SWITCHING SYSTEMS MANAGEMENT
NO. 4 ELECTRONIC SWITCHING SYSTEM
MAGNETIC TAPE ADMINISTRATION

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1. GENERAL

1.01 The No. 4 Electronic Switching System (ESS) uses simplex call store and duplicated disk files to store translations data. In the event call store is mutilated, a copy of the call store is read from disk file. The possibility exists that some unexpected machine trouble could mutilate the data in both call store and disk file. To protect against this occurrence, magnetic tape backup systems are provided.

1.02 Whenever this section is reissued, the reason will be listed in this paragraph.

1.03 A reel-type magnetic tape system located in the machine equipment area provides one source of backup data.

1.04 Magnetic tape cassette units associated with various DATASPEED® Model 40 units provide a second backup source for the most recently changed data.

1.05 The machine administrator will utilize both tape systems to protect the integrity of the data in the No. 4 ESS.

2. RESPONSIBILITIES

2.01 The machine administrator is responsible for the translations data in the No. 4 ESS. The machine administrator is also responsible for ensuring that the backup data which is maintained on magnetic tape is updated at timely intervals. To accomplish this, update intervals must be established and provisions made for the systematic storage of tapes. The systematic storage must include provisions for protection of the tapes as well as permitting the machine administrator to readily select the desired tape.

2.02 This document makes recommendations for tape administration. The machine administrator will be responsible for implementing any changes in these procedures required by local operating requirements.

3. REEL-TYPE MAGNETIC TAPES

3.01 The reel-type magnetic tapes are identified by acronyms used in the operation of the tape unit.

3.02 The machine administrator will be concerned with the following tapes.

- ***TWRP:*** This tape is identified by the acronym TWRP which is derived from

Tape-Write, Read Program. This program is used to access the tape.

- ***TPM:*** This acronym stands for Traffic Plant Measurements.
- ***TDAS:*** Traffic Data Acquisition System
- ***OSOR:*** Onsite Operations Reports
- Network Management.

3.03 Each of these tapes is contained on a separate reel. Their identifying terms (acronyms) will be used throughout this document.

4. TWRP TAPE

4.01 The TWRP tape contains a copy of the complete office translations. The TWRP tape will contain the office data assembler (ODA) data plus all modifications to that data which have been accomplished by recent change action.

4.02 The need to update the TWRP tape is determined by the capacity remaining in the rollback area. Since the total capacity of the rollback area is fixed, the interval between TWRP tape dumps becomes a function of the volume of recent change activity; the higher the volume of recent changes, the more frequent the requirement to update the tape.

4.03 It is recommended that a copy of translations be recorded on the TWRP tape when the rollback area reaches 50 percent of capacity. A tape rotation procedure using three separate reels of tape should be established. These reels should be rotated in order and coordinated with the production of rollforward tapes as discussed in Part 5.

4.04 Performing TWRP tape updates at the 50 percent of rollback area capacity point will ensure that a reasonable amount of rollback area exists. This is in the event that type II rollback is required while allowing available space for the expansion of the new rollback area. The use of three tapes allows the protective retention of TWRP tapes that reflect the new translation data that correlate with the data contained in both the old and new rollback areas while providing a "clean" tape reel for the next scheduled TWPR tape update.

4.05 The TWRP tape will be stored in the machine operations center (MOC) area. It is recommended that a duplicate copy of the TWRP tape be retained at machine administration center (MAC). The dual tapes would provide protection in case of accidental damage to a TWRP tape.

4.06 More detailed information on the rollback area is provided in Dial Facilities Management Practices (DFMP), Division H, Section 9g, Rollforward, Rollback, Reinitialization. This document refers to the TWRP tape as a reinitialization tape.

5. RECENT CHANGE TAPES

5.01 Recent change messages will be used to modify the No. 4 ESS translations data base. It is necessary to provide a backup of recent changes which take place in the interval between TWRP tape updates. To provide this backup, the recent changes are copied onto magnetic tape cassettes associated with the RCREC and RCMOC terminals in the MAC and MOC areas.

5.02 Recent change tapes which must be retained are the recent change buffer tape and rollforward tape. It is recommended that the recent change tapes be administered in the same manner as the TWRP tape. When a TWRP tape is updated the buffer tape and rollforward tape should be removed from their respective terminals and stored with one copy of the TWRP tape. When the TWRP tape is reused, the cassettes may also be reused. It is a good idea to record the clock track before reusing cassette tapes to avoid confusing old recent changes with more recently recorded recent changes.

5.03 There is one exception to this method. If recent change messages are input to the buffer area far in advance of the due date, the machine administrator may want to retain the buffer tape until those messages are activated.

A. Buffer Tape

5.04 All recent change messages successfully entered into the buffer state are recorded on this tape. The buffer tape is recorded on the tape cassette associated with the RCREC terminal located in the MAC.

B. Rollforward Tape

5.05 All recent changes accepted for the test state will be recorded on the tape cassette associated with the RCMOC channel located in the MOC. A reformatted copy of the original input form is recorded on this tape. When a message is activated, a "Recent Change Comment" containing the input form of the RCAM is recorded on this cassette.

5.06 This tape will be used to restore translation data following a type II rollback.

6. TPM TAPE

6.01 The measurement system in the No. 4 ESS provides 23 reports which may be designed to meet local requirements. The machine administrator is responsible for establishing and maintaining these reports. The measurement system reports are described in DFMP, Division H, Section 9f(1) Measurement System—General. The definitions and schedules for these reports are stored in the data base. It is recommended that a copy of the report structures be maintained on the TPM tape.

6.02 The machine administrator must ensure the update of the TPM tape each time the report structures are changed.

6.03 The machine administrator should consider retaining the previous report configuration on tape, at least until one complete report cycle is completed. That is, each defined report has been generated at least one time and the reports have been validated. This would entail maintaining only two TPM tapes. If the machine administrator finds that the report configurations are changing relatively often, it may be desirable to maintain several TPM tapes. If a report configuration is required on a recurring basis, that configuration should be maintained on tape to be input whenever that configuration is required.

7. OSOR TAPE

7.01 This tape will contain a copy of the long term data storage area.

7.02 Some onsite operations reports will cover long periods of time (up to a year). To produce these reports, data will stay in memory for long periods of time. To protect against accidental destruction of this data, it is recommended that a tape copy of the long term data storage area be maintained. This recommendation also appears in DFMP, Division H, Section 9f(3), Machine Administration Reports.

7.03 The machine administrator must establish a scheduled update for this tape.

7.04 It is recommended that this tape be updated on a weekly basis.

7.05 The machine administrator may use this tape to remove unwanted data from the data base. By inputting this tape, the data base is returned to the status which was present at the last tape update.

8. TDAS TAPE

8.01 This tape provides engineering data for downstream data processing. The TDAS tape is discussed in DFMP, Division H, Section 9f(1) Measurements System—General.

8.02 The TDAS tape is required on a scheduled basis which is determined by AT&T.

8.03 The machine administrator will schedule the output at the direction of the operating company headquarters.

9. NETWORK MANAGEMENT TAPE

9.01 This is a reel-type tape which contains the network management data base. The update of this tape will be required when new pages are added to the display system. Changes to existing pages and initial lists will also require the update of this tape.

9.02 The network manager is responsible for directing the update of this tape.

9.03 It is recommended that the network manager retain a copy of this tape and that a second copy be maintained in the MOC. When network management is from a remote location, one copy of the tape should be located in the onsite network management area.