Electric Transmission Lines - To Bury, Not to Praise

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ADEQUATE AND CONTINUOUS electric service is obviously an integral part of our modern living and therefore a matter of devout concern to everyone in the civilized community, and yet, anyone might well resort to prayer, if not profanity, when confronted with the prospect of a transmission line tower in his front yard. Thus, a dilemma is posed, and it is the purpose of this article to explore the dilemma in a legal context.

We may begin by acknowledging the general consensus that, as a matter of aesthetics, underground lines are preferable to overhead lines. However, this still leaves three problem areas unexamined: First: What lines can be placed underground? Second: At whose command can lines legally be forced underground? And third: Who should pay the extra cost of undergrounding, and how?

It is presently quite possible technically to install underground transmission lines of up to and including 345,000 volts. But this has not been true until comparatively recently and the present possibility reflects the culmination of years of research by the electric industry, initiated, it is worth noting, long before public agitation reached its present intensity.¹

Some short experimental 500,000 volt and 750,000 volt cable installations are now functioning in French laboratories under forced cooling to achieve thermal stability, and the Russians have a 50 meter experimental run of 500,000 volt paper-insulated cable in operation at a generating plant.² Laboritory lengths of 600,000 volt cable also have been developed in Italy. Nevertheless, the fact remains that no

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insulation has been developed which presently permits practical and usable underground installation of 500,000 volt or 750,000 volt cable. The development of adequate low-loss insulation is critical. In its absence, the heat generated in the cable insulation itself represents a large portion of the total heat which must be dissipated directly into the surrounding soil or removed by forced cooling procedures if power is to flow unimpeded. Without compensation, a 345,000 volt underground cable, twenty-five miles long, would use up its entire carrying capacity and would not be able to deliver any power at all. Although no cable of voltage higher than 345,000 volts is available for practical use, active research is proceeding in the United States to find some means of undergrounding 500,000 volts and higher.

Parallel with the technological advances and research in the field, development of public interest in undergrounding has proceeded apace. An aesthetic preference for underground has, of course, long existed, but only recently has the pressure brought by aesthetic advocates attained fever pitch. That the fever pitch has been attained, witness the introduction of a Senate bill authorizing the expenditure of 200,000 dollars for a study by the Secretary of the Interior of the effect of overhead transmission lines upon "the health and welfare of citizens, community planning and zoning, real estate values and tax revenues, and the natural beauty of our country." A second bill would have authorized the Secretary of the Interior to conduct a 150-million-dollar program of research and development "to encourage the use of underground transmission of electric power," and a Senate joint resolution provided for a study of "the impact of overhead electric transmission lines and towers upon scenic assets, zoning and community planning, property values and real estate revenues." None of the above measures was adopted by both houses, but their introduction and the progress they did make illustrate the prominence on the national scene of the underground issue.

All interested parties are becoming acutely aware of the cost problem. Examples of this awareness are the bills introduced in the

4. One example of this research is the Edison Electric Institute five-year Synthetic Insulation Research Program, now in its final year, at the Illinois Institute of Technology Research Institute. This and other projects are referred to in *Electrical World*, Jan. 23, 1967, p. 79.
United States House of Representatives (89th Congress) by Representa-
tive Ottinger of New York and Representative Widnall of New
Jersey which not only proposed a research program to promote under-
ground lines but also contemplated a tax incentive through an amori-
tization deduction allowance in relation to such lines. Although no
hearings were held on these bills, they illustrate the realization, in at
least some quarters, that the very high relative cost of underground
lines is a problem which cannot be ignored.

The intense interest in underground transmission lines has been
reflected in the decisions for longer than one might think. Some thirty-
five years ago, certain property owners and residents of Westchester
County, New York, filed a complaint with the New York Public
Service Commission opposing the construction of an overhead 132,000
volt line about twenty-one miles long. The complaint alleged that the
new line and towers would be a menace to safety of the users of the
public highways and parkways under the line and would adversely
affect real estate values in its vicinity. In the first decision to give the
matter of transmission line aesthetics full dress consideration, the
Commission said that the desirability of underground lines must be
balanced against the additional expense (in that case, 1,000,000 dollars
per year), and concluded that, under the circumstances, the increased
cost was not justified.

