

line has been contracted for and d.c. transmission may become an important factor in point-to-point movement of power where numerous taps and interconnections are not required.

Distribution is commonly considered to include all of the facilities needed to deliver power from the utility's primary transmission network to the door of the customer.

The cost of distribution is much more dependent on load density than on the size of the system. Many small distribution systems are operated by municipalities and other public or private groups and the physical nature of distribution systems permits these small distributors to operate their systems with a quality of service and at costs which are frequently comparable to those of larger power systems.

At the end of 1965 the total installed electrical generating capacity in the United States was more than 254 million kilowatts. During the year, over 1.15 trillion kilowatt-hours of energy were generated, or the equivalent of about 6,000 kilowatt-hours for every man, woman, and child in the Nation, considering all household, commercial, industrial, and other uses. Household use amounted to nearly 5,000 kilowatt-hours per family in 1965.

Electric utilities in the United States provide service that is among the most reliable to be found anywhere in the world. Many areas go for years without power service interruptions, and recurring outages in any one area are rare. A power system is a complicated mechanism, however, and short duration power failures are caused somewhere in the Nation almost daily by storms, human error, equipment failures, or other factors. Occasionally a local occurrence cascades into a major blackout, such as that experienced in the Northeast on November 9, 1965. As technology improves, and as neighboring systems are more strongly intertied, the likelihood of extended outages decreases. The Federal Power Commission recently established an Industry Advisory Committee on Reliability of Electric Bulk Power Supply, and the committee is making an exhaustive and coordinated study of problems of maintaining service reliability. In addition, almost every utility is constantly checking its own equipment and operating procedures to insure that optimum service is provided.

2. EXISTING ELECTRIC PLANT IN THE UNITED STATES

Table 3 shows the total number of plants and the installed capacity of electric utilities in the United States as of December 31, 1965, with a breakdown by States and regions. The table also shows the distribution between steam, hydro, and internal combustion installations. The generation from these plants is carried to bulk distribution centers by a network of nearly 400,000 miles of high-voltage transmission lines that serve every part of the Nation. About 1 percent of the transmission system is underground. Practically all of the underground lines are located in congested urban areas.

About 5 percent of the total generation in the United States comes from municipally owned plants. A distribution of the generating capacity of these plants by size of city is not readily available, but about half is owned by large municipalities with populations over 100,000. Many small cities own distribution facilities, and many of these own generating plants which, although small, account for nearly half of the national total for all municipally owned plants.