

ADMINISTRATIVE PROCEDURES AND METHODS

RESPONSIBILITIES OF OUTSIDE PLANT ENGINEERING

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1. GENERAL

1.01 This section defines responsibilities of Outside Plant Engineering. Many of these responsibilities that were recorded in Bell System handbooks in September, 1927 (now out of print) have not changed over the years. These established responsibilities will now become a part of the System Engineering Practices. New and additional responsibilities are being developed and are becoming an integral part of the present method of operation.

1.02 The term *plant engineer* or *engineer* as referred to in this series of practices is intended to be a general term and is used to indicate an engineering employee. Its use should in no way be interpreted as a designation of the

sole or primary responsibility of an employee carrying the title of plant engineer or engineer.

2. SERVICE

2.01 The basic responsibility of the plant engineer is to have the required outside plant in service when and where needed. This includes plant required for new and improved customer service as well as those items necessitated by public developments. Although the service function is shared with plant assignment and construction forces, the engineer is responsible for initiation and coordination of work items to meet customer demands.

2.02 The plant engineering force is responsible for development of the outside plant items in the construction program. The engineer must select those items that will meet the needs of service and present them to his supervision together with supporting facts and information on why the work should be undertaken at the time proposed and in the manner proposed. The plant engineer must be aware that the construction program is necessarily contained within the budget limitations established by top management. He should familiarize himself with construction program criteria and recognize the effect his specific projects will have on those requirements. Each project proposed for inclusion in the program should be given a careful evaluation with respect to specifications and timing.

3. PLANT UTILIZATION

3.01 The engineer is charged with the responsibility of working the plant to the highest practical fills consistent with controls on station activity and outside plant rearrangement expense and with the needs of the service as defined in Part 2. When he observes excess costs in the latter areas, he should consider the use of plant additions to

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return such levels to a normal point. His goal should always be *overall* company benefit.

3.02 Rearrangements should be made in accordance with a plan that will provide continuing benefit rather than benefit on an expedient short-term basis.

4. ECONOMICAL PLANT DESIGN

4.01 A major responsibility of the plant engineer is to see that all plant additions are designed in the most economical manner. This includes selection of type and size of plant, route, and feasibility of construction. It requires a balanced judgment in the choice of "C" and "M" items.

4.02 Each problem should be approached without bias and all pertinent facts obtained before a decision is made. Plant additions and changes should be made in accordance with the Outside Plant Plan.

4.03 Comparative cost studies are an integral part of all plant design and should be employed on most routine orders and on essentially all specific estimates. To fulfill this responsibility properly, the engineer should utilize manual cost study procedures described in Section AG11.301, the computerized cost study method developed in Section AG11.302, or the Exchange Feeder Route Analysis Program outlined in Section AG50.500.

5. MAINTENANCE AND SERVICE RELIABILITY

5.01 The plant engineer must be available to assist in restoration of plant in any emergency situation.

5.02 Consistent with the needs of good service, all new construction specifications should require plant that has a low vulnerability to service interruptions. In general, this means that maximum amounts of buried and underground plant, placed and constructed to assume maximum security from damage by natural and man-made causes, should be included in every program.

5.03 The plant engineer should work with plant coordinates in the replacement of deteriorated items that are causing excessive maintenance or operating expense.

6. SAFETY

6.01 All engineering specifications should be made with maximum consideration for employee, public, and customer safety. Considerations include clearances from power, vehicular traffic situations, excavation hazards, etc.

6.02 The engineer should conduct himself in a safe manner and set an example in the presence of craft employees and the public.

7. INTERDEPARTMENTAL COORDINATION

7.01 The timing of all job completions should be determined by plant engineering and an effective job scheduling arrangement established through coordination with construction forces.

7.02 The plant engineer should cooperate fully in company programs, such as transmission improvement endeavors, customer service improvement projects, plant appearance improvement undertakings, wire center rearrangements, etc.

7.03 The plant engineer is also responsible for collaboration and follow-up work on interoffice trunk and toll cable projects. In most cases this includes preparation of outside plant authorizations and detail work plans.

8. LIAISON AND RIGHT-OF-WAY

8.01 The plant engineering force is responsible for establishing and maintaining an effective liaison program with governmental agencies at all levels, planning bodies, and other utilities. The program should include participation in long-range community planning, regular exchange of construction program data where appropriate, predesign and preconstruction conferences on major undertakings such as state highway projects, encouragement of and participation in the activities of utility coordinating committees, and development of mutually helpful day-to-day working relationships. The program should be built around the concept of coordinated advance planning to minimize the adverse effects of possible conflicts. This will save dollars for the organizations involved, and ultimately for the tax-paying and rate-paying public.

8.02 Centralized direction and coordination of the liaison program are extremely important. In the larger operational areas this may well approach

or become a full-time responsibility for a staff individual.

8.03 The effectiveness of the liaison program will be improved by standardizing mutual routines and procedures whenever and wherever this can be accomplished and by establishing identified mutual contact points with the major organizations involved. Also, it will be helpful to solicit the understanding, support, and occasional assistance of upper-level management.

8.04 The plant engineering organization will normally handle the acquisition and management of necessary right-of-way for all outside plant and related items. This will involve consideration of the importance of the plant to be installed, property values, and the type of right-of-way to be obtained, e.g., verbal permission, recorded easement, purchase in fee.

8.05 The plant engineering organization has the responsibility for negotiating use agreements and billing arrangements with other utilities. These may include gas, water, power, CATV, and other telephone companies. In many cases it will be desirable to enlist the assistance of other departments and groups such as transmission, marketing, legal, and inventory and cost.

8.06 Another plant engineering function is the billing and recovery of telephone company costs for outside plant items whenever other agencies are responsible for payment or reimbursement of any kind.

9. RECORDS

9.01 The engineering group is responsible for the maintenance of all records associated with outside plant items. This does not include customer cable pair records but in some cases

includes certain equipment such as CATV amplifiers and line concentrators that are used in connection with outside plant installations.

9.02 Plant location records are kept to facilitate the restoration of plant, to permit an orderly extension and replacement of plant items, and to support the continuing property records of the business. They are used as the data base for many studies, including such tasks as loop "lookups" for special circuit designs, new wire centers, etc. In the fulfillment of these objectives, the plant engineer must work with his plant and accounting coordinates to achieve maximum utility and accuracy.

10. ENGINEERING PERFORMANCE

10.01 Plant engineering management is expected to provide effective engineering cost control through efficient work procedures and to ensure that there are adequate personnel to provide the outside plant required for service in an economical manner.

10.02 The engineering force is responsible for good quality in the preparation of specific and routine work authorizations. The Management Quality Control Plan described in Section AG11.110 is a tool designed to determine training requirements for engineering personnel and the effectiveness of outside plant engineering management.

10.03 Plant engineering supervision has a continuing responsibility to update and upgrade its performance through adoption of new Bell System programs and procedures. Concepts that are described in this series of practices are included in the curriculum for plant engineering force trainees at the Bell System Center for Technical Education at Lisle, Illinois. Operating company groups should inform themselves of the benefits of these items and take the necessary steps for implementation.