operates" above.

For standard tabaudit the STATUS command displays the range of tables included and excluded. The ALL option can be used to display all tables included and excluded.

The STATUS command displays the current parameters being used by the automated TABAUDIT process. The parameters that are displayed consist of: all included table ranges and their indices, the start time, the start date, the stop time, the stop date, whether or not automated TABAUDIT is currently active, and current table. If the ALL option is used, the parameters that are displayed consist of: the all included and excluded tables and their indices, the start time, the start date, the stop time, the stop date, whether or not automated TABAUDIT is currently active, and current table.

When activating TABAUDIT, the current information the TABAUDIT session is working with is displayed. The user is asked to confirm the data. If data is missing, the user is told what data is missing. If for some reason a session of tabaudit can not obtain the resources it requires, the user is notified that the tabaudit session was terminated, and for what reason.

When QUITing out of a standard tabaudit session, the user loses that session's parameters. When QUITing out of an automated tabaudit session, the user is placed back in the standard tabaudit increment, and as long as the automated session is active, the session parameters are preserved.

All data that automated TABAUDIT captures is stored in protected store. This includes table statistics (time, date and error counts), and the keys of tuples containing errors.

Automated TABAUDIT has a couple of restrictions. Sessions of automated TABAUDIT and TABAUDIT can be running at the same time, however; only one session can be verifying a specific table at a time. Two sessions of automated TABAUDIT can not be both running at any given instant. Furthermore, once an automated tabaudit session is active, no changes can be made to the session's parameters without first terminating the session.

Examples:

The following commands will enter the TABAUDIT increment at the AUTO level, set the time frame within which TABAUDIT is to execute, and specify the range of tables to verify the number of verification cycles to perform.

```
> TABAUDIT
TABAUDIT:
```

```
> AUTO
Automated Tabaudit:
```

```
This level of the Tabaudit CI is used to setup a
```

scheduled session of Tabaudit. The TIMEFRAME command is used to specify the time frame within which the verification of tables is to be performed.

AUTOTABAUDIT :

> TIMEFRAME 1:00 30:06:92 5:00 05:07:92
Is the following schedule correct?

Automated Tabaudit is to execute from 1:00 to 5:00 between the following dates:

Start date: 1992/06/30
Stop date: 1992/07/05

Please confirm ("YES", "Y", "NO", or "N"):
> Y

> INCLUDE FROM LTCINV TO KSETFEAT

> EXECUTE

AUTOMATED TABAUDIT STATUS			
Active Timeframe		Executing Timeframe	
Start Date	Stop Date	Start Time	Stop Time
1992/06/30	1992/07/05	1:00	5:00

Current time : 1992/06/23 16:32:05
Automated Tabaudit : Inactive

The following tables are INCLUDED

From table LTCINV (52) to table KSETFEAT (420)

The following tables are EXCLUDED

From table DART (0) to table XLIUMAP (51)
From table DNINV (421) to table CNMDBTST (1115)


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

Automated Tabaudit has been activated.

Reporting utility

The report utility is initiated by the CI command, REPORT command in the TABAUDIT directory. This command has five options:

- CHECKED
- NOTCHECKED
- ALL
- INCLUDED
- ERRORS
- <table_name>

The report utility's CHECKED function generates a list of all tables that have been checked, the time and date of the last check, as well as the number of each type of error encountered. At the end of the report, the total number of errors encountered and the amount of time TABAUDIT required to perform the checks are displayed.

The report utility's NOTCHECKED function generates a list of all tables that have not been verified.

If the ALL function is specified, a full report of all tables in table DART is generated indicating whether the table has been checked, the table has been checked and passed verification, or the table has been checked, but an error has been encountered. The number of errors, the error types, and time and date of data verification are indicated. For every table, each failed tuple's key is listed. The output may be directed to a specific device. In addition, at the end of the report, the total number of errors and the total amount of time that TABAUDIT was executing are displayed.

The INCLUDED function generates a report of all tables in a specified includes list. The report details whether or not a table has been checked, and whether or not it passed all checks. If a check failed, the number of each type of error, time and date of the check as well as the failed tuples key are displayed. In addition, at the end of the report the total number of errors encountered in the tables in the includes list, as well as the total amount of time TABAUDIT was executing are displayed.

The ERRORS function is identical to the ALL function except reports are generated only for those tables known to have errors.

If a table name is specified, a report of that table's data integrity is generated. The number of errors, the error types, and time and date of data verification will be indicated. The key of each tuple that failed is displayed.

TABXFR linking

If all data issues have not been resolved and rechecked by TABAUDIT before a data move is attempted, a warning is displayed. The types of warnings are:

- WARNING - ## tables have not been verified by TABAUDIT.
- WARNING - ## errors encountered by TABAUDIT.
- WARNING - ## tables not checked by TABAUDIT within the last 30 days.

Note: ## represents an integer.

Refer to the report utility to determine which tables cause the warnings above.

PRECHECK step

A precheck step is used to ensure that any tables that have not been checked, or any errors that have not been fixed are brought to the applicators attention. The number of all tables that did not pass TABAUDIT's checks is displayed via the following warning messages:

- WARNING - ## tables not checked by TABAUDIT.
- WARNING - ## errors encountered by TABAUDIT.
- WARNING - ## tables not checked by TABAUDIT within the last 30 days.

Note: ## represents an integer.

Refer to the reporting utility to determine which tables cause the above warnings.

Using CHECKTAB

Checking tables for data inconsistencies prior to a software delivery is necessary to ensure that critical tables are free of data problems and each table has valid data. This is accomplished by running CHECKTAB. If CHECKTAB is not appropriate for certain tables, then the TABCHK utility can also be used. A newer development, TABAUDIT, is used with BCS34 and higher.

CHECKTAB does extensive table checking and identifies most types of table errors and data-fill problems. TABCHK checking, while not as extensive as CHECKTAB, checks for table errors such as false tops, false bottoms, and other consistency problems.

CHECKTAB performs table checks by reading and writing (without any data changes) every tuple in a specified table. If the read or write fails, the tuple position is output. This allows the user to identify the exact tuple in question. Normal table editor comments and warnings are displayed when errors are detected during the CHECKTAB operation.

CAUTION

Telco personnel normally should not attempt to run CHECKTAB without specific instructions.

Review Software Delivery Bulletins and all current Warning Bulletins concerning CHECKTAB before using it.

How CHECKTAB operates

CHECKTAB, will verify DMS tables by performing a series of checks on the tables and on the data in the tables.

- If patch ALR09 (BCS26 through BCS30) or patch ALR10 (BCS28 and BCS30) are in the switch and applied, checktab will run only a list of approved tables (or a permit list).
 - If the switch is INACTIVE and OUT_OF_SYNC this checktab can be used to check any table in the office.
 - If the switch is IN_SYNC or on the ACTIVE side, it will only check the tables contained in the CHECKTAB_PERMIT_LIST

Notice that a relatively small number of table are in the permit list. The permit list is used only when in_sync or on the active side.

- If patch ALR09/ALR10 is not in the switch, checktab will run on all tables except those listed in an exception list (not shown).

CHECKTAB help

> HELP CHECKTAB

Table Tuple Consistency CHECKTAB Command

The CHECKTAB options are:

- EXCEPTIONS - Displays a list of the checktab exceptions.
(BCS31 and higher)
- ONLY - Checks a single table. The output can be redirected to a specific device and filename.
- ALL - Checks all tables listed in table DART. The output can be redirected to a specific device.
- FROM - Checks all tables following and including a given table listed in table DART. The output can be redirected to a specific device.
The FROM command can also be followed by a TO option to specify where CHECKTAB should stop checking. The table following the TO option will be included in the check.

The default output device is the screen and the default filename is the table name concatenated with the string \$FILE. If the ALL or FROM option is chosen, CHECKTAB creates a SUMMARY\$FILE that lists the results of the tables it has checked.

The results can be sent to SFDEV, disk, or tape. The summary file will always be sent first to SFDEV and then later copied to the user specified device and not erased from SFDEV.

- eg1: CHECKTAB ONLY ofcstd
- eg2: CHECKTAB ONLY ofcstd sfdev temp
- eg3: CHECKTAB ALL sfdev
- eg4: CHECKTAB FROM ofcstd d010temp
- eg5: CHECKTAB FROM custab TO ofcstd sfdev

WARNING: Only one CHECKTAB should be running with the ALL or FROM option.

Parms: <Function> {ONLY <Table Name> STRING
 [<Device Name> DEVICE name]
 [<File Name> STRING],
 ALL [<Device Name> DEVICE name],
 FROM <Start table Name> {(otherwise)
 [TO <End Table Name> STRING]}}
 [<Device Name> DEVICE name]}

CHECKTAB examples

```

> CHECKTAB ALL D000SCRATCH

> LIST D000SCRATCH
OFRT$FILE
HNPACONT$FILE
SUMMARY$FILE

> PRINT SUMMARY$FILE
Tbl CUSTAB      : tuples checked 615, passed 615, failed 0.
Tbl CUSFLDS    : tuples checked 905, passed 905, failed 0.
.
Tbl OFRT       : tuples checked 88, passed 87, failed 1.
Tbl RTEREF    : tuples checked 88, passed 87, failed 1.
.
Tbl HNPACONT   : tuples checked 7, passed 7, failed 0.
---ERROR: Table HNPACONT has subtable problems. Check console
file.
.
Tbl ACDMISSP  : tuples checked 3, passed 3, failed 0.

```

In this SUMMARY\$FILE, table OFRT has 1 failed tuple and table HNPACONT has no errors ; however, one its subtable does.

```

> PRINT OFRT$FILE
TABLE OFRT: Old Table Control.
*WARNING* No trunk member is present in TABLE TRKMEM yet
INVALID TABLE ROUTE IN T-ROUTE AT:3
---ERROR: Tuple is invalid.
    POSITION 61
Completed tuple checking.
SUMMARY: Tbl OFRT: tuples checked 88, passed 87, failed 1.

```

Position 61 has an invalid T-ROUTE in table OFRT. Correct the error by adding in a new OFRT tuple for the invalid T_ROUTE or remove the invalid T_ROUTE. The warning message is a reminder to remove the T_ROUTE pointing to the CLI with no trunk members.

```

> CHECKTAB ONLY OFRT
NOTE: No device specified. Output will go to default device.
TABLE OFRT: Old Table Control.
*WARNING* No trunk member is present in TABLE TRKMEM yet
Completed tuple checking.
SUMMARY: Tbl OFRT: tuples checked 88, passed 88, failed 0.

```

Table OFRT is corrected.

```
> PRINT HNPACONT$FILE
TABLE HNPACONT: Old Table Control.
  POSITION 613
    SUBTABLE RTEREF
INVALID TABLE ROUTE IN T-ROUTE AT:0
---ERROR: Tuple is invalid.
  POSITION 1
    Completed tuple checking.
    SUMMARY: Tbl RTEREF: tuples checked 9, passed 8, failed 1.
  SUBTABLE HNPACODE
    Completed tuple checking.
    SUMMARY: Tbl HNPACODE: tuples checked 6, passed 6, failed 0.
  SUBTABLE ATTRIB
    Completed tuple checking.
    SUMMARY: Tbl ATTRIB: tuples checked 0, passed 0, failed 0.
    .
    .
    .
Completed tuple checking.
SUMMARY: Tbl HNPACONT: tuples checked 7, passed 7, failed 0.
```

Correct the error and run 'CHECKTAB ONLY HNPACONT'.

```
> CHECKTAB ONLY HNPACONT
NOTE: No device specified. Output will go to default device.
TABLE HNPACONT: Old Table Control.
  POSITION 613
    SUBTABLE RTEREF
    Completed tuple checking.
    SUMMARY: Tbl RTEREF: tuples checked 9, passed 9, failed 0.
  SUBTABLE HNPACODE
    Completed tuple checking.
    SUMMARY: Tbl HNPACODE: tuples checked 6, passed 6, failed 0.
  SUBTABLE ATTRIB
    Completed tuple checking.
    SUMMARY: Tbl ATTRIB: tuples checked 0, passed 0, failed 0.
    .
    .
    .
Completed tuple checking.
SUMMARY: Tbl HNPACONT: tuples checked 7, passed 7, failed 0.
```

Table HNPACONT is corrected.

Using JFFREEZE

The JFFREEZE feature was designed to (1) ensure the "Frozen image" for Hybrid (Local) dump and restores is dumped correctly, and (2) to enforce the office data freeze by inhibiting illegal data modifications.

While JFFREEZE is active, journal file activity is recorded in the JF HISTORY file. JFFREEZE automatically rotates journal files daily (at 0300 hours) and keeps a record of all JF filenames. To see the HISTORY file type:

```
> JFFREEZE HISTORY
```

JFFREEZE examples

```
> JFFREEZE ON
```

```
DATA FREEZE ACTIVATION
```

```
-----
```

```
ONCE ACTIVE, ON-LINE TECHNICAL SUPPORT WILL BE
REQUIRED TO TURN JFFREEZE OFF.
```

```
THE SYSTEM IMAGE FOR DUMP AND RESTORE MUST BE
TAKEN AT THIS TIME.
```

```
DO YOU WISH TO CONTINUE?
```

```
Please confirm ("YES" or "NO"):
```

```
> YES
```

```
JFFREEZE ACTIVATION CONTINUING....
```

```
SYSTEM IMAGE FOR DUMP AND RESTORE
```

```
-----
```

```
ENTER THE FREE IOC OR SLM DISK VOLUME TO RECEIVE
THE SYSTEM IMAGE FILE(S):
```

```
> D000IMG2
```

```
JFFREEZE: THE SYSTEM IMAGE DUMP WILL COMMENCE IN 2 MINUTES
```

```
DO YOU WISH TO PROCEED?
```

```
Please confirm ("YES" or "NO"):
```

```
> YES
```

```
JFFREEZE image dump commences in 2 minutes...
```

```
Dump START time: 1989/06/14 18:20:06.416 WED
```

```
CC: Old AUTOLOAD ROUTE:THUMBWHEEL CODE C CMC 0 IOC 0 MTD 1
```

CC: New AUTOLOAD ROUTE:THUMBWHEEL CODE A CMC 0 IOC 0 DDU 0
CC: Dumping RAM.
CC:
CC: Dumping Data Store.
CC:
CC: Dumping Program Store.
CC: Dumping Entry Record.
CC: Checking RAM.
CC:
CC: Checking Data Store.
CC:
CC: Checking Program Store.
CC: Checking Entry Record.
CC: Successful DUMP and CHECK.
CC: 25709 blocks with 49 corrections.
CC: SETBOOT for CC failed, autoloader route NOT updated.
Dump Completed Successfully.

Dump END time: 1989/06/14 19:01:11.496 WED..
JFFREEZE image dump completed

JOURNAL FILE

TABLE DIRPSSYS:

FROM ANOTHER TERMINAL, CHANGE AND VERIFY THE
FOLLOWING DATA IN THE JF TUPLE:

SSYSNAME	RETPD	CRETPD	FILEDATE	SHEDDAYS	ROTACLOS
-----	-----	-----	-----	-----	-----
JF	30	30	FIRSTACT	NNNNNNN	BOTH

READY TO CONTINUE?

Please confirm ("YES" or "NO"):

Note: Verify the fields listed above and verify AUTOXFER is set to
'NONE' in table DIRPSSYS.

> YES

THE JOURNAL FILE WILL BE STARTED/ROTATED NOW.

JFFREEZE WILL AUTOROTATE THE JOURNAL FILE NIGHTLY
AT APPROXIMATELY 3:00 AM


```
*****  
**                                                                 **  
**      JFFREEZE IS NOW ACTIVE  -  DATA FREEZE IN EFFECT      **  
**                                                                 **  
*****
```

DISPMS command

(The following applies only to SuperNode on BCS34 or higher and, when patched, on BCS31-33.)

DISPMS is a CI command which displays the image header information containing the load type, BCS number and edition code. The main purpose of the DISPMS command is to verify the type of an MS load prior to LOADMS.

Using DISPMS to display load file information

- 1 List the device containing the load file(s) to be displayed.
- 2 > DISPMS <filename>
where <filename> is either the MS or CM load file listed above.
- 3 Information displayed can be:

MS-S BCS 34 CR	<i>(a standard JNET MS load)</i>
MS-E BCS 34 CR	<i>(an ENET MS load)</i>
MS-I BCS 34 CR	<i>(an SCP-II MS load)</i>
MS-N BCS 34 CR	<i>(a SNSE MS load)</i>

MOVEBCS summary

In BCS34 and lower the MOVEBCS command is used to dump and restore tables. This is also known as the "data transfer." This command is normally entered on the inactive (mate) side.

Procedure 1 Interrupt MOVEBCS

During the data transfer the user can stop the MOVEBCS process two different ways: HALT is to be used most of the time; whereas, LIMIT 0 can be used to stop the data transfer of a long table.

- 1 **App/INACT** To *halt* MOVEBCS, on the inactive (mate) side enter:

```
Mate> MOVEBCS HALT
```

MOVEBCS process will halt after the current table is completely moved. This will not interrupt tables in the process of being moved.

