STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

OPINION NO. 85-2

CASE 70126 - POWER AUTHORITY OF THE STATE OF NEW YORK -
Marcy-South 345 kV Transmission Facilities

OPINION AND ORDER GRANTING CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED

Issued: January 30, 1985

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STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

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BY THE COMMISSION:

INTRODUCTION

On November 19, 1982, the Power Authority of the State of New York (the Power Authority) filed an application, pursuant to Article VII of the Public Service Law, for a certificate of environmental compatibility and public need to construct approximately 180 miles of 345 kV transmission facilities from the vicinity of the Marcy and Edic substations in Marcy, Oneida County, to a proposed substation in East Fishkill, Dutchess County, New York (Marcy-South).

Preliminary conferences were held on January 4 and April 5, 1983, and eight public statement hearings were held in Marcy, Herkimer, Cooperstown, Delhi, Monticello, Goshen and Wappingers Falls. Over 2,000 people attended the public statement hearings and the views expressed generally reflected one of two viewpoints. One group of speakers, comprising

chiefly residents living along the proposed route, opposed the line on environmental grounds. They cited the visual impact of the large towers, their concern over the health and safety aspects of high voltage transmission lines, and the effect of herbicides used along rights-of-way. The second group, pointing to the line's economic benefits, supported its construction because it would create jobs and offer to downstate consumers relief from increasing electric costs. In addition to the statements made at the public statement hearings, numerous letters were received over the course of the proceeding. Most adopted one or the other of the foregoing positions, but many dealt with more specific routing issues of interest to the writers.

Formal evidentiary hearings commenced on April 18, 1983, in East Fishkill, New York, and continued on 59 days at various times and places through February 2, 1984. In addition, physical inspections of the routings of the proposed facilities were conducted, upon notice to all parties. At the formal evidentiary hearings, a total of 74 witnesses were sponsored by the Power Authority; the staff of the Department of Public Service (staff); the New York State Department of Environmental Conservation (DEC); the New York City Energy Office and the New York City Department of Environmental Protection (the City); the New York State Department of Agriculture and Markets (Ag. & Markets); Assemblymembers Hinchey and McPhillips (Assemblymembers); Prudent Residents Opposed to Electric Cable Transmission (PROTECT); the Counties of Orange, Dutchess, Sullivan and Otsego (the Counties); Mamakating Federation of Community Associations (Mamakating); Delaware County Citizens Opposed to the Power Line Route Alternatives (DCCOPRA); Friends of PROTECT (Friends); and Long Island Association of Commerce and Industry.

The record of the prehearing conferences, public statement hearings and formal evidentiary hearings contains 12,515 transcript pages and 295 exhibits. In addition, two stipulations were presented.[1/]

On June 25, 1984, the recommended decision of Administrative Law Judges Walter T. Moynihan and John T. Vernieu was issued. Briefs on exceptions were filed by all parties sponsoring witnesses except for the Long Island Association of Commerce and Industry. In addition, exceptions were entered by the Utility Workers Union of America, AFL-CIO (Utility Workers) and Edward J. Hagovsky. Further comments were submitted by the Town of Montgomery, Marlborough, Newburgh, New Windsor and Plattekill. Reply briefs on exceptions were later filed by the Power Authority, staff, DEC, Ag. & Markets, the City, New York State Electric & Gas Corporation (NYSEG), Mamakating, DCCOPRA and Friends.

BACKGROUND

Maintaining that the existing bulk power transmission system was being used in a manner not anticipated when the system was designed, the Power Authority regarded the system as now primarily devoted to the transfer of substantial amounts of economy power from the North to the Southeast, which has reduced system reliability and diminished its concomitant flexibility. In order to relieve this constraint on power flows to the Southeast and the stress on the system, which has impaired the State's ability to displace expensive oil-fired energy (by measures including the importing of hydro power from Canada), the Power Authority proposed construction of Marcy-South.

1/A third stipulation, (Stipulation No. 3), concerning routing in the Catskill Park, was received after the close of the record and a motion was made by the Power Authority to allow into evidence the study on which the stipulation was based. This issue is discussed further below.

Generally, the Power Authority's proposal called for construction of new overhead transmission facilities comprising single- and double-circuit 345 kV segments, as well as a submarine cable system for crossing the Hudson River.[1/] Primarily double-circuit construction was proposed between the Marcy/Edic substation area (Oneida County) and the Fraser substation (Delaware County) and between the Coopers Corners substation (Sullivan County) and the Rock Tavern substation (Orange County). Single-circuit facilities, for the most part, were proposed between the Fraser and Coopers Corners substations to complement a single-circuit 345 kV line now existing between those two points, and between the Roseton (Orange County) and the proposed East Fishkill (Dutchess County) substations. Also included with the application were plans for necessary work at the various substations, including the new East Fishkill substation, as well as plans for the Hudson River submarine cable system and the land disposal of materials to be dredged from the river. In addition to setting forth its proposals, the Power Authority set forth its explanation of why its proposals were necessary additions to the New York State electrical grid and why they should be considered environmentally compatible.

As required by Article VII, the Power Authority's application discussed alternative routings; in addition, two principal alternative transmission reinforcement options between Marcy and the East Fishkill substation were presented by other parties. The Counties and staff proposed a single-circuit 345 kV line that would extend a total of about 147 miles, and the Counties offered as well a lesser reinforcement option that would require only about 55 miles of single-circuit 345 kV construction.

1/A detailed description of the proposed route is found at R.D., pp. 125-144.

