OFFICE UPDATE PROCEDURES USING REGIONAL OFFICE DATA ADMINISTRATION PROGRAM AND/OR NEW GENERIC PROGRAM (2B-EF-1) NO. 2B ELECTRONIC SWITCHING SYSTEM

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1. GENERAL

1.01 This section describes procedures for updating the No. 2B Electronic Switching System (ESS) generic program and/or translations. The term office data includes both translation and office parameter data. The generic program consists of data that is common to every No. 2B ESS office. The office data may be changed by an office data administration (ODA) update by use of the ODA system of computer programs. This section includes the procedures necessary to update either or both the generic program and/or office data.

1.02 This section is reissued to include 2B-EF-1 changes and other miscellaneous corrections. Since this is a general revision, change arrows ordinarily used have been omitted.

1.03 For a more detailed description of the ODA system for No. 2B ESS, refer to Section 232-324-101.

1.04 The 2B processor common program system guarantees that the off-line main store contains the same data as the on-line main store in normal operation and that this data is the same as the backup tape copy. Two separate mechanisms exist to ensure the two stores are exact replicas.

- The off-line store is updated with the current contents of the on-line store as necessary.

- If the two stores are presumed to be the same, both are audited for bad parity and for mismatches between the two stores.

1.05 The ability of the 2B processor to quickly recover from faults is dependent on the contents of the main store of the standby control unit (off-line main store) being an exact replica of the contents of the active main store. If this is not the case, when a fault occurs, time is consumed in moving the contents of one store to the other.

1.06 Special hardware exists in the 2B processor to maintain an updated off-line main store, an off-line store whose contents are identical to those in the on-line main store. With the processor in the update mode, the data is automatically written into both stores every time a write-into-store instruction is encountered.

1.07 It is not always possible to keep the processor in the update mode. The off-line main store may have a fault or the automatic update mechanism might interfere with an experiment being run in the standby control unit. When the system is returned to the update mode, the contents of the on-line main store must be copied to the off-line main store to establish an exact replica before it can be maintained by the automatic update mechanism.

1.08 ***Lettered Steps:*** A letter a, b, c, etc, added to a step number in this section, indicates an action which may or may not be required depending on local conditions. The condition under which a lettered step or a series of lettered steps should be made is given in the ACTION column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

2. PRELIMINARY PROCEDURES FOR A GENERIC RESTART AND/OR ODA TRANSLATION UPDATE

2.01 Prior to a generic restart only (paragraph 3.01A), order six list 2 tape cartridges of the desired generic point issue.

2.02 Preparatory steps for an update involving an ODA translation update (paragraph 3.01 B or C) are as follows:

(a) All questionnaires and input forms (No. 2B ESS 2000 series) are prepared and sent to the Western Electric computation center.

(b) A modification of the ODA run, giving the established schedule of actions, is received.

(c) Preserve all service order recent changes and customer-dialed changes during the ODA interval (see Section 232-324-101). To request the system to automatically generate paper tapes of every customer-dialed change, type the following input message at the maintenance TTY:

A RC:PUN:1!

Note: This TTY message must be typed at the time of the last RC update before the data transmission is to take place and must remain in the No. 2B ESS until the office update procedures are completed.

(d) Do a recent change update using the tape data facility (refer to Section 232-304-301 for update procedures). Save all paper tapes corresponding to changes entered after this step (if any) for reinsertion at a later step. Hold all recent change activity to a minimum until completion of this procedure.

(e) Send two copies of the current office tape data to the Western Electric computation center as per schedule. Refer to Section 232-309-305 for procedures to make a tape copy. The TELCo will receive two list 1 tape cartridges for an ODA translation update only and six list 1 tape cartridges for a generic restart and ODA translation update. The list 1 tape cartridges will contain (among other things) generic (as ordered), an updated translation file, an empty overwrite file, an empty backdate file, and label file. The list 2 tape referred to in paragraph 2.01 differs from a list 1 tape in that it does not include office-related information such as translation data. Ensure that sufficient spare tape cartridges are on hand to maintain a ***minimum*** quantity of four working cartridges.

2.03 The ODA update uses WECo manufacturing to write complete updated program store translation information. These new tapes will be shipped to the No. 2B ESS office. Hashsums and documentation will accompany the translation data.

2.04 This procedure will require tape handling operations (refer to Section 232-309-305).

3. PROCEDURES FOR A GENERIC RESTART AND/OR TRANSLATION ODA UPDATE

3.01 Prior to the installation of updated office data tapes in the No. 2B ESS, the WE installer will inform the local TELCo as to which kind of system initialization will be required for the associated update. This information will determine which one of the following parts and tables will be used for the office update:

A. Generic Restart Without an ODA Run: The Engineering Change Procedure (ECP) will specify the level of initialization needed. This could be any of the following:

(1) CU Switch (Table A)

(2) Transient Clear Initialization (Table B)

(3) Recent Change Initialization (Table C)

(4) Stable Clear Initialization (Table D)

(5) Stable Clear and Recent Change Initialization (Table E)

B. ODA Update Only (No Generic Change): A stable clear, recent change initialization is always needed. (Table E)

C. Generic Restart and ODA Translation Update: A stable clear, recent change initialization is always needed. (Table E)

3.02 The time required to run the procedure in A, B, or C should be estimated or obtained from an office that has run the procedure. Thus, the procedure can be started at a time that permits the SW:INIT message in Tables B, C, D, and E to be performed at a low traffic period. Preliminary steps in Part 2 may be done in advance. However, all recent change activity must be held to a minimum between the time the recent change is updated as required by the procedure, and the entire procedure is completed.