- 2 To stop MOVEBCS during the data transfer of a long table do:

- a. Mate> MOVEBCS LIMIT 0

Wait for a system response indicating completion before continuing.

CAUTION

DO NOT raise the LIMIT unless MOVEBCS is stopped.

However, it is acceptable to lower the LIMIT while the process is running.

- b. After MOVEBCS has stopped you may reset the LIMIT as previous. The table that was interrupted will run again:

```
Mate> MOVEBCS LIMIT <as desired>
```

- 3 You may RESTART the data transfer using the FROM option. Start from the last table successfully completed.

To restart MOVEBCS, on the inactive terminal enter:

```
Mate> MOVEBCS FROM <table>
```

-continued-

Procedure 1
Interrupt MOVEBCS (continued)

- 4 **ACT** You may, instead, ABORT (stop and reschedule) the application by doing these steps.
- a. **OVERIDE** all POSTSWACT steps (STATUS POSTSWACT will list the steps) with the *exception* of the following steps:
 - RESET_OFFICE_TUPLES
 - ENABLE_AUTO_IMAGE
 - RESUME_ATT
 - b. **Run** POSTSWACT. This will execute ONLY the steps listed above.
 - c. **RESET** both PRESWACT and POSTSWACT with:
 - > BCSUPDATE ; RESET
-

MOVEBCS and MOVEBCSR syntax

MOVEBCSR <options> - Use this command to dump tables on the NT40 to a magnetic tape by reading table DART.

Note: For from_BCS 27-31 only, use the SEQDART command before using MOVEBCSR. SEQDART sequentially orders the table names in table DART to allow an efficient restore process on the SuperNode.

Where <options> can be:

<TAPE number> STRING

<RESTORE_BCS number> {0 to 99}

[<FUNCTION> {ONLY <table> STRING,
FROM <table> STRING}]

MOVEBCS <options> - <Without options> starts the data transfer process. It starts after the last completed table or at the beginning if no tables have been completed.

Where <options> can be:

FROM <table> - Starts the data transfer from the specified table.

ONLY <table> - Performs a data transfer on the specified table only.

- STOPIF - Sets the number of failures allowed for a table. If this threshold is reached then the data move stops at the end of the table. (Range is 0 to 4294967296.)
- LIMIT - Sets the number of failures allowed for a table. If this threshold is reached then the data transfer stops (whether the table has completed or not). (Range is 0 to 4294967296.)
- STATUS - Displays information about the status of the data transfer.
- HALT - Stops the data transfer after the current table is completed.
- STOP <stop_options>
- Where <stop_options> can be:
- BEFORE <table> - Stops MOVEBCS before given table.
- AFTER <table> - Stops MOVEBCS after given table.
- CLEAR BEFORE <table> - Clears the stop before given table.
- CLEAR AFTER <table> - Clears the stop after given table.
- QUERY - Lists all STOPS.
- REPORT - Generates a final data transfer report. This will include a table exception report and an NTX package delta.
- XREPORT - Creates a table exception report only.
- NTXDELTA - Performs a delta of the NTX packages on the old and new loads.
- QUIT - EXIT the BCSUPDATE increment.

DARTEDIT syntax

- DARTEDIT - Enters the DARTEDIT increment to enable the following commands.

PRINTDART <mode>

Where <mode> can be:

- SHORT - Prints a compact listing of tables in DART. (default)
- LONG - Lists tables in DART in a single column format.

Examples:

```
> PRINTDART SHORT
Table DART:
 000 N DART 001 N OKPARMS 002 E DATASIZE 003 N SYSDATA 004 E OCCNAME
 005 E OCCINFO          006 E HNPACONT 007 N OFCSTD  008 N OFCOPT
 009 OFCENG 010 E CRSFMT 011 E CLLI      012 E NNASST 013 E SITE
 014 E CMSHELF...
```

```
> PRINTDART LONG
Table DART:
 000 N DART
 001 N OKPARMS
 002 E DATA SIZE
 003 N SYSDATA
 004 ED OCCNAME
 005 E OCCINFO...
```

SORTDART <mode>

Where <mode> can be:

- SHORT - Prints a compact listing of tables in DART alphabetically. (default)
- LONG - Lists tables in DART alphabetically in a single column format.
- FIND <table> - Finds the table(s) starting with...

Example:

```
> FIND TERMDEV
 041 E TERMDEV
```

DELTA syntax

This command may be used to display the differences (delta) between a given table on the active and inactive sides.

DELTA <table> <delta level> <file option>

Where <table> is the name of the table to be checked. For a sub-table use for the table name:

[<table> SUB <subtable>]

<delta level> can be:

- COUNT - Checks the number of tuples in both tables.
- KEYS - Does a checksum on the keys of the tuples.
- CHECKSUM - Does a checksum on the tuples (default).

And <file option> can be:

- FILE - Sends results to a file on SFDEV called DELTA\$REPORT (default).
- NOFILE - Displays the terminal without creating a file.

Example:

```
> DELTA OFCENG NOFILE
Table OFCENG
  Tuples do not match.  Old Count = 209, New Count = 206.
**OLD  AMA_EBCDIC_CONVERT N

**OLD  CUSTOMER_GROUP_IBNGRP_OM_COUNT 288
**NEW  CUSTOMER_GROUP_IBNGRP_OM_COUNT 32
```

TABXFR summary

In BCS35 and higher the TABXFR increment is used to dump and restore tables. This is also known as the "data transfer."

Procedure 2 Interrupt TABXFR

During the data transfer the user can stop the TABXFR process two different ways: HALT is to be used most of the time; whereas, HALT NOW can be used to stop the data transfer of a long table.

Note: For the ACTREST platform the following commands are the same, except on the *active* side.

- 1 **App/INACT** To *halt* TABXFR, on the inactive terminal enter:

```
Mate > HALT {must be in TABXFR increment}  
TABXFR process will halt after the current table is completely moved. This  
will not interrupt tables in the process of being moved.
```

- 2 To *stop* TABXFR during the data transfer of a long table type:

```
Mate> HALT NOW {in TABXFR}  
TABXFR process will halt immediately, even in the middle of the table.
```

- 3 Restart the data transfer using the FROM option. Start from the last table successfully completed.

To restart TABXFR, on the inactive terminal enter:

```
Mate> STARTXFR FROM <table> {still in TABXFR}
```

- 4 **ACT** You may, instead, ABORT (stop and reschedule) the application by typing on the ACTIVE side:

```
> BCSUPDATE ; ABORT_PRESWACT  
> TABXFR ; CANCEL  
> QUIT ALL
```

TABXFR syntax

TABXFR - Enters the TABXFR increment to enable the following commands.

TABXFR subcommands are as follow:

SETUP <options> - Set up and initialize the type of platform used to perform the data transfer.

Where <options> can be:

- | | |
|-----------------|--|
| STANDARD | - Standard split switch application. |
| DUMPONLY | - Setup to perform the dump part of the dump and restore. This is for dumping data to tape. |
| ACTREST | - Perform the restore part of the dump and restore (data transfer). This restores data from tape to the active side (i.e. restore to split cm mode). |
| THIRDPRO | - Third processor-assisted data transfer. |
| STOPIF | - Sets the number of failures allowed for a table. If this threshold is reached then the data transfer stops at the end of the table. (Range is 0 to 4294967296.) |
| LIMIT | - Sets the number of failures allowed for a table. If this threshold is reached then the data transfer stops (whether the table has completed or not). (Range is 0 to 4294967296.) |
| STATUS | - Displays information about the setup and status of the data transfer. |
| STARTXFR | - Starts the data transfer process. It starts after the last completed table or at the beginning if no tables have been completed. |
| XFRFROM <table> | - Starts a data transfer from the specified table. |
| XFRONLY <table> | - Performs a data transfer on the specified table only. |
| DUMP | - Performs just the dump portion of the data transfer. (Only available after issuing the SETUP DUMPONLY command.) |
| RMOUNT | - Mounts the device to be used for the active restore. |
| RDEMOUNT | - Demounts the device being used for the active restore. |
| RCOPY | - Copies a file from the restore device to SFDEV. |

- DATASYNC - Manipulates the Data Synchronization. (Only available after issuing the SETUP THIRDPRO command.)
 - HALT - Stops the data transfer after the current table is completed.
 - HALT NOW - Causes the data transfer to halt immediately, after the current tuple.
 - CLEAR - Clears the specified table. This only works with tables that have a transfer type of PHYSICAL in table DART.
- STOPXFR <stop_options>
- Where <stop_options> can be:
- BEFORE <table> - Stops TABXFR before given table.
 - AFTER <table> - Stops TABXFR after given table.
 - CLEAR BEFORE <table> - Clears the stop before given table.
 - CLEAR AFTER <table> - Clear the stop after given table.
 - QUERY - Lists all STOPS.
 - CANCEL - Cancels the data transfer. Entered on active side after any type of ABORT. Turns on AUTODUMP and AUTOPATCH.
 - REPORT - Generates a final data transfer report. This will include a table exception report and (with BCS36 and lower) an NTX package delta.
 - XREPORT - Creates a table exception report only.
 - NTXDELTA - Performs a delta of the NTX packages on the old and new loads (with BCS36 and lower).
 - QUIT - EXIT the TABXFR increment.

BCSUPDATE summary

The BCSUPDATE increment enables the commands for the BCS application.

BCSUPDATE level commands do the actual work of applying the new BCS load. (BCSUPDATE includes the application functions formerly performed either manually or by the SWAP or AutoApply processes.)

Note: If the BCSUPDATE will not immediately follow the data transfer (MOVEBCS/TABXFR), then verify JFFREEZE is activated or journal file rules are being followed to insure all data on the journal files will be restored correctly when the BCSUPDATE is continued.

BCSUPDATE increments

The primary increments of BCSUPDATE that assist in switching activity from one BCS load to another and in recovering from the activity switch are:

- PRECHECK (BCS37 and higher)
- PRECHECK FIRST (BCS33 through BCS36)
- PRECHECK FINAL (BCS33 through BCS36)
- PRESWACT
- SWACTCI (BCS33 and higher)
- SWCT (BCS31 and BCS32)
- POSTSWACT

The PRESWACT interrupt/abort process is described in this section. This is followed by descriptions of PRECHECK FIRST and PRECHECK FINAL steps, PRESWACT STEPS, and POSTSWACT steps. (SWACT commands are described in the next section, *CC Warm SWACT summary*.)

The following processes or increments are available within BCSUPDATE:

- | | |
|----------|--|
| PRECHECK | - A series of pre-application checks (prechecks) used to ensure an office is ready for the software upgrade. |
| PRESWACT | - Perform the BCS application by invoking the application driver. The command may be used repeatedly. |
| STATUS | - Display the current status of the BCS application. It displays what critical steps have been completed (and the execution time), those still |

- needed, and whether or not the system is ready to perform the switch of activity.
- RESET
 - Reset all completed procedures to their initial state of NEEDED so BCSUPDATE can be re-executed.
- SWCT
 - Enable CC Warm SWACT commands. In BCS31 this command became available only as an increment of BCSUPDATE.
- SWACTCI
 - Same as SWCT. This changed to SWACTCI in BCS33.

Note: Commands for switching activity are available as increments of the SWACTCI/SWCT level. Refer to the next section, *CC Warm SWACT summary*, for details of SWACT commands.

- POSTSWACT
 - Recovery functions following the SWACT.
- OVERRIDE
 - Set a failed PRESWACT or POSTSWACT procedure to COMPLETED. This should be used with caution. Only those steps that have been investigated and pose no threat to the current application should be set completed by this command.
- DATADUMP
 - Display office information (implemented in BCS31).
- RUNSTEP
 - Execute individual PRESWACT steps. Starting in BCS34 this also works for POSTSWACT steps. CAUTION! Also see next command.
- ABORT_PRESWACT
 - (BCS35 and higher) Used to abort PRESWACT or to recover after a RUNSTEP is used to run one of the preswact steps. Both PRESWACT and RUNSTEP will set the DUMP_RESTORE_IN_PROGRESS bool in OFCSTD to 'Y'. After a RUNSTEP (if done out-of-process) the applicator must run ABORT_PRESWACT to reset the bool to 'N'.
- QUIT
 - EXIT the BCSUPDATE level.

Procedure 3
PRESWACT Abort

App It may be necessary to STOP (and reschedule) the application after PRESWACT (or MOVEBCS/TABXFR) has been implemented, but before the switch of activity. If this is the case perform the following steps to restore the active side to its original configuration.

1 ACT For BCS 35 and higher type this command:

```
> BCSUPDATE ; ABORT_PRESWACT
```

2 ACT For BCS 34 and lower do these steps.

a. OVERRIDE all POSTSWACT steps (STATUS POSTSWACT will list the steps) with the *exception* of the following steps:

- RESET_OFFICE_TUPLES
- ENABLE_AUTO_IMAGE
- RESUME_ATT

b. Run POSTSWACT. This will execute ONLY the steps listed above.

c. RESET both PRESWACT and POSTSWACT with:

```
> BCSUPDATE ; RESET
```

PRECHECK steps

To ensure that an office is ready for a software upgrade, a series of pre-application checks (or prechecks) must be completed (see Site Preparation Reference Guide for RTP or). These checks are typically done at two points prior to the application date. The checks may also be performed by Northern Telecom through the execution of separate checklists. For BCS33 and higher many of these checks that were previously manually verified can be done in advance by the site personnel using the PRECHECK command.

The PRECHECK command (by itself) is valid for BCS 37 and higher. The PRECHECK FIRST and PRECHECK FINAL commands are valid if the current load is BCS33 through BCS36. If you are coming from BCS32 or lower these steps must be manually performed by the BCS Applications Engineer.

The PRECHECK command, within the BCSUPDATE increment, will execute the following steps.

Note: Unless otherwise noted, each of these steps are also run during the execution of either the PRECHECK FIRST and PRECHECK FINAL commands.

Step Name

=====

- DISPLAY_DEVICE_AND_USER - Display information on the IOC device and username the PRESWACT is being run on. This includes the COMCLASS, PRIVCLASS, PRIORITY, LOGINCONTROL, STACKSIZE, PRIVCLASS, etc. This information can also be displayed through the use of the DEVICE command in the BCSUPDATE level.

- TABLE_COUNTS - Display the counts of some of the larger system tables (LENLINES, IBNLINES, KSETLINE, TRKMEM, etc). This information will help determine how long the MOVEBCS/TABXFR will take. This step will be run only during PRECHECK FIRST.

- CHECK_MEMORY - Determine the amount of physical and logical memory, and verify that the amounts are equal. The amounts will be displayed in 1M equivalents so they can be compared to the NT-determined required memory specifications.

- DISPLAY_TOPS_ENVIRONMENT - This step will display the value of TOPS_OC_ENVIRONMENT from table OFCENG. If the parameter is not found, a message will be displayed stating that this is not a TOPS office. This step will be run only during PRECHECK FIRST.

- CHECK_DSLIMIT - The step will check table DSLIMIT to ensure that there is enough space in SFDEV to complete the precheck, dump and restore, and the application. If this amount is not available, a message will be displayed stating this.

- CHECK_CRSFMT_AND_CRSMAP - This step will check table CRSFMT and CRSMAP to ensure SMDR data is not being sent to the AMA stream

if the AMA format is BCFMT. This arrangement should not be used except for those sites that handle their data in a special way. If this datafill arrangement is present, a message will be displayed.

- E911SRDB_CHECK
- This step will check the data dictionary range for DIGIT and SERVING_NUMBERING_PLAN_AREA. If these ranges do not line up there will be difficulties transferring the data.
- CHECK_LTCINV
- This step will check table LTCINV to ensure that field OPTATTR is datafilled with "CCS7" only when a DTC is running CCS7 traffic i.e. if the load name for the DTC (see LOAD field) begins with "DC7".
- CHECK_LCMINV
- This step will check table LCMINV to ensure that field MEMSIZE is set to "256K" when using an XLCM load and set to "64K" when using an LCM load. If this condition is not met, a message will be displayed.
- DISPLAY_SLM_DEVICE
- This step will determine and display of the office is equipped with a SLM I or SLM II type drive This step will be run only during PRECHECK FIRST.
- DISPLAY_PEC_INFO
- This step will display the PEC and release numbers for both the CM and MS. This information is used to verify that hardware is at the correct level. The correct levels are given in the Baseline report. This step will be run only during the PRECHECK FIRST.
- DEVICE_CHECK
- This step will display any SYSB or MANB devices. Devices in either of

these states can cause delays on the night of the application.

- DISPLAY_DNC_USERS - Display all DNC/MPC users and their status.

- CHECK_LOGS - This step will verify the front-end stability by checking traps and critical system logs. The log output is in the following order: TRAP, INIT, SWER, NET and PM. The step will then scan the CC, CMC and MISM CM, MS, SLM and MM log buffers for indications of stability problems.

- DISPLAY_PERIPHERAL_LOAD_NAMES - This step will display the name and load name of loadable peripherals. This step will be run only during PRECHECK FIRST.
- DISPLAY_MPC_LOAD_NAMES - This step will display the load names for each equipped MPC. This step will be run only during PRECHECK FIRST.