To analyze the electrical system desirability of constructing Marcy-South from the point of view of the statewide transmission system, the Power Authority divided the State into 11 geographic areas, lettered A through K. With one exception, the areas are linked together in a chain-like fashion. The chain begins with letter A, encompassing the Buffalo area, then proceeds east to the Albany area, letter F, then south to Long Island, letter K. The one exception is the Adirondack region, letter D, which joins area E and forms a small branch in the chain. The interface between any two adjacent areas was assigned a value equal to the total transmission capability between the two areas. For example, the interface between areas E and F, which is called Total East, has 3,850 MW of transmission capability, and that between areas F and G, which is called UPNY/SENY, has 2,000 MW of transmission capability. In fact, these two interfaces are the critically weak links in the statewide transmission chain.

The Judges concluded that Total East and UPNY/SENY are weaknesses in the center of the statewide transmission system and that the Marcy-South reinforcement would strengthen the system. However, they noted that the net benefits of the reinforcement must first be demonstrated. They described this as including not only the estimated costs and savings, but also unquantified aspects such as negative aesthetic impact and improved system reliability.

The recommended decision, in examining the net benefits, was divided into two main areas, need and environmental impact. Our Opinion follows that format. It then turns to specific routing issues and concludes with a consideration of miscellaneous issues, most of which pertain to measures for mitigating adverse effects on the environment.

ECONOMIC AND ENVIRONMENTAL ISSUES; THE QUESTION OF NEED

The recommended decision divides the discussion of need into two categories: the status and structure of Canadian energy imports and the computer model estimates of the economic benefits of the transmission line. These issues will be discussed in turn, followed by a consideration of system benefits and environmental trade-offs. Finally, after our discussions of the individual issues, our overall conclusions on these matters are set forth.

CANADIAN ENERGY IMPORTS

New York State currently imports Canadian energy from both Ontario-Hydro and Hydro-Quebec. The combined maximum imports from these two sources are estimated by the Power Authority to be about 28 TWH[1/] annually from 1987 through 1999.

Ontario-Hydro

The Ontario-Hydro system is expected to have 15 to 25 TWH annually of coal-fired surplus energy from 1983 to 1995. In addition, it anticipates 5 to 10 TWH annually of nuclear-fired surplus energy after 1987. These estimated surpluses would be generated by Ontario-Hydro's maximum surplus capacity of about 7,000 MW between 1990 and 1996. This surplus capacity is in addition to Ontario-Hydro's planned reserve of 4,000 to 5,000 MW. The Power Authority noted also that Ontario-Hydro had reduced its load growth projection, which would substantially increase the projected surpluses of energy over the next 15 years or more.

1/One TWH (terawatt hour) equals one billion kilowatthours.

The Power Authority assumed that Ontario-Hydro energy would be imported as economy energy, i.e., on a split-the-savings basis. And it estimated that, as a result of an increase to 2,000 MW in the transmission capability of the Ontario-Hydro to Niagara facilities, Ontario-Hydro imports would increase to 13 TWH per year (11 coal-fired and two nuclear-fired). The Judges noted, however, that the transmission capability employed by the Power Authority was conservative and that the capability is expected to be as much as 2,500 MW.

The City, according to the Judges, proposed that Ontario imports be assumed to be only 12 TWH annually (5 TWH nuclear and 7 TWH coal, with a transmission capability of 2,150 MW), while the Counties noted the Power Authority's original projections provided for only 10 TWH from Ontario-Hydro. The Counties noted further that the original combined total of Ontario-Hydro and Hydro-Quebec imports was 22 TWH. They pointed out this level was broadly consistent with the New York Power Pool's April, 1983 long-range plan, which estimated 18 TWH annually, and the draft State Energy Master Plan of October, 1983, which projected 24 TWH annually. Thus, the Counties argue the Power Authority's total revised estimate of 28 TWH annually, including 13 TWH from Ontario, is too high.

The Judges concluded that the overall estimate of Canadian imports should be limited to the 24 TWH projected in the draft State Energy Master Plan. They decided that the cumulative amount of energy imports in the Hydro-Quebec contracts should be assumed imported, and the balance of the 24 TWH should be assumed imported from Ontario-Hydro.

The sole express objection to the Judges' recommendation regarding Ontario-Hydro imports was made by the City. It argued the proper estimate of total annual imports is 27 TWH and that its position was misinterpreted by the Judges, who had concluded it was contradictory to increase both the price advantage and the transmission capability between Ontario-Hydro and New York State while reducing total imports. The City contends it did not limit Ontario-Hydro imports to 12 TWH but recommended the level of Ontario imports for the base case analysis be increased to an average of 12 TWH annually. It says it is not contradictory to recommend an increased import capacity (2,150 MW) and a price reduction yet still estimate the level of Ontario imports to average 12 TWH. The City finds this so because it believes the Judges have underestimated the overall level of imports and the level of imports from Hydro-Quebec.

The City's exception is denied, for its projection of Canadian imports is too high. The Judges' recommended level of 24 TWH annually is reasonable, on the record before us, and it comports with the projection in the draft State Energy Master Plan. Accordingly, we adopt their recommended assumption.

Hydro-Quebec

The Power Authority has three contracts with Hydro-Quebec: the Diversity Power Contract, the Interconnection Agreement, and the Energy Contract. The Diversity Power Contract, which expires March 31, 1999, provides for the sale of 800 megawatts of power to New York during the months of April through October of each year. As much as three TWH of energy can be purchased in association with the

800 megawatts of diversity power. The second contract, the Interconnection Agreement, also expires March 31, 1999. Virtually all energy imported under the Interconnection Agreement is classified as fuel replacement energy (economy energy). This energy is being imported at a price equal to the lesser of 80% of the price of energy it replaces or a split-the-savings formula. The third contract, the Energy Contract, sets an import target of 111 TWH over a 13-year period from September 1, 1984 through August 31, 1997, with a possible five-year extension to August 31, 2002.

