DOCKET NO. 11

AN APPLICATION SUBMITTED BY NORTHEAST UTILITIES SERVICE COMPANY, AS AGENT FOR THE HARTFORD ELECTRIC LIGHT COMPANY FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED WITH RESPECT TO THE CONSTRUCTION OF AN OVERHEAD 345 KV ELECTRIC TRANSMISSION LINE AND THE CONSTRUCTION AND RECONSTRUCTION OF AN OVERHEAD 115KV ELECTRIC TRANSMISSION LINE ALONG A ROUTE BETWEEN THE MANCHESTER SUBSTATION, IN MANCHESTER AND THE NORTH BLOOMFIELD SUBSTATION, IN BLOOMFIELD	:	POWER FACILITY EVALUATION COUNCIL JANUARY 23, 1978

O P I N I O N

I. GENERAL

This application is for a certificate of environmental compatibility and public need for the construction of (1) a new 345 kV overhead electric transmission line for 14 miles along an existing transmission route between Meekville Junction in Manchester and North Bloomfield Substation in Bloomfield, (2) a replacement 115 kV overhead electric transmission line for 2.3 miles along an existing transmission route between Meekville Junction and Manchester Substation in Manchester and (3) a replacement 115 kV overhead electric transmission line for 5 miles along an existing transmission route between South Windsor Junction in South Windsor and Bloomfield Junction in Bloomfield.

Public hearings were held at the Windsor Public Library, Windsor, on July 19, 20, 21, and 27, 1977. Evening session was held on July 20, 1977. Members of the Council made several inspections of the proposed and alternate routes for the proposed lines. In addition to advertised notice, notice was mailed, in accordance with law.

The applicant presented testimony and exhibits to support its claims that the new 345 kV transmission line and related 115 kV reconstruction is needed, that the construction of the lines as proposed would not adversely affect the environment to a degree justifying the much higher cost of undergrounding, and that the proposed route from Manchester Substation to North Bloomfield Substation is environmentally preferable to the alternative route from Berlin Substation to North Bloomfield Substation.

The case in opposition to the proposed route was presented principally by residents adjacent to that route, especially those residents on Hampton Lane, Tiffany Lane, and Linwood Drive in Bloomfield.

II. NEED

The Council is of the opinion that there is a public need for a new 345 kV transsmission line between Meekville Junction and North Bloomfield Substation. Such need was adequately documented.

The proposed 345 kV line will supply a 345/115 kV autotransformer at the North Bloomfield Substation and will be a source of power for the 115 kV lines that radiate outward from that substation to much of the greater Hartford area, the northwestern quadrant of Connecticut, and the southwestern quadrant of Massachusetts.

In order to determine the reliability of the existing facilities in the event of reasonably foreseeable and representative single and double contingency outages, the applicant tested the existing autotransformers and the underlying 115 kV system using computerized load flow techniques, the projected area loads, and the applicable planning guidelines.

The projected area loads are based on the Northeast Utilities 10 Year Forecast of Loads and Resources submitted January 1, 1977 which the Council has thoroughly reviewed.

The planning guidelines are designed to provide a reliable electric power supply at reasonable cost and also to provide a consistent approach to the determination of local area need. The guidelines represent standard utility practice and constitute a basis for planning new facilities.

The load flow studies, which incorporate the forecast and the planning guidelines, indicate that by 1980 overloads will occur under one case of single and four cases of double contingencies. Such overloads could cause cascading outages and result in the loss of customer load on parts of the system. If loads continue to grow in subsequent years, all of the identified overloads will become more severe.

The load flow studies also indicate that the addition of the proposed 345 kV line and the North Bloomfield autotransformer will improve reliability of the circuits and avoid the above overloads.

The proposed facilities will also reduce transmission line losses by an estimated $750,000 per year. Such savings are significant, represent a reduction at present prices of 57,000 barrels of fossil fuel resources, and further support the applicant's proposal.

The estimated construction cost of the proposed facilities is $17,730,000. Of this $7,690,000 is for the 14 miles of 345 kV construction and the 5 miles of 115 kV reconstruction, $1,800,000 is for right-of-way widening, $210,000 is for the 345 kV connection at Meekville Junction, $550,000 is for the replacement 115 kV line between Manchester Substation and Meekville Junction, $5,830,000 is for the North Bloomfield autotransformer and terminal facilities, and $1,650,000 is for the Manchester Substation terminal facilities.

Alternatives to the proposed facilities were explored by the applicant, but none was found to be reasonable. The alternative of supplying North Bloomfield via Berlin would involve a longer and more costly route, and construction could not be completed by 1980. The alternative of expanding the area's 115 kV system would require a much larger number of lines and would be considerably more costly. The alternative of constructing generating facilities at some or all of the area's 115 kV substations would also entail greater costs. The alternative of undergrounding the proposed line would be $33,550,000 more expensive than the proposed overhead construction.

