CUTOVER AND PRECUTOVER PROCEDURES FOR TURNOVER/CUTOVER INTERVAL NO. 2B ELECTRONIC SWITCHING SYSTEM

CONTENTS PAGE

1. GENERAL

1.01 The purpose of this section is to describe the cutover procedures to be used when existing electromechanical offices are replaced by a No. 2B Electronic Switching System (ESS). Procedures are provided which may be used for the initial cutover of a new office or for the transfer of lines to an office already in commercial service.

1.02 This section is reissued to include changes since the last issue and additional information due to the 2B-EF-2 generic program.

Caution: Failure to follow all the steps in this section can lead to a lengthy system outage. In particular, Steps 17 through 24 of the Cutover Overwrite procedure in paragraph 4.03 and Steps 8 and 9 of the Postcutover items in paragraph 4.05 must be followed.

1.03 Two procedures for cutting lines into service are described in this section. The first uses a CUTOVER program, while the second uses a route index per 100 lines method.

1.04 The CUTOVER program method can be used when the No. 2B ESS office replaces an existing office, or on an area cut. This procedure alleviates the need for mechanical cutover devices for lines when the No. 2B ESS office replaces an existing electromechanical system. During the precutover mode, the ESS program control keeps the line cutoff contacts open to isolate the lines in the existing office from the No. 2B ESS office. Trunk circuit isolation still requires the use of mechanical cutover devices unless new trunk facilities are being provided.

1.05 The Hundreds Group Route Index (HRI) procedure can be used when the office is already in service and less than the entire set of customers is to be cutover (such as an area or centrex cutover). This requires that line isolation be provided since the office remains in the cutover mode during the entire procedure.

1.06 When a No. 2B ESS installation replaces an existing office, cross-connections for subscriber lines must be installed prior to cutover. Prior to cutover, the switching functions are performed by the existing office. The line cutover program ensures that customer service is not interrupted before cutover and that quick transition of service from the old office to the new office takes place. The cutover program can also be used to transfer existing lines in another office to a No. 2B ESS office already in commercial service.

1.07 The No. 2B ESS office can cutover a variable number of hundreds groups at one time. A hundreds group consists of a sequential group of directory numbers whose last two digits range from 00 through 99. These hundreds groups may have different office codes, and they may be cutover with their existing directory numbers or with a directory number change at the time of cutover. If there is a directory number change, it must be changed from an office code not being used in the No. 2B ESS machine to one which is served by the No. 2B ESS.

1.08 The operating company may designate certain lines as test lines. There is no restriction as to directory number assignment to these lines, and they are treated as working lines in the No. 2B ESS office during the precutover period.

CUT PROGRAM METHOD

2. MODES OF OPERATION

2.01 The precutover and cutover modes are the two modes of the cutover program in a No. 2B ESS office. During the precutover mode, isolation of all nontest lines to be placed into service is maintained. This isolation is provided by keeping the line ferreed cutoff contacts open. With the line ferreed cutoff contacts open, the No. 2B ESS machine cannot detect line originations, and the line ferrod battery and ground are removed from tip and ring conductor paths to the old office. Cutoff contacts of working lines and of any test lines in the No. 2B ESS office are left closed when the lines are in the idle state.

2.02 The mode of operation of the office is determined by the cutover program by checking the cutover bit in the system office option word. This word is located in an area of program store which cannot be changed by recent change. When the cutover bit is 0, the office is in the cutover mode and all defined lines are treated as working lines. When the cutover bit is 1, the office is in the precutover mode.

PRECUTOVER MODE

2.03 During this mode of operation, complete isolation of nontest lines is maintained.

2.04 ***Office-to-Office Testing:*** This procedure is performed during the precutover mode and is used to verify that a particular subscriber will be reached when the number of the subscriber is pulsed over a No. 2B ESS no-test trunk. (Reference should be made to Section 232-002-509 or 232-302-305.)

CUTOVER MODE

2.05 During this mode of operation, the system is in service and there is no isolation of subscriber lines in the No. 2B ESS office.

3. PRECUTOVER AND CUTOVER OFFICE FUNCTIONS

3.01 ***Call Processing During Precutover Mode:*** Lines that are being cutover from an existing office cannot originate in the No. 2B ESS office because their ferrods are disconnected during the precutover mode. The cutoff contacts on working lines and test lines are closed; therefore, originations will be detected. The routing for line terminations is performed according to the following translation information.

(1) ***Calls to Working and Test Lines:*** The location of a called line is determined by a directory number translation of the office code and the last four digits of the called number. Each hundreds group defined in the directory number translation tables contains a CUT flag indicating whether it is a group that has been cutover (0) or not (1). This flag is returned to the calling program by the translation routine. After the directory number translation, the CUTDN subroutine in the CUT program is called before the intraoffice or the incoming call is completed. The hundreds group flag is checked if the office is in the precutover mode. If a working hundreds group is called, the flag indicates that numbers in that group are in service. If the flag indicates that the hundreds group is not yet cutover, the test line feature in the directory number translation word of the called line is checked. When a test line is called, the test line bit is found set. The CUTDN subroutine returns an indication to the calling program that a call may be completed in the normal manner if a working or test line is called.