Under the Interconnection Agreement alone, oddly, construction of Marcy-South would increase the price of energy sold by Hydro-Quebec. This is because the price is keyed to the cost of the energy displaced by the sale, and the transmission reinforcement provided by the line would mean that the avoided cost became more frequently that of energy produced by expensive, downstate, low-sulfur oil-fired generation. To avoid this anomaly, Hydro-Quebec and the Power Authority entered into the Energy Contract, which, among other things, ties the price, in general, to New York's statewide average fossil-fueled energy cost.

Two issues are raised in the context of the contracts with Hydro-Quebec. First, the Utility Workers challenge the wisdom of relying on another foreign source of energy. Second, there is a dispute whether the Energy Contract may be cancelled by Hydro-Quebec in the event a single rather than double-circuit transmission line is built. These issues are discussed in turn.

1. Reliance on Imports

The Judges rejected the Utility Workers' argument that the Energy Contract will lead to an excessive reliance on a foreign energy source. The Utility Workers had compared the arguments made by the Power Authority to those that led to the reliance on oil from the Middle East and they had contended that there is a serious question whether Marcy-South adds to the problem of emergency preparedness by making it easier to forsake domestic energy development. The Judges, however, credited the Power Authority's arguments that if Marcy-South were constructed, Canadian imports would constitute at most 19% of New York's electric energy in 1988--a percentage that would later decline--and that the State's existing generation reserve provides an adequate cushion for emergencies. Meanwhile, 30.6% of the State's electric energy is fueled by oil. Thus, the Judges concluded, the Energy Contract will lessen dependence on uncertain foreign oil supplies and reasonably diversify the State's energy mix.

On exceptions, the Utility Workers renew their arguments to the Judges. They assert that the Judges focused too heavily on short-run savings and overlooked the long-term social costs, including the loss of jobs and tax revenues that allegedly will result from reliance on imports. Further, they contend the Energy Contract allows the Canadian Government the option to redirect any electricity for its own needs. Finally, the Utility Workers cite a General Accounting Office (GAO) report that suggests there is no plan for an emergency stemming from a disruption of service from Canada.

The Power Authority replies that the Utility Workers rely on the false premise that the Marcy-South transmission line will carry only imported energy. It also notes that the Utility Workers have merely repeated the arguments made in the initial brief and have not challenged the Judges' conclusions. Finally, the Power Authority challenges the Utility Workers' criticism of a lack of long-term planning and points to the State Energy Master Plan, which calls for increased Canadian imports.

The Utility Workers' comparison between reliance on oil from the Middle East and hydropower from Canada is not a valid one. The increased Canadian imports will diversify the State's energy supply, and, as the Judges observed, the Canadian imports will constitute a maximum of 19% of the State's electric energy while oil now accounts for 30.6% of the total. Moreover, the imports will serve to reduce the cost of power in the State, but will not be relied upon as capacity needed to meet peak loads: New York will continue to be able to meet its capacity requirements with domestic power throughout the term of the Energy Contract. Finally, as noted by the Power Authority, increased Canadian imports have been contemplated by the State Energy Master Plan. Accordingly, the Utility Workers' arguments provide no basis for rejecting the Power Authority's proposal.

2. Possible Cancellation of the Energy Contract

As developed by the Judges, the issue of the Energy Contract and especially the cancellation provision of Article 17, next discussed, took on a pivotal role. This is so because the parties disputed whether Article 17 allows Hydro-Quebec to cancel the Energy Contract in the event a

double-circuit transmission line is not certified. Furthermore, the parties disagreed over the likelihood that Hydro-Quebec actually would enforce any right to cancel the contract. Thus, the threshold question for the Judges was whether the contract required a double-circuit line or whether a single-circuit line would suffice. We turn here to that question, which is raised anew on exceptions; however, we do not share the Judges' view of its importance.

a. Article 17

Article 17 of the Energy Contract states:

> 17.1 This Contract is subject to and conditioned upon receipt of all requisite consents and approvals by the competent authorities including but not limited to:
>
> 1) POWER AUTHORITY having obtained the necessary approvals for and having constructed, by September 1st, 1987, a 345 kV reinforcement between the vicinities of Utica and Fishkill, which will increase the capability to transfer energy from upstate New York to the southeast New York area by approximately 2000 MW; and
>
> 2) HYDRO-QUEBEC having obtained the necessary approvals for and having constructed a HVDC link at Chateauguay Substation which will increase the capability to transfer energy by approximately 1000 MW to POWER AUTHORITY.
>
> 17.2 If the facilities referred to in 17.1, are not completed by September 1st, 1988, either HYDRO-QUEBEC or POWER AUTHORITY can elect to cancel this Contract.

The Power Authority contended this provision gives Hydro-Quebec the right to cancel if the Marcy-South line is not constructed, and it argued a single-circuit reinforcement would not satisfy the terms of the contract. Staff and many of the intervenors, however, contended that a single-circuit reinforcement would not cause cancellation.