Perhaps the most famous, and certainly the most involved, case
on the power to require underground construction is the one arising
from municipal efforts to underground a line in Woodside, California,
and adjacent areas. In 1960, Congress had authorized an Atomic
Energy Commission research project, designated Stanford Lunar
Accelerator Center, and in 1961, appropriated 114 million dollars for
construction of a plant at Palo Alto. The electricity necessary for the
project was to be supplied over a 220,000 volt tower line to be con-
structed by Pacific Gas and Electric Company, but the County of San
Mateo and the Town of Woodside refused to issue the use permits
required by their ordinances unless the line was placed underground.
Just to nail down its denial of a use permit, Woodside in 1964, adopted
an ordinance prohibiting construction of any overhead line to carry
50,000 volts or more and, for good measure, also enacted a general

12. For further development on this point in New York see Hooley, Compulsory Underground Wiring — a Battle Rejoined in Public Utility Law, 5 VILL. L. REV. 80 (1960).
ordinance prohibiting overhead installation of any transmission, distribution or communication line. The Atomic Energy Commission then proceeded to condemn a right of way for the line and the determinative legal issue became whether the municipal ordinances were valid as against such condemnation. It was held in *Man v. United States*¹⁴ that the Atomic Energy Commission was indeed bound by the ordinances and so it ultimately took a special act of Congress to push the aerial line through.

All the usual ingredients of the underground versus overhead controversy were present. The terrain over which the line would pass was passionately declared to be "one of the loveliest areas of California and perhaps the nation..." with "stands of redwood trees more than a hundred years old" and "many beautiful houses placed on 3-acre minimum lots." On the other hand, the essential obstacle to underground installation was the greater cost (in this instance, 2,640,000 dollars, as against 668,000 dollars to 992,000 dollars for an overhead line). In the course of its opinion upholding the ordinances, the Court of Appeals referred to various acts of Congress and quoted from *Berman v. Parker*¹⁶:

> The concept of the public welfare is broad and inclusive.... The values it represents are spiritual as well as physical, aesthetic as well as monetary. It is within the power of the legislature to determine that the community should be beautiful as well as healthy, spacious as well as clean, well-balanced as well as carefully patrolled.¹⁷

It seems perfectly clear that the holding in the *Woodside* case is generally valid, and that municipal ordinances requiring underground installations will be upheld where no statutory principle or precept is violated.¹⁸ However, if the ordinances are inconsistent with a state statute, they will be stricken down. In Pennsylvania, for example, the courts have consistently invalidated restrictive ordinances under the rationale that municipalities cannot enact ordinances regulating public utility facilities because the Pennsylvania Public Utility Commission has exclusive jurisdiction in this area. A case classic in enunciating this general principle is *Duquesne Light Co. v. Township of Upper St. Clair*,¹⁹ holding that a first class township could not compel a public

¹⁴. 347 F.2d 970 (9th Cir. 1965).
¹⁵. Id. at 977.
¹⁷. 347 F.2d at 977-78.
utility to obtain a building permit for the construction of a transmission line and condition the grant of the permit upon compliance with a zoning ordinance. The rationale is that local authorities cannot comprehend the overall needs of the public beyond their territorial jurisdiction, and a state body, in this case the Public Utility Commission, is best equipped to weigh the interests of the public at large.

Whether the power to require underground installations rests with the local governmental bodies or with a commission having statewide jurisdiction, the question remains as to how the additional cost burden is to be borne. If the utility involved is to lay out the excess funds, there are only two possible sources of reimbursement: the entire body of ratepayers and the ratepayers in the area benefitted. Over the years, it has been accepted policy that the entire body of ratepayers generally should bear the cost of undergrounding in densely populated areas where considerations of safety imperatively require it. However, as population density decreases, the danger from overhead lines becomes relatively slight and the cost per customer of underground construction becomes much heavier. Also, the revenue per customer becomes less. It would, therefore, be logical to conclude that at some point it becomes unreasonable to burden all the ratepayers with the cost of benefits to a favored few.

In practically all transmission line cases, beauty is the only justification for expenditure of these millions and millions of extra dollars, since the excess expenditure contributes no additional quality or safety to the public service. The sole benefit is aesthetic and accrues primarily to persons living in sight of the line, giving rise to the ambivalent situation where the same people, as customers, are in favor of lower rates and, as devotees of beautification, are advocates of underground installations. There is ample authority to support the principle that, to prevent discrimination against the general body of ratepayers, imposition of a local burden warrants, and in some cases requires, the imposition of a local surcharge.