(2) ***Calls to Precutover Lines:*** If, after the directory number translation of a called number, the CUTDN subroutine finds that the called number is not part of a working hundreds group and is not a test line, then the hundreds group containing the number is used to get a route index to determine how the calling party is to be routed. This route index is returned to the calling program, and the call is routed accordingly. The route index directs the call to the old office if there is no directory number change at the time of cutover. If the calling party has dialed a number not yet in service, the route index sends the call to intercept. Calls to numbers with a special routing major class are treated separately because the numbers dialed are terminating-only numbers. If the called number is in a hundreds group not yet cutover and the special routing requires outpulsing, the call is routed according to the office code dialed. If outpulsing is not required, then a test, service, or intercept code has been dialed, and the call is completed according to special routing.

3.02 ***Network Orders During Precutover Mode:*** The peripheral order buffer execution program (POBE, PD-2H219) is an interrupt program which sends network and other peripheral orders. When an order is ready to be sent by POBE, the NTWKORD subroutine in the CUT program is called. When the office is in the precutover mode and a "close line cutoff contact order" is to be sent, examination of the line is required before the order is sent. If the directory number of the line receiving the order is one of the numbers being cutover, the close cutoff order is changed to open cutoff. This prevents the battery in the No. 2B ESS office from interfering with the other office. Test lines are treated as being in service; therefore, the close cutoff order is sent.

3.03 ***Call Processing During Cutover Mode:*** If the office is in the cutover mode, a transfer to any subroutine in the cutover program is returned to the calling program. All defined lines are processed as working lines, and network orders are sent as loaded by POBE.

3.04 ***Automatic Line Insulation Test (PD-2H114):*** This test program provides automatic testing of line insulation and the ability of the lines to originate. These tests are run on all idle lines if the office is in the cutover mode. In the precutover mode, each line is checked by the LITORD subroutine in CUT before the insulation test is performed. If the line directory number is not yet cutover, the insulation test is skipped. If the line is a working line or a test line, the test is performed.

4. NEW OFFICE PROCEDURES

CUTOVER PROCEDURES

4.01 ***Cutover Communications:*** Necessary communications should be established between

departments and the cutoff and cut-in stations. The communications console should be located in the No. 2B ESS office.

4.02 ***Precutover Items:*** The following items normally are the responsibility of personnel assigned to the No. 2B ESS office and are to be completed prior to the day of cutover. This list may not be complete for any particular office, but it is to be used as a guideline for preparing a detailed work schedule.

(1) Make a complete rehearsal of the cutover procedures and prepare information for postcutover overwrite to the tape cartridge. (See paragraphs 7.01 and 7.02.)

(2) Complete routing and charging accuracy tests (Section 232-002-513).

(3) Verify that all entries in the traffic work table are set up properly, including times to start automatic testing. [See Section 232-120-301 and input message manual (IM-2H200).]

(4) Make arrangements for safety goggles and rubber gloves for all personnel assigned to remove heat coils in the old office.

(5) Make office evaluation.

(6) Install communications system to be used during cutover.

(7) Complete last cycle of office-to-office testing [Section 232-302-509 or 232-302-305 (the latter can only be used in a new, never before cutover, office)]. Ensure that all test data has been removed at conclusion of testing and that original data has been restored.

(8) Complete last cycle of trunk testing.

(9) Identify and protect all heat coils in the old office that ***should not be removed*** at cut.

(10) Update recent change (Section 232-304-301).

(11) Run automatic line insulation tests (ALIT) after last recent change update (to check for translation errors only).

(12) Rearrange load boxes to function on intraoffice (IAO) calls only, and reduce the number of calls to one-fourth or less of the available customer dial pulse receivers (CDPRs).

(13) Verify operator intercepts for lines that have had service suspended or denied.

4.03 The following items are to be completed on the day of cutover.

(1) Guarantee that the following automatic tests passed successfully:

(a) ▶CU diagnostics◀

(b) PU exercise

(c) Service circuit tests

(d) Junctor and range extension (RE) tests

(e) Trunk tests (if applicable)

(f) ALIT (if applicable)

(g) Tape cartridge exercises

(h) TTY exercises

(i) Tape to tape audit.

(2) Make inspections of buildings and arrange for clearing of any items found. The inspection is to include housekeeping and general appearance.

(3) Inspect the protection for all heat coils in the old office that ***are not*** associated with the cut.

(4) Inspect heat coil pulling devices. Verify the presence of safety goggles and rubber gloves in the old office.

(5) Make an operational check of cutover communication lines.

(6) Perform a recent change update after last service order input and traffic work table update.