The issue has two aspects: whether Article 17 gives Hydro-Quebec the option to cancel, and whether Hydro-Quebec would cancel if it had the option.

i. Contract Interpretation

As to the former issue, the dispute is over the meaning of the statement that the reinforcement between Utica and Fishkill "will increase the capability to transfer energy from upstate New York to the southeast New York area by approximately 2,000 MW." The Counties contended this clause was specific and has the technical meaning that the transfer limit across the UPNY/SENY interface must be increased by 2000 MW; this, they say, could be accomplished by a single-circuit reinforcement. The Power Authority, on the other hand, argued for what it called the plain meaning of the clause. It opined that the reinforcement must be "between the vicinities of Utica and Fishkill," which encompasses both the Total East and UPNY/SENY interfaces, and that only a double-circuit reinforcement would satisfy the 2000 MW increase requirement between Utica and Fishkill.[1/]

1/The following table sets forth each party's estimates of the desirable transmission reinforcements:

		Suggested Additional Capability		
Interface	Existing Capability	Power Authority	Counties and Staff	Counties Lesser Reinforcement
Total East	3,850 MW	2,500 MW	1,375 MW	225 MW
UPNY/SENY	2,000 MW	3,000 MW	2,000 MW	1,950 MW

The Judges reasoned that

> the logic of electrical circuitry, the language of the contract, and the evidence submitted by the parties who negotiated the Energy Contract all point to the conclusion that, if both the Total East and UPNY/SENY interfaces are not reinforced by about 2000 MW, either party to the contract has the right to cancel. The logic of electrical circuitry is simple: since both interfaces are bottlenecks in the transmission system and since they are in series with each other, both must be reinforced to facilitate the flow of power.1/

And they concluded that all doubts about the meaning of Article 17 are erased by the testimony of one of the contract negotiators and a letter from Hydro-Quebec to Mamakating,2/ which explained that concessions made to the Power Authority were contingent upon removal of the transmission bottleneck in order to allow transmission of 2000 MW of additional power at all times.

On exceptions, staff argues--and the Counties agree--that Article 17 serves no useful purpose and that there is no basis for requiring a 2000 MW reinforcement. It posits that a single circuit reinforcement is adequate for the parties to realize the benefits of the Energy Contract and that "portions of Article 17 serve absolutely no purpose whatsoever, except perhaps to 'boot strap' the Power Authority's double circuit proposal."3/ It asserts further

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1/R.D., p. 23.

2/On exceptions, Mamakating objects to allowing this letter into evidence because it could not verify who wrote it. A copy of the letter, however, was also sent to the Power Authority, and there appears to be no basis for Mamakating's objection.

3/Staff's Brief on Exceptions, p. 17.

that "acceptance of the Power Authority's argument, in effect, restricts the decision making authority of. . .the Commission by confirming the contractually acceptable reinforcements to the Applicant's proposal only."[1/]

The Power Authority rejoins that the 2000 MW reinforcement was required by Hydro-Quebec and accepted by the Power Authority in order to remove the transmission bottleneck and realize all the advantages of the Energy Contract. The Power Authority points out as well that Hydro-Quebec required the reinforcements because it had agreed to supply surplus energy on terms that would provide savings to the Power Authority. Furthermore, it notes the substantially reduced system benefits under a single-circuit reinforcement and it points specifically to the need to reinforce the Total East interface in order to prevent an outage at times of high system power flows.

The Judges were convinced that the Power Authority's interpretation of Article 17 was correct, i.e., that the provision referred to reinforcement of transmission capability between Utica and Fishkill generally and not simply to the UPNY/SENY interface. While this finding is not specifically challenged on exceptions,[2/] we conclude, for reasons discussed below, that we need not resolve the matter definitively. In any event, it is still necessary to discuss the argument made by staff and others that Hydro-Quebec would not cancel under Article 17 even if it had the option.

1/Id., pp. 17-18.

2/As noted, staff questions the logic and propriety of Article 17 as construed by the Power Authority, but does not directly challenge the Authority's reading of the provision.

ii. Likelihood of Cancellation

The Judges concluded--on the basis of their reading of Article 17--that Hydro-Quebec would have an incentive to cancel the Energy Contract in the event a single-circuit reinforcement were certified. They reasoned that it is in Hydro-Quebec's interest to "sell as much electricity as it can at the highest price available [and that Hydro-Quebec] negotiated the Energy Contract to achieve an increase in profits on the strength of its abundant supply situation coupled with a low production cost."[1/] Thus, the Judges rejected the argument that Hydro-Quebec, because it had overbuilt its system and needs external markets to prevent a rise in its domestic rates, would not cancel even if it had the right to. The Judges discounted this argument because the rate for economy power purchased under the Interconnection Agreement--while higher than pre-scheduled energy under the Energy Contract--is still lower than the Power Authority's incremental production cost rate, and they thus concluded the Power Authority would continue purchases from Hydro-Quebec under the Interconnection Agreement if the Energy Contract were abrogated.

On exceptions, staff, the Counties, DEC and the Assemblymembers join in the argument that Hydro-Quebec would not likely cancel the Energy Contract. Specifically, staff characterizes the Judges' analysis as "superficial and one-sided." It contends that, although a business operates to maximize its profits, "[a] prudent business will operate in a fashion that will maximize its profits within the context of reasonable business risks."[2/] And it says the Judges did not analyze the risks to Hydro-Quebec if it cancelled.

1/R.D., p. 25.

2/Staff's Brief on Exceptions, p. 9; emphasis in original.

Along these lines, staff argues that the business risks Hydro-Quebec would run if it cancelled are not commensurate with its potential gain of only about 10% additional revenues. To achieve that gain, Hydro-Quebec would have to sell the same level of energy under the less certain Interconnection Agreement as it would have sold under the Energy Contract. Essentially, staff believes Hydro-Quebec would rather have the more certain contractual levels of prescheduled sales under the Energy Agreement than the potential for additional revenues under the Interconnection Agreement, which would not be guaranteed.