- DISPLAY_ST_LOAD_NAMES - This step will display load names for each of the equipped ST (Signalling Terminal) devices, including DCH's. This step will be run only during PRECHECK FIRST.

- C7LINK_CHECK - Check table C7LINK for a mixture of MSB7-based and LPP-based CCS7 links. A mixture is not supported over a BCS Application and the datafill should be changed to show either all MSB7-based or all LPP-based CCS7 links.

PRESWACT steps

The following steps are executed in sequence to setup the environment for the swact. This is not a complete list of processes run by PRESWACT; the steps will be different depending on the BCS level and on certain features being present in the office.

Step Name

=====

```
CMIC_LINKHITS_CHECK,          Cmwsract
  On the active CPU;
  Verify that neither of the MC links have experienced more
  than 3 link hits. Counters are cleared every 24 hours.

VERIFY_ACTIVE_DSLIMIT,        Applutil
  On the active CPU;
  Check to see that there is at least 100K of available SFDEV.
  If not, add 100K to the STOREFS tuple in DSLIMIT.

DISABLE_AUTOIMAGE,           Adumpctl
  On the active CPU;
  Stop any Auto Image that may be running or is scheduled to
  run during the application.
  Will be rescheduled in POSTSWACT by ENABLE_AUTOIMAGE.

VERIFY_DSLIMIT,              Applutil
  On the inactive CPU;
  Check to see that there is at least 100K of available SFDEV
  If not, add 100K to the STOREFS tuple in DSLIMIT.

TRACE_ON,                    Applutil
  On the active CPU;
  Turn TRACECI ON for upcoming transfer of dynamic tables.

DISABLE_PATCH_AUDIT_ACT      Palarmim
  On the active CPU;
  Disable the patch audit during the One Night Process.

SET_OFFICE_TUPLES,          Applutil
  On the active CPU;
  Set the parm values of NODEREXCONTROL and LCDREX_CONTROL so
  that REX tests are effectively turned off during PRESWACT.
  Store the old values in REX$FILE and send to inactive CPU.
  Original values restored in POSTSWACT RESET_OFFICE_TUPLES.

SET_CPU_SHARE,              Applutil
  On the active CPU;
  Set GUARANTEED_TERMINAL_CPU_SHARE to 16 for PRESWACT.
```

Original values restored in POSTSWACT RESET_OFFICE_TUPLES.

SET_MATE_TUPLES, Applutil
On the inactive CPU;
Turn DUMP_RESTORE_IN_PROGRESS on.
Check that the REX\$FILE arrived. It contains the original
tuple values for the office parms NODEREXCONTROL and
LCDREX_CONTROL.
Store the original values in protected store and turn off
the REX parms.
Set GUARANTEED_TERMINAL_CPU_SHARE to 16 for PRESWACT.
Original values restored in POSTSWACT RESET_OFFICE_TUPLES.

DTDETECT_TRANSFER, Appldigit
On the active CPU;
Check if the digitone detection feature is active and send
the result over to the inactive CPU so that the bool can be
stored. This will be used in POSTSWACT to return the bool
DTDETECT_IN_USE to its original value.

SEND_PATCHES, Applutil
On the active CPU;
Scans SFDEV and all devices listed in table PADNDEV for
patch files matching the inactive side's BCS number and
sends the patch files to the inactive side's SFDEV.

APPLY_PATCHES, Applutil
On the inactive CPU;
Applies the patch files on the INACTIVE.

MATE_RESTART_COLD Applutil
On the inactive CPU;
send a message to the inactive CPU to perform a COLD
RESTART, wait up to 10 mins for it to return A1.

MATE_RESTART_WARM Applutil
On the inactive CPU;
send a message to the inactive CPU to perform a WARM
RESTART, wait up to 10 mins for it to return A1.

VERIFY_DUMP_RESTORE, Applutil
On the inactive CPU;
Check table DART to ensure that all tables have been
transferred successfully by the MOVEBCS process.
Otherwise, the step fails and the names of all tables that
have not been completed are sent to SFDEV file TABSTATES.

SWACT_MODULE_CHECK, Modchkui
On the active and inactive;
Checks for the existance of specified SWACT modules.

FRAME_RELAY_BILL Frbswact
On the active CPU;
Stop collection of billing data from the FRIU's and send collected billing data to AMA. This step is the first PRESWACT step that kicks off a process, is marked as EXECUTING and then proceeds to the next step.

DISABLE_PATCH_AUDIT_INACT Palarmim
On the inactive CPU;
Disable the patch audit during the One Night Process.
Enabled during POSTSWACT step ENABLE_PATCH_AUDIT_POSTSWACT.

HALT_ACTIVE_ALT, Applatt
On the active CPU;
Halt Automatic Line Testing as this may cause some lines' states to be incorrectly transferred during the step DUMP_LINE_STATES.

HALT_ACTIVE_ATT, Applatt
On the active CPU;
Halt Automatic Trunk Testing as it may cause some trunks' states to be incorrectly transferred during the step TRANSFER_TRUNK_STATES.

HALT_ATT, Applatt
On the inactive CPU;
Halt Automatic Trunk Testing as it may cause some trunks' states to be incorrectly set during the TRUNK_RESTORE step.

CSC_LINK_CHECK, Csccheck
On the active CPU;
Checks all CSC's in the office to ensure that it is using its dedicated HDLC link. If any are found in this state then the step fails and the suspect CSC's are displayed.

STATUSUPDATE, Staupdui
On the active CPU;
Check all nodes in the office to ensure that none are SYSBSY or MANBUSY. Tell the inactive which are OK and to have them MANBUSY'd.

IXPM_STATUSUPDATE, Intswcti
On the active CPU;

Special STATUSUPDATE for International XPMs.

FOCUS_MAINT_XFER, Applfm
On the active CPU;
Transfers line and trunk trouble info to the INACTIVE
so that Focused Maintenance info is not lost during SWACT.

DUMP_TOPSMP_STATES Ympmtchl
On the active CPU;
Dump the appropriate TOPS (TMS) position states into files
TOPSMP\$INB and TOPSMP\$MB. Positions in the TRAINING state
are not allowed during applications so the step will fail
with warnings to that effect. Send the files to the
inactive.
RESTORE_INB_TOPSMP and RESTORE_MB_TOPSMP handles these
files.

RESTORE_INB_TOPSMP, Ympmtchl
On the inactive;
RTS's all positions, puts all positions that appear in both
INB\$TOPSMP and MB\$TOPSMP into the INB state.
The MB positions will be set to MB during POSTSWACT.

CORRECT_DRWR_STATES, Drwrmtch
On the active CPU;
Transfer the line drawer states to the INACTIVE and
match the inactive's drawer states to the active.

TRANSFER_TRUNK_STATES, Trkmatch
On the active CPU;
Create files for trunk states, INB, MB and RES and send them
to the INACTIVE. RESTORE_INB is done during PRESWACT but
TRUNK_RESTORE for MB and RES trunks must wait till POSTSWACT
because they would come up idle after the restart.

RESTORE_INB, Trkmatch
On the inactive CPU;
Manbusy INB trunks (really ALL trunks after initial
datafill) then use INB\$TRKS file to set the INB trunks back
to INB.
The MATE_RESTART will set all MB trunks to CBSY.
Also, puts the MB and RES trunks INB so that they will not
be available to call processing after SWACT.

TRANSFER_PDTC_HG Hgpdtc
On the active CPU;
Put the states of all Handler Groups for each PDTC into

total Data Store.

PRELOAD_EXECS, Prldexui
 On the active CPU;
 Load the XPMs with the BCS+n EXEC line-ups. The pointers to the EXEC lineups will be switched from old to new during the WARMSWACT process.

USR_VERSION_DUMP Sasvmdnr
 On the active CPU;
 This step dumps the Software Application System's Version Management data into SFDEV file USR\$VRSN. The file is then sent to the inactive for restore during POSTSWACT.

UNMASK_CUSTFLDS, Applmask
 On the active CPU;
 Add tuples to table CUSTFLDS that will allow hidden fields for the dynamic tables to be transferred.

MATE_UNMASK_CUSTFLDS, Applmask
 On the inactive CPU;
 Add tuples to table CUSTFLDS that will allow hidden fields for the dynamic tables to be transferred.

TRANSFER_CFW, Appldtab
 TRANSFER_CFX,
 TRANSFER_SCALLTAB,
 TRANSFER_IBNSC,
 TRANSFER_CELLFEAT,
 TRANSFER_ACSCALL,
 TRANSFER_RCFCLI,
 TRANSFER_ATTCONS,
 TRANSFER_SLELIST,
 TRANSFER_KSETQCK.
 Move the data for dynamic tables as close to SWACT as possible. There may have been quite a delay between the MOVEBCS and SWACT and some customers may have changed data during this time. Done in the above order.

MASK_CUSTFLDS, Applmask
 On the active CPU;
 Deleted the previously added CUSTFLDS tuples.

MATE_MASK_CUSTFLDS, Applmask
 On the inactive CPU;
 Deleted the previously added CUSTFLDS tuples.

TRACE_OFF, Applutil
On the active CPU;
Halt TRACECI output that was needed for transferring
dynamic table data.

MATE_TRACE_OFF, Applutil
On the active CPU;
Halt TRACECI output that was needed for transferring
dynamic table data.

PM_EXEC_DELTA, Prldimp
On the active CPU;
Builds a table of PM node numbers and their EXEC lineups,
send it to the inactive where a comparison is made between
it and a similar table built on the inactive side.

CHECK_DISK_VOLLS, Applddu
On the active CPU;
Scan the volumes on all ONLINE disk drives and check that
any open files are critical files. List all non-critical
files that are open and tell the user to close them.

DUMP_DIRPPPOOL, Appldirp
On the active CPU;
Procedure to dump table DIRPPPOOL into file DIRP_INAC.
The file is sent to the inactive side's SFDEV for use by
subsequent DIRP steps.

CHECK_DIRP_PARVOLLS, Appldirp
On the active CPU;
Loop over the tuples in DIRPPPOOL and for those whose
POOLTYPE is PARALLEL check that all 24 volumes are NIL. If
not, type out the volume names and the DIRPSSYS subsystem
using them.

CHECK_DIRPPPOOL, Appldirp
On the active CPU;
1) Display active side datafill. Advise the user to close
regular TAPEX and parallel/regular TAPES.
2) Display inactive side datafill. Advise the craftsman
to mount any TAPE volumes (parallel/regular) that they
want recovered after the SWACT. Advise also to adjust
datafill for DISK or DPP volumes if desired.

CHECK_DIRPSSYS , Appldirp
On the inactive CPU;
Check that all resident DIRP subsystems have associated

entries in table DIRPSSYS. If not, check table DIRPPool to see that both a REGULAR and PARALLEL pool for the subsystem exist. If not, add them. Then add the DIRPSSYS entry for the subsystem.

UPDATE_METERS, Intswcti
On the active CPU;
International local calls are billed via the pegging of software registers called meters. This procedure transfers that information to the soon-to-be-active CPU.

SNIX_HSDF_TRANSFER, Hsdfen
Transfer critical SNIXVOLS tuples to the inactive.

WAKE_UP_CALLS, Intswcti
On the active CPU;
International offices also have customer data associated with wakeup calls. This procedure transfers that information to the soon-to-be-active CPU.

SRDB_INFO_TRANSFER, Srdbmem
On the active CPU;
Transfer the E911 Selective Routing Database to the inactive CPU.

OCNC_INFO_XFER, Yocncinf
On the active CPU;
Transfer Night Closedown information to the inactive so that operator calls are routed properly after SWACT. This info includes; CLOSE TIME, OPEN TIME, HOST, MODE STATE and QUEUE SET.

SEND_AUTOLD, Applald
On the active CPU;
Transfer the AUTLOAD ROUTE information to the inactive CPU. This determines what device the CPU will choose if it decides to re-boot itself.

STOP_BILL_SERVER, Appleioc
On the active CPU;
Some DMS250 offices have a special node for billing purposes.
This procedure shuts the billing server down during SWACT.

TRANSFER_LCM_DATA,
Transfer data for each LCM over to the mate side.

MS_CHECK, Applms
On the active CPU;
Verify that one of the MS units is loaded with a BCS+n compatible load. Load versions for both units is displayed. A message that contains the inactive CM load version is also displayed with the result of the comparison (passed/failed).

MATE_MEM_CHECK, Matemchk
On the inactive CPU;
Test the memory before allowing SWACT.
PRESWACT will wait 30 minutes for a response.

POSTSWACT steps

The following steps are executed in sequence to clean up the environment after the Swact. This is not a complete list of processes run by POSTSWACT; the steps will be different depending on the BCS level and on certain features being present in the office.

Step Name
=====

DIRP_RECOVERY	- Reads DIRP_REC file to recover AMA.
HARDWARE_CHECK	- Scans all hardware that is addressed by STATUSUPDATE/STATUSCHECK to ensure no hardware is MANB, SYSB or CBSY.
DIRP_AUDIT	- Audits all DIRP subsystems to clear alarms.
CHECK_BILL_SERVER	- Sets internal bool, used to track whether or not bill server was active, to false.
CLEAR_INVALID_REGS	- Performs the equivalent of a CLRINVREG of the REGISTER level.
6X45_PECS	- Performs the equivalent of the PECS6X45 CI command.
MATCH_ALL_UPD	- Performs the equivalent of a MATCHALL UPDATE from the PATCHER level.
SLU_INSTALL	- Performs the equivalent of a SLUINSTALL on these tables: TRA250I1, TRA125I1, TRA125I2, and

ENG640I1.

- RESTORE_DTDETECT - Restart DTDETECT if it was started in the old load.
- RESUME_ATT - Resumes scheduled ATT testing.
- BEGIN_TESTING - Informs site that testing should begin. POSTSWACT should stop after this step.
- RESET_OFFICE_TUPLES - Resets the following office parameters to their original values:
NODEREXCONTROL
GUARANTEED_TERMINAL_CPU_SHARE
- RESET_SMDR - Resets office parameter SMDR_LOG_RPT to original value.
- RESET_SWCT_AMA - Resets office parameter SWCT_AMA_PREBILLING to original value
- RESET_AMA_RPT - Resets office parameter SPECIAL_AMA_REPORT to original value
- RESET_AMAB - Resets tuple AMAOPTS of table AMAOPTS to original value.
- ENABLE_AUTOIMAGE - Re-enables Auto Image feature.
- DISPLAY_SWACT_TIME - Displays the total CC Warm Swact time in minutes and seconds.
- TRUNK_RESTORE - Sets trunks which were MB or RES back to their original states.
- RESTORE_MB_LINES - Uses MB\$LNS to set lines which were MB back to MB.
- RTS_INI_TRUNKS - RTSs all trunks which are INI after the SWACT.
- RESTORE_MB_TOPSMP - Sets TOPSMP which were MB before the SWACT back to MB.
- DEVICE_SCAN - Scans all DDUs to make sure they are up and lists all DDU volumes

and SFDEV to find all patches.

SLM_DISK_SCAN - Same as DEVICE_SCAN except scans
SLM disk volumes.

CLEANUP_SFDEV_FILES - Erases the files used by the
ONP process and also erase patches
from SFDEV.

CC Warm SWACT summary

SWitch of ACTivity (SWACT) is a generic term referring to a process by which activity is switched between two processors. CC warm SWACT is a SWACT where special software is executed to ensure the degradation in service provided by a switch is minimized when switching activity between the CPUs in the core of the switch (e.g., CM in Supernode).

Note: Only "simple" 2-port and echo calls that are in a stable talking state (that is, not in a transition state such as dialing) will survive a CC warm SWACT. Survival means that the call is kept up until the next signaling message is received (hopefully, for example, a terminate message, but on any other message as well, such as an attempt to use the conference feature). See *Appendix B* for sample call scripts and a procedure for testing call survivability over a CC warm SWACT.

The three parts in this section are divided as follows:

1. Explanation of CC warm SWACT and its major steps
2. Explanation of CC warm SWACT commands
3. Explanation of CC warm SWACT logs

CC Warm SWACT Steps

CC warm SWACT is a method by which a new software load can be efficiently activated in a DMS-100F switch. It ensures a controlled activity switch while minimizing degradation of service to the subscriber. To achieve this goal the process performs the following steps.

- Precheck to ensure the environment is right for the intent (e.g., switch is out of sync and inactive side is not jammed)
- Establish communication between the two CPUs
- Obtain required semi-dynamic data from the active CPU and transfer it to the inactive CPU
- Setup and allocate required resources to transfer dynamic data (e.g., originating and terminating party of calls being supported)
- Stop call processing. Freeze everything so nothing can change while activity is being switched
- Obtain and transfer all dynamic data
- SWitch ACTivity from the active CPU to the inactive CPU
- Perform additional checking to ensure sanity of new CPU and initiate recovery
- Insert the dynamic data that was transferred before the SWACT

- Resume call processing
- Cleanup and deallocate any resources used to execute the CC warm SWACT

CC warm SWACT Commands

The commands required to perform/monitor/report a CC warm SWACT are as follows.

SWCT (BCS32 or lower)-directory where all commands for CC warm SWACT may be found. User must be in the BCSUPDATE directory to go to this directory in BCS31 and BCS32, i.e., BCSUPDATE;SWCT

System Response: Prompt changes to SWCT:

SWACTCI (BCS33 and higher)-same as SWCT but was changed in BCS33 to distinguish CC warm SWACT from XPM SWACT.