3.03 Before beginning the procedure, verify the following:

- The system is in the normal mode of operation by observing that the SYSTEM NORMAL lamp is lighted.
- All maintenance center functions are released and the SYSTEM EMERGENCY MANUAL CONTROL panel is clear (no lamps lighted).
- Control unit 0, control unit 1, system status panel and maintenance TTY are in service.
- The system is in standby, the MAS (main store) lamp, ATI, TDC, MISC, MANUAL FORCE lamps are extinguished.

A. Generic Restart Without an ODA Run

STEP	ACTION	VERIFICATION
Tape Cartridge Procedure		
1a	If any steps will be performed between 0100 and 0200 hours— At maintenance TTY— Type in: INH:MSF x! x = automatic long-term peripheral unit exercises multiscan function number.	At maintenance TTY— System response: OK

STEP	ACTION	VERIFICATION
2b	If any steps will be performed between 2300 and 2315 hours— Type in: INH:MSF y! y = automatic long-term CU exercises (CU diagnostics) multiscan function number.	System response: OK
3	Type in: A RC:PUN:1!	System response: OK
4	Do a recent change update using the tape data facility (refer to Section 232-304-301 for update procedures.) ***Note:*** The above step allows for the possibility of returning to the original data if the new data does not work.	
5	Type in: RMV:TAPE 0!	System response: OK
6	Type in: RMV:TAPE 1! ***Note:*** If the system attempts to bootstrap any time between the next step and completion of this procedure, release the LOCK key (if active) and replace the original tapes in the transports. (The original tapes are the tapes in service at the beginning of segment A.)	System response: OK
7	Operate UNLOAD pushbuttons on both TDCs. Remove and save old cartridges. Insert both new cartridges.	
8	Type in: RST:TAPE 0;UCL!	System response: OK
9	Type in: RST:TAPE 1;UCL!	System response: OK
10	Type in: INIT:TAPE! ***Note:*** Perform Step 10 a total of four times to ensure proper tape retensioning.	System response: IP INIT TAPE COMPL
11	Type in: DGN:TAPE 0!	System response: IP DGN TAPE 0 ATP

STEP	ACTION	VERIFICATION
12	Type in: DGN:TAPE 1!	System response: IP DGN TAPE 1 ATP
13c	If any steps will be performed between 0215 and 0235 hours— Type in: INH:MSF z! z = tape diagnostics multiscan function number.	System response: OK
14	Type in: ALW:TAPEUTIL!	System response: PF ALW TAPEUTIL COMPL
15	Type in: AUDIT:TAPE(0,1);DETL!	System response: IP AUDIT TAPE MATCH 0 TAPEUTIL STOPPED
	Caution: Do not proceed unless the tape audit passes. If audit errors are found, repeat Steps 10 through 14, and 15. If audit errors are still present, obtain new tapes from the Regional Center. Replace original tapes in TDCs and restore the system to normal.	
16	Type in: RMV:TAPE 0!	System response: OK
17	Operate the UNLOAD button on TDC 0. Remove and save the new tape. Insert the original tape saved from Step 7.	
18	Type in: RST:TAPE 0;UCL!	System response: OK
19	Type in: ALW:TAPEUTIL!	System response: PF ALW TAPEUTIL COMPL
20	Type in: AUDIT:TAPE(0,1),TRK 2;CORR!	System response: IP AUDIT TAPE MATCH 0
21	Type in: RMV:TAPE 0!	System response: OK
22	Operate the UNLOAD button on TDC 0. Remove and save the original tape.	

STEP	ACTION	VERIFICATION
23	Type in: ALW:OW!	System response: PF ALW OW COMPL
24	Type in: IN:GENID:xxxxxxxx! xxxxxxxx = present generic identifier.	System response: OK
25	Type in: IN:ISSID:zzzzzzzz! zzzzzzzz = new issue identifier.	System response: OK
26	Type in: INIT:OWFILE!	System response: PF INIT OWFILE COMPL
27	Type in: STOP:OW!	System response: PF ALW OW STOPPED
28	Reinsert the new tape saved from Step 17 in TDC 0.	
29	Type in: RST:TAPE 0;UCL!	System response: OK
30	Type in: ALW:TAPEUTIL!	System response: PF ALW TAPEUTIL COMPL
31	Type in: DMP:TAPE 0,DIRECTRY!	System response: PF DMP TAPE DIRECTRY 0 file name START b ccc END d eeee ffff . . . TAPEUTIL COMPL b = start track number cccc = start block number d = ending track number eeee = ending block number fff = file length
32	Type in: COPY:TAPE(0,1),TRK cc:BLK(dd,ee,ff)! cc = starting track number of BOOT2 file from Step 31 dd = ee = starting block number of BOOT2 file from Step 31 ff = length of BOOT2 file from Step 31	System response: IP COPY TAPE COMPL TAPEUTIL STOPPED

STEP	ACTION	VERIFICATION
33	Type in: ALW:TAPEUTIL! ***Caution: Ensure the correct tape numbers are specified on next message.***	System response: PF ALW TAPEUTIL COMPL
34	Type in: AUDIT:TAPE(1,0);CORR!	System response: IP AUDIT TAPE MATCH 0
Update Procedure		
35	Type in: T PR:TWT!	System response: PF TR PR TWT aaa bbb ccc day aaa = DSP if active bbb = TNP if active ccc = SOL if active day = day of week
36	Type in: T WT:ATT!	System response: OK
37	Type in: T WT:AST!	System response: OK
38	Type in: T WT:AJT!	System response: OK
39	Type in: T WT:LIT!	System response: OK
40	Type in: DGN:CU!	System response: PF DGN CU x COMPL ATP UPD OMAS COMPL
41	Type in: M TK:SI!	All trunk, service circuits, and junctor circuits that are marked out of service will be listed.
42d	If switch and initialization (Tables B, C, D, or E) is required— Type in: M PU SI! ***Caution: Do not proceed if any major piece of equipment is out of service.***	System response: PF MR AL SI MR AM SI MR LK AS 0 END
43	At System Status Panel— Depress LOCK key.	At System Status Panel— LOCK lamp lighted.