The Power Authority responds--and the City concurs--that uncontradicted evidence shows Hydro-Quebec believes it would have the right to cancel if a single-circuit facility were constructed. It disputes as well staff's notion that Hydro-Quebec, if it cancelled, would be giving up guaranteed sales for sales that are not guaranteed. Continuing, the Power Authority explains that sales under the Energy Contract are non-firm and, though dependable to the Power Authority, offer substantially no more benefits to Hydro-Quebec than sales under the Interconnection Agreement. As for staff's contention that Hydro-Quebec would be incurring substantial business risks in order to achieve greater revenues, the Power Authority answers that Hydro-Quebec would receive, by staff's own comparisons, additional revenues of up to $765.4 million and that, inasmuch as the Energy Contract sales are not firm, the business risks cited by staff are unsupportable as a reason for not cancelling the contract. Finally, the Power Authority responds that there is little risk to Hydro-Quebec that New York would purchase less energy if the Energy Contract were cancelled, for the operational costs of that energy are much lower than energy available from other sources.

iii. Renegotiating the Energy Contract

Friends questions what they see as the Judges' excessively strict interpretation of Article 17 and argues that we should grant certification conditioned on the Power Authority obtaining a waiver of Article 17. It contends Hydro-Quebec has incentive to negotiate, inasmuch as significant quantities of energy--95% of that contracted for, according to Friends--could still be transmitted over a single-circuit line. Friends argues further that we have the authority to require a clarification of what they consider an ambiguous provision, and the Assemblymembers join in the argument that we should, as a condition precedent to certification, take an active role to determine Hydro-Quebec's specific intentions as to cancellation. They believe we would not be rewriting the contract between the parties but merely resolving an ambiguity necessary for rendering a decision. Finally, Friends opines that Hydro-Quebec would accept the condition to assure sales and that it would suffer no material change in circumstances.

In reply, the Power Authority points out that Friends did not pursue its argument on the record and contends its position is based on errors of fact. Specifically, the Power Authority notes that sales under the Energy Contract are not firm, that Hydro-Quebec has expressed its preference for the double circuit, and that economic studies demonstrate the benefits of the double circuit. Finally, it posits that the likely outcome of a conditional certification would be no transmission reinforcement at all, for the Authority would not build a single-circuit line without attempting to negotiate a new contract, and there is no reason for Hydro-Quebec to act swiftly in offering the same terms and conditions embodied in the Energy Contract. Such, it argues, is the case because Hydro-Quebec could rely on the Interconnection Agreement for continued sales.

iv. Discussion

Regardless of whether Article 17 would permit Hydro-Quebec to cancel the Energy Contract if we were to certify only a single circuit, the record contains an ample basis upon which one could conclude that Hydro-Quebec would not, in fact, exercise that option. More fundamentally, however, we regard the issue as one of little if any decisional consequence. To permit an applicant's contractual arrangements to dictate, in effect, the terms on which an Article VII certificate is issued would be to give up our responsibility to determine the need for a jurisdictional facility and the "terms, conditions, limitations or modifications"[1/] upon which the facility is to be certified. We are unwilling--indeed, we are not permitted--to avoid that responsibility, and we therefore decline to consider the possible termination of the Energy Contract as pertinent to our choice between single and double circuitry. Accordingly, there is no need for us to resolve this issue.

b. Article 13

Article 13 of the Energy Contract states:

> Neither party shall be liable for injury, damage or loss resulting from the supply, non-supply or quality of electricity hereunder nor for loss or damage resulting from uncontrollable forces, the term uncontrollable forces being deemed for the purpose of this Contract to mean any cause beyond the control of either of the parties including but not limited to. . .restraint by court or public authority, which by exercise of due diligence and foresight either party could not reasonably be expected to avoid.

1/Public Service Law, §126(1).

PROTECT argued that a power line should not be built until the Quebec Provincial Government and Canadian Federal Government become signatories to the Energy Contract. It contended the supply of power could be cut off by these governmental bodies for political or retaliatory reasons, leaving the Power Authority, under the terms of Article 13, without recourse. The Judges concluded, however, that while added security would be offered by having the Quebec and Canadian governments as signatories, compelling economic forces bind the parties to honor the contract and the risk of breach is small. Notably, the Judges point to Hydro-Quebec's enormous financial obligations committed to the sale of surplus energy and its preference for selling its surplus rather than being forced to increase domestic rates. It points also to the fact that hydropower cannot be stored and that there is no incentive to withhold energy that cannot be sold later.

On exceptions, PROTECT restates its position that it is our responsibility to determine whether the contract offers "adequate assurance of a dependable supply of energy and to ensure that unwise investments of public funds are not made."[1/] It charges that we would be acting irresponsibly if we did not at least require renegotiation and inclusion of all appropriate parties as signatories.

The Power Authority replies that the Energy Contract has received all the necessary approvals and that several documents evidence Canadian provincial and federal support for the contract. It contends additional signatures would not make the contract more enforceable, for the signatures would not change the rights of the Quebec or Canadian federal government to take actions as sovereigns effectively abrogating the contract.

1/PROTECT's Brief on Exceptions, p. 42.

ECONOMIC ANALYSIS

The economic merits of double- and single-circuit transmission reinforcements were compared primarily through the use of the multi-area production simulation (MAPS) program, which permits sophisticated computer modeling of the statewide electrical system. The manner in which it was used in this proceeding was to project the operating costs expected from the system after the various reinforcement proposals and then compare them with the operating costs of the existing system to determine the relative production cost and oil cost savings.

The Energy Contract

The parties disagreed over many of the inputs used in the MAPS program, but the item having the greatest impact on their results is the Energy Contract.[1/] The Judges based their analysis on the assumption that the Energy Contract would be cancelled if a single-circuit line were constructed. They concluded, as a result, that a double-circuit line would offer significant additional savings--$1,134.5 million for the study period--over the single circuit. As a consequence of their finding that the Energy Contract would be cancelled if a single-circuit line were built, the Judges did not examine closely the comparative benefits of single and double circuitry if the Energy Contract were applicable to both, but they did note that the asserted $19.2 million saving associated with the single circuit--which reflects staff's assumptions regarding the Energy Contract, fuel prices, and import capability--relates only to the period 1987 to 2000 and that if the period of the analysis were extended to the year 2006 the double-circuit facility would offer $89 million in net savings.