(7) Perform a stable-recent change clear (***only on a new office cutover),*** then type

the following TTY input messages to set the system clock, reset the service loss lamp, and reset the automatic test inhibit lamp.

SET:CLK:TIME (hh,mi,ss), day (mo,dd,yy)!
M SY:RSL!
A AU:RC!

(8) Prepare cutover translation change TTY input requests after last recent change update. (Refer to Section 232-304-303 for ▶2B-EF-1 or 232-304-304 for 2B-EF-2◀ for procedure for changing program store words.)

Note: The following items should be performed in the last 2 hours before cutover.

(9) If the cutover occurs between 8 pm and 8 am, type the following TTY input messages to inhibit certain exercises and tests at the time of cutover.

▶INH:MSF 11! (inhibit CU exercise)◀

▶INH:MSF 12! (inhibit PU exercise)◀

▶INH:MSF 7! (inhibit TDC diagnostics)◀

T WT:ATT! (inhibit timed trunk testing)

T WT:AST! (inhibit timed service circuit testing)

T WT:AJT! (inhibit timed junctor and range extension testing)

T WT:LIT! (inhibit ALIT testing)

Caution: Do not turn off trunk, service, or junctor testing by using the M TK:AT:0! and similar messages as this will also inhibit call processing requests for maintenance.

(10) If the local test desk (LTD) TTY channel 4 is not attended, or if there is no local monitor, type the following input message:

RMV:TTYC 4!

(11) Change automatic message accounting (AMA) tapes (if applicable).

(12) Verify that all advanced trunks available to No. 2B ESS before cutover have been released per schedule.

(13) Make check of permanent signals in the old office and remove the coils on the associated lines in the new office if there are more permanents than 1/2 the quantity of DP or TT CDPRs (see paragraph 4.05, Step 3). This is ***very*** important to ensure that the system is not heavily loaded with permanent signals immediately after cut.

(14) Verify that all cutover and field personnel are present.

(15) Verify that repair personnel are at key locations.

Note: The next six items should be performed approximately 30 minutes before cutover.

(16) Initialize the overwrite program by typing the following input message:

ALW:OW!

(17) Identify the generic program and issue to be overwritten by typing the following input messages:

IN:GENID:xxxxxxxx!

xxxxxxxx = Up to eight characters used to identify the generic.

IN:ISSID:zzzzzzzz

zzzzzzzz = Up to eight characters used to identify the issue.

(18) Enable the previously prepared cutover overwrite (see paragraph 4.03, Step 8) to be inputted via TTY into the overwrite buffer by typing the following input message:

▶For 2B-EF-1 IN:OW nnnn;TTY!
For 2B-EF-2 IN:OW nnnnn;TTY!◀

nnnnn = Next available translation overwrite number.

(19) Enter the previously prepared cutover overwrite data by typing the following input message:

▶For 2B-EF-1 IN:OWDATA:0,0,adr,old,new!
For 2B-EF-2 IN:OWDATA:-,0,adr,old,new!

adr = The absolute address of the location being overwritten.

old = Old content of the location being overwritten.

new = New data to be used in overwriting the location.◀

(20) Verify that the old data specified in Step 19 compares to the corresponding data in the main store location identified by typing the following input message:

▶For 2B-EF-1 VFY:OW:OLD!
For 2B-EF-2 VER:OW:OLD!◀

(21) ▶Copy the cutover overwrite from the overwrite buffer to the TTY by typing the following input message:

OP:OW;TTY!

(22) Visually inspect the contents of the overwrite buffer via TTY output message from Step 21. If any errors were made in the old or new data fields on input, repeat Step 19. This will result in the generation of an IN OWDATA ERR warning message for 2B-EF-1 or an IN OWDATA WARN message for 2B-EF-2. For errors made in the address field, restart at Step 18 and reinput IN:OWDATA input message again.◀

(23) Copy the cutover overwrite from the overwrite buffer to both tapes by typing the following input message:

OP:OW;TAPE!

Note: The next 12 items should be performed approximately 15 minutes before cutover.

(24) Change the cutover overwrite from the inactive to the active state by typing the following input message:

▶ACT:OW!◀

Caution: This should be done no more than 15 minutes before cutover since an untimely reload of memory (bootstrap) will cause a premature cutover.

(25) Depress the LOCK key on the system status panel (SSP).

(26) Establish conference call for the cutover communications.

(27) Load the new cutover overwrite data into the standby main store from the overwrite buffer by typing the following input message:

LOD:OW:NEW!

This input message inhibits main store (MAS) audits.

(28) Verify the data in the standby memory is correct by typing the following input message:

▶For 2B-EF-1 VFY:OW:NEW!
For 2B-EF-2 VER was performed in Step 27.◀

(29) Unlock the active CU by depressing the LOCK key on the system status panel and switch the standby CU by typing the following input message:

SW:CU!

(30) Depress the LOCK key on the system status panel.