Two cases on this point were decided by the Supreme Court of Utah on the same day, some ten years ago. Ogden City v. Public Serv.


21. The principles established by this decision have been held to invalidate township ordinances requiring underground installation of transmission lines. Philadelphia Elec. Co. v. Township of Birmingham, 42 Delaware Co. 173 (Pa. 1955).

22. For a complete discussion on the subject of municipality versus commission regulation of public utilities see Avery, Zoning and Public Utilities, 56 PUB. UTIL. FOR. 231 (1955); Haller, Zoning and the Utilities, 56 PUB. UTIL. FOR. 231 (1955); Kadane, Zoning, Utilities, and Sweet Reason, 56 PUB. UTIL. FOR. 792 (1955).

Com’n,\textsuperscript{24} was a review of a Commission order allowing a telephone company’s application to charge and bill its subscribers in particular areas so as to recapture excise, sales, franchise, or occupation taxes, costs of services rendered without charge to local political subdivisions, and other local impositions exacted by local governing bodies. Out of nearly a hundred cities and communities served by the telephone company, forty-six levied taxes on local gross revenues ranging from .39 per cent to 7.28 per cent. Ogden City, by a 1941 ordinance, permitted the company for the ensuing twenty-five years to use its streets for the installation of transmission facilities for a sum equal to one per cent of local exchange revenues plus .44 per cent representing the value of free services rendered the city. On the preliminary question of the Commission’s jurisdiction to authorize the surcharge, the court stated that not only did the Commission have the authority to order such a surcharge, but such a surcharge “appeals to basic equities” in that it eliminated one point of discrimination in a field where discrimination though undesirable, was impossible to eliminate completely.

Under the same date, the same court, in Ogden City v. Public Serv. Comm’n,\textsuperscript{25} reviewed another Commission order directing a power company to charge and bill its customers residing in a municipality, as a separate item, pro rata, for exactions of “any municipality wherein is imposed any franchise, occupation, sales or license tax” against the company. Here the power company resisted the Commission’s order since it had assured local authorities “that it had no intention of billing local subscriber-residents for a pro rata share of the local imposition. The Utah Supreme Court noted that “the company’s frank consistency and adherence to principle are commendable, but its private understanding hardly could bind the Commission.” Accordingly, the court in this case affirmed a Commission order requiring the power company to recoup by a surcharge the amount of the local imposition. The court succinctly stated the basic issue:

[W]hether customers in an area whose governing authority exacts taxes, fees or other imposition against the utility, should pay the cost of operation represented by the local levies, or whether all customers of the company, statewide and pro rata, should shoulder that burden.\textsuperscript{26}

It then affirmed the order and went on to say approvingly that such a Commission policy produced uniformity in the practices of three different utility services (gas, telephone and electric).\textsuperscript{27}

\textsuperscript{24} 123 Utah 437, 260 P.2d 751 (1953).
\textsuperscript{25} 123 Utah 443, 260 P.2d 754 (1953).
\textsuperscript{26} Id. at 445, 260 P.2d at 755.
The tax cases cited have been considered primarily because they illustrate the simplest as well as the most widely spread illustration of the principle that local impositions upon a public utility should be, indeed must be, recouped from the customers taking service in the locality. This is necessary in order to avoid discrimination against other service areas, which derive no benefit from the imposition, and hence should not have to contribute to its cost.

The application of this principle is not limited, however, to local tax situations, and a number of cases have applied it where the undergrounding of electric distribution lines was involved. For example, in Cooney v. Southern Berkshire Power & Elec. Co., a complaint was filed alleging that the electric company refused an underground supply to a new home. In refusing to order the electric company to make the underground extension at its own expense, the Massachusetts Department of Public Utilities expressed its viewpoint that those persons already customers of the utility company should not be forced to finance an expensive extension of facilities with no prospects that the extension would be of financial benefit to the company. The Department pointed up the problem:

Certainly we could not condone a rate schedule which would burden the consumers in another town in respondent's territory with the excess cost of the aesthetics of the town of Lenox, much as we may delight in its beauty and desire to conserve it. And to raise all rates for underground service would obviously lead in a very short time, as the system is extended and as replacements are made in the present old and rapidly deteriorating underground plant, to prohibitively high rates for underground service.