1/Other inputs are discussed in succeeding sections.

On exceptions, staff argues, as noted before, that the Energy Contract would not be cancelled even if a single-circuit line were constructed and that, with the contract in force, a single-circuit reinforcement would result in greater savings than a double circuit. In response, the Power Authority points out that of the 32 most recent economic comparisons between the double circuit and the single circuit with the Energy Contract in force, 90% of the analyses show a greater net benefit for the double circuit. And it asserts further that the 10% of the analyses favoring staff's position rely on the assumption that the facilities should not be compared beyond the year 2000.[1/]

It is clear that a double-circuit line with the Energy Contract in force would yield greater economic benefits than a single-circuit line without it. But if the contract is in force with a single-circuit reinforcement, the question becomes a closer one.

A careful look at the analyses relied upon by staff reveals, as the Power Authority asserts, that factors other than the applicability or non-applicability of the Energy Contract make staff's analysis of the single circuit with the Energy Contract in force more favorable economically than the double circuit. The pertinent inputs for this inspection are the levels of imports from Canada and the oil prices assumed. Although staff contends the difference between its own and the Judges' analyses is only the Energy Contract assumption, the Power Authority points out the

1/The Power Authority argues further that the analyses employed by staff as evidence supporting its position are based on unrealistically low levels of Canadian imports and unrealistically low fuel prices.

import capability and oil price assumptions used by staff conflict with those used by the Judges and, because they are lower, distort the savings comparisons favoring a single circuit. These issues are next discussed; later in this section we consider MAPS runs comparing single and double circuitry with the Energy Contract in force for both and all other assumptions identical as well.

Fuel Prices

Another input in the MAPS program that can affect significantly the projected production costs is the price of oil; in general, the higher the price of oil, the greater the economic benefit of Marcy-South. The Power Authority submitted a range of forecasts--it had developed high and low projections to allow for inherent uncertainties--and compared them with the forecasts of other experts. For example, its mid-range scenario depicted oil prices in the years 1990 and 2000 at $33.72 and $41.95 per barrel, respectively, which it compared with the 1983 Energy Information Administration Forecast of $37.00 and $59.00 per barrel. Altogether it compared its forecasts with thirty independent projections; of these, only two forecasts for 1990 and two for 2000 were lower than its own. Thus, it concluded, its forecasts were likely to be conservative.

Staff's forecasts were lower than the Power Authority's and were constructed by applying real price growth rates and inflation rates to oil prices paid by New York utilities in the summer of 1983. Staff employed a price escalation rate of 1% for low sulfur oil and a 5.5% inflation rate from 1985 through the end of the century; the Power Authority assumed corresponding rates of 3.2% and 7%.

The City supported the Power Authority's projections and argued staff's projections were too low. Meanwhile, the Assemblymembers contended the Power Authority's projections of oil prices exceeded those of virtually every utility in the State. The Counties similarly challenged the Power Authority's projections, citing sources that show a near-term decline in oil prices and a long-term constant real price.

In the face of the considerable uncertainty in projecting oil prices, the Judges decided to adopt a range of forecasts. They concluded the low end of the range should be represented by staff's projection and the high end by the Power Authority's mid-range forecast.[1/]

On exceptions, the Power Authority charges the Judges' range of oil prices is too low, and it characterizes staff's forecast--the low end of the Judges' range--as devoid of foundation. It goes on to challenge the experience of staff's witness and his failure to rely on computer models, which it considers a fundamental requisite to proper forecasting. It challenges as well staff's failure to develop a range of forecasts and to address itself to the issue of volatility. The Power Authority challenges also the Counties' position--that oil prices will be at or below staff's projected levels through 1985--but concludes that the Counties in fact confirm the Power Authority's position. Finally, it contends the Counties' reliance on forecasts by LILCO, Con Edison, and Niagara Mohawk is misplaced because there was no evidence those forecasts comprised the most recent estimates nor that they were mid-range. Thus, the Power Authority claims, the Judges' range is conservatively biased and underestimates oil prices and, as a corollary, the cost savings of the proposed facilities.

1/For the inflation rate applied to fuel prices they adopted staff's use of the Blue Chip Economic Indicators.

Staff, Friends, and Mamakating respond. Staff argues the Power Authority's exception is immaterial because the choice of fuel forecasts has no impact on the decision to build the reinforcement but affects (and only minimally) the level of predicted savings--staff asserts a difference between high and low forecasts of only $108 million over 13 years. Friends and Mamakating point to recent articles that predict declines in prices below those used in the Power Authority's studies.

We find the Judges' proposed range of oil prices to be reasonable. The bases on which staff made its projections are valid; and though the projections were not based on computer models, the result appears to represent a fair estimate of the low end of a reasonable range of prices. Indeed, recent market actions indicate that price increases below staff's projection are possible. As for the upper end of the Judges' range, the Power Authority's mid-range prices appear reasonable as well. We do not agree, as the Power Authority asserts, that the Judges' range is overly conservative, but, as the Power Authority acknowledges, this is an area of great volatility and no single position can possibly be definitive.

Length of the Study Period

Initially, the Power Authority based its MAPS studies on an 11-year period, but it later extended the study period to twenty years. (In general, the longer the study period the greater the economic benefit of Marcy-South.) It noted the expected service life of the proposed facilities is 35 to 50 years and that an 11-year study period, therefore, is too conservative. The City argued as well for a longer study period. It opined that a short study period is biased against the version of the project with higher capital costs (i.e., double-circuit construction) and creates the illusion

that the single- and double-circuit facilities are similar in terms of savings. The Judges noted in this vein that increasing the study period to twenty years increases the production cost savings advantage for the double circuit to $277.2 million using staff's assumptions and $401.5 million using the Power Authority's assumptions. Staff and the Counties opposed extending the study period beyond the period of the Energy Contract (i.e., through 1997) because energy price forecasts would be increasingly more speculative.