(31) Load the cutover overwrite data into the new standby main store by typing the following input message:

▶For 2B-EF-1 LOD:OW:NEW!

For 2B-EF-2 LOD will be performed in Step 34.◀

(32) Verify the data in the standby memory is correct by typing the following input message:

▶For 2B-EF-1 VFY:OW:NEW!
For 2B-EF-2 VER was performed in Step 31.◀

(33) Depress the LOCK key on the system status panel to unlock the active CU.

Note: If midnight occurs between here and Step 39, a normal daily processor switch will occur.

(34) Terminate the overwrite procedure and restore the main store audits by typing the following input message:

STOP:OW!

(35) Make final check of permanent signal lines. (See Step 13.)

(36) Verify that emergency calls are not in progress.

(37) Remove heat coils in old office.

(38) Place the office in the cutover mode and restore the line ferrods by typing the following input message:

M SY:CUT:PST!

Caution: In an existing office, due to the remote possibility of the line ferrod restoral disrupting some transient calls, this message should not be used during periods of heavy traffic.

(39) Release all step-by-step trunk make busies. Switch to prewired markers in the No. 5 crossbar offices and crossbar tandem offices.

4.04 ***Trunk Cutover:*** Trunk cutover procedures for a new office are found in Part 8.

4.05 ***Postcutover Items:*** The following items are performed after the office is cutover.

(1) Test lines requiring special treatment and emergency lines.

(2) Make dial tone test from the cable pairs at the combined distributing frame (CDF) or the protector frame.

(3) Clear permanent signals by inserting heat coils of lines removed in Step 13 of paragraph 4.03. Insert no more coils at any one time than one-half of the dial pulse (DP) or TOUCH-TONE® CDPRs. Wait until these go high and dry before inserting the next batch.

(4) Make test calls on toll and tandem network and loop back into the No. 2B ESS office. Test tie trunks and Common Control Switching Arrangement (CCSA) networks, if applicable.

(5) Observe lines that are "showering" by noting the following TTY printouts on channel 4 (LTD TTY) or maintenance TTY:

MI L ERR

MI L NCH

MI L SCC

MI L SCR

MI CF

Remove these lines from service until the trouble can be cleared by typing the following TTY input message:

M L:RMV:aaa bbbb ccc dddd!

aaa = Line network number

bbbb = Concentrator group, switch, level

ccc = Office number

dddd = Low four digits of the line directory number.

(6) As soon after cutover as the system is running normally, reinstate the diagnostics if turned off in paragraph 4.03, Step 9, by typing the following TTY input messages:

▶ALW:MSF 11!◀

▶ALW:MSF 12!◀

RST:TTYC 4! [If removed in paragraph 4.03 (Step 10).]

T WR:RST!

(7) Test centrex attendant consoles, if applicable.

(8) Update office option word on tape translation file by performing a recent change update procedure (Section 232-304-301).

(9) Remove temporary cutover overwrite by inputting the following TTY input messages:

ALW:OW!
◗CNL:OW!◖

◗RMV:OW!◖
STOP:OW!

5. EXISTING OFFICE PROCEDURES

5.01 Normally, the machine runs in the cutover mode. When working lines in another office are to be transferred to a working No. 2B ESS office, an office data administration (ODA) run must be made to define these lines in the No. 2B ESS office. The line translation data for these lines may be altered by recent change before the lines are placed into service in the No. 2B ESS office. The CUT flag must be removed from all cutover hundreds groups as part of this or an earlier ODA run. This ODA run must define the hundreds groups that are to be cut over and provide a route index to be used for directing calls made to these lines when the office is in the precutover mode. The hundreds groups are defined in the directory number translation tables. Each hundreds group contains a CUT flag which is a 1 if the particular group is not yet cut over. Immediately after the data assembled by the ODA run is placed in the machine, the office must be placed in the precutover mode. The office is changed from precutover mode to cutover mode, and vice versa, by a TTY message. However, before the message will be accepted, a word in translations must be restored to allow this message. Normally, the new office data translations (ODT) will have this word changed to allow the precut message, but the word must be changed before the cut message will be accepted. The precutover procedure consists of loading the new ODT and placing the system in the precutover mode.

PRECUTOVER PROCEDURE

5.02 ***Inhibit CU Exercise Routines:*** This step is required only if the precutover procedure is performed while CU exercise tests are running (either by manual requests or between 2300 and 0000 hours). If the precutover procedure is not performed between 2300 and 0000 hours, make sure there is time to perform all functions of the procedure before 2300 hours.

Note: If it is necessary to inhibit the diagnostic tests, the inhibit procedure must be performed before the new ODT is loaded.

(1) Abort the long term periodic tests and mark multiscan function ◗11◖ as ***not*** allowable for this period, both automatically and manually, by typing the following input message:

◗INH:MSF 11!◖

(2) Immediately after receiving the system OK from the message in (1), mark multiscan function ◗11◖ as allowable for the next interval and allow manual initiation of multiscan function ◗11◖ by typing the following input message:

◗ALW:MSF 11!◖

5.03 ***Change Mode of Office:*** The office is changed to the precutover mode as follows.

