LONG-HAUL
MICROWAVE RADIO RELAY
ASSIGNMENT OF CONTROL OFFICES

1. GENERAL

1.01 This section describes the assignment of control offices for the operation and maintenance of long-haul microwave radio facilities. It conforms to the concept of receive end controls. It is limited to the radio portion of the transmission facility in terms of:

(a) Radio sections.

(b) Switching sections.

(c) Sidelegs.

1.02 It is reissued to:

(a) Specify that it applies only to long-haul microwave radio relay facilities. Short-haul radio control office assignments are covered in Section 660-095-918PT.

(b) Make wording changes to clarify various paragraphs.

NOTE: Marginal arrows are used to indicate changes.

1.03 The assignment of a Radio (R) Unit control office is covered in Section 660-095-913PT.

1.04 The responsibilities of control offices for the operation and maintenance of long-haul microwave radio facilities are covered in Section 660-095-915PT.

2. DEFINITIONS

2.01 Long-haul Microwave Radio Facility: Generally a hetrodyne system consisting of one or more multiunit switching sections in a radio route between an FMT IN and an FMR OUT, e.g., TD2, TD3, TH, Lenkurt 75A, Collins MW109, etc.

2.02 Main Stations: A station with radio equipment and manual or automatic IF line switching equipment. In addition, FM equipment, monitoring facilities, etc., may be installed to originate and terminate facilities or to bridge on a through facility. Main stations may be located at or away from attended central offices. They are designated by city and town names, such as East Bay Hills, Mount Adelaide, Oat Mountain, Topaz Lake, Turquoise, Wolf Creek, etc.

2.03 Auxiliary Station: A station which generally has only repeater equipment. A sideleg may add other radio equipment, such as auxiliary amplifiers, program, AUX STA SW equipment, FM receivers, etc. Auxiliary stations are listed as a geographical location, generally under the name of the nearest town or city subdivision.

2.04 Radio Channel: A transmission path between two adjacent stations employing a given frequency assignment.

2.05 Radio Unit (R Unit): Usually consists of one or more radio channels in tandem between two adjacent main stations, a main station and a testroom or customer location, an auxiliary-station bridging point and a testroom or a customer location. At auxiliary stations where the normal frequency pattern is not followed, the radio channel or channels in tandem to and from this location will be individual radio units.

2.06 Main Route: An extensive layout of radio units providing communications between two or more major points.

2.07 Secondary Route: A limited layout of radio units providing communications between two or more points.

2.08 Sideleg: One or more radio units bridged and/or connecting one or more terminal points to a main or secondary route, directly or via another radio unit.

2.09 Protection Channel: One or more radio units in tandem, providing a protection facility between two main stations.

2.10 Plant Maintenance Channel: A radio system that generally carries the radio order circuits (ROC), alarm circuits, express radio order channel (XROC), and voice frequency line for automatic switching. The plant maintenance channel can also contain message circuits.

2.11 Radio Section: A facility between points on a main, secondary, or sideleg route. It extends from the FM-transmitter input to the FM-receiver output, including any bridged FM receivers. It may include several IF-IF switching sections. On a TH-1 system, it extends from the input of the baseband switch before the FMT to the output of the baseband switch after the FMR, and includes the BB-IF and IF-BB switching sections.

NOTE: Facilities assigned to video layouts commonly have sideleg sections bridged at IF from backbone (main or secondary) routes. The critical transmission requirements of video make it unacceptable to line up these sidelegs separately, using a test FM transmitter, at the IF bridging point. Therefore, overall tests of these sideleg facilities must be done in conjunction with the overall tests on the backbone facilities (i.e., from the input of the originating FMT to the output of each terminal FMR).

2.12 Switching Section: includes all radio facilities between two main stations or between the beginning and ends of the protection switching channels. It also includes plant maintenance channels.

2.13 Radio Section Control Office: The receive terminal office of a radio section, except for some channels assigned to video as covered in Part 3.

2.14 Switching Section Control Office: The receive end main station office controlling the received channels within the switching section. This office also controls the protection and any plant maintenance channels in that direction of transmission.

2.15 Maintenance Center Office: The home office of the force which maintains the equipment in one or more of the designated main or auxiliary stations. This office should be selected with the concurrence of the Division Plant Manager (Toll), Division Toll Manager, or Plant Manager.

2.16 Alarm Center Office: A fully attended office where the alarm or alarms from one or more main or auxiliary stations terminate. A central office where the alarms are received from a station located on the premises is considered an alarm center. In addition to the terminating of alarms, the alarm center may initiate remote operations at the served or auxiliary stations. This office should be selected with the concurrence of the Division Plant Manager (Toll), Division Toll Manager, or Plant Manager.

2.17 Patch Unit Radio (PUR): A video grade radio channel (TVS) released from the television network and eventually assigned to message service (MUR). A PUR is composed of one or more spare radio units (SUR) connected in tandem and established by program circuit orders.

2.18 FMC-TV: Facility Management Center-Television is the name given to an organization in New York which has been established to:

(a) Achieve the maximum possible effectiveness from available broadband facilities associated with providing television service.