The Judges recognized that, as the study period was lengthened, the economic advantages of the double circuit became greater. Nevertheless, they agreed with staff and the Counties that after the expiration of the Energy Contract, events would be too uncertain to be forecasted with confidence and, while they recognized the double circuit would continue to benefit consumers, they limited the study period to 1997, when the Energy Contract expires.

The Power Authority and the City except. They contend the Judges erred in not considering the benefits beyond 1997 and that ignoring those benefits would be unwise, for they establish the greater advantages of the double circuit. The Power Authority also challenges the Judges' remark that the extended study period assumes extension of the Energy Contract. It points to testimony that Hydro-Quebec imports after 1997 were assumed to be economy energy under the Interconnection agreement. As for other assumptions made for the years after 1997, the Power Authority complains that the issue was not rasied on the record. The Power Authority, in any event, does not consider its assumptions speculative but says they are rational and intentionally conservative. Most notably, it points to the assumption that Hydro-Quebec surpluses are likely after 1997. Finally, the Power Authority points out that there is no disagreement

that the double circuit would provide greater production cost savings but that the issue is whether those savings offset the higher capital costs of double-circuit construction; that is, whether the net savings are greater. It concludes that limiting the study period distorts the analysis of comparative economics by ignoring those years after the project is assumed to be paid off and in which net savings therefore are greatest.

Staff and Friends reply that the Judges were correct to limit the study period. They insist that assumptions beyond 1997 are too speculative, and staff argues specifically that surplus energy from Hydro-Quebec may be unavailable. One factor it cites as contributing to this possibility is the recent New England Power Pool contract with Hydro-Quebec for 7 TWH annually from 1990 to 2000.

Plainly, a longer study period means that less certain assumptions will be relied on. Nonetheless, one certainty is that the service life of the proposed facility is more than three times longer than the study period employed by the Judges. Moreover, the Power Authority and City are correct that limiting the study period biases the analysis against the project with the greater capital costs. Consequently, it would be shortsighted to ignore the certain benefits that will accrue after 1997. And while it is true that energy prices will be more speculative without the Energy Contract, the Power Authority pointed out that it did not employ those costs in its MAPS runs. Thus, its longer-term projections are really not much more speculative than earlier projections. Moreover, as the Power Authority correctly points out, the facility is not only for Canadian power. Accordingly, it is reasonable to recognize qualitatively that after 1997 the economic advantages of the double circuit are likely to be significant.

Out-of-State Sales

The Judges declined to assume out-of-state sales, finding these "sales are difficult to forecast because of the interplay between the neighboring pools of fuel cost, generation availability and load demands."[1/] On exceptions, the City argues out-of-state sales should be assumed, for some undoubtedly will take place. Staff responds that these sales are too speculative to be assumed and that, though some sales are likely, their level will be significantly lower than now.

The Judges acted reasonably in not including out-of-state sales, for these sales are affected by too many variables and cannot be relied on. The City's exception is denied.

Judges' MAPS Runs

At the Judges' direction, the Power Authority ran the MAPS program incorporating the Judges' assumptions. The results are set forth below:

1/R.D., p. 53.

Power Authority's Mid-Range Oil Prices
(Present Worth in Millions of 1987 Dollars)

1987-1997	Production Cost Savings Compared to no Reinforcement	Capital Charges	Net Savings
Marcy-South (Double Circuit)	2,610.9	708.5	1,902.4
Counties and Staff Single Circuit	1,265.4	497.5	767.9
Counties Single Circuit Option	964.7	301.3	663.4

Staff's Oil Prices
(Present Worth in Millions of 1987 Dollars)

1987-1997	Production Cost Savings Compared to no Reinforcement	Capital Charges	Net Savings
Marcy-South (Double Circuit)	1,969.3	708.5	1,260.8
Counties and Staff Single Circuit	862.4	497.5	364.9
Counties Single Circuit Option	691.1	301.3	389.8

The Judges noted that the savings advantage of the double circuit can be attributed to the increased level of Canadian imports they relied on and the assumed cancellation of the Energy Contract for the single-circuit lines. And they conclude that the double-circuit line is preferable in that, using the upper range of oil prices, $211 million in additional capital charges--the difference between the single- and double-circuit options--provides $1,134.5 million in additional net savings over the study period.

On exceptions, DEC argues that the results relied on by the Judges represent a dramatic departure from the MAPS runs examined on the record. It offers comparisons to various estimates and complains that many of the assumptions differ and that, as a result, the single-circuit alternative is given short shrift. It concludes that the MAPS runs used by the Judges should be accorded no weight.

In reply, the Power Authority argues the Judges based their assumptions on evidence presented in the hearings and subject to discovery and cross-examination. They argue further that there has been no objection to the propriety of the MAPS computer program and that DEC had been aware as early as April 5, 1983 of the Judges' intention to have their own MAPS studies performed.

DEC's exception is denied. The assumptions employed by the Judges were developed from the record, and the MAPS program itself is a proper tool, objected to by no party, for projecting the results based on those assumptions. Consequently, the Judges' decision to direct additional MAPS runs was proper; indeed, as described below, we have done the same.