(1) Load the new ODT in the off-line CU and switch on-line (with the appropriate initialization) in accordance with Section 232-324-301. The new translations already have the cutover bit in OFFOPO set to the precut mode if any nonworking hundreds groups have been set up on input form ESS-2501. This step places the system in the precut mode. If any initialization takes place, the new line ferrods are also opened.

(2) If no initialization was involved in Step 1 (ie, only an update and switch), open the line ferrods as soon as possible after Step 1 by typing the following input message:

M SY:CUT:PRE!

Caution: Due to the remote possibility of the line ferrod restoral disrupting some transient calls, this message

should not be used during periods of heavy traffic.

(3) Load the new ODT in the other off-line CU in accordance with Section 232-324-301.

(4) Restore the off-line CU to service by typing the following input message:

RST:CU!

(5) The office is now in the precutover mode. Office-to-office testing can now be performed in accordance with Sections 232-002-509 ▶and 223-302-305.◀

CUTOVER PROCEDURE

5.04 Follow the procedures given in Part 4 for cutting over a new office.

HRI METHOD

6. HUNDREDS GROUP ROUTE INDEX PROCEDURE

6.01 The Hundreds Group Route Index (HRI) procedure is an alternate procedure designed primarily for centrex cutovers and area cuts to a working office. During this procedure, the office remains in the cutover mode of operation. When working lines in another office or a centrex are to be cutover, an office data administration (ODA) run must be made to define these lines in the No. 2B ESS office. The line translation data for these lines may be altered by recent change before the lines are placed into service in the No. 2B ESS office. The ODA run must define the hundreds groups (via ESS-2501 form) that are to be cutover and provide a two-word expansion table per 100 lines that is recent changeable. Each two-word expansion table provides a route index (RI) to be used for directing calls made to these lines before they are cutover and a pointer to of the hundreds group table that will be used after the lines are cutover. A recent change message is used to zero the RI to cut the hundreds group into service. After the RI is zeroed, the pointer is used to complete the translation for the called number. Calls cannot be completed to test lines when in a noncutover HRI hundreds block.

6.02 Since the office remains in the cutover mode throughout the HRI procedure and the line ferrods are connected, some method must be used to isolate the lines from the No. 2B ESS office until they are cutover. The HRI procedure does not allow terminating service because the RI in the two-word expansion table routes the calls to another office or to some form of intercept. Originating service must be prevented until cutover by removing the heat coils from the protector frame in the No. 2B ESS office or by not running cross-connects until cutover.

6.03 The HRI procedure can be used in conjunction with the existing office procedures (Part 5). These procedures should be compared to determine which procedure or a combination of the two methods best suits the office.

6.04 ***Office-to-Office Testing:*** This procedure is performed early in the HRI method and is used to verify that a particular subscriber will be reached when the number of the subscriber is pulsed over a No. 2B ESS no-test trunk. Reference should be made to Sections 232-002-509 and ▶232-302-305.◀

6.05 ***Automatic Line Insulation Test (PD-2H114):*** This program provides automatic testing of the line insulation and the ability of the lines to originate. These tests are run on all idle lines during the HRI method.

CUTOVER PROCEDURES

6.06 ***Cutover Communications:*** Necessary communications should be established between departments and the cutoff and cut-in stations. The communications console should be located in the No. 2B ESS office.

6.07 ***Precutover Items:*** The following items normally are the responsibility of personnel assigned to the No. 2B ESS office and are to be completed prior to the day of cutover. This list may not be complete for any particular office, but it is to be used as a guideline for preparing a detailed work schedule.

(1) Make a complete rehearsal of the cutover procedures and prepare information for the cutover input messages.

(A RC:HRI:nnx abcd!)

(2) Complete routing and charging accuracy tests if these translations changed (Section 232-002-513).

(3) Verify that new centrex groups of which traffic data is desired have been assigned to the H or C traffic schedule.

(4) Make arrangements for safety goggles and rubber gloves for all personnel assigned to remove heat coils in the old office.

(5) Make office evaluation.

(6) Install communications system to be used during cutover.

(7) Complete last cycle of office-to-office testing (Section 232-002-509). Ensure that all test data has been removed at conclusion of testing and the original data has been restored.

(8) Complete last cycle of trunk testing if applicable.

(9) Identify and protect all heat coils in the old office that ***should not be removed*** at cut.

(10) Update recent change (Section 232-304-301).

(11) Run automatic line insulation test (ALIT) after last recent change update (to check for translation errors only).

(12) Verify operator intercepts for lines to be cutover that have had service suspended or denied.