STEP	ACTION	VERIFICATION
		System response: REPT CU STAT UAV
44d	If switch and initialization (Tables B, C, D, or E) is required— At 3A CC Panels— Depress both MANUAL keys.	At 3A CC Panels— Both MANUAL lamps lighted. System response: REPT CU STAT MAN REPT ERR KEY
45	Type in: ALW:TAPEUTIL!	System response: PF ALW TAPEUTIL COMPL
46	Type in: LOD:OMAS;TAPE x! x = off-line tape unit. ***Note: Do not make any TTY requests that may cause multiscan functions to be initiated until Step 57 has been executed.***	System response: IP LOD OMAS COMPL TAPEUTIL STOPPED
47	Type in: ALW:OW;UCL!	System response: PF ALW OW COMPL
48e	If any overwrites must be made to the generic data in the off-line main store— Perform the overwrite procedure in Table F.	
49	Compute generic hashsums on ***each*** main store module (32K words) by typing in: VFY:OW:ADR adr! adr = module boundaries of generic data. ***Caution: Resolve all hashsum mismatches before proceeding.***	System response: PF VFY OW ADR adr bbbbbb bbbbbb = hashsum number
50	Initialize the system in accordance with applicable Table A, B, C, D, or E.	
51	Make calls through each network to determine that the system is working properly. Also perform system evaluation in accordance with Section 232-325-501. If Table A was used, do not perform any operation which would update the off-line store. ***Important:*** If the system is not working properly, wait until the end of the initialization interval (SERVICE LOSS lamp lighted steadily)	

STEP	ACTION	VERIFICATION
	and switch or force back to the original working CU.	
52d	If switch and initialization (Tables B, C, D, or E) is required— Restore AMA service observing to its prior state (Step 42d) by typing in: M AM:OBS:fg hi n!	System response: IP
53	Delay until the new on-line CU has run for a total of 15 to 30 minutes.	
54f	If a CU switch only (Table A) is required— At (new) off-line 3A CC Panel— Depress MANUAL key.	At off-line 3A CC Panel— MANUAL lamp lighted. System response: REPT CU STAT MAN
55f	Type in: STOP:OW!	System response: PF ALW OW STOPPED
56b	If switch and initialization (Table B, C, D, or E) is required— Type in: ALW:MSF x! x = main store update multiscan function number.	System response: OK
57	At 3A CC Panels— Depress MANUAL keys on off-line CU and on-line CU (if active). ***Note:*** The off-line store is updated when UPD OMAS COMPL is printed.	At 3A CC Panels— MANUAL lamps extinguished. System response: UPD OMAS COMPL At off-line 3A CC Panel— STANDBY lamp lighted.
58	Type in: T WT:RST!	System response: OK
59	Type in: T PR:TWT!	System response: PF TR PR TWT aaa bbb ccc day aaa = DSP if active bbb = TNP if active ccc = SOL if active day = day of week
60	Change the traffic work tables to its original state given in Step 35.	

STEP	ACTION	VERIFICATION
61f	If switch (Table A) is required— Ensure all multiscan functions previously inhibited are now allowed by typing in: ALW:MSF w! w = All multiscan functions previously inhibited.	
62	Type in: M PU:EX!	System response: PF MI PU EX END
63	Type in: A AU:RC!	System response: PF AR AU RC ATP AR AU RCBIT ATP
64	Type in: ALW:OW!	System response: PF ALW OW COMPL
65	Type in: UPD:OW!	System response: PF UPD OW COMPL
66	Type in: STOP:OW!	System response: PF ALW OW STOPPED
67	Use the tape copy procedure in Section 232-309-305 to bring the remaining new tapes from WECo up to the current status of the present tapes.	

B. ODA Update Only (No Generic Change)

Tape Cartridge Procedure

1a	If any steps will be performed between 0100 and 0200 hours— At maintenance TTY— Type in: INH:MSF x! x = automatic long-term peripheral unit exercises multiscan function number.	At maintenance TTY— System response: OK
2b	If any steps will be performed between 2300 and 2315 hours— Type in— INH:MSF y! y = automatic long term CU exercises (CU diagnostics) multiscan function number.	System response: OK

STEP	ACTION	VERIFICATION
3	Do a recent change update using the tape data facility. (Refer to Section 232-304-301 for update procedures.) ***Note:*** The above step allows for the possibility of returning to the original data if the new data does not work.	
4	Type in: RMV:TAPE 0!	System response: OK
5	Type in: RMV:TAPE 1! ***Note:*** If the system attempts to bootstrap any time between the next step and completion of this procedure, release the LOCK key (if active) and replace the original tapes in the transports. (The original tapes are the tapes in service at the beginning of segment B.)	System response: OK
6	Operate UNLOAD pushbuttons on both TDCs. Remove and save old cartridges. Insert both new cartridges.	
7	Type in: RST:TAPE 0;UCL!	System response: OK
8	Type in: RST:TAPE 1;UCL!	System response: OK
9	Type in: INIT:TAPE! ***Note:*** Perform Step 9 a total of four times to ensure proper tape retensioning.	System response: IP INIT TAPE COMPL
10	Type in: DGN:TAPE 0!	System response: IP DGN TAPE 0 ATP
11	Type in: DGN:TAPE 1!	System response: IP DGN TAPE 1 ATP
12c	If any steps will be performed between 0215 and 0235 hours— Type in: INH:MSF z! z = tape diagnostics multiscan function number	System response: OK