The Council is also of the opinion that there is a public need for the reconstruction of the proposed 115 kV circuits. This reconstruction will not necessitate any additional 115 kV circuits. Such reconstruction is necessary to continue in operation the existing 115 kV circuits.

The applicant believes it would be prudent to provide accommodations for a second 345 kV circuit between Manchester and North Bloomfield Substations. It is clear from the record, however, that this second circuit will not be needed if the line from Hampden Junction to Agawam to North Bloomfield Substation is constructed. The Hampden Junction to Agawam portion of the line in Massachusetts has already been approved by the Massachusetts Energy Facilities Siting Council. A second Manchester-North Bloomfield line has not been identified in any of the applicant's 10-20 Year Forecasts, and the applicant admitted there are no plans for such a line at this time. Thus, the Council is of the opinion that there is no need to provide all the requested accommodations for a second Manchester to North Bloomfield line at this time. Accordingly, we do not believe that the 80 feet of acquisition proposed in segments 12 and 14 is necessary, and we feel that only 95' is necessary for two small sections in segments 12 and 15 instead of the 180 feet and ~~250~~ 215 feet, respectively, as proposed. Although a widening by 55 feet in segment 4 would be sufficient for the proposed line, the Council believes that a 75 foot widening will not result in an environmental impact greater than that associated with the 55 foot acquisition. This additional twenty feet will not severely limit the future use of the right-of-way as would

the 55 foot acquisition. Because of an absence of figures regarding alternative acquisitions in segment 5, we believe that the necessary construction can be accomplished if the applicant acquires only enough land to construct a 115 kV line on the north side of the existing 115 kV lattice line, leaving room in the center of the right-of-way to construct the proposed 345 kV line but with no additional land to accommodate a second 345 kV line on wood H-frames. In no case should the acquisition in segment 5 exceed 130'.

III. ENVIRONMENTAL IMPACT

The Council has carefully considered the proposed route and sought to identify viable alternate routes.

Having considered several alternatives, it is our opinion that the proposed route from Manchester Substation in Manchester to North Bloomfield Substation in Bloomfield through the Towns of Manchester, East Hartford, South Windsor, Windsor, and Bloomfield, has the least adverse environmental impact.

With the exception of a 0.6 mile section, the proposed route follows existing rights-of-way and requires widening of 75 feet for only 2.6 miles, 95 feet for a 1350 foot section, 95 feet for an additional 250 foot section, and less than the 130 feet proposed in a 0.3 mile segment across the Connecticut River flood plain. It is our opinion that 170' acquisition for approximately 0.6 miles is necessary in segment 3B for the proposed line.

The Council believes that the proposed route has less land-use, visual, and natural system impacts than any of the alternatives considered. This is not to say that the proposed route is free of adverse environmental impacts. The Council is aware of the land-use impacts of land acquisition in Manchester, South Windsor and Bloomfield. We are mindful of the visual impacts resulting from steel pole structures in Windsor, and we are concerned about the natural system impacts that may result. Nevertheless, we believe that the land acquisition is necessary for the proposed line in segments 3, 4, 5, 12, and 15. This will lessen visual impacts by permitting the use of lower wood pole H-frame structures. We believe the use of steel poles in Windsor is necessary to prevent widening of the right-of-way which would be impractical in such a heavily developed area. Also, alternatives to the use of steel poles in Windsor, such as establishing a new right-of-way, are either impossible or would result in greater environmental effects. Furthermore, we believe the removal of the existing 115 kV lattice line will improve the appearance of the right-of-way.

We are particularly concerned about the residents in the Linwood Drive, Tiffany Lane, Hampton Lane area because many found too late that their homes are close to the existing right-of-way. We regret that the residents were not adequately informed about the existence of the right-of-way or the potential future use thereof. Nevertheless, the construction of 345 kV steel pole line 10 feet closer to the existing line, i.e. 60 instead of 70 feet, with all three conductors placed on the north side of the poles, will require the least amount of vegetation to be removed from the back yards of the houses on Linwood Drive and Tiffany Lane and would have no greater affect on the houses on Hampton Lane than the original proposal. We believe this will minimize the adverse visual impact in this area.

Finally the council believes that construction of the line will result in some environmental impacts, but that they are not significant enough to deny the line or select an alternative route. These impacts can be minimized by a Right of Way Development and Management Plan.

The Council knows that the houses proposed for acquisition on Main Street in South Windsor and Filley Street in Bloomfield have some historical value. Although it is possible to prevent the taking of the house on Main Street, we do not believe it is possible to avoid taking the house on Filley Street. The house must be taken for the proposed line, and any alternative routes around the house would result in significantly greater adverse environmental impacts by establishing and clearing a wholly new right-of-way.

The record, as expressed in the Council's findings, indicates that the location of the transmission line as granted will not pose an undue hazard to persons or property along the area traversed by the line. Also, we do not believe that the proposed line will interfere with radio and television reception.