System Response: Prompt changes to SWACTCI.

QUIT-gracefully exits SWCT/SWACTCI CI increment.

System Response: Prompt returns to previous state.

FORCESWCT/FORCESWACT-displays, enables or disables the ability for the newly active CPU to switch activity back to the previously active CPU if an abnormal condition exists (more than 10% of PMs on the newly active side are not OK). FORCESWCT for BCS32 or lower. FORCESWACT for BCS33 and higher.

Optional parameter:

- no parameter queries the status of FORCESWCT/FORCESWACT (IN EFFECT or NOT IN EFFECT is displayed).
- ON forces activity to stay on the newly active CPU even if an abnormal condition exists. This is the default setting.
- OFF allows activity to switch back if the abnormal condition exists. This should not be used unless the user definitely does not want to stay on the newly active CPU to correct problems, etc.

System Response: Log is produced when ON/OFF optional parameter is used (SWCT104).

LOADEXECS-displays, enables or disables the exec loading process which occurs after a CC warm SWACT to download new execs to the PMs for call processing. This command has been obsoleted in BCS35 or greater.

Optional parameter:

- no parameter queries the status of LOADEXECS (ENABLED or DISABLED is displayed).
- ON enables exec loading. This is the default setting and is required when performing a CC warm SWACT between different BCSs, i.e., BCSn -> BCSn+, BCSn+ -> BCSn.
- OFF disables exec loading after CC warm SWACT. This should not be used unless the user definitely understands the implications of not downloading execs to PMs after a CC warm SWACT.

System Response: Log is produced when ON/OFF optional parameter is used (SWCT104).

DISP/DISPLAY-displays information regarding CC warm SWACT. DISP in BCS30 or lower. DISPLAY in BCS31 and higher.

Optional parameter:

- BADNODES will display all hardware devices whose status is NOT OK or OFFLINE on the active side of the switch.
- MISMATCH displays mismatches found from comparing device statuses between the active side and the inactive side of the switch.
- SWCTTIME (SWACTTIME in BCS35 and higher) displays all times collected for CC warm SWACT (SWCT101 time, EXECTIME, RECETIME).
- ALARM has been obsoleted in BCS33 and beyond.

System Response: Information is displayed to terminal.

QUERYSWACT-this command checks the office configuration to determine which CC warm SWACT command (RESTARTSWACT or NORESTARTSWACT) should be used.

System Response: If the office supports NORESTARTSWACT the response is as follows:

'NORESTARTSWACT is recommended for initiating a CC Warm SWACT. Further checking will be done when SWACT is invoked.'

otherwise the following message is displayed:

'RESTARTSWACT must be used for initiating a CC Warm SWACT.'

NORESTARTSWACT-this command executes the CC warm SWACT process and performs all of the necessary prechecks to activate the CC warm SWACT. PRESWACT steps of BCSUPDATE must all be executed successfully before a NORESTARTSWACT will be allowed. This command is valid only in BCS36 and greater.

Optional parameter:

- **NOMATCH** will disable the matching of device statuses between the active and inactive sides of the switch. **WARNING:** Do not use this option unless there is no other choice. Device statuses after the CC warm SWACT are not guaranteed hence several devices may be out of service after the CC warm SWACT.

System Response: The steps being executed as part of the CC warm SWACT will be displayed to the terminal and logs will be generated (SWCT102). SWACT will occur. If a NORESTARTSWACT cannot be executed in this office the following message will be displayed:

'RESTARTSWACT should be used instead of NORESTARTSWACT.
NORESTARTSWACT command aborted.'

RESTARTSWCT/RESTARTSWACT-this command executes the CC warm SWACT process and performs all of the necessary prechecks to activate the CC warm SWACT. In BCS31 and greater the PRESWACT steps of BCSUPDATE must all be executed successfully before a RESTARTSWCT/RESTARTSWACT will be allowed. RESTARTSWCT in BCS32 and lower. RESTARTSWACT in BCS33 and higher.

Optional parameter:

- **NOMATCH** will disable the matching of device statuses between the active and inactive sides of the switch. **WARNING:** Do not use this option unless there is no other choice. Device statuses after the CC warm SWACT are not guaranteed hence several devices may be out of service after the CC warm SWACT.

System Response: The steps being executed as part of the CC warm SWACT will be displayed to the terminal and logs will be generated (SWCT102). SWACT will occur followed by a COLD restart. If a NORESTARTSWACT is supported by this office the following message will be displayed which requires a YES/NO response from the user:

'NORESTARTSWACT should be used instead of RESTARTSWACT.
Do you wish to continue with RESTARTSWACT?'

ABORTSWCT/ABORTSWACT-this command executes the CC warm SWACT process and performs all of the necessary prechecks to activate the CC warm SWACT. In BCS31 and lower the RESTARTSWCT command should be used in place of this command. This command does not require PRESWACT to be performed before execution. This command should only be used when aborting a BCS application. ABORTSWCT in BCS32 and lower. ABORTSWACT in BCS33 and higher.

Optional parameter:

- **NOMATCH** will disable the matching of device statuses between the active and inactive sides of the switch. **WARNING:** Do not use this option unless there is no other choice. Device statuses after the CC warm SWACT are not guaranteed hence several devices may be out of service after the CC warm SWACT.
- **NOCHECK** will override the requirement for all devices to be OK before a CC warm SWACT. Therefore a device can be CBSY for instance and the CC warm SWACT will still be allowed. Available in BCS34 and higher. **WARNING:** Use this option only as a last choice after exploring other choices.

System Response: The steps being executed as part of the CC warm SWACT will be displayed to the terminal and logs will be generated (SWCT102). SWACT will occur followed by COLD restart.

STATUSCHECK-this command matches statuses for devices between the active and inactive side of the switch. It verifies that the STATUSUPDATE step executed in PRESWACT was successful.

System Response: A SWCT109 log is generated for each type of device that has passed the STATUSCHECK process. A SWCT110 log is generated for each type of device that has failed the STATUSCHECK process. Each device of the failed type that mismatches is displayed to the terminal.

MODCHECK-this command checks for necessary CC warm SWACT application modules on the inactive side and outputs any modules which are missing. Missing modules will cause the CC warm SWACT to fail and therefore must be investigated or overridden via the OVERRIDE option to MODCHECK. This command is valid in BCS32 and beyond.

Optional parameter:

- no parameter invokes checking for all CC warm SWACT application modules.

- **OVERRIDE** will disable the checking for requested missing modules and hence disable the functions performed by those CC warm SWACT applications.
- **RESET** will enable the checking for requested missing modules and hence enable the functions performed by those CC warm SWACT applications.

System Response: SWCT113 log will be output if MODCHECK is successful. SWCT114 log will be output if MODCHECK fails. SWCT115 log will be for every missing module. SWCT116 log will be output for every module for which the OVERRIDE/RESET options are used.

RESUMEPM-should not be used. This is a very dangerous command and should only be used by qualified personnel.

System Response: Some PMs may go SYSB. Do not use this command.

RESTOREXECs-this command will load execs to any or all PM types.

CAUTION
This command should only be used in emergency situations by qualified personnel.

Non optional parameter:

- <PM_TYPE> {TM, LM, DCM, RLM, XPM, ALL}

System Response: PM type(s) chosen will have execs loaded. No response to terminal.

CC warm SWACT Logs

SWCT101-Information log only. This log does not indicate a service affecting problem. Displays the WARM SWACT time.

SWCT102-Information log only. This log does not indicate a service affecting problem. Indicates which CC warm SWACT step successfully completed.

SWCT103-Trouble log. This log indicates a service affecting problem and must be investigated in order for the CC warm SWACT to complete successfully. Indicates which CC warm SWACT step failed.

SWCT104-Information log only. This log does not indicate a service affecting problem. Indicates a condition or state of the CC warm SWACT process.

SWCT105-Trouble log. This log indicates a service affecting problem and must be investigated in order for the CC warm SWACT to complete successfully. Indicates why a CC warm SWACT step failed.

SWCT106-Trouble log. This log indicates a service affecting problem and must be investigated in order for the CC warm SWACT to complete successfully. Indicates the underlying problem of why a CC warm SWACT step failed.

SWCT107-Information log only. This log does not indicate a service affecting problem. Indicates that exec loading occurred successfully to the reported PM type. This log has been obsoleted in BCS35 and beyond.

SWCT108-Trouble log. This log indicates a service affecting problem and must be investigated in order for the CC warm SWACT to complete successfully. Indicates that exec loading failed to the reported PM type. This log has been obsoleted in BCS35 and beyond.

SWCT109-Information log only. This log does not indicate a service affecting problem. Indicates that a STATUSCHECK application passed.

SWCT110-Trouble log. This log indicates a service affecting problem and must be investigated in order for the CC warm SWACT to complete successfully. Indicates that a STATUSCHECK application failed.

SWCT111-Information log only. This log does not indicate a service affecting problem. Indicates that the PRELOAD_EXECS step of PRESWACT completed successfully.

SWCT112-Trouble log. This log indicates a service affecting problem and must be investigated in order for the CC warm SWACT to complete successfully. Indicates that PRELOAD_EXECS failed for an XPM, one log will be reported for every XPM that failed.

SWCT113-Information log only. This log does not indicate a service affecting problem. Indicates that the MODCHECK command passed successfully.

SWCT114-Trouble log. This log indicates a service affecting problem and must be investigated in order for the CC warm SWACT to complete successfully. Indicates that the MODCHECK command failed.

SWCT115-Trouble log. This log indicates a service affecting problem and must be investigated in order for the CC warm SWACT to complete successfully. Indicates which modules are missing on the inactive side according to the MODCHECK command, one log will reported for every missing module.

SWCT116-Information log only. This log does not indicate a service affecting problem. Indicates that a module has been OVERRIDDEN/RESET for checking by the MODCHECK command.

SWCT117-Information log only. This log does not indicate a service affecting problem. Displays information about the CC warm SWACT process.

Appendix B: Supplementary Procedures

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Procedure B-1
Loading the BCSTOOLS (continued)

CAUTION

Because DRCI is resident in BCS33 and higher, you are no longer required to unload and load the module (steps 6 and 8 below).

- 6** Only if from_BCS 32 and lower, unload module DRCI (if present).
 > UNLOAD DRCI
Enter YES to confirm the message, "Module DRCI belongs to Package DRCISUB."
 > QUERY DRCI *{to verify unloaded}*
-
- 7** Put up the new BCSTOOLS tape.
 > MOUNT <x> ;TLIST T<x> *{x is the MTD number}*
-
- 8** If from_BCS 32 and lower, load module DRCI if it was unloaded above.
 > LOAD DRCI
 > QUERY DRCI *{to verify loaded}*
-
- 9** > COPY DATA_DUMP SFDEV *{only needed if to_BCS 31 or lower}*
-
- 10** > COPY ONPMODS SFDEV
-
- 11** > LISTSF ALL *{to verify execs are in storefile}*
-
- 12** > PRIORITY ON
-
- 13** > DRCI
-
- 14** > RUNEXEC ONPMODS
Answer "YES" if asked, "Do you wish to load One Night D/R application modules?"

Answer "OK" to prompt, "Enter OK after the BCS TOOLS tape has been listed."

-continued-

Procedure B-1
Loading the BCSTOOLS (continued)

15 The unloading/loading process will run to completion.

Note: In some instances MOD158 logs may be generated periodically. These logs are the expected result of feature AL2236, and can occur for each module loaded by the ONPMODS process.

16 > DEMOUNT T<x>

17 > DRCI QUIT

18 If from_BCS 26-29, ensure patch EWW08 is applied on the from_BCS load, then enter:

> SWCTCHK *{ensure test passes}*

19 > RECORD STOP ONTO <printer> *{if RECORD was started above}*

Procedure B-2**MATE_MEM_CHECK failure (PRESWACT)**

This procedure may be used to correct an error condition that may possibly be seen during a software delivery.

FROM BCS: 32 TO BCS: All

CONDITION: If you receive an error message as the result of the PRESWACT Runstep MATE_MEM_CHECK, then isolate the faulty memory card on the inactive (mate) side as follows.

CAUTION

Failure of this test is grounds for an immediate RESCHEDULE.
Its purpose is to prevent a SWACT to faulty hardware on the inactive side.

ACTION for NT40:

- 1 From the inactive-side terminal (via mateio) check for a CC102 log with a reason text of "CHECKSUM PARITY ON DATA STORE." The offending card will be identified in the log.

- 2 Also, the MAPCI status (inactive) will be updated with the offending memory card marked "f".

```
> MAPCI ; MTC ; CC ; DS
```

or

```
> MAPCI ; MTC ; CC ; PS
```

ACTION for SuperNode:

- 1 Go into LOGUTIL and extract any traps which may have occurred. You are interested in traps of reason ECC error, or SRAM parity. You may also see FIR INTERRUPT PENDING.

- 2 To determine which card the failure is on, you will have to decode the SRAM Status Register field, found on the line following the "Peripheral interrupt mask" line. The value of this register depends upon the kind of 9X13 card equipped. If the CPU board is a 9X13Hx pt 9X13Gx, and the value is NOT D180, then the CPU board is at fault. For all other CPU boards, if the value is NOT 0000, then the CPU board is at fault.

-continued-

Procedure B-2

MATE_MEM_CHECK failure (continued)

- 3 If this does not isolate the error to the CPU board, then the "Matcher address" field has to be decoded.

- 4 If the address specified is in the 40000-BFFFF range, then the CPU board is at fault.

- 5 If the address specified is in the 400000-1FFFFFF range, then the problem is on a memory card and can be decoded by the TRNSL command in the memory map level:

```
> MAPCI NODISP;MTC;CM;MEMORY  
> TRNSL ADDRESS #<page> #<offset>
```

- 6 If the memory which is faulty is a spare module, then there is no way to determine which card is at fault, but it will be one of the memory modules marked as spare. You can determine which cards have spare modules by typing, in the memory level:

```
> TRNSL CARD <cpu_number> ALL
```

Procedure B-3
AFT MOP

This procedure may be used to PREVENT an error condition that may possibly be seen during a software delivery.

FROM BCS: 29 TO BCS: 34

CONDITION: The following workaround is only specific to AFT running on TCP or SIPC.

ACTION:**1** After MOVEBCS:

Delete AFT datafills from RASLAPPL and GASINFO tables on the INACTIVE (new) side. Make sure to keep a copy of the datafills because it needs to be re-entered later on.

To delete AFT datafill, perform STOPAFT on AFT sessions:

- a. Type AFT to get in AFTCI level.
 - b. STOPAFT <aft_session>
where <aft_session> is the NETCON id in RASLAPPL table.
 - c. Remove tuples from GASINFO first.
 - d. Then remove tuples from RASLAPPL table.
-

2 Pre-SWACT:

On the old side, perform the following steps.

- a. Type AFT to get in AFTCI level.
 - b. Perform STOPAFT command. This ensures that AFT will not attempt to transfer any new files.
 - c. Rotate DIRP volumes for CDR and OM. The purpose of rotating the volumes is to avoid re-transferring of a big file since AFT does not have information that would enable it to start from the last transferred block prior to SWACT.
-

-continued-

Procedure B-3
AFT MOP (continued)

- d. Wait until the current transfers (CDR and OM) are completed.
 - Perform QUERYAFT to check that both CDR and OM files have been transferred. This means the rotated CDR and OM files should disappear from the QUERYAFT display and QUERYAFT should show that AFT is at the IDLING state. AFT log should also indicate that file transfer has been completed.
 - If AFT is at IDLING state but the rotated file is still in the QUERYAFT display, it means there has been a Partial File Transfer (PFT). What one should do is to STARTAFT <aft_session>. Then do QUERYAFT. Wait until the AFT state changes to anything other than IDLING (takes about one minute in BCS33, about 15 seconds in BC34), then do STOPAFT <aft_session>.
-

3 Post-SWACT:

- a. Check DIRP status:
 - MAPCI;MTC;IOD;DIRP
 - QUERY <subsystem>
 - b. Make sure active and standby volumes are mounted.
 - c. Since there is an issue over the timing of DIRP files (rotated during SWACT), wait until all 'U' files appear in table DIRPHOLD. AFT should not be datafilled until those files appear in the table. This will guarantee that files are not transferred out of order. The number of 'U' files appearing in table DIRPHOLD per stream should be equal to the number of files datafilled in table DIRPSSYS, field NUMFILES (assuming the same DIRP volumes were used before and after SWACT).
 - d. Re-datafill AFT into RASLAPPL and GASINFO tables.

Note: Do not perform STARTAFT manually. AFT should start up itself automatically after it is datafilled.
 - e. QUERYAFT <aft_session> will display a file directory with AFT status in about 5 minutes. File transfer will start in about another one minute. Then, AFT should be in SENDING state soon if everything proceeds normally. AFT, SST logs should be collected if AFT is having a problem resuming transfer activity.
-

Procedure B-4
Converting one PM to another

During a BCS application it is possible to change the key field LTCNAME from an LGC to an LTC. This would be done during the data transfer to eliminate having to delete and re-add the peripheral. Telco then is responsible to change the FRAMENAME, LOADNAME, and EXEC LINEUP information to meet their needs. This procedure should be used to accomplish this.