STEP	ACTION	VERIFICATION
13	Type in: ALW:TAPEUTIL!	System response: PF ALW TAPEUTIL COMPL
14	Type in: AUDIT:TAPE(0,1);DETL!	System response: IP AUDIT TAPE MATCH 0 TAPEUTIL STOPPED
	Caution: Do not proceed unless the tape audit passes. If audit errors are found, repeat Steps 9, 13, and 14. If audit errors are still present, obtain new tapes from the Regional Center. Replace original tapes in TDCs and restore the system to normal.	
15	Type in: RMV:TAPE 0!	System response: OK
16	Operate the UNLOAD button on TDC 0. Remove and save the new tape. Insert the original tape saved from Step 6.	
17	Type in: RST:TAPE 0;UCL!	System response: OK
18	Type in: ALW:TAPEUTIL!	System response: PF ALW TAPEUTIL COMPL
19	Type in: DMP:TAPE 0,DIRECTRY!	System response: PF DMP TAPE DIRECTRY 0 file name START b cccc END d eeee ffff . . . TAPEUTIL COMPL b = start of track number ccc = start of block number d = ending track number eeee = ending block number ffff = file length
20	Type in: DMP:TAPE 1,DIRECTRY!	System response: PF DMP TAPE DIRECTRY 1 file name START b cccc END d eeee ffff . .

STEP	ACTION	VERIFICATION
		TAPEUTIL COMPL b = start of track number cccc = start of block number d = ending track number eeee = ending block number ffff = file length
	Caution: Do not proceed if the PATCH file lengths are unequal.	
21	Type in: COPY:TAPE(0,1),TRK cc:BLK(dd,ee,ff)! cc = starting track number of original tape PATCH file from Step 19 dd = starting block number of original tape PATCH file from Step 19 ee = starting block number of new tape PATCH file from Step 20 ff = length of PATCH file	System response: IP COPY TAPE COMPL TAPEUTIL STOPPED
22	Type in: RMV:TAPE 0!	System response: OK
23	Operate the UNLOAD key on TDC 0. Remove and save the original tape. Reinsert the new tape saved from Step 16 in TDC 0.	
24	Type in: RST:TAPE 0;UCL!	System response: OK
25	Type in: ALW:TAPEUTIL!	System response: PF ALW TAPEUTIL COMPL
	Caution: In the following step, be sure to copy from TDC 1 to TDC 0.	
26	Type in: COPY:TAPE(1,0),TRK cc:BLK(dd,ee,ff)! cc = starting track number of new tape PATCH file from Step 20 dd = ee = starting block number of new tape PATCH file from Step 20 ff = length of PATCH from Step 20	System response: IP COPY TAPE COMPL TAPEUTIL STOPPED
Update Procedure		
27	Type in: T PR:TWT!	System response: PF TR PR TWT aaa bbb ccc day aaa = DSP if active

STEP	ACTION	VERIFICATION
		bbb = TNP if active ccc = SOL if active day = day of week
28	Type in: T WT:ATT!	System response: OK
29	Type in: T WT:AST!	System response: OK
30	Type in: T WT:AJT!	System response: OK
31	Type in: T WT:LIT!	System response: OK
32	Type in: DGN:CU!	System response: PF DGN CU x COMPL ATP UPD OMAS COMPL
33	Type in: M TK:SI!	All trunk, service circuits, and junctor circuits that are marked out of service will be listed.
34	Type in: M PU SI!	System response: PF MR AL SI MR AM SI MR LK ASO END
	Caution: Do not proceed if any major piece of equipment is out of service.	
35	At System Status Panel— Depress LOCK key.	At System Status Panel— LOCK lamp lighted. System response: REPT CU STAT UAV
36	At on-line and off-line 3A CC Panels— Depress both MANUAL keys.	At 3A CC Panels— Both MANUAL lamps lighted. System response: REPT CU STAT MAN REPT ERR KEY
	Note: At this point, the off-line store is loaded and both 3A CCs are in MANUAL.	
37	Type in: ALW:TAPEUTIL!	System response: PF ALW TAPEUTIL COMPL

STEP	ACTION	VERIFICATION
38	Type in: LOD:OMAS;TAPE x:TRNSLN! x = off-line tape unit.	System response: IP LOD OMAS COMPL TAPEUTIL STOPPED
39	Type in: ALW:OW;UCL!	System response: PF ALW OW COMPL
40	To compute translation hashsums on ***each*** main store module— Type in: VFY:OW:ADR adr! adr = module boundaries of translation data ***Note:*** Hashsums cannot be computed over data loaded beyond the present store limit. ***Caution: Resolve all hashsum mismatches before proceeding.***	System response: PF VFY OW ADR adr bbbbbb bbbbbb = hashsum number.
41e	If any overwrites must be made to the translation data in the off-line main store— Perform the overwrite procedures in Table F.	
42	Initialize the system in accordance with Table E.	
43	Make calls through each network to determine that the system is working properly. Perform system evaluation in accordance with Section 232-325-501. ***Important:*** If the system is not working properly, wait until the end of the initialization interval (SERVICE LOSS lamp lighted steadily) and switch or force back to the original working CU.	
44	Restore AMA service observing to its prior state (from Step 34) by typing in: M AM:OBS:fg hi n!	System response: IP
45	Delay until the new on-line CU has run for a total of 15 to 30 minutes.	
46	Type in: ALW:MSF x! x = main store update multiscan function number.	System response: OK

STEP	ACTION	VERIFICATION
47	At 3A CC Panels— Depress MANUAL keys on off-line CU and on-line CU (if active).	At 3A CC Panels— MANUAL lamps extinguished. System response: UPD OMAS COMPL At off-line 3A CC Panel— STANDBY lamp lighted.
	Note: The off-line store is updated when UPD OMAS COMPL is printed.	
48	Type in: T WT:RST!	System response: OK
49	Type in: T PR:TWT!	System response: PF TR PR TWT aaa bbb ccc day aaa = DSP if active bbb = TNP if active ccc = SOL if active day = day of week
50	Change the traffic work tables to its original state given in Step 27.	
51	Type in: M PU:EX!	System response: PF MI PU EX END
52	Run diagnostic on all new peripheral units put into service by the restart procedure.	
53	Type in:— A AU:RC!	System response: PF AR AU RC ATP AR AU RCBIT ATP
54e	If any overwrites were made to translation data by the overwrite procedure (Table F), perform a recent change update procedure. Immediately following this procedure, use the overwrite program to deactivate (CNL:OW) all active ***translation*** overwrites loaded via the procedure in Table F.	