(b) Be an efficient liaison between customer orders and facilities, and minimize delays caused by inquiries.

(c) Assign facilities following a specific sequence.

(d) Maintain various usage records.

(e) Maintain service control of PURs.

3. SELECTION OF CONTROL OFFICES

3.01 The rules outlined for selecting control offices should be followed. However, if deviations are necessary, they shall be authorized by the Division Plant Manager (Toll), Division Toll Manager, or Plant Manager.

Radio Section Control Office – Message Facility

3.02 Radio section control offices for message facilities are selected according to the following priorities:

(a) Receive end controls.

(b) A Bell System office normally controls both directions of transmission when one terminal is in an independent company office.

Radio Section Control Office – Video Facility

3.03 When assigning radio section control offices associated with television routes, a radio section is defined as a facility layout, either temporary or permanent, between two or more points that extends from the FM transmitter input to the output of the FM receivers, including bridged receivers and those associated with sidelegs. On temporary services, FM equipment will be assigned to a PUR at the transmitting end and at the extreme receiving office. Whenever possible, when bridging points are tested, the same spare equipment should be employed for overall channel tests as will be used when providing service.

3.04 Control offices are determined according to the following guides. These guides recognize the considerable advantage to video transmission maintenance, and, therefore, to video service, of having the section control office assignments conform as nearly as possible to the video network control organization.

(a) New York 4 radio controls all transmitting and receiving radio sections terminating at that office.

(b) Chicago, Atlanta, Los Angeles, Dallas and Washington control all transmitting and receiving radio sections terminating at their respective offices, except item (c) below.

(c) A section extending between any of the offices named in (b) above is controlled by the geographically eastern terminal exept circuits between Atlanta and Washington, in which case, Atlanta controls.

(d) For sections not included under (a), (b) and (c) above, the attended receiving end controls, if concurrent with a television operating center (TOC). Where this does not apply, the attended transmitting end controls if concurrent with a TOC.

(e) For any sections not included under (a), (b), (c) and (d) above, or where for some reason these guides are not considered suitable or adequate, the control office should be selected by the video network section control office (New York, Altanta, Chicago, Los Angeles, Dallas or Washington) in whose territory the section is located in collaboration with the proposed microwave control office.

Switching Section Control Office

3.05 Switching section control offices are selected according to the following priorities:

(a) At fully attended switching section offices, the receive end controls all maintenance and operational functions.

(b) At partially attended switching section offices, generally, the receive end controls maintenance functions at all times and operational functions during attended hours. During unattended hours, the switching section control office may delegate to the alarm center office:

- Switching operations
- Granting of releases

(c) At partially attended switching section offices where extenuating conditions exist, these conditions shall be reviewed and referred to the Division Manager according to 3.01. He may assign the alarm center for the receive end as the control office for all maintenance and operational functions.

(d) A Bell System office normally controls both directions of transmission if one end terminates in an independent company office.

Network Radio - Microwave Systems - Change Control Office Responsibilities of E-2 Alarm Centers

NOV 6 74

FILE: SAN RAFAEL HILL
IN FRONT OF BSP
660-095-916 PT/NAS

File: 270.340

San Jose, October 11, 1974

D. R. KING, DISTRICT MANAGER-TOLL OPERATIONS, San Jose:
G. F. OKESON, DISTRICT MANAGER-TOLL OPERATIONS, Oakland:
J. J. OSTROM, DISTRICT MANAGER-TOLL OPERATIONS, Walnut Creek:
R. D. PETREE, DISTRICT MANAGER-TOLL OPERATIONS, Fresno:
L. L. PUGMIRE, DISTRICT MANAGER-TOLL OPERATIONS, Napa:
D. L. TAYLOR, DISTRICT MANAGER-TOLL OPERATIONS, Sacramento:
R. H. WOODWARD, DISTRICT MANAGER-TOLL OPERATIONS, Bakersfield:
F. E. WRIGHT, DISTRICT MANAGER-TOLL OPERATIONS, Sacramento:

OPERATIONS
NOTED
ORTH BAY
COPY RTE

Under the authority assigned to the Division Toll Manager the following changes in control responsibilities will be put into effect and considered as a supplement to BSP 660-095-916PT.

Switching Section Control Offices are responsible for local alarms when manned by qualified personnel. The E-2 alarm center shall be notified of all switching operations or service affecting alarms.

E-2 Alarm Centers will be responsible for controlling all switching operations and channel releases at switching section offices under their surveillance. This provides a single location which is accountable for route status. The E-2 alarm center will not discontinue surveillance of a switching section office unless a qualified person at the remote office assumes the alarm responsibility.

This supplement relates only to the E-2 alarm centrals and the switching section control offices under their surveillance within the Northern Region. The basic intent of this supplement is that the E-2 centrals will perform on a continuous basis those operational control functions that are normally assigned to the switching section control offices. These operational control functions will be primarily limited to route switching operations and channel releases. In no way is this an attempt to change the maintenance control responsibilities of the switching section control offices as set forth in the appropriate BSP's.

RLS
KRM:RI

Division Manager
Toll Operations

Division Manager
Toll Operations