Do the following after the CC SWACT when you have converted one PM type to another PM type (for example, an LGC to LTC conversion).

1 **Telco/ACT** Busy the inactive unit of the peripheral to be reloaded.

2 Make appropriate changes in table LTCINV for the FRAMENAME, LOADNAME, and EXECs for the peripheral being modified.

3 Load, patch, and rts unit x nodatasync on the inactive unit.

4 Perform a cold swact to the newly loaded side.

5 Busy the newly inactive unit.

6 Set the patch set against that unit, load and perform a regular rts.

7 Repeat steps 1-6 for any remaining peripherals to be modified.

Procedure B-5
CSC static data

All Cell Site Contollers (CSCs) need to have static data updated manually after the CC SWACT.

- 1 **Site/ACT** Bsy the inactive side on the CSC.

- 2 RTS the inactive side of the CSC.

- 3 WARMSWACT OFF.

- 4 Perform a swact on the CSC (whicRecover echo cancellerthe inactive side on the CSC).

- 6 RTS the inactive side of the CSC.

- 7 Once both units of the CSC are in-service, do WARMSWACT ON.

Procedure B-6
Recover echo canceller modules (ECMs)

For to_BCS 34 with feature package NTXK97AA (DMS300 EC Control): as soon as you log into the switch following the CC SWACT check table ECHINV, if the table is not empty do the following.

Note: For to_BCS 35 and 36 the ECMs will be set SYSB over the CC SWACT but will be automatically recovered within 5 minutes. Echo cancellation on existing calls will not be affected, but new calls will not have cancellation applied until they recover InSv. You may set them InSv manually if required (see below command) but you will terminate echo cancellation on existing calls.

- 1** **App/ACT** > MAPCI ; MTC ; EXT ; EQUIP

- 2** > POST ALL ECHOCAN

- 3** > BSY ALL ; RTS ALL

Procedure B-7
MATE IMAGE capture

For SuperNode only the following procedure for dumping an inactive (mate) image may be useful in an abort situation or whenever an image of the inactive CM is required.

When dumping a mate image of a DATAXFER'ed load it is important to realize that the image you are taking will have all peripherals in an OFFL state; therefore, this image is not BOOTABLE as it will not have the minimum configuration of at least one IOC and one TERMDEV in an "IN-SERVICE" state. To avoid this problem we will be RTS'ing the minimum configuration manually.

SuperNode only

- 1 **App/ACT** On the ACTIVE side ensure that patch MAP01 has been applied if the office is at BCS 26, 27 or 28.

- 2 **ACT** Determine which SLM volume to use to dump the image.

```
> MATELINK RTS;MCR RTS (if necessary)
```

```
> DISKUT
```

```
> LF S00DIMAGE
```

Lists the volume on which you wish to put the image

- 3 **ACT** From the active side enter MATEIO, and MATEBIND the SLM volume you have chosen. See the example below.

```
> MATEIO
```

```
> MATEBIND JJ S00DIMAGE {example}
```

- 4 **ACT** > MATELOG <device_name>

- 5 **INACT** On the Mate side LOGIN as OPERATOR ORERATOR.

- 6 **INACT** Mate> MAPCI;MTC;IOD;IOC 0;BSY IOC
Mate MAPCI will not display.

- 7 **INACT** On the Mate side BSY and RTS the same location that the MAP is datafilled on the active side (example: CARD 2 PORT 0;BSY 0;RTS 0).
The RTS will fail, but this is expected.

-continued-

Procedure B-7
MATE IMAGE capture (continued)**8 INACT**

Mate> QUIT MAPCI

Mate> PRINT MATEIODIR

You should see the file JJ in MATEIODIR.

9 INACT From the inactive side enter MATEIO, and DUMP the inactive (Mate) image. See the example below.

Mate> MATEIO

Mate> DUMP IMAGE JJ ACTIVE RETAIN NODE CM *{example}*

This command will give a couple of messages about not being able to translate the IOC devices-ignore the messages.

10 ACT When image is complete, backup the file to tape. You will only have a CM load.

Testing call survivability over a CC warm SWACT

This section provides sample call scripts and a procedure for testing call survivability over a CC warm SWACT. These are provided as guidelines for the testing of calls being supported over the CC warm SWACT.

Sample call scripts for testing call survivability over a CC warm SWACT

1. Verify ISDN calls:

line (KSET-Disp M5317T) -> trunk -> line (KSET-Disp M5209T)

(e.g., 968-xxxx ---> 6-456-xxxx)

line (PPHONE-Disp M5317T) -> trunk -> line (1FR-Disp Maestral)

(e.g., 968-xxxx ---> 9-969-xxxx)

line (KSET-Disp M5317T) -> trunk -> line (PPHONE-Meridan Bus.)

(e.g., 968-xxxx ---> 9-1-819-456-xxxx)

line (KSET-Disp M5317T) -> line (KSET-PSET)

(e.g., 968-xxxx ---> 968-xxxx)

line (BRAMFT set) -> line (BRAFS set)

(e.g., 968-xxxx ---> 968-xxxx)

line (1FR) -> line (BRAKS set)

(e.g., 968-xxxx ---> 968-xxxx)

2. Verify regular POTS calls:

line (PPHONE) -> trunk -> line (1FR)

(e.g., 969-xxxx ---> 9-1-514-970-xxxx)

line (1FR) -> line (1FR)

(e.g., 969-xxxx ---> 969-xxxx)

3. Verify CMS calls:

line (1FR) -> line (1FR)

(e.g., 969-xxxx ---> 969-xxxx)

4. Verify use of different trunk types:

line (1FR) -> PTS trunk -> line (1FR)

(e.g., 968-xxxx ---> 9-969-xxxx)

line (1FR) -> ISUP trunk (all variants supported by office)

-> line (KSET-Disp M5209T)

(e.g., 968-xxxx ---> 6-456-xxxx)

5. Verify use of different PM types:

line (LM) -> line (RLM)

(e.g., 969-xxxx ---> 969-xxxx)

line (LCM) -> line (RLCM)

(e.g., 969-xxxx ---> 969-xxxx)

Procedure for testing call survivability over a CC warm SWACT**1. Ensure that the best possible mix of the above call scripts are used for the following procedure.**

2. Establish call.

Just before the CC warm SWACT perform the following:

On the originating set:

- Take handset off hook and dial the desired number
- Wait for terminating set to pick up
- Ensure that a voice path has been established by blowing into phone on originating set and listening for the blowing on the terminating set

On the terminating set:

- Wait for ringing
- Take handset off hook
- Ensure that a voice path has been established by blowing into phone on terminating set and listening for the blowing on the originating set

Leave both handsets offhook

Note: Only stable (in a talking state-not in transition like dialing or feature activation mode) two port calls are maintained over CC warm SWACT. Any call which involves a feature/extension data block or service circuit will not be maintained (e.g., call waiting, call forwarding, conference call).

3. Testing call

Right after the new CPU takes activity (i.e., during the restart or recovery sequence on the newly active CPU) perform the following:

On the originating set:

- Ensure that a voice path has been maintained by blowing into phone on originating set and listening for the blowing on the terminating set

On the terminating set:

- Ensure that a voice path has been maintained by blowing into phone on terminating set and listening for the blowing on the originating set
-

Leave both handsets offhook.

As soon as you are able to log into the switch (i.e., once A1 is flashing) perform the following sequence:

On the originating set:

- Ensure that a voice path has been maintained by blowing into phone on originating set and listening for the blowing on the terminating set

On the terminating set:

- Ensure that a voice path has been maintained by blowing into phone on terminating set and listening for the blowing on the originating set

Leave both handsets offhook

Once the SWCT101 log is issued (i.e., SWACT is done and dial tone has been re-established) perform the following sequence:

On the originating set:

- Ensure that a voice path has been maintained by blowing into phone on originating set and listening for the blowing on the terminating set

On the terminating set:

- Ensure that a voice path has been maintained by blowing into phone on terminating set and listening for the blowing on the originating set

Place both handsets on hook (i.e., terminate call).

Note: Any activation of a feature on a call maintained over CC warm SWACT will cause the call to be dropped (e.g., a call maintained over CC warm SWACT cannot activate a conference call, cannot activate call forwarding, cannot come out of hands-free mode, cannot be put on hold etc. without causing the call to be torn down).

4. Ensure call processing

Re-establish call as described in Step 1.

If at any time during this procedure any of the following conditions exist: one-way speech path, no dial tone, no speech path, constant ringing, no ringing, crosstalk, busy signal-perform the following actions:

- a. Check hardware involved for faults (e.g., check set, line card, ring generator, etc.).
- b. Post line or trunk at MAP position and confirm proper state or transition of state is set (e.g., if supposed to be in talking mode ensure both the originating and terminating set show CPB, when you put handset onhook the state should change from CPB to IDL).
- c. Obtain a QDN for both the originating and terminating set.
- d. Obtain a TRAVER for the call between the originating and terminating set.
- e. Collect SWCT, ENET, NET, NETM, ENCP, PM, TRK and LINE logs from both sides of the switch (i.e., both active and inactive CPU).

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Appendix C: Test Call Scripts

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BCS testing procedure

The purpose of this section is to provide a test plan for the verification of the new software release. The tests are sequenced to ensure switch sanity and call processing stability.

The test plan consists of generic tests to be "datafilled" by the Telco/carrier site as applicable for the particular site (calling number, called number, and test results). Space is provided for the site to add additional tests as required.

Immediately following the SWACT the site should initiate testing based on the guidelines provided.

The *Critical call processing tests* section provides detailed call scripts for critical testing. Again, these are generic tests that should be tailored to a particular office.

Following that, *AMA verification tests* (either NT or BellCore formats) and *Metering verification tests* should be executed for the appropriate sites.

When executing the *Critical feature tests* it is the responsibility of the Telco/Carrier to ensure that service to high profile customers (for example: 911, police, fire, hospitals, and radio stations) is fully restored.

The testing can be carried out in the following sequence:

- *Critical call processing tests* section is to be completed in the first 30 minutes.
- *AMA verification tests* section is to be initiated immediately after and in conjunction with *Critical call processing tests*. This section is comprised of three subsections:
 - *Standard AMA tests using NT billing record formats*
 - *Standard AMA tests using BellCore AMA formats*
 - *Metering verification tests* section
- *Critical feature tests* section is to be completed by 06:00 hours.
- *Non-Critical tests* section is to be completed by 09:00 hours.

Critical call processing tests
DMS-100 critical call processing tests

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Check for dial tone on all LM's			
2	Verify all EAS outgoing routes			
3	Verify CAMA route for ANI 1&2 party			
4	Verify local tandem routes			
5	Verify '0' minus route			
6	Verify '0' plus route			
7	Verify '0' plus route using DTMF for ACCS features			
8	Verify '0' plus route using DP for operator access (no ACCS features)			
9	Verify DDO route			
10	Verify directory assistance (DA) route			
11	Verify ONI 1-7, 1-10 digits			

DMS-100 critical call processing tests (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
12	Verify critical PBX routes (i.e. hospitals, etc.)			
13	Verify service CODE routes (i.e. 511, 911 etc.)			
14	Verify all switcher announcements, 60T, 120T			
15	Verify TOLL COMP (DTS) route			
16	Verify INC EAS routes			
17	Verify IFR intra-office call			
18	RLM tests: <ul style="list-style-type: none"> a) EAS outgoing (one route) b) '0' plus/minus c) CAMA ANI d) IFR INTRA RLM 			
19	Verify operator intercept route			

DMS-200 critical call processing tests

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Verify all incoming and outgoing intertoll routes			
2	Verify all toll COMP(DTS) routes			
3	Verify all machine announcements			
4	Verify incoming CAMA routes			
5	Verify ONI and ANIFAIL CAMA calls go to CAMA positions and complete			

**AOSS critical call processing test
(Auxiliary Operator Services System)**

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Return an AOSS position to service (BSY, RTS, etc.)			
2	Verify a DMODEM is attached to the data trunk of the position (AOSSPOSDATA)			
3	Verify login to an AOSSPOS with a valid operator no			
4	From a MF AOSS DA ANI type trunk place a 411 ANI call to AOSS (seizure - KP - 0 - 7D ANISPILL - ST)			
5	Verify call arrival tone display of 411, and correct booknumber at AOSS position. Enter a requested number and key 'POS RLS'.			
6	From an AOSS POS DA ONI type trunk place a 411 ONI call to AOSS (seizure only)			

AOSS critical call processing test (continued)

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TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
---------	--------------------------	-------------------------------	------------------------	-------------

7	Verify call arrival tone, display of 411, and CLG# header. Enter a requested number and 'POS RLS'. Verify call is not released until a valid calling number is entered.			
---	---	--	--	--

Datapath critical call processing test (NTX250 Datapath-Basic)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	At a data unit, press DN & verify: a) audible beep is returned when key is pressed b) DN lamp on solid c) dial tone is returned		NOTE: Ensure that baud rate switches on both data units are set to 9600 asynchronous	
2	Press Volume/UP & Volume/DOWN keys & verify volume increases and decreases			
3	Key in digits corresponding to the directory number of another data unit. Verify dial tone breaks and audible beep returned whenever a key is pressed.			
4	Verify audible ringing/warbling is returned to both originating and terminating data units			

Datapath critical call processing test (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
---------	--------------------------	-------------------------------	------------------------	-------------

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- 5 Verify while ringing/warbling is taking place:
 - a) originator's DN lamp is on solid
 - b) terminator's DN lamp is flashing
 - c) NET CONNECT lamps on both data units flash

 - 6 Press terminating DN key and verify:
 - a) ring/warble ceases on both data units
 - b) both DN lamps are on solid
 - c) both NET CONNECT lamps on solid
 - d) a 2-way data path exists between data units (eg., send data from data terminal on one DU to another data terminal on the other DU)
 - e) line state at LTP indicates CPB
-

Datapath critical call processing test (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
---------	--------------------------	-------------------------------	------------------------	-------------

- 7 Press terminator's RLS key and verify:
 - a) line state returns to idle
 - b) 2-way data path no longer exists
-

c) both data units
return to original
idle state
(eg., DTR and
POWER/SYNC lit)

8 Repeat steps 1 to
7, only RLS from
originator

9 Repeat steps 1 to
8, only set up
call in opposite
direction

10 On a data unit set
the AUTO ANSWER
switch to AUTO

Datapath critical call processing test (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
---------	--------------------------	-------------------------------	------------------------	-------------

11	Terminate a call at that data unit and verify: a) it warbles momentarily b) DN lamp is lit c) warbling ceases d) call is automa- tically answered, NET CONNECT lamp is lit solid, and 2-way data path exists			
----	--	--	--	--

12	Repeat last two steps for several SYNCHRONOUS and ASYNCHRONOUS baud rate settings			
----	---	--	--	--

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- 13 If BERT (Bit Error Rate Test) equipment is available, verify that acceptable error rate is obtained (eg., 10×10^{-7})
-

**Equal Access critical call processing test
(NTX186 Equal Access End Office)**

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Verify local tandem routes to the IC's point of presence are operational			
2	Verify direct ATC routes to the IC's point of presence are operational			
3	Complete a 10XXX-0 call to the appropriate IC operator route			
4	Complete a 10XXX-0 -7 digit intralata intrastate call (if intralata calls are allowed to complete)			
5	Complete a 10XXX-0 -7 digit interlata intrastate call			
6	Complete a 10XXX-0 -10 digit interlata intrastate call			
7	Complete a 10XXX-0 -10 digit interlata interstate call			
8	Complete a 10XXX - 01 - international call			

Gateway critical call processing tests

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Verify all (idle) incoming and outgoing R1 trunks			
2	Verify all (idle) incoming and outgoing N5 trunks			
3	Verify all (idle) incoming and outgoing N6 trunks			
4	Ensure all tones, group alarms and announcements function			
5	Verify proper link management functions on N6			
6	Verify proper trunk states and trunk recovery on call processing			
7	Verify proper trunk states and trunk recovery on CCITT #6			
8	Ensure calls may be processed from R1 to N5, N5 to R1 and R1 to R1			
9	Ensure calls may be processed from N5 to N5 (transit)			

Gateway critical call processing tests (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
10	Ensure calls may be processed from N6 to N5, N6 to R1, N5 to N6, R1 to N6, and N6 to N6			
11	Verify warm restart effect on trunk states ie. trunks in CP, speech, idle, setup, takedown stages			
12	Verify cold restart effect on trunk states ie. trunks in CP, speech, idle, setup, takedown stages			

**DMS-TOPS critical call processing tests
(Traffic Operator Position System, NTX030 TOPS Call Processing
Features)**

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
---------	--------------------------	-------------------------------	------------------------	-------------

- 1 Return 1 position to service (i.e. INB, MB, etc.)
 - 2 Verify DMODEM is attached to data trunk of position
 - 3 Return all HOBIC devices to service (HOBIC, AQ, VQ and record)
 - 4 Verify each device has DMODEM attached
 - 5 From MF combined TOPS trunk, place 1-ANI call (KP-NPA-NNX-7D-ST2P-KP-0-7D ANI SPILL - ST)
 - 6 Verify call terminates OK and speech path is good
 - 7 From MF combined TOPS trunk, place 0- ANI call (KP - NPA-NNX-7D-ST3P-KP-0-7D ANI SPILL - ST)
-

DMS-TOPS critical call processing tests (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
---------	--------------------------	-------------------------------	------------------------	-------------

8 Call appears as 0-call. Wait for call to terminate & key 'RLS FWD' & 'START' Outgoing portion drops and re-outpulses

9 Verify call can be handled & floated by operator. Verify call terminates OK

10 From MF combined TOPS trunk, place 0- ONI call (KP-ST3P-KP-1-ST)

11 Call appears as 0 call. Verify call can be handled properly by the operator and terminates OK.

12 Repeat step 10 & 11 from dedicated non-coin trunk

13 From MF combined TOPS trunk, place 1- HOTEL call (KP-NPA-NNX-7D-ST2P-KP-6 -7D ANI SPILL- ST)

Datapath critical call processing test (continued)

TEST NO	TEST DESCRIPTION OR CLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
---------	-------------------------	-------------------------------	------------------------	-------------

14 Call appears as 1- hotel call. Verify

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it be handled properly by the operator and terminates OK. On completion of call, HOBIC devices should record it.