6.08 The following items are to be completed on the day of cutover.

(1) If a new generic program was loaded, guarantee that the following automatic tests passed successfully:

(a) ▶CU diagnostics◀

(b) PU exercises

(c) Service circuit tests

(d) Junctor and range extension (RE) tests

(e) Trunk tests (if applicable)

(f) ALIT (if applicable)

(g) Tape cartridge exercise

(h) TTY exercise

(i) Tape to tape audit.

(2) Inspect the protection for all heat coils in the old office that ***are not*** associated with the cut.

(3) Inspect heat coil pulling devices. Verify the presence of safety goggles and rubber gloves in the old office.

(4) Make an operational check of cutover communication lines.

(5) Update recent change after last service order input and traffic work table update.

(6) If the cutover occurs between 8 pm and 8 am, type the following TTY input messages to inhibit certain exercises and tests at the time of cutover.

▶INH:MSF 12! (inhibit PU exercises)◀

T WT:ATT! (inhibit timed trunk testing)

T WT:AST! (inhibit timed service circuit testing)

T WT:AJT! (inhibit timed junctor and range extension testing)

T WT:LIT! (inhibit ALIT testing)

▶INH:MSF 11! (inhibit CU exercises)◀

▶INH:MSF 7! (inhibit TDC diagnostics)◀

Caution: Do not turn off trunk, service, or junctor testing by using the MTK:AT:O! and similar messages as this will also inhibit call processing requests for maintenance.

(7) If the local test desk (LTD) TTY channel 4 is not attended, or if there is no local monitor, type the following input message:

RMV:TTYC 4!

(8) Verify that all advanced trunks available to No. 2B ESS before cutover have been released per schedule.

(9) Make check of permanent signals in the old office and remove the coils on the associated lines in the new office if there are more permanents than 1/2 the quantity of DP or TT CDPRs. This is ***very*** important to ensure that the system is not heavily loaded with permanent signals immediately after cut.

(10) Verify that all cutover and field personnel are present.

(11) Verify that repair personnel are at key locations.

(12) Establish conference call for the cutover communications.

(13) Make final check of permanent signal lines. (See Step 9.)

(14) Five minutes prior to cutover verify that no emergency calls are in progress.

(15) Remove heat coils or cross-connects in old office.

(16) Cutover the hundreds group(s) by typing the following input message(s):

A RC:HRI:nnx abcd!

nnx abcd = A telephone number within the hundreds block(s) to be cutover.

(17) Place heat coils in No. 2B ESS office with exception of Step 9 or run cross-connects, if applicable.

6.09 ***Trunk Cutover:*** Trunk cutover, if applicable, is found in Part 8.

6.10 ***Postcutover Items:*** The following items are performed after the office is cutover.

(1) Test lines requiring special treatment and emergency lines.

(2) Make dial tone test from cable pairs at the combined distributing frame (CDF) or the protector frame or, if applicable, make test calls at centrex customer premises from station to station.

(3) Clear permanent signals by inserting heat coils of lines removed in Step 9 of paragraph 6.08. Insert no more coils at any time than 1/2 of the DP or TT CDPRs. Wait until these go high and dry before inserting the next batch.

(4) Make test calls on toll and tandem network and loop back into the No. 2B ESS office. Test tie trunk and Common Control Switching Arrangement networks, if applicable.

(5) Observe lines that are "showering" by noting the following TTY printouts on channel 4 (LTD TTY) or maintenance TTY:

MI L ERR

MI L NCH

MI L SCC

MI L SCR

MI CF

Remove these lines from service until the trouble can be cleared by typing the following TTY input message:

M L:RMV:aaa bbbb ccc dddd!

aaa = Line network number

bbbb = Concentrator group, switch, level

ccc = Office number

dddd = Low four digits of the line directory number.

(6) As soon after cutover as the system is running normally, reinstate the diagnostics

turned off in paragraph 6.08, Step 6, by typing the following TTY input messages:

◗ALW:MSF 11!◖

◗ALW:MSF 12!◖

◗ALW:MSF 7!◖

T WT:RST!

RST:TTYC 4! [If removed in paragraph 6.08 (Step 7).]

PROCEDURES TO BE USED WITH CUT PROGRAM METHOD AND/OR HRI METHOD

7. CHANGING CUTOVER BIT IN PROGRAM STORE

7.01 The cutover bit (bit 4 of the office option word, OFFOP0, defined in PA-2H202 must be in the correct state before the system can be switched from the precutover mode to the cutover mode, or vice versa, by the cutover TTY message. Bit 4 of OFFOP0 must be a 0 to change from precutover to cutover mode and a 1 to change from cutover to precutover mode. Bit 4 is normally a 1 when a new ODT is loaded if any nonworking lines have been set up on input form ESS-2501.

7.02 ***Change Office Option Word:*** Normal recent change messages do not access the office option data word area of the program store; therefore, a CHIPS change message must be used as follows.

(1) Obtain the present octal contents of the program store for the word change message. This information is obtained by typing the following input message:

DMP:PS aa!

aa = Address of office option word OFFOP0.