C. Generic Restart and ODA Translation Update

Tape Cartridge Procedure

1a	If any steps will be performed between 0100 and 0200 hours— At maintenance TTY—	At maintenance TTY— System response: OK

STEP	ACTION	VERIFICATION
	Type in: INH:MSF x! x = automatic long-term peripheral unit exercises multiscan function number.	
2b	If any steps will be performed between 2300 and 2315 hours— Type in: INH:MSF y! y = automatic long-term CU exercises (CU diagnostics) multiscan function number.	System response: OK
3	Do a recent change update using the tape data facility (refer to Section 232-304-301 for update procedures.) ***Note:*** The above step allows for the possibility of returning to the original data if the new data does not work.	
4	Type in: RMV:TAPE 0!	System response: OK
5	Type in: RMV:TAPE 1! ***Note:*** If the system attempts to bootstrap any time between the next step and completion of this procedure, release the LOCK key (if active) and replace the original tapes in the transports. (The original tapes are the tapes in service at the beginning of segment C.)	System response: OK
6	Operate UNLOAD pushbuttons on both TDCs. Remove and save old cartridges. Insert both new cartridges.	
7	Type in: RST:TAPE 0;UCL!	System response: OK
8	Type in: RST:TAPE 1;UCL!	System response: OK
9	Type in: INIT:TAPE! ***Note:*** Perform Step 9 a total of four times to ensure proper tape retensioning.	System response: IP INIT TAPE COMPL

STEP	ACTION	VERIFICATION
10	Type in: DGN:TAPE 0!	System response: IP DGN TAPE 0 ATP
11	Type in: DGN:TAPE 1!	System response: IP DGN TAPE 1 ATP
12c	If any steps will be performed between 0215 and 0235 hours— Type in: INH:MSF z! z = tape diagnostics multiscan function number.	
13	Type in: ALW:TAPEUTIL!	System response: PF ALW TAPEUTIL COMPL
14	Type in: AUDIT:TAPE(0,1);DETL!	System response: IP AUDIT TAPE MATCH 0
	Caution: Do not proceed unless the tape audit passes. If audit errors are found, repeat Steps 9, 13, and 14. If audit errors are still present, obtain new tapes from the Regional Center. Replace original tapes in TDCs and restore the system to normal.	
15	Type in: ALW:OW!	System response: PF ALW OW COMPL
16	Type in: IN:GENID:xxxxxxxx! xxxxxxxx = present generic identifier.	System response: OK
17	Type in: IN:ISSID:zzzzzzzz! zzzzzzzz = new issue identifier.	System response: OK
18	Type in: INIT:OWFILE!	System response: PF INIT OWFILE COMPL
19	Type in: STOP:OW!	System response: PF ALW OW STOPPED

STEP	ACTION	VERIFICATION
Update Procedure		
20	Type in: T PR:TWT!	System response: PF TR PR TWT aaa bbb ccc day aaa = DSP if active bbb = TNP if active ccc = SOL if active day = day of week
21	Type in: T WT:ATT!	System response: OK
22	Type in: T WT:AST!	System response: OK
23	Type in: T WT:AJT!	System response: OK
24	Type in: T WT:LIT!	System response: OK
25	Type in: DGN:CU!	System response: PF DGN CU x COMPL ATP UPD OMAS COMPL
26	Type in: M TK:SI!	All trunk, service circuits, and junctor circuits that are marked out of service will be listed.
27	Type in: M PU SI!	System response: PF MR AL SI MR AM SI MR LK ASO END
	Caution: Do not proceed if any major piece of equipment is out of service.	
28	At System Status Panel— Depress LOCK key.	At System Status Panel— LOCK lamp lighted. System response: REPT CU STAT UAV
29	At 3A CC Panels— Depress both MANUAL keys.	At 3A CC Panels— Both MANUAL lamps lighted. System response: REPT CU STAT MAN REPT ERR KEY

STEP	ACTION	VERIFICATION
30	Type in: ALW:TAPEUTIL!	System response: PF ALW TAPEUTIL COMPL
31	Type in: LOD:OMAS;TAPE x! x = off-line tape unit.	System response: IP LOD OMAS COMPL TAPEUTIL STOPPED
32	Type in: ALW:OW;UCL!	System response: PF ALW OW COMPL
33	Compute translation hashsums on ***each*** main store module (32K words) by typing in: VFY:OW:ADR adr! adr = module boundaries of translation data. ***Note:*** Hashsums cannot be computed over data loaded beyond the present store limit. ***Caution: Resolve all hashsum mismatches before proceeding.***	System response: PF VFY OW ADR adr bbbbbb bbbbbb = hashsum number
34d	If any overwrites must be made to the generic or translation data in the off-line main store—Perform the overwrite procedure in Table F.	
35	Compute generic hashsums on ***each*** main store module (32K words) by typing in: VFY:OW:ADR adr! adr = module boundaries of generic data. ***Caution: Resolve all hashsums mismatches before proceeding.***	System response: PF VFY OW ADR adr bbbbbb bbbbbb = hashsum number
36	Initialize the system in accordance with Table E.	
37	Make calls through each network to determine that the system is working properly. Perform system evaluation in accordance with Section 232-325-501. ***Important:*** If the system is not working properly, wait until the end of the initialization interval (SERVICE LOSS lamp lighted steadily) and switch or force back to the original working CU.	