15 Repeat steps 13 & 14 from a dedicated hotel trunk.

16 From MF combined TOPS trunk, place 0- COIN call (KP-NPA-NNX-7D STP-KP-0 -7D ANI SPILL- ST)

17 Call appears as 0-coin pre call. Verify it is handled properly by the operator and terminates OK.

18 Do flash recall from originator. Verify call comes back as 'RCL'. Key 'POS RLS'. Wait 3 mins. & ensure call arrives NFY 3

19 Repeat step 17 & 18 from dedicated coin trunk.

Datapath critical call processing test (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
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20 From the FM TTY, enable a transfer

(XA1)

21 Verify that:

- a) IC screen is updated to include transfer format
 - b) FM CRT screen is updated to include transfer format
 - c) FM TTY position status summary is updated to include transfer format (key P)
-

22 Key 'L' from T0 TTY. Verify a message is received at the TTY showing the logged in operators

DMS-250 critical call processing test

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Verify all service CCTS IDLE/INI STATE (ANNS, RCVRDGT, RCVRMF, RCVRATD, TTT, TTU, T102T)			
2	Verify all (IDLE) customer trunks (ONAL, ONAT, EANT) NO "PMB,CFL" states			
3	Verify all (IDLE) network trunks (IMT, DAL, DAL-TIE) NO "PMB,CFL" states			
4	Confirm EANT OFFNET call processing (ORIG 7D,10D W/ANS)			
5	Confirm EANT ONNET call processing (ORIG 7D,10D W/ANS)			
6	Confirm (ONAL,DAL) OFFNET call processing (7D, 10D W/ANS)			
7	Confirm (ONAL,DAL) ONNET call processing (7D, 10D W/ANS)			
8	Confirm IMT,ONAT W/ "SAT" call processing (ORIG W/SAT _ Y)			
9	Verify OCC billing record incrementing (DIRP: QUERRY OCC)			

DMS-250 critical call processing test (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
10	Ensure all tones, group alarms, and ANNMNTS operational			
11	Verify 6/7 digit AUTHCODE W/ACCSCRN (note CDR results)			
12	Verify speed number calls can process (7D, 10D - CDR REF)			
13	Confirm IDDD call originations and terminations W/ANS 7D, 10D ON/OFFNET			
14	*** TOPS REQMT *** Verify call routing I) ORIG ANI CALLS II) ORIG ONI CALLS			
15	*** TOPS REQMT *** Verify TOPS calls can be completed (7D,10D ON/OFFNET)			

DMS-MTX critical call processing test

TEST NO	TEST DESCRIPTION OR CLLI	FROM: TRUNK TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Verify all service CCTS IDLE/INI state (ANNS, RCVRS - DGT, MF, ATD, TTT, TTU, T102T)			
2	Verify all cell sites (INSV) no SYSB/MANB states			
3	*** MACPI-TTP level: set 'C'/P' trks that are "IDL" to "INB" status (these must be "SZD" state otherwise)			
4	Verify all RCU(S) (INSV) CCH, LCR, TAU and VCHS. no SYSB/MANB states			
5	Verify all (IDLE) customer trunks (MTX and ZONE) no "PMB,CFL" states			
6	Confirm MTX-BASIC call processing land to mobile mobile to land mobile to mobile (ORIG 7D,10D W/ANS)			
7	Verify AMA billing record incrementing (DIRP; QUERY AMA)			

DMS-MTX critical call processing test (continued)

TEST NO	TEST DESCRIPTION OR CLI	FROM: TRUNK TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
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8	Insure all tones, group alarms, and announcements are operational.			
---	--	--	--	--

DMS-100 International critical call processing tests

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Check for dial tone on all lcm's			
2	Verify Local Metered Call			
3	Verify National Metered Call			
4	Verify Intern. Metered Call			
5	Verify DIR. DIAL Queque (03)			
6	Verify DIR. DIAL Immed. (09)			
7	Verify directory assistance (DA) route (01)			
8	Verify critical PBX routes hospitals (77)			
9	Verify critical PBX routes fire (00)			
10	Verify service code routes Repair (02)			
11	Verify all switcher announcements, 60T, 120T			
12	Verify toll comp			

route

DMS-100 International critical call processing tests (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
---------	--------------------------	-------------------------------	------------------------	-------------

13 Verify inc routes

14 Verify IFR
intraoffice call

15 Check PS and DS

AMA verification tests

Automatic Messaging Accounting (AMA) verification tests provide test calls to ensure all aspects of the AMA feature function correctly.

Beginning with BCS 29 and higher BCSs, offices can be configured for AMA recording in the Bell Communications Research (BellCore) format. The Northern Telecom (NT) AMA format is used in many offices. Two versions of AMA verification tests are provided depending on the AMA format (NT AMA format or BellCore AMA format) used in the office. For more information on the two formats refer to:

- NTP 297-1001-128 (BellCore AMA format)
- NTP 297-1001-119 (NT AMA format)

Regardless of which format is used in the office the AMA verification tests for both AMA formats consists of the following:

- Series of test calls (call scripts) is made.
- An AMA program is used to dump the AMA tape or disk file containing the records for the test calls.
- The dumped AMA information is compared for each test call made.
- If the dumped AMA information is correct for each test call, the AMA feature is functioning properly.

Standard AMA tests using NT billing record formats

For the NT billing format a total of 30 call scripts have been established as a standard package. However, the Telco may add or delete call scripts based on job requirements and feature availability.

Before beginning the tests each call script should be filled with the calling and called telephone numbers plus the ANI spill when different from the calling number.

After the call scripts are completed, the AMA tape is printed using a non-resident program called AMADUMP. The AMA tape data entries are then compared.

Using the AMADUMP program, the following AMA tape entries should be verified for each call script (see NTP 297-1001-119 for a detailed explanation):

- | | |
|----------------------------|-------------------------------|
| 1. Entry code | 5. Answer Time (day and time) |
| 2. Information Digits | 6. Conversation Time |
| 3. Service Feature Code | 7. Called Number |
| 4. Event Information Digit | 8. Calling Number |

The following NOTES are provided for the following call scripts to indicate call set-up configuration, optional tests, etc.

- (1) This test is considered optional and to be executed at the Telco's discretion.
- (2) This test call is to originate from a NEE TTS 59B (BLUE BOX) or equivalent connected to a analog incoming Cama trunk.
- (3) This test call is to originate from any end office. To provide this it is suggested end office telephone lines be provided at the DMS toll office.
- (4) Call a telephone number that will not provide an answer condition.
- (5) Request directory assistance operator to disconnect first.
- (6) Obtain a special billing number from the traffic department.
- (7) SWAPS - system wide area paging system
- (8) Refer to the traffic equipment circular for a Multi Voice Com calling number and ANI id.
- (9) The 'call attempt feature' is turned on by table OFCPARM position NO_ANS_CALLS_ON_TAPE set to 'Y'.

Standard AMA tests using NT billing record formats

TEST CALL NO	CALL INFORMATION	Entry Code Digit	Info Digit	Serv Feat	Event Info	CAMA Susp	Call Dura-tion
1	STATION PAID DDD (Note 3) ani, origin. disconnect Called Number 1-____-____-____ Calling Number ____-____	00	20	00	00	no	15 sec
2	STATION PAID DDD (Note 3) ani, termin. disconnect Called Number 1-____-____-____ Calling Number ____-____	00	20	00	01	no	20 sec
3	INWATS (Note 3) ani, origin. disconnect Called Number 1-800-____-____ Calling Number ____-____	00	20	00	00	no	60 sec

Standard AMA tests using NT billing record formats (continued)

TEST NO	CALL INFORMATION	Entry Digit	Info Code Digit	Serv Digit	Event Feat	CAMA Info	Call Susp	Call Dura- tion
---------	------------------	-------------	-----------------	------------	------------	-----------	-----------	-----------------

4 SWAPS (Note 1,3)
ani, origin. disconnect 00 20 00 00 no 10 sec
Called Number 1-____-____-____
Calling Number ____-____

5 TWX (Note 1,2)
ani, origin. disconnect 08 20 00 00 no 15 sec
Called Number kp-610-____-____-st
Calling Number kp-0-____-____-st

6 SWAPS (Note 1,3)
oni, termin. disconnect 00 24 00 01 no 12 sec
Called Number 1-____-____-____
Calling Number ____-____

7 OUTWATS (Note 3)
ani, termin. disconnect 11 2 0 01 no 10 sec
Called Number 1-____-____-____
Calling Number ____-____

8 OUTWATS (Note 1,2)
ani fail, origin. disconnect 11 25 00 00 no 25 sec
Called Number kp-____-____-____-st
Calling Number kp-2-____-____-st

9 MULTI VOICE COM (Note 1,2,8)
ani, origin. disconnect 15 20 00 00 no 10 sec
Called Number kp-____-____-____-st
Calling Number kp-0-____-____-st

10 MULTI VOICE COM (Note 1,2,8)
ani fail, origin. disconnect 15 25 00 00 no 15 sec
Called Number kp-____-____-____-st
Calling Number kp-2-____-____-st

11 MULTI VOICE COM (Note 2)
oni, origin. disconnect 15 24 00 00 no 10 sec
Called Number kp-____-____-____-st

Calling Number kp-1-____-____-st

Standard AMA tests using NT billing record formats (continued)

TEST CALL NO	INFORMATION	Entry Code Digit	Info Digit	Serv Feat	Event Info	CAMA Susp	Call Dura-tion
--------------	-------------	------------------	------------	-----------	------------	-----------	----------------

12 STATION PAID DDD (Note 2)
 ani/service observed 00 30 00 00 no 10 sec
 origin. disconnect
 Called Number kp-____-____-____-st
 Calling Number kp-3-____-____-st

13 STATION PAID DDD (Note 2)
 ani fail/service observed 00 31 00 00 no 30 sec
 origin. disconnect
 Called Number kp-____-____-____-st
 Calling Number kp-5-____-____-st

14 STATION PAID DDD (Note 2)
 oni/service observed 00 34 00 00 no 25 sec
 origin. disconnect
 Called Number kp-____-____-____-st
 Calling Number kp-4-____-____-st

15 STATION PAID DDD (Note 3,4,9)
 ani, origin. disconnect 00 20 00 00 no 15 sec
 call attempt feat 'on' 02
 Called Number 1-____-____
 Calling Number ____-____

16 STATION PAID DDD (Note 3)
 ani, origin. disconnect 00 20 00 00 no 15 sec
 Called Number 1-555-1212
 Calling Number ____-____

17 STATION PAID DDD (Note 3,5)
 ani, termin. disconnect 00 20 00 01 no 15 sec
 Called Number 1-____-555-1212
 Calling Number ____-____

18 STATION PAID DDD (Note 1,2)
 ani fail, origin. disconnect 00 25 00 00 yes 10 sec
 Called Number kp-____-____-____-st

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Calling Number kp-2-____-____-st

Standard AMA tests using NT billing record formats (continued)

TEST CALL	Entry	Info	Serv	Event	CAMA	Call
NO INFORMATION	Code	Digit	Feat	Info	Susp	Dura-
	Digit	Digit	tion			tion

19 STATION PAID DDD (Note 1,2)
oni, origin. disconnect 00 24 00 00 yes 10 sec
Called Number 1-____-____
Calling Number ____-____

20 STATION PAID DDD (Note 1,2)
ani, blue box fraud/ans/ 00 20 00 04 no 20 sec
orig. disconnect
Called Number kp-____-____-____-st
Calling Number kp-0-____-____-st

21 STATION PAID DDD (Note 1,2)
ani, blue box fraud/ans/ 00 20 00 05 no 25 sec
term. disconnect
Called Number kp-____-____-____-st
Calling Number kp-0-____-____-st

22 STATION PAID DDD (Note 1,2)
ani, blue box fraud/ 00 20 00 06 no 30 sec
no ans/orig. disconnect
Called Number kp-____-____-____-st
Calling Number kp-0-____-____-st

23 STATION PAID DDD (Note 1,2)
ani, blue box fraud/ 00 20 00 07 no 25 sec
no ans/term. disconnect
Called Number kp-____-____-____-st
Calling Number kp-0-____-____-st

24 INWATS (Note 3)
oni, origin. disconnect 00 24 00 00 no 35 sec
Called Number 1-800-____-____
Calling Number ____-____

25 STATION PAID DDD (Note 3,6)
oni, orig. disc. special 00 24 00 00 no 40 sec
billing no.

Called Number 1-____-____-____
 Calling Number ____-____

Standard AMA tests using NT billing record formats (continued)

TEST CALL NO	CALL INFORMATION	Entry Code Digit	Info Digit	Serv Feat	Event Info	CAMA Susp	Call Dura-tion
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26 INWATS (Note 2)
 ani/service observed, 00 34 00 00 no 30 sec
 origin. disconnect
 Called Number kp-____-____-____-st
 Calling Number kp-4-____-____-st

27 INWATS (Note 2)
 ani/service observed, 15 30 00 00 no 20 sec
 origin. disconnect
 Called Number kp-____-____-____-st
 Calling Number kp-3-____-____-st

28 STATION PAID DDD (Note 3)
 ani, origin. disconnect 00 20 00 00 no 180 sec
 Called Number 1-____-____-____
 Calling Number ____-____

29 STATION PAID DDD (Note 3)
 ani, origin. disconnect 00 20 00 00 no 300 sec
 Called Number 1-____-____-____
 Calling Number ____-____

30 STATION PAID DDD (Note 3)
 ani, origin. disconnect 00 20 00 00 no 1 sec
 Called Number 1-____-____-____
 Calling Number ____-____

**Standard AMA tests using BellCore AMA format
(NTX098 BellCore CAMA Format/NTX159 BellCore LAMA Format)**

The BellCore AMA format identifies each type of call by a call code. Each call code uses a number of different structure codes depending upon the attributes of the call. The *Standard AMA tests using BellCore AMA format* table consists of 21 different call tests. Each call test is identified by a call code. Use this set of call scripts for the office if configured for the BellCore AMA format. The telephone company may add or delete call scripts based on job requirements and feature availability.

After the call scripts are completed, the AMA tape may be printed by using a non-resident program called AMADUMP. The AMA tape data entries are then compared. (See NTP 297-1001-128 for a detailed explanation.)

Reference: NTP 297-1001-128 (BellCore AMA format)

Standard AMA tests using BellCore AMA format

TEST NO	CALL INFORMATION	Call Code	Call Feature
1	station paid ddd	006	ani, origin. disconnect
2	station paid ddd	006	ani, termin. disconnect
3	inwats	008	ani, origin. disconnect
4	outwats	068	ani, termin. disconnect
5	outwats	068	ani fail, origin. disconnect
6	station paid ddd	006	ani/service observed, origin. disconnect
7	station paid ddd	006	ani fail/service observed, origin. disconnect
8	station paid ddd	006	oni/service observed, origin. disconnect

Standard AMA tests using BellCore AMA format (continued)

TEST NO	CALL INFORMATION	Call Code	Call Feature
9	station paid ddd	006	ani, origin. disconnect, unanswered call recording
10	directory assistance 555-1212	033	ani, originating disconnect
11	station paid directory assistance NPA-555-1212	006	ani, termin. disconnect
12	station paid ddd	006	ani fail, origin. disconnect
13	station paid ddd	006	oni, origin. disconnect
14	inwats	008	oni, origin. disconnect
15	station paid ddd	006	oni, originating disconnect, special billing number
16	inwats origin. disconnect	008	oni, service observed,
17	outwats origin. disconnect	068	ani, service observed,
18	station paid ddd	006	ani, origin. disconnect, duration_1 second
19	multi-unit message rate	001	detailed billing, timed, origin. disconnect
20	multi-unit message rate	001	detailed billing, timed, termin. disconnect

Standard AMA tests using BellCore AMA format (continued)

TEST NO	CALL INFORMATION	Call Code	Call Feature
21	multi-unit message rate	002	bulk billing, timed, origin. disconnect
22	multi-unit message rate	002	bulk billing, timed, termin. disconnect
23	multi-unit message rate	003	detailed billing, untimed, origin. disconnect
24	multi-unit message rate	003	detailed billing, untimed, termin. disconnect
25	multi-unit message rate	004	bulk billing, untimed, origin. disconnect
26	multi-unit message rate	004	bulk billing, untimed, termin. disconnect
27	directory assistance 411	009	ani, origin. disconnect

Metering verification tests

The metering Verification test section provides test calls to ensure all aspects of the metering feature function correctly.