(2) The system responds with the octal contents of the office option word in the following message:

DMP PS aa
bb dd dd dd dd dd dd dd

aa = Address of office option word OFFOP0.

bb = Octal contents of office option word OFFOP0.

dd = Octal contents of additional PS words, ignore.

(3) Change the octal contents of the office option word (b data field) to its binary equivalent. (See Table A and Table B.) Change bit 4 to a 0 for cutover and to a 1 for precutover. The recent change bit (22) should always be zero (0). Bit 23 is not used and should also be zero (0).

TABLE A

OLD OFFOP0 (in octal)	b	b	b	b	b	b	b	b
BINARY EQUIVALENT	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
BIT POSITION	23 22 21	20 19 18	17 16 15	14 13 12	11 10 9	8 7 6	5 4 3	2 1 0
NEW OFFOP0 (in octal)	c	c	c	c	c	c	c	c

TABLE B

DECIMAL TO OCTAL TO 3-DIGIT BINARY	
0	000
1	001
2	010
3	011
4	100
5	101
6	110
7	111

Change this new binary number back to the octal contents (cccccccc) to be used in paragraph 4.

(4) ▶Initiate the Change Program Store Words routine by following the procedure in Section 232-304-303 for 2B-EF-1 or 232-304-304 for 2B-EF-2.◀

8. TRUNK CUTOVER

8.01 The problems presented by interoffice, tie, and foreign exchange trunks and Common Control Switching Arrangement networks during precutover and cutover intervals are similar to those presented by lines. Whenever cable pairs and facilities are to be reused, isolation from the old office must be provided, outgoing trunks in the No. 2B ESS office must be made busy to outgoing calls, and the circuits must be tested before being placed into service. In addition, a quick procedure must be provided for cutting over large quantities of trunks.

8.02 During the precutover interval, trunk groups of not less than one or two trunks shall be established between the No. 2B ESS office and each connecting office. This provides test call capability between the offices to determine if any local problems exist. It should be noted that procedures vary between new and reused facilities on incoming, outgoing, and 2-way trunks. It is common to test each trunk circuit for proper operation before cutover.

INCOMING TRUNKS

8.03 Control of each incoming trunk is the responsibility of the originating office. During the precutover interval, any trunks not being used for test purposes should be made busy at the originating end.

A. New Facilities

8.04 Trunks using new facilities should be tested in advance of cutover and should be made busy at the originating end. Trunk isolation is not required since the conductors of the new facilities are not multipled to trunk equipment in the office being replaced.

B. Reused Facilities

8.05 Incoming trunks reusing existing facilities must be isolated from the trunk circuit in the office being replaced. This is accomplished by means of a mechanical cutover device. Precutover testing should be accomplished by temporarily setting the cutover device to the No. 2B ESS position and by testing from the outgoing trunk testboard (or other trunk testing equipment) in the originating office.

8.06 At cutover, the following procedures should be performed in order to transfer these trunks from the office being replaced to the No. 2B ESS office.

(1) Several hours prior to cutover, a portion of the incoming trunk group should be made busy at the originating office to ensure that calls are not made to the old office on these trunks.

(2) The originating office should notify the new No. 2B ESS terminating office when the trunks have been made busy and have become idle.

(3) The cutover devices which disconnect these trunks from the office being replaced and connect them to the new No. 2B ESS office should be activated. The originating office should be notified when this is completed.

(4) The trunks should be tested by the originating office by placing a call to a test number.

(5) When the No. 2B ESS office has been cutover, the originating office should release the trunks from the make-busy condition. Any trunks not yet transferred to the No. 2B ESS office must be made busy at the originating office. Whenever routings are changed because of a cutover, the necessary cross-connections or translation changes should also be made prior to cutover, and the new routings should be made busy until cutover.

(6) The above procedures should be repeated until the entire trunk group has been cutover.

OUTGOING TRUNKS

A. New Facilities

8.07 When outgoing trunks from No. 2B ESS offices utilize new facilities to another office, the cutover devices are not required and the trunks are not made busy in the No. 2B ESS office. Each trunk should be tested prior to cutover. Whenever it is necessary to keep some of the trunks out of service during the precutover interval, these trunks should be restored to service shortly before or after cutover.

B. Reused Facilities

8.08 Cutover devices are required for those outgoing trunks which reuse existing facilities. These trunks should be made busy at the No. 2B ESS office by removing them from service via the maintenance TTY or from the trunk test panel (TTP). All outgoing trunks which reuse facilities should be removed from service prior to cutover.

8.09 The following procedures should be performed when transferring outgoing trunks that reuse existing facilities.

(1) Several hours prior to cutover, a predetermined number of trunks from each group should be made busy at the office being replaced. The No. 2B ESS office should be notified when these trunks have been made busy and have become idle.

(2) The cutover devices associated with the trunks made busy shall be activated. This disconnects the trunks from the office being replaced and connects them to the ESS office. The office being replaced should be notified when the cutover devices have been activated.