STEP	ACTION	VERIFICATION
38	Restore AMA service observing to its prior state (Step 27) by typing in: M AM:OBS:fg hi n!	System response: IP
39	Delay until the new on-line CU has run for a total of 15 to 30 minutes.	
40	Type in: ALW:MSF x! x = main store update multiscan function number.	System response: OK
41	At 3A CC Panels— Depress MANUAL keys on off-line CU and on-line CU (if active). ***Note:*** The off-line store is updated when UPD OMAS COMPL is printed.	At 3A CC Panels— MANUAL lamps extinguished. System response: UPD OMAS COMPL At off-line 3A CC Panel— STANDBY lamp lighted.
42	Type in: T WT:RST!	System response: OK
43	Type in: T PR:TWT!	System response: PF TR PR TWT aaa bbb ccc day aaa = DSP if active bbb = TNP if active ccc = SOL if active day = day of week
44	Change the traffic work table to its original state given in Step 20.	
45	Type in: M PU:EX!	System response: PF MI PU EX END
46	Run diagnostics on all new peripheral units put into service by the restart procedure (if applicable).	
47	Type in: A AU:RC!	System response: PF AR AU RC ATP AR AU RCBIT ATP
48	If any overwrites were made to translation data by the overwrite procedure (Table F), perform a recent change update procedure.	

STEP	ACTION	VERIFICATION
	Immediately following this procedure, use the overwrite program to deactivate (CNL:OW) all activated ***translation*** overwrites (only headed via procedure in Table F earlier).	
49	Use the tape copy procedure in Section 232-309-305 to bring the remaining new tapes from WECo up to the current status of the present tapes.	

4. GLOSSARY

4.01 The following is a glossary of expressions used in this section:

ATP—All Tests Passed

BOT—Beginning of tape

CS—Call Store, that part of MAS that is not write protected

CU—Control Unit

EOT—End of Tape

MAS—Main Store

ODA—Office Data Administration

PS—Program Store, that part of MAS that is write protected

RC—Recent Change

TDC—Tape Data Controller

TTY—Teletypewriter.

TABLE A

INITIALIZATION PROCEDURES FOR CU SWITCH ONLY

STEP	ACTION	VERIFICATION
1	Remove the active CU from lock-up by releasing the maintenance center LOCK key.	System response: REPT CU STAT AVL
2	Switch CUs by typing the following TTY message: SW:CU!	System response: REPT SW CU
3	Check for dial tone and place at least one test call. ***Important:*** If the new on-line CU fails to process calls, switch or force back to the original working CU.	

TABLE B

INITIALIZATION PROCEDURES FOR SWITCH AND TRANSIENT CLEAR

STEP	ACTION	VERIFICATION
1	At maintenance TTY— Type in: STOP:OW!	At maintenance TTY— System response: PF ALW OW STOPPED
2	If the office is equipped with LAMA, ensure that the AMA block currently being recorded is properly ended by typing (for each AMA frame): M AM:SWO:fg h-! fg = Two-digit AMA frame number h = AMA transport number	System response: MR AM SWO fg hi
3	If AMA transport 0 (for each frame) is not on-line, type in: M AM:SWO:fg 1-!	System response: MR AM SWO fg hi
4	Remove the active CU from lock-up by releasing the SSP LOCK key.	System response: REPT CU STAT AVL
5	At System Status Panel— Depress ENABLE key. ***Caution: Do NOT depress INIT EXEC key. Initialize by performing Steps 6 and 7 with minimum delay between the steps.***	At System Status Panel— ENABLE lighted. System response: REPT ERR SSP KEY
6	At TTY— Type the following input message: SW:INIT! ***Note:*** The off-line CU will switch active and continue processing using the new data.	The system will initialize. System response: INIT TTYC ALL RCOVRY CU INIT
7	Type in: INH:MSF x! x = main store update multiscan function number.	System response: OK
8	Check for dial tone and place at least one test call.	

STEP	ACTION	VERIFICATION
	Important: If the new on-line CU fails to process calls, wait until the end of the initialization interval (SERVICE LOSS lamp lighted steadily) and switch or force back to the original working CU.	
9	At System Status Panel— Depress ENABLE key.	At System Status Panel— ENABLE lamp extinguished.
10	At System Status Panel— Depress ALARM RELEASE key.	Alarm is released.
11	Type in: M SY:RSL!	System response: PF MR SY RSL
12	Type in: T WT:ATT!	System response: OK
13	Type in: T WT:AST!	System response: OK
14	Type in: T WT:AJT!	System response: OK
15	Type in: T WT:LIT!	System response: OK
16	Remove any trunks or service circuits which are known to be bad.	