The Council is mindful and very disturbed by the unauthorized use of this right-of-way and other rights-of-way in Connecticut by motorized vehicles. We are aware of numerous attempts to prohibit this use, and encourage the applicant to do everything within its authority to discourage such unauthorized use.

We recognize the potential for alterations of structures and rights-of-way at the intersection of the right-of-way with I-291, and we acknowledge the applicant's request for flexibility in design in these areas.

Finally, although the Council does not have jurisdiction over distribution lines, we urge the applicant to resolve the problem concerning the 23 kV lines in Stroh Park with the Town of Windsor.

IV. CONCLUSION

The Council has concluded, based on its consideration of the entire record, including its field inspections, that a new 345 kV transmission line and the associated 115 kV transmission line reconstruction between Manchester Substation in Manchester and North Bloomfield Substation in Bloomfield is needed for system reliability purposes as more fully set forth above, and that the best route is from Manchester to Bloomfield as proposed by the applicant and as herein modified.

The Council recognizes and the record reflects that certain adverse effects on the environment may occur as the result of the granting of a certificate in this matter. The nature of these environmental impacts are detailed more particularly in the findings, but they are not sufficient to justify selection of an alternate route, or the denial of this application.

The Council is aware that two houses along the proposed route do have some historic value. It is possible and desirable, as noted above, to avoid taking the house on Main Street in South Windsor. There are no reasonable alternatives, however, that would avoid taking the house on Filley Street in Bloomfield. This conflict with historic values is not sufficient to warrant denial of the application or selection of an alternate route.

The record does not suggest that there would be any significant adverse effect on, or conflicts with, the policy of the State concerning ecological balance, scenic and recreational values, air and water purity, forests and parks, or fish and wildlife. Constructing the proposed facility in accordance with the applicable requirements of the Connecticut Public Utilities Control Authority and the National Electrical Safety Code should adequately safeguard public health and safety.

The Council is of the opinion that the possible adverse effects or conflicts with the policies of the State referred to above do not constitute sufficient reason to deny the application. In arriving at this conclusion, the Council has carefully reviewed the evidence and recommendations presented to it and finds that there is a need for the proposed transmission facilities, in order to insure adequate and reliable electric power supply in the area to be served, and that many of the potential adverse environmental effects of the proposed facility are of minimal significance, as detailed in the findings.

In analyzing the nature of the probable environmental impact of the proposed facility, the Council has recognized that until such time as a certificate of environmental compatibility and public need has been issued to the applicant, a detailed right-of-way development and management plan cannot be prepared. Thus, the precise route of the line and much of the detail necessary to evaluate more particularly and limit the extent of its adverse environmental impact is presently unavailable. It is for this reason that the Council feels it has a responsibility to require the applicant to coordinate its specifications for construction of the facility, its detailed environmental inventory and its right-of-way maintenance and use plan with the Council prior to the initiation of construction activities. Such a plan will aid this Council in determining the most appropriate method of constructing and maintaining the proposed facility so that the least possible adverse effect on the environment will occur.

The Council is of the opinion that the entire length of the proposed facility should be located overhead. As the findings indicate, undergrounding of the proposed line could not be accomplished without unreasonable costs to consumers.

The applicant and other electric systems in New England have established a grid of 345 kV transmission lines to transport large blocks of electric power from major generating stations to major load areas for transformation to 115 kV and further transmission to local substations. The proposed 345 kV line is a part of the proposed expansion of this system.

The Council is satisfied that the new 345 kV line conforms to a long range plan for expansion of the electric power grid of the electric systems serving the state and interconnected utility systems, that will serve the interests of electric system economy and reliability and will be consistent with the purposes of Chapter 277a of the General Statutes of the State of Connecticut.

The plan of the applicant is to continue to support research and development of underground transmission materials and techniques which will make it economically justifiable to underground transmission lines and to continue to propose overhead transmission lines, except in congested urban areas, until the cost of underground transmission more nearly approaches that of overhead transmission.

The overhead portions of the facility conform to the Federal Power Commission "Guidelines for the Protection of Nautral, Historic, Scenic, and Recreational Values in the Design and Location of Rights of Way and Transmission Facilities".

The record, as expressed in the Council's findings, indicates that the location of the transimission line as granted will not pose an undue hazard to persons or property along the area traversed by the line.

The Council believes that the line is needed to provide adequate and reliable electric service to the greater Hartford area and to the northwestern quadrant of Connecticut, and that it does so at the lowest reasonable cost to consumers consistent with the need to protect the environment and ecology of the State and to minimize damage to scenic, historic, and recreational values.

Therefore, the Council concludes that a certificate of environmental compatibility and public need should be issued for the construction of the proposed 345 kV transmission line and associated 115 kV line reconstruction along the proposed route.