(3) Each trunk shall now be tested from the TTP. When the trunk passes the tests, it should be released idle. This action restores the trunk to service if no automatic diagnostic test exists. Trunks that are provided with automatic diagnostic tests will have this test performed automatically when the trunk is released. The trunk is restored to service if the test is successful; otherwise, it is left out of service (maintenance busy). In either case, a TTY printout at the local maintenance TTY indicates the disposition of the circuit.

(4) After cutover, the remaining trunks should be cutover as described in paragraphs (1), (2), and (3).

TWO-WAY TRUNKS

8.10 Since both ends of the 2-way trunk are potentially originating offices, control of 2-way trunks is the responsibility of the offices at both ends.

A. New Facilities

8.11 When 2-way trunks utilize new facilities to another office, cutover devices are not required. However, since the trunks are not made busy in the No. 2 ESS office they must be busied at the far end. Each trunk shall be tested prior to cutover. Whenever it is necessary to keep some of the trunks out of service during the precutover interval, these trunks should be restored to service shortly before or after cutover.

B. Reused Facilities

8.12 Cutover devices are required for those 2-way trunks which reuse existing facilities. These trunks should be made busy at the No. 2B ESS office by removing them from service via the maintenance TTY or the trunk test panel (TTP). All 2-way trunks which reuse existing facilities should be removed from service prior to cutover.

8.13 The following procedures should be performed when transferring 2-way trunks that reuse existing facilities.

(1) Several hours prior to cutover, a predetermined number of trunks from each group should be made busy, both at the office being replaced and at the office at the other end of the trunk. The No. 2B ESS office should be notified when these trunks have been made busy and have become idle.

(2) The cutover devices associated with the trunks made busy should be activated. The office being replaced should be notified when the cutover devices have been activated.

(3) Each trunk should now be tested from the TTP. When the trunk passes the tests, it should be released idle. This action restores the trunk to service if no automatic diagnostic test exists. Trunks that are provided with automatic diagnostic tests will have this test performed automatically when the trunk is released. The trunk is restored to service if the test is successful; otherwise, it is left out of service (maintenance busy). In either case, TTY printout indicates the disposition of the circuit.

(4) The distant office should be notified when paragraph 3 is completed. The trunks should be tested next by the distant office by placing a call to a test number in the No. 2B ESS office.

(5) After cutover, the remaining trunks should be cutover as described in paragraphs (1), (2), (3) and (4). The distant office should release the cutover trunks from the make-busy condition. Any trunks not transferred to the No. 2B ESS office must be made busy at the originating office. Whenever routings are changed because of a cutover, the necessary cross-connections or translation changes should also be made prior to cutover and the new routings shall be made busy until cutover.

9. ABBREVIATED PROCEDURES

9.01 The following check list is an abbreviated form of the procedures described in Parts 4 and 5. Before using the check list, Parts 4, 5, and 6 must be read for a complete understanding of the procedures.

NEW OFFICE CUTOVER PROCEDURES

STEP	READ	ACTION	SYSTEM ACTION
1	4.02 4.03	Complete precutover items.	
2	4.04	Trunk cutover.	
3	4.05	Complete post-cutover items.	

EXISTING OFFICE PRECUTOVER PROCEDURES

*1	5.02	If precut between 2300 and 0000 hours —	System will not perform CU exercise tests for this interval.
		(1) Abort long term periodic tests: →INH:MSF 11! ←	
		(2) Mark multiscan function →11← as allowable for next interval: →ALW:MSF 11!←	
2	5.03	(1) Load ODT in off-line CU.	
3		(2) Immediately place system in precutover mode. M SY:CUT:PRE!	System precutover mode.
4		(3) Load new ODT in off-line CU.	
5		(4) Restore the off-line CU to service. RST:CU!	Off-line CU is restored and main store is updated and put in update mode.

EXISTING OFFICE CUTOVER PROCEDURES

*1	5.04	Follow procedure in Part 4.	

HUNDREDS GROUP ROUTE INDEX PROCEDURE

1	6.07	Precutover items	
2	6.09	Trunk cutover	
3	6.10	Post-cutover items	

TRUNK CUTOVER

STEP	READ	ACTION	SYSTEM ACTION
1	8.04	Cut over new facilities for incoming trunks.	
2	8.06 (1)-(6)	Cut over reused facilities for incoming trunks.	
3	8.07	Cut over new facilities for outgoing trunks.	
4	8.08		
	8.09 (1)-(4)	Cut over reused facilities for outgoing trunks.	
5	8.11	Cut over new facilities for 2-way trunks.	
6	8.13 (1)-(5)	Cut over reused facilities for 2-way trunks.	

9.02 ***Asterisk:*** Steps that vary from the normal procedure or that are performed only under certain conditions are marked with an asterisk (*). The related conditions are explained in the ACTION column.