TABLE C

INITIALIZATION PROCEDURES FOR SWITCH AND RECENT CHANGE CLEAR

STEP	ACTION	VERIFICATION
1	At maintenance TTY— Type in: STOP:OW!	At maintenance TTY— System response: PF ALW OW STOPPED
2	Dump and save the line trace list by typing in: A CT:LST!	System response: Printout is a list of the directory numbers contained in the Calling Line Identification (CLID) table. These are outgoing directory numbers that are being call traced.
3	Dump and punch the call forwarding list by typing: A CF:PUN!	System response: The A CF:PUN! input message is used to punch on paper tape the entire contents of Call Forward list.
	OR	
	If it is not desirable to punch a paper tape, type: A CF:PR!	System response: The A CF:PR! message is used to print all the active entries in the Call Forward list. ***Note:*** If many lines are forwarded, the response to this message may be very long.
4	If the office is equipped with LAMA, ensure that the AMA block currently being recorded is properly ended by typing (for each AMA frame): M AM:SWO:fg h-! fg = Two-digit AMA frame number h = AMA transport number	System response: MR AM SWO fg hi
5	If AMA transport 0 (for each frame) is not on-line, type in: M AM:SWO:fg 1-!	System response: MR AM SWO fg hi
6	Remove the active CU from lock-up by releasing the SSP LOCK key.	System response: REPT CU STAT AVL
7	At System Status Panel— Depress the ENABLE and RECENT CHANGE keys.	At System Status Panel— ENABLE and RECENT CHANGE lamps lighted. System response: REPT ERR SSP KEY

STEP	ACTION	VERIFICATION
	Caution: Do NOT depress INIT EXEC key. Initialize by performing Steps 8 and 9 with minimum delay between the steps.	
8	At TTY— Type the following input message: SW:INIT! ***Note:*** The off-line CU will switch active and continue processing using the new data.	System will initialize. System response: INIT TTYC ALL RCOVRY CU INIT At System Status Panel— RECENT CHANGE lamp extinguished.
9	Type in: INH:MSF x! x = main store update multiscan function number.	System response: OK
10	Check for dial tone and place at least one test call. ***Important:*** If the new on-line CU fails to process calls, wait until the end of the initialization interval (SERVICE LOSS lamp lighted steadily) and switch or force back to the original working CU.	
11	At System Status Panel— Depress ENABLE key.	At System Status Panel— ENABLE lamp extinguished.
12	At System Status Panel— Depress ALARM RELEASE key.	Alarm is released.
13	Type in: M SY:RSL!	System response: PF MR SY RSL
14	Type in: T WT:ATT!	System response: OK
15	Type in: T WT:AST!	System response: OK
16	Type in: T WT:AJT!	System response: OK
17	Type in: T WT:LIT!	System response: OK
18	Restore the call trace list by typing for each entry: A CT:ENT:aaa bbb cccc!	System response: OK

STEP	ACTION	VERIFICATION
19	Reinsert the call forward list by typing in: A CF:ENT/ (use paper tape if available)	System response: OK
20	Begin reinserting all recent change paper tapes as well as any tapes which may have been initialized by the customer. All recent changes should be reinserted in original order.	
21	Remove any trunks or service circuits which are known to be bad.	

TABLE D

INITIALIZATION PROCEDURES FOR SWITCH AND STABLE CLEAR INITIALIZATION

STEP	ACTION	VERIFICATION
1	At maintenance TTY— Type in: STOP:OW!	At maintenance TTY— System response: PF ALW OW STOPPED
2	Type in: T PR:PLT!	System response: PF TR PR PLT
3	If the office is equipped with LAMA, ensure that the AMA block currently being recorded is properly ended by typing (for each AMA frame) M AM:SWO:fg h-! fg = Two-digit AMA frame number h = AMA transport number	System response: MR AM SWO fg hi
4	If AMA transport 0 (for each frame) is not on-line type: M AM:SWO:fg 1-! ***Note:*** Perform Steps 5 and 6 in parallel.	System response: MR AM SWO fg hi
5	Check for emergency calls in progress using local procedures. ***Caution: Do not proceed until all emergency calls have terminated.***	
6	Check the number of stable calls in progress by typing: M AU:TMR:1! ***Caution: Proceed in accordance with local operating practices.***	System response: PF MR AU TMR
7	Remove the active CU from lock-up by releasing the SSP LOCK key.	System response: REPT CU STAT AVL
8	At System Status Panel— Depress ENABLE and STABLE CALLS keys. ***Caution: Do NOT depress INIT EXEC key. Initialize by performing Steps 9 and 10 with minimum delay between the steps.***	At System Status Panel— ENABLE and STABLE CALLS lamps lighted. System response: REPT ERR SSP KEY

STEP	ACTION	VERIFICATION
9	Type in: SW:INIT! ***Note:*** The off-line CU will switch active and continue processing using the new data.	The system will initialize. System response: INIT TTYC ALL RCOVRY CU INIT At System Status Panel— STABLE CALLS lamp extinguished.
10	Type in: INH:MSF x! x = main store update multiscan function number.	System response: OK
11	Check for dial tone and place at least one test call. ***Important:*** If the new on-line CU fails to process calls, wait until the end of the initialization interval (SERVICE LOSS lamp lighted steadily) and switch or force back to the original working CU.	
12	At System Status Panel— Depress ENABLE key.	At System Status Panel— ENABLE lamp extinguished.
13	At System Status Panel— Depress ALARM RELEASE key.	Alarm is released if initialization interval is completed.
14	Insert the day and time into the system by typing in: SET:CLK:TIME (hr,min,sec),day (mo,da,yr)!	System response: OK
15	Type in: M SY:RSL!	System response: PR MR SY RSL
16	Type in: T WT:ATT!	System response: OK
17	Type in: T WT:AST!	System response: OK
18	Type in: T WT:AJT!	System response: OK
19	Type in: T WT:LIT!	System response: OK
20	Remove any trunks or service circuits which are known to be bad.	