The Cooney case was followed in another proceeding involving the same company and the same general service area in Re Southern Berkshire Power & Elec. Co. A considerable portion of the record in this case dealt with the differential in the company's rates between underground and overhead service, and the decision noted that the cost of construction and maintenance of underground systems was very substantially in excess of the cost applicable to overhead systems. In sustaining a 2.97 dollars per month surcharge rate applicable only to customers benefitting by underground service, the decision emphasized the unfairness to the general body of customers of placing the burden of the increased costs occasioned by the underground system on the many customers who do not benefit by it.

29. Id. at 58.
Similarly, in *Re Southern California Edison Co.*, the California Public Utilities Commission decided that, in view of the relatively high cost of underground electrical distribution systems, an electric company should be authorized to apply a surcharge for service from underground systems which it was forced to install at its own expense in places where an overhead system would be practical from an operating standpoint. The California Commission repeated this holding a few years later in *City of Walnut Creek v. Pacific Gas & Elec. Co.*, where the city had filed a complaint seeking an order requiring the gas and electric company to provide electric service and to bear the entire cost of the installation of underground electric facilities within the area of underground districts created by city ordinance. In dismissing the complaint, the Commission, after finding that the record showed that it is common knowledge that costs associated with providing underground service are several and often many times the costs of an equivalent overhead electric system, noted that it had never heard of any instance in which the general practice of requiring the applicant for underground service to pay the extra cost had been held unreasonable.

In the only court decision dealing with undergrounding *distribution* lines, the opinion noted that appellant sought underground service without paying the differential required from all patrons and held that to permit undergrounding at no cost to him would not only be in direct violation of the utility's tariff rules but would be discriminatory as against all of the utility's other customers.

Surprisingly enough, the issue of who should bear the extra cost of underground *transmission* has not, until quite recently, been specifically dealt with in any case involving such lines. The lead case arose in Maryland. In November 1962, Baltimore Gas and Electric Company requested authorization from the Baltimore County Board of Appeals to construct a 115,000 volt overhead transmission line as a special exception use in a district where underground installation was required by ordinance. The Board denied the overhead permit for a small portion of the line and the Maryland Court of Appeals affirmed. Faced with this latest instance of additional underground construction costs, Baltimore Gas and Electric Company placed the issue squarely before the Maryland Public Service Commission by filing a “petition ... for

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designation of electric service customers from whom fixed charges on excess construction costs, imposed by local law, should be recovered." The Commission ruled that the entire body of customers should pay the excess cost of this particular installation because it was a case of first impression. However, the Commission, well aware that it had not heard the last of the problem, announced as its policy for future cases the rule that whenever electric utilities are required by local authority to construct a line underground at a cost substantially higher than that which would ordinarily be expended, then those charges needed to support the excess investment will be imposed on the customers in the geographic area and/or those within the local subdivision to which the regulation applies.86

Clearly, the Maryland Commission has taken a forthright stand on the issue of who should pay for aesthetic advantages. It can be expected that the logic of the Commission's position will induce other regulatory bodies to apply similar principles. Whatever cooling effect this may have upon the ardor of those who have hitherto been able to advocate underground lines without being embarrassed by the crass subject of money to be paid by their audiences remains to be seen. The Virginia Corporation Commission recently approached the cost-bearing problem from the standpoint of company absorption as a promotional allowance and concluded that it is in the public interest to encourage underground distribution installations. However, in words applicable as well to transmission situations, the Commission went on to emphasize:

[S]o long as the cost of underground is substantially more than the cost of overhead, the customer who receives the underground service must, in one way or another pay for it, regardless of whether underground distribution is voluntarily chosen or required by local ordinance. Otherwise, there would be an unjust burden on customers who are served by the less expensive but less desirable overhead method. There are a number of methods by which the customer can be required to pay for underground service. It can be done through cash payment of the actual difference in cost between underground and overhead, payment of the average difference in cost between underground and overhead, the establishment of a separate rate for underground electric service, the addition of an underground surcharge to existing rates or a credit based on anticipated revenues. So long as the method of repayment selected by the utility is reasonable and not unjustly discriminatory, the method should be determined by the company and not by the Commission.87

In summary, then, undergrounding is technologically possible for lines to and including 345,000 volts, but the extra cost is to be borne by those who benefit, thus avoiding an undue and discriminatory burden upon the non-benefitted ratepayers. It remains to be seen how many of the articulate and excited advocates of underground lines will be as willing to pay the piper as they have been eager to call the tune.