These call scripts have been established as a recommended standard package. However, the Telco may add or delete call scripts based on job requirements and feature availability.

Before beginning the tests each call script should be filled with the calling and metering information.

After the call scripts are completed, the Billing tape is printed using a non-resident program. The Billing tape data entries are then compared.

Verify basic call processing on LCM with BCS21 LCM load.

Here are two test cases for simple metering verification:

- 1** LINE TO LINE METERING
 - a. Select a line with an SPM.
 - b. At map post the line, then enter COUNTS and note meter value.
 - c. Determine the current tariff rate for a LOCAL line to line call.
 - d. Make a line to line call from the line with SPM.
 - e. Leave the call up for a sufficient length of time for meter pulses to be sent.
 - f. Terminate the call and record new meter count.
 - g. Verify the meter count is correct for the current tariff and that the SPM value agrees with the meter count to within one pulse.

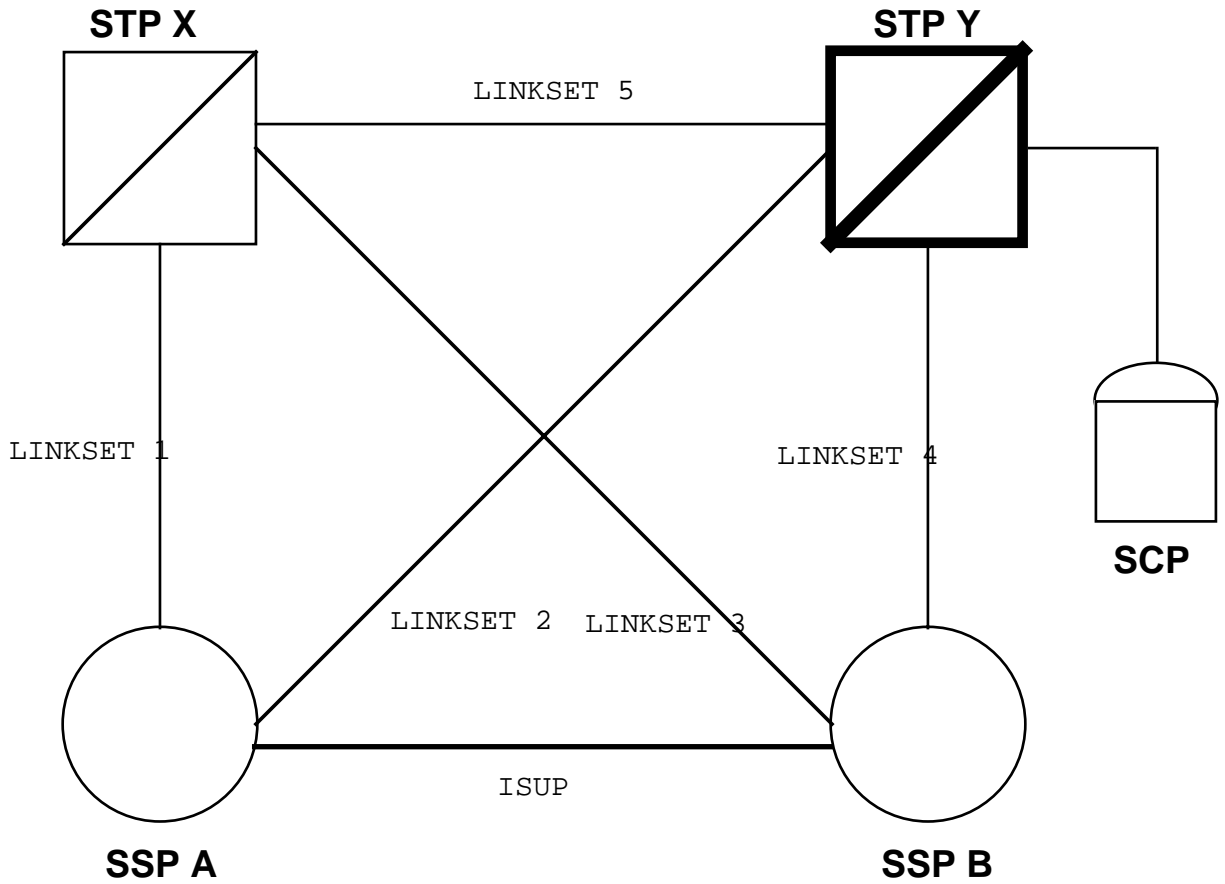
- 2** LOCAL COIN - BASIC CALL
 - a. Verify the coin line has a LCC _ COIN.
 - b. Verify metering assigned (QDN -> SPM option).
 - c. Go off hook; verify dial tone, red light on.
 - d. Attempt to dial; verify ignored.
 - e. Deposit coin; dial tone not interrupted.
 - f. Make a local call; verify ringing.
 - g. Answer call; verify coin collect, red light off.
 - h. Verify additional meter pulses, credits used.
 - i. Three loud tones; last credit starts.
 - j. Verify additional coins accepted.
 - k. Verify call is cut-off when last credit expires.

DMS-STP verification tests

These tests are recommended to be run at the following times:

- Prior to loading peripherals with the new BCS level loads.
- After loading peripherals with the new BCS level loads.
- After swact to the new BCS level load on the STP, while the STP is still OUT-OF-SYNC.

Figure 1
STP Y is getting the software upgrade



**STP verification test cases
(NTX832 DMS-STP Basic/NTX833 STP Operations)**

TEST NO	TEST DESCRIPTION	TEST RESULT /REMARKS
1	<p>Verify ROUTING, DATABASE services, and CLASS features functionality. (Reference Figure 1.)</p> <p>a) Inhibit all links in LINKSET 1 (from SSP A)</p> <p>b) At STP Y verify that route to SSP A via STP X is marked TFP (TFP = transfer prohibited)</p> <p>c) At SSP B verify that route to SSP A via STP X is marked TFR (TFR = transfer restricted)</p> <p>d) Perform DATABASE QUERY from SSP A to SCP (e800, accs, etc.)</p> <p>e) Place several calls from SSP A to SSP B and verify that calls complete (isup)</p> <p>f) Place calls from SSP A to SSP B via ACB/AR and verify that calls complete (ACB = automatic call back, AR = automatic recall)</p> <p>g) Place calls from SSP B to SSP A and verify that calls complete (isup)</p> <p>h) Place calls from SSP B to SSP A via ACB/AR and verify that calls complete</p> <p>i) Uninhibit all links in LINKSET 1 (from SSP A)</p> <p>j) Inhibit all links in LINKSET 2 (from SSP A)</p>	

STP verification test cases (continued)

TEST NO	TEST DESCRIPTION	TEST RESULT /REMARKS
	<ul style="list-style-type: none"> k) At STP X verify that route to SSP A via STP Y is marked TFP l) At SSP B verify that route to SSP A via STP Y is marked TFR m) Perform DATABASE QUERY from SSP A to SCP (e800, accs, etc.) n) Place several calls from SSP A to SSP B via ACB/AR and verify that calls complete o) Place calls from SSP B to SSP A via ACB/AR and verify that calls complete p) Uninhibit all links in LINKSET 2 	

2 Verify LINKSETS

- a) Perform INSV test on a link in a linkset
- b) Inhibit the link
- c) BSY the link
- d) Deact the link
- e) Perform LIU7 maintenance test on associated LIU7 (see test 3)
- f) RTS the link
- h) ACT the link
- g) Uninhibit the link
- h) Perform INSV test on the link
- i) Go to test 4

STP verification test cases (continued)

TEST	TEST DESCRIPTION	TEST RESULT
------	------------------	-------------

NO	/REMARKS
3	<p>Verify LIU7</p> <ul style="list-style-type: none"> a) Perform INSV test on the LIU7 AFTER THE ASSOCIATED LINK IS OUT-OF-SERVICE: b) BSY the LIU7 c) Perform out-of-service test on the LIU7 d) Reload the LIU7 e) PMRESET the LIU7 f) Perform out-of-service test on the LIU7 g) RTS the LIU7 h) Perform INSV test on the LIU7 i) Return the associated link to service. (Go to test 2f)
4	<p>Verify FBUS</p> <ul style="list-style-type: none"> a) Perform INSV test on an FBUS b) Perform INSV test on a TAP c) BSY the TAP d) Perform out-of-service test on the TAP e) Ensure the associated LIU7 is ISTB due to MANB TAP f) RTS the TAP g) Perform INSV test on the TAP h) Ensure the associated LIU7s are inservice

STP verification test cases (continued)

TEST	TEST DESCRIPTION	TEST RESULT

NO	/REMARKS
5	Verify LIM a) Perform INSV test on the LIM b) Bsy one unit of the LIM c) Perform out-of-service test on the unit d) Reload the unit e) PMRESET the unit f) RTS the unit g) Perform INSV test on the unit
6	Verify EIU for MDR7 a) Take the associated MDR7 instance out-of-service b) Perform INSV test on the EIU c) Bsy the EIU d) Perform out-of-service test on the EIU e) Reload the EIU f) PMRESET the EIU g) Perform out-of-service test on the EIU h) RTS the EIU i) Perform INSV test on the EIU j) Return the associated MDR7 instance to service

STP verification test cases (continued)

TEST NO	TEST DESCRIPTION	TEST RESULT /REMARKS
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- 7 Verify SEAS feature functionality
 - a) Check the connection by verifying the MPCs (Multi-Protocol-Controller) are ENBLD (post both MPCs associated with SEAS)
 - b) Verify PVCs (Permanent Virtual Circuits) are INSV (PVC MAP level)
 - c) Check that X.25 levels (OSI layers 1, 2 and 3) are established by verifying the PVCs (Permanent Virtual Circuits) are INSV (PVC MAP level)
 - d) Check the SEAS application by verifying that SEAS is INSV (SEAS MAP level)
 - e) Make sure the application-application connections are established by verifying all PVCs are INSV (PVC level of SEAS)
-

Critical feature tests**DMS-100 critical feature tests**

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Verify ground start			
2	Verify hunting - (MLH,DNH)(option CIR, LIN)			
3	Verify stop hunt (SHU)			
4	Verify bridge night number			
5	Verify COIN - CC, CR on IAO and EAS calls			
6	Verify coin control TROL- CC, CR ON operator call (0 - -)			
7	Verify 2FR - IAO, EAS revertive (TIP & RING)			
8	Verify multiparty - IAO, EAS REVERTIVE (TIP & RING)			
9	Verify 4FR ANI			
10	Verify 1MR - PEG routes, NON PEG routes			
11	Verify one alternate route,			

routes correctly

DMS-100 critical feature tests (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
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12	Verify PS/PD line routes correctly to LKOUT			
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13	Verify OM routing and reporting			
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14	Verify each LCC can originate and terminate with Digitone and Digipulse™			
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15	RLM tests repeat tests 1, 5, 6, 7, 12 and 14			
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16	Verify DTDETECT			
----	-----------------	--	--	--

17	Verify acces to all map levels			
----	--------------------------------	--	--	--

18	Verify special billing (SPB)			
----	------------------------------	--	--	--

19	Verify service orders			
----	-----------------------	--	--	--

20	Verify table editor			
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DMS-200 critical feature tests

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Verify one alternate route routes correctly			
2	Verify OM routing and reporting			
3	Verify access to all map levels			
4	Verify table editor basic commands			

AOSS critical feature test

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	From an OIC type AOSS trunk place a 411 ANI call. (KP-OIC-ST - KP - 0 - 7D ANISPILL - ST)			
2	Verify call arrival tone, display of 411 and correct booknumber at position. Enter a requested number. Verify call can be released without entering a CLG# by keying 'NC' (No Charge) & 'POS RLS'			
3	From an intertoll trunk (originating within home NPA) place a 555-1212 call to AOSS. Verify call comes to position identified as 'HOM'. Enter a CLG# and 'POS RLS'.			
4	From an intertoll trunk (originating within foreign NPA) place a 555-1212 call to AOSS. Verify call comes to position identified as 'FOR'. POS RLS.			
5	Verify ability of I AOSS calls to queue for an available			

position.

AOSS critical feature test (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
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6 RTS an AOSS TRAFFIC OFFICE TTY (TADS) key 'L'. Verify a message is received at the TTY showing the logged in operators.

7 Verify AMA for all calls above.

8 RTS T.O. TTY, FM CRT, FM TTY, Assistance and Incharge positions.

9 From an AOSS DA ANI type trunk place a 411 call to AOSS (seizure - KP-0-7D - ANISPILL - ST).

10 Verify call arrives at AOSS operator position; place a general set call.

11 Verify set call arrives at the Assistance position. Verify the assistant, operator, and customer can talk to each other.

12 Release call from assistance and complete call at

general position.

AOSS critical feature test (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
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13	Repeat above test, making a directed set call to an Incharge position Float call to Incharge and release call.			
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Gateway critical feature tests

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Verify functionality of MAP, TTPs and attendant resources (for all maintenance levels).			
2	Verify functionality of CDRs, oms, LOGS, subsystems.			
3	Verify functionality of all test lines for national and international types.			
4	Verify functionality of all test lines for TASI,SAT OVERRIDE, NWM,SA,FEATURES.			
5	Verify functionality of cancel repeat attempts and code blocking.			
6	Verify calls will reroute or reattempt upon encountering troubles (R1,N5,N6)			
7	Verify all table editor features are functional.			
8	Verify DMO changes and data updates may be made.			

**IBN/MDC critical feature test
(Meridian Digital Centrex, NTX100 IBN/MDC-Basic)**

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Observe from the LOGS all consoles in the office have returned to the status they were before the reload			
2	Ensure the console to be used in testing, can be RTS & verify the night service LED is on (console unjacked).			
3	Verify all customer groups correctly respond to their listed DN dialed e.g. night service or att service.			
4	Verify: <ul style="list-style-type: none"> a) IBN/MDC station to IBN/MDC station calls terminate correctly b) IBN/MDC station to IBN/MDC trunk calls(MF,DP, DTMF) calls terminate correctly c) IBN/MDC trk to IBN/MDC station calls terminate correctly. d) IBN/MDC trk to IBN/MDC trunk calls terminate correctly. 			

IBN/MDC critical feature test (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
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5 JACK_IN to the test console and make it available to rcv calls.

6 Make zero call to the attendant & answer it. Verify speech connection
Extend call to:
a) another IBN/MDC stn
b) an IBN/MDC trunk.

7 Access an idle loop at the TC. Make AC to IBN/MDC line call. Answer it. Key the digits of another IBN/MDC station and answer it. Verify speech paths from all 3 connections
Release the call from the AC and verify the 2 stations are connected.
Release the call.

8 Verify DOD access, Centrex & PBX.

9 Verify Toll calls are recorded.

10 If SMDR is applicable, verify SMDR is working.

11 Verify a diagnostics to the AC works.

IBN/MDC critical feature test (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
12	Verify interposition calling and PBX.			

**P-PHONE critical feature tests
(NTX089 Enhanced Coin Services)**

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
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1	Complete IBN/MDC critical feature tests as applicable.			
---	--	--	--	--

2	Verify the following calls terminate correctly: a) P-Phone to attendant b) P-Phone to IBN/MDC station c) P-Phone to IBN/MDC trunk d) P-Phone to P-Phone e) Attendant to P-Phone f) IBN/MDC station to P-Phone e) IBN/MDC trunk to P-Phone			
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**DMS-TOPS critical feature tests
(NTX030 TOPS Call Processing Features)**

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	RTS traffic office TTY,FM CRT,FM TTY, assistance pos. & Incharge pos.			
2	From MF combined trunk group , place 0- ANI call (KP-ST3P-KP-7D ANI SPILL- ST)			
3	Verify call arrives at TOPS operator pos.			
4	Place general set call.			
5	Verify set call arrives at the Assistance pos. Verify the assistant,operator & customer can talk to each other			
6	Release call from assistance operator.			
7	Complete call using the TOPS operator position.			