TABLE E

INITIALIZATION PROCEDURE FOR SWITCH AND RECENT CHANGE AND STABLE CLEAR INITIALIZATION

STEP	ACTION	VERIFICATION
1	At maintenance TTY— Type in: STOP:OW!	At maintenance TTY— System response: PF ALW OW STOPPED
2	Dump and save the line trace list by typing in: A CT:LST!	System response: Printout is a list of the directory numbers contained in the Calling Line Identification (CLID) table. These are outgoing directory numbers that are being call traced.
3	Dump and punch the call forwarding list by typing: A CF:PUN!	System response: The A CF:PUN! input message is used to punch on paper tape the entire contents of Call Forward list.
	OR	
	If it is desirable to punch a paper tape, type: A CF:PR!	System response: The A CF:PR! message is used to print all the active entries in the Call Forward list. ***Note:*** If many lines are forwarded the response to this message may be very long.
4	Type in: T PR:PLT!	System response: PF TR PR PLT
5	If the office is equipped with LAMA, ensure that the AMA block currently being recorded is properly ended by typing (for each AMA frame): M AM:SWO:fg h-! fg = Two-digit AMA frame number h = AMA transport number	System response: MR AM SWO fg hi
6	If AMA transport 0 (for each frame) is not on-line, type: M AM:SWO:fg 1-!	System response: MR AM SWO fg hi
	Note: Perform Steps 7 and 8 in parallel.	
7	Check for emergency calls in progress using local procedures. ***Caution: Do not proceed until all emergency calls have terminated.***	

STEP	ACTION	VERIFICATION
8	Check the number of stable calls in progress by typing: M AU:TMR:1!	System response: PF MR AU TMR
	Caution: Proceed in accordance with local operating practices.	
9	Remove the active CU from lockup by releasing the SSP LOCK key.	System response: REPT CU STAT AVL
10	At System Status Panel— Depress ENABLE, RECENT CHANGE, and STABLE CALLS keys.	At System Status Panel— ENABLE, RECENT CHANGE, and STABLE CALLS lamps lighted. System response: REPT ERR SSP KEY
	Caution: Do NOT depress INIT EXEC key. Initialize by performing Steps 11 and 12 with minimum delay between the steps.	
11	Type in: SW:INIT;UCL! ***Note:*** The off-line CU will switch active and continue processing using the new data.	The system will initialize. System response: INIT TTYC ALL RCOVRY CU INIT At System Status Panel— RECENT CHANGE and STABLE CALLS lamp extinguished.
12	Type in: INH:MSF x! x = main store update multiscan function number.	System response: OK
13	Check for dial tone and place at least one test call. ***Important:*** If the new on-line CU fails to process calls, wait until the end of the initialization interval (SERVICE LOSS lamp lighted steadily) and switch or force back to the original working CU.	
14	At System Status Panel— Depress ENABLE key.	At System Status Panel— ENABLE lamp extinguished.
15	At System Status Panel— Depress ALARM RELEASE key.	Alarm is released.
16	Insert the day and time into the system by typing in: SET:CLK:TIME(hr,min,sec),day(mo,da,yr)!	

STEP	ACTION	VERIFICATION
17	Type in: M SY:RSL!	System response: PF MR SY RSL
18	Type in: T WT:ATT!	System response: OK
19	Type in: T WT:AST!	System response: OK
20	Type in: T WT:AJT!	System response: OK
21	Type in: T WT:LIT!	System response: OK
22	Restore the call trace list by typing for each entry: A CT:ENT:aaa bbb cccc!	System response: OK
23	Reinsert the call forward list by typing in: A CF:ENT/ (use paper tape if available)	System response: OK
24	Begin reinserting all recent change paper tapes as well as any tapes which may have been initiated by the customer. All recent changes should be reinserted in original order.	
25	Remove any trunks or service circuits which are known to be bad.	

TABLE F

OVERWRITE PROCEDURE

STEP	ACTION	VERIFICATION
1	At maintenance TTY— Type in: IN:GENID:xxxxxxxx!	At maintenance TTY— System response: OK
2	Type in: IN:ISSID:zzzzzzzz!	System response: OK
3	Type in: IN:OW n;TTY! where n = number from the BWT.	System response: PF IN OW COMPL
4	Type in: IN:OWDATA:ck,seg,adr,old,new! ***Note 1:*** If this is a translation overwrite, set bit 22 of the old data field to 1. ***Note 2:*** Repeat Step 4 for each changed word. ***Note 3:*** If any errors were made in the old or new data fields on input, repeat Step 4 for each incorrect entry. This will result in an IN OWDATA ERR warning message being generated. For addressing errors, reinput all changes by restarting at Step 3.	System response: OK
5	Type in: VFY:OW:OLD! ***Caution: Do not proceed unless the specified system response is given. If a mismatch is detected, resolve the mismatch and repeat Step 5.***	System response: PF VFY OW COMPL
6	Type in: OP:OW;TTY!	System response: PF OP OW n IN OWDATA seg adr old new . . . OP OW COMPL
7	Visually inspect the contents of the overwrite buffer via the TTY output message from Step 6.	

STEP	ACTION	VERIFICATION
8	Type in: OP:OW;TAPE!	System response: PF OP OW COMPL
9	Type in: LOD:OW:NEW!	System respone: PF LOD OW COMPL
10	Type in: VFY:OW:NEW!	System response: PF VFY OW COMPL
	Note: Do not proceed unless the specified system response is given. If an error is found, repeat Steps 9 and 10. If the error is still found, allow the CU diagnostic multiscan function number and manually request CU diagnostics and main store audits for hardware memory faults. After the trouble has been cleared, restore the system to normal and repeat procedure steps in the update procedure which reload the off-line main store. Then restart Table F by typing IN;OW n;TAPE! and continuing with Step 9 (for all overwrites) after the off-line CU is restored.	
11	Type in: ACT:OW!	System response: PF ACT OW COMPL
	Caution: Activating a Translation Overwrite is a temporary measure. Subsequent procedures will instruct you to cancel translation overwrites after a recent change update.	
12	Repeat Steps 3 through 11 for additional overwrites.	