DMS-250 critical feature test

TEST NO	TEST DESCRIPTION OR CLLI	FROM LINE TYPE DIGITS DIALED	TO CALL TYPE /REMARKS	TEST RESULT
1	Verify EANT ANI screening functions I) Invalid "NXX" ANI SPILL TRMT II) Restricted call routing access (Note CDR results)			
2	Verify "#" / "*" re-dial features ONAL,DAL,ONAT,EANT			
3	Verify hotline call routing functions I) dedicated II) conditional			
4	Verify CF3P/CF6P call setup, ANS, re-dial, disconnect			
5	Verify (IMT, ONAT) route advance FUNC. (SAT RTE, PART'NED)			
6	Verify CDR search on call records functions correctly			
7	Verify NEMAS/AOM link access, file transfer operation			
8	Confirm MM access: I) all map levels II) table editor III) DMO, JF INCREMT IV) CDR, OM LOG REPS V) map test lines			

DMS-250 critical feature test (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM LINE TYPE DIGITS DIALED	TO CALL TYPE /REMARKS	TEST RESULT
9	*** TOPS REQMT *** Verify TOPSPOSDATA CCTS operational with console functions			

DMS-100 International critical feature tests

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Verify ground start			
2	Verify hunting- (DNH) option CIR)			
3	Verify bridge night number			
4	Verify local coin calls			
5	Verify 1MR - peg routes, non peg routes			
6	Verify one alternate route, routes correctly			
7	Verify PS/PD line routes correctly to LKOUT			
8	Verify OM routing and reporting			
9	Verify each LCC can originate and terminate			
10	Verify access to all map levels			
11	Verify special billing (SPB)			
12	Verify service orders			

DMS-100 International critical feature tests (continued)

TEST NO	TEST DESCRIPTION OR CLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
13	Verify table editor			

DMS-200 International critical feature tests

TEST NO	TEST DESCRIPTION OR CLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Verify one alternate route routes correctly			
2	Verify OM routing and reporting			
3	Verify access to all map levels			
4	Verify table editor basic commands			

Non-critical tests**DMS-100 non-critical tests**

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Verify coin touch tonepad disabling			
2	Verify flash ignore			
3	1FR OGT MF ON TM call			
4	1FR OGT DP ON TM call			
5	1FR OGT MF ON DCM call			
6	1FR OGT DP ON DCM call			
7	EAS INC MF to 1FR DGT CLI idle call			
8	EAS INC MF to 1FR DGT CLI busy call			
9	EAS INC MF to line on operator intercept call			
10	* EAS INC to SYNC/ NON-SYNC test line call		* Not needed for ISUP (CCS7) TRK	
11	* EAS INC to OPEN CKT test line call		* Not needed for ISUP (CCS7) TRK	
12	* EAS INC to SHORT		* Not needed for	

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CKT test line
call

ISUP (CCS7) TRK

DMS-100 non-critical tests (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
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13 EAS INC to MW
test line call

14 EAS INC to
BALANCE test
line call

15 EAS INC to
LOOP AROUND
port 1 & 2 call

16 CDF or CCF coin
call -PS/PD(CR)

17 CDF or CCF coin
call - vacant
code ann (CR)

18 CDF or CCF coin
call - DACS (CR)

19 CDF or CCF coin
call - repair
desk (CR)

20 CDF or CCF coin
call - intercept
(CR)

21 CDF or CCF coin
call - OGT with
answer (CR)

22 CDF or CCF coin
call- OGT without
answer (CR)

23 #3LTC or CALRS or
equivalent - post
DGT idle line

DMS-100 non-critical tests (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
---------	--------------------------	-------------------------------	------------------------	-------------

24 #3LTC or CALRS or
equivalent - post
DGT busy(talking)
line

25 Verify service
analysis basic
commands

26 Verify LOGUTIL
routing and
reporting

27 MAP tests - PM
level. For each
PM type below
equipped, do the
following tests:

***** WARNING: With TELCO approval only *****

BSY - TEST - REMOVE
controller card
(OX70 for TM, MTM & OAU;
2X38 for DCM
2X27 for LM & RLM)
- test should fail -
replace controller card -
RELOAD - TEST - RTS

Do above on TM2 0,
TM4 0, TM8 0, MTM 0
OAU 0, DCM 0,
LM 0, RLM 0

DMS-100 non-critical tests (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
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28 Verify the following features work:

- a) 3we
 - b) efw - regular, remote & remote equal acced
 - c) cwt
 - d) speed calling
-

29 Map tests - net level
Select a network pair and plane :
Perform BSY-TEST -RTS

30 Map tests - LTP level
Post a line:
DIAGN-BSY-RTS

31 Map tests - TTP level
Post a trunk :
Perform BSY-RTS -TEST (no parms)

DMS-200 non-critical tests

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
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1	Verify incoming CAMA TO: 101 test line 102 test line 103 test line 104 test line 108 test line			
---	--	--	--	--

2	Verify incoming intertoll to: 101 test line 102 test line 103 test line 104 test line 108 test line			
---	---	--	--	--

3	Verify service analysis basic commands			
---	--	--	--	--

4	Verify network management basic commands			
---	--	--	--	--

5	MAP tests - PM level. For each PM type below equipped, do the following tests:			
---	--	--	--	--

***** WARNING: With TELCO approval only *****

BSY - TEST - REMOVE
controller card (OX70)
- test should fail -
replace OX70 card -
RELOAD - TEST - RTS

Do above on TM 2 0,
TM 4 0, TM 8 0, MTM 0,

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OAU 0, DCM 0

DMS-200 non-critical tests (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
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6	Map tests - NET level Select a network pair and plane : Perform BSY-TEST -RTS.			
---	--	--	--	--

7	Map tests - TTP level Post a trunk;perform BSY-RTS-TEST (no parms)			
---	---	--	--	--

AOSS non-critical tests

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	From the FM TTY, key 'P' and verify a position status summary is received.			
2	Verify OM pegs in OM group: 'AOSS are being incremented for work volume, initial position seizures, and calls waiting queue usage.			

ATT100 non-critical tests

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Make a coin line to TSPS call. Verify expanded inband signalling coin collect, return, ringback, operator release, operator-attached function operation.			
2	Verify AMA record on a MUMR call			
3	Verify correct register pulsing on a hotel/motel line.			
4	Verify that a 2-party or 4-party ANI line with DOR not originate.			
5	Verify that a 2 or 4 party ANI line with SUS may not originate or be terminated on.			
6	Make a coin call with an insufficient coin deposit.			
7	Verify that coin call totalizer operation is correct.			

**Datapath non-critical tests
(NTX250 Datapath-Basic)**

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Ensure that data unit switches are set as follows: Manual Answer Manual Origination Self Test off Far End Loopback off Local Loopback off Internal Clock Adaptive Profile off Buzz soft Assert DTR off Assert RTS off 9600 BAUD ASYNC			
2	Connect Data Terminal Equipment with the following settings to both data units: 9600 Baud Async No Parity On Line Full Duplex			
3	Ensure that POWER/SYNC and DTR lamps on data units are lit.			
4	Verify that the POWER/SYNC lamp flashes if the jack is unplugged, and the POWER/SYNC lamp lights solid within 2 sec. when the jack is plugged in.			

Datapath non-critical tests (continued)

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TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
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5 At LTP level of MAP
POST a data unit
line and verify
that line is posted.

6 Diagnose line and
verify the
following:

- a) line state
changes to 'MB',
- b) UNDER TEST lamp
is lit on data unit,
- c) diagnostic passes,
- d) UNDER TEST lamp
turns off and
line state
returns to idle

7 Turn the SELF TEST
switch on momenta-
rily and verify:

- a) POWER/SYNC and
UNDER TEST are
only lamps lit,
- b) all lamps are lit
after several sec.,
- c) data unit returns
to its previous
state.

**ESN non-critical test
(Electronic Switched Network)**

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Verify calls from IBN/MDC line using: a) network speed call b) variable outpulsing types on a trunk c) tone detection route d) authorization code e) queuable routes f) route with ESN protocol			
2	Verify that Time of DAY routing is using proper routes for the current time of day.			
3	Verify operation of the DISA feature			
4	Verify access through virtual facility groups.			
5	Verify proper timeouts in digit collection on various access codes			

**Equal Access non-critical tests
(NTX186 Equal Access End Office)**

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Complete a 10XXX 7 digit intralata intrastate call (providing intralata calls are allowed to complete).			
2	Complete a 10XXX-1 -7 digit interlata intrastate call.			
3	Complete a 10XXX-1 -10 digit interlata intrastate call.			
4	Complete a 10XXX- -10 digit interlata interstate call.			
5	Complete a 10XXX-0 -10 digit world zone 1 call.			
6	Complete a 10XXX-1 -10 digit world zone 1 call.			
7	Complete a 10XXX - 011 - international call.			
8	Repeat tests 1 through 7 and verify that both feature group C and feature group D calls complete correctly.			

Equal Access non-critical tests (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
9	Repeat tests 1 through 7 using either an interim or transitional carrier dialing 950 1XXX and verify that the calls complete correctly.			
10	For tests 1 through 9 verify that the correct AMAB logs and AMA records are output.			
11	Verify that all existing trunk logs reflect the correct equal access information in the new corresponding fields.			
12	Verify that operational measurements correctly pegs equal access calls and failures.			
13	Verify that TSMS correctly pegs equal access calls and failures.			
14	Verify that abbreviated dialing operates correctly with equal access calls.			

Equal Access non-critical tests (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
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15 Verify that speed calling operates correctly with equal access calls.

16 Verify that automatic number identification (ANI) can be turned on and off on a per carrier basis.

17 Verify that treatment 'CACE' exists and can be applied properly.

18 Verify that treatment 'D950' exists and can be applied properly.

19 Verify that treatments 'N950','ILRS', 'NACD', and 'DACD' exist and can be applied properly.

Gateway non-critical tests

TEST NO	TEST DESCRIPTION OR CLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	MAP level tests on CPU synchronization, PS/DS card tests, etc.			
2	TTP tests on trunks ie. posting, holding seizing, etc.			
3	Monitor level tests, line side, drop side MW KVM tests, etc.			
4	Transmission level tests, ie. tone det, tone gen, tst call, etc.			
5	Verify irregularities on N6 signalling CP and link management			
6	Verify irregularities on N5 signalling line and register.			
7	Verify irregularities on R1 signalling			
8	Verify proper recording of CDR records on printer and on tape.			
9	Verify proper log messages for particular fail types.			

Gateway non-critical tests (continued)

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TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
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10 Verify operational measurements are obtained as requested:
QUARTERLY
HALF HOURLY
DAILY, etc.

11 Verify proper thresholds are set for all alarms on trunk group occupancy.

**IBN/MDC non-critical test
(NTX100 IBN/MDC-Basic)**

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Verify following station features still work: a) call transfer & 3WC b) call forwarding-CFU,CFB,CFD c) call pickup d) call-waiting e) speed calling - individual, group f) Meet Me conference			
2	Verify AC functions still work: a) AC to trk & trk to AC b) Various ICI's can queue for the AC & are answered correctly. c) AC HOLD functions d) AC RECALL calls e) AC conference f) AC position busy g) AC busy verification of trks & lines h) AC camp-on i) AC to AC from call forwarded lines j) AC operational measurements k) AC display			

**IBN/MDC/Equal Access non-critical tests
(NTX100 IBN/MDC-Basic/NTX186 Equal Access End Office)**

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Using a 500/2500 set make a DP call from a LCM to an outgoing ATC trunk on DTC dialing 9-10XXX-7 digits.			
2	Repeat step 1 dialling 9-10XXX-international.			
3	Repeat step 1 dialling 9-9501XXX.			
4	Repeat step 1 from a LM dialing 9-10XXX-7 digits.			
5	Repeat step 1 from a LM dialling 9-10XXX-0-10 digits			
6	Repeat step 1 from a LM dialling 9-9501XXX.			
7	Repeat step 1 from a RLM dialling 9-10XXX-10 digits.			
8	Repeat step 1 from a RLM dialling 9-10XXX-01-internat'l.			
9	Repeat step 1 from a RLM dialling 9-9501XXX.			

IBN/MDC/Equal Access non-critical tests (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
10	From an ATT console on a LCM place a call to an outgoing trunk on DTC dialing 9-10XXX-7 digits.			
11	Repeat step 10 dialing 9-10XXX-10 digits.			
12	Repeat step 10 dialing 9-10XXX-international.			
13	Repeat step 10 dialing 9-10XXX-0-7 digits.			
14	Repeat step 10 dialing 9-10XXX-0-10 digits.			
15	Repeat step 10 dialing 9-10XXX-01-international.			
16	Repeat step 10 dialing 9 - 9501XXX.			
17	Place an incoming DTC call to a LM station.			
18	Place an incoming DTC call to a LM ATT console.			

IBN/MDC/Equal Access non-critical tests (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
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19	Place an incoming DTC call to a RLM station.			
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20	Place an incoming TM8 call to a LCM station.			
----	--	--	--	--

21	Place an incoming DCM call to a LCM station.			
----	--	--	--	--

22	Place an incoming DTC call to a LCM station.			
----	--	--	--	--

23	Place an incoming DTC call to a LCM P-Phone.			
----	--	--	--	--

24	Place an incoming DTC call to a LCM ATT console.			
----	--	--	--	--

**P-PHONE non-critical test
(NTX089 Enhanced Coin Services)**

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Complete IBN/MDC non-critical feature tests as applicable			
2	Verify following P-Phone features still work: a) call transfer & 3WC b) call forwarding c) call pickup d) call-waiting e) speed calling f) automatic dial g) ring again			
3	Verify calls to and from a MADN group terminate correctly.			

**DMS-TOPS non-critical tests
(NTX030 TOPS Call Processing Features)**

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
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1	From the FM TTY, key 'P' and verify a position status summary is recv'd			
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DMS-250 non-critical test

TEST NO	TEST DESCRIPTION OR CLLI	FROM LINE TYPE DIGITS DIALED	TO CALL TYPE /REMARKS	TEST RESULT
1	Verify ATT function for auto, manual test setup, results (TL6N, T105, ATMS)			
2	Verify NWM PRE-RTE operational, and other controls REQ			
3	(USTS only) service analysis feature being operational			
4	Verify SYNCLK links SWACT successfully Note "RE-SYNC" time			
5	Verify LTC/DTC warm SWACT ability (no call interrupt)			
6	Verify KT pegging resolve problem CCT			
7	*** TOPS REQMT *** POS status summary, Verify OM pegging for 'TOPS', 'OFZ'			

DMS-MTX non-critical test

TEST NO	TEST DESCRIPTION OR CLLI	FROM: TRUNK TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Verify ATT function for auto, manual test setup, results			
2	Verify pool link "SWBCK" to assigned dedicated CSC link (non-pooled config)			
3	Verify CSC "XPM" SWACT execution. (no call interrupt)			
4	Verify SYNCLK links SWACT successfully Note "RE-SYNC" time			
5	Verify KT pegging resolve problem CCT			

DMS-100 International non-critical tests

TEST NO	TEST DESCRIPTION OR CLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Verify flash ignore			
2	1FR OGT MF on TM CALL			
3	1FR OGT DP on TM CALL			
4	1FR OGT MF on DCM CALL			
5	1FR OGT DP on DCM CALL			
6	INC MF to 1FR DGT CLI idle call			
7	INC MF to 1FR DGT CLI busy call			
8	INC MF to line on operator intercept call			
9	INC to SYNC/ non-sync test line call			
10	INC to open CKT test line call			
11	INC to short CKT test line call			
12	INC to MW test line call			

DMS-100 International non-critical tests (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
13	INC to balance test line call			
14	INC to loop around PORT1 & 2 call			
15	Coin call PS/PD (CR)			
16	Coin call - vacant code ANN			
17	Coin call - DACS			
18	Coin call REPAIR DESK			
19	Coin call - intercept			
20	Coin call - OGT with answer			
21	Coin call _ OGT without answer (CR)			
22	Verify service analysis basic commands			
23	Verify LOGUTIL routing and reporting			

DMS-100 International non-critical tests (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
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24 MAP tests - PM level. For each PM type below equipped, do the following tests:

***** WARNING: With TELCO approval only *****

BSY - TEST - REMOVE controller card (OX70 for TM, MTM & OAU; 2X38 for DCM 2X27 for LM & RLM) - test should fail - replace controller card - RELOAD - TEST - RTS

Do above on TM2 0, TM4 0, TM8 0, MTM 0 OAU 0, DCM 0, LM 0, RLM 0

25 Map tests - NET level
Select a network pair and plane :
perform BSY-TEST -RTS

26 Map tests - LTP level
post a line:
DIAGN-BSY-RTS

27 Map tests - TTP level
post a trunk :
Perform BSY-RTS -TEST (no parms)

DMS-200 International non-critical tests

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
1	Verify incoming intertoll to: 101 test line			
2	Verify service analysis basic commands			
3	Verify network management basic commands			
4	MAP tests - PM level. For each PM type below equipped, do the following tests: ***** WARNING: With TELCO approval only ***** BSY - TEST - REMOVE controller card (OX70 for TM, MTM & OAU; 2X38 for DCM) - test should fail - replace controller card - RELOAD - TEST - RTS Do above on TM2 0, TM4 0, TM8 0, MTM 0 OAU 0, DCM 0			

DMS-200 International non-critical tests (continued)

TEST NO	TEST DESCRIPTION OR CLLI	FROM: LINE TYPE DIGITS DIALED	TO: CALL TYPE /REMARKS	TEST RESULT
5	Map tests - net level Select a network			

pair and plane :
Perform BSY-test
-RTS.

- 6 Map tests - TTP
level
Post a TRK:perform
FORM BSY-RTS-TEST
(no parms)
-

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DMS-100 Family

Software Delivery

ONP/Hybrid Software Delivery Procedures

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