Comparisons Assuming Energy Contract in Force

It is clear that under the Judges' assumptions--which include cancellation of the Energy Contract if a single-circuit line is built--the double circuit is economically preferable. Staff and DEC argue, however, that with the Energy Contract intact, the single circuit would result in greater savings than the double circuit. The table set forth below depicts their position:

Staff's Economic Assumptions;
Energy Contract in Force
(Millions of 1987 Dollars)

	Marcy-South	Single Circuit	Difference
1987-2000			
Production Costs	49,400.1	49,565.3	165.2
Capital Charges	618.3	433.9	184.4
Net Advantage (Disadvantage) of Marcy-South (Double Circuit)			(19.2)
1987-2006			
Production Costs	68,251.8	68,529.0	277.2
Capital Charges	630.8	442.6	188.2
Net Advantage of Marcy-South (Double Circuit)			89.0

From these results, DEC and staff conclude the double circuit should not be built, for in the first case the single circuit provides greater savings and in the second the advantage to double circuit derives from extending the study period,

which, as noted earlier, these parties consider too speculative. Friends and the Counties also support this position.

As mentioned in earlier sections, the Power Authority challenges the results relied on by the other parties for, it argues, staff assumed levels of oil prices and Canadian imports that were unrealistically low. The Power Authority's estimates are shown below:[1/]

Power Authority's Economic Assumptions; Energy Contract in Force (Millions of 1987 Dollar)

	Marcy-South	Single Circuit	Difference
1987-2000			
Production Costs	61,568.7	61,774.0	205.3
Capital Charges	715.7	640.6	75.1
Net Advantage of Marcy-South (Double Circuit)			130.2
1987-2006			
Production Costs	93,720.4	94,121.9	401.5
Capital Charges	737.1	659.6	77.5
Net Advantage of Marcy-South (Double Circuit)			324.0

1/These estimates also assume use for the single-circuit line of a heavier conductor than proposed by staff or recommended by the Judges; the heavier conductor requires that steel rather than wood poles be employed and thus increases the capital costs of the single circuit. The Power Authority had assumed the heavier conductor, known as Bluebird, would be more economic because it would limit transmission losses, but the Judges favored the lighter conductor, called Bobolink, because they found an economic advantage for the heavier conductor had not been proven. No exception has been taken.

When the Judges directed their MAPS runs, they did not include a scenario that would demonstrate the present worth difference between single and double circuits with all assumptions (including the effectiveness of the Energy Contract) the same and thus compare the alternatives more definitively. Consequently, we requested additional MAPS runs that would demonstrate the comparative benefits of single and double circuit with all assumptions, including the continued effectiveness of the Energy Contract, the same. The results are shown below:

Power Authority's Mid-Range Fuel Prices
(Present Worth in Millions of 1987 Dollars)

	Production Cost Savings	Capital Charges	Net Savings
Double Circuit	2,610.9	708.5	1,902.4
Single Circuit With Energy Contract	2,504.6	497.5	2,007.1

Staff's Fuel Prices

	Production Cost Savings	Capital Charges	Net Savings
Double Circuit	1,969.3	708.5	1,260.8
Single Circuit With Energy Contract	1,908.9	497.4	1,411.4

The new MAPS runs reveal that, with the Energy Contract in force, the single circuit provides greater net benefits, over the length of the Energy Contract, than the double circuit. As noted before, however, if the study period is lengthened and benefits beyond 1997 are recognized, the economic advantage of the double circuit becomes evident. Accordingly, the double circuit can be expected to afford, over the long run, a substantial economic benefit even if the Energy Contract were in force for the single circuit.

SYSTEM BENEFITS

In examining the relative system benefits of the proposed lines, the Judges set forth four criteria, viz., improved system reliability, reduced transmission line losses, increased system flexibility, and increased strategic capabilities. With specific reference to reliability, they concluded that Marcy-South offers greater improvements in three areas: system diversity, transient stability and resistance to extreme contingencies. They noted that the addition of more transmission and substation connections provides an improved basis for making decisions on maintenance outages, purchased power transactions with other pools, unplanned outages, extreme contingencies and use of the New York Power Pool transmission system.

In its brief on exceptions, staff mentions that the single-circuit reinforcement is "more than adequate to meet the system requirements to obtain the full benefits of the [Energy] contract."[1/] The Power Authority responds that staff is mischaracterizing the reduced system benefits of the single-circuit alternative. It contends it has performed a technical analysis of staff's lesser reinforcement, "with somewhat startling results to the discredit of Staff's proposal."[2/]

1/Staff's Brief on Exceptions, p. 17.

2/Power Authority's Reply Brief on Exceptions, p. 24.

The Power Authority points to two studies it conducted that indicate a blackout condition would occur during a severe outage at times of high system power flows. It thus concludes the single circuit is less reliable than the double circuit.

The Power Authority responds also to staff's argument that "no party has ever alleged that the system benefits were significant enough to play a major role in the choice between reinforcements."[1/] It would be unreasonable, the Power Authority says, to urge anyone to balance some of the benefits against all of the detriments, and it points out that the Judges concluded that the double circuit would provide substantial economic and system benefits.

Finally, the Power Authority cites the findings of the Clapp Commission, which reviewed the 1977 New York City blackout.[2/] It notes the findings that (1) a safety margin should be inherent in the design of a transmission system, and (2) financial limitations, real or imaginary, should not result in the sacrifice of essential reliability.

It is clear that the double-circuit reinforcement is more reliable, and no party challenges that conclusion. We agree and find that system benefits are a major factor weighing in favor of the double circuit.

1/Staff's Brief on Exceptions, p. 8, n. 1.

2/State of New York Investigation of the New York City Blackout July 13, 1977 (January, 1978).

ALLOCATION OF SAVINGS

The Judges resisted the Assemblymembers' urgings to adopt a method for allocating to customer classes the projected savings from Marcy-South. They concluded, for three reasons, that the allocation of expected savings is best resolved in individual utilities' rate cases:

> [F]irst, in the rate cases the savings can be reviewed in conjunction with the utility's total production cost; second, the expected savings can be estimated much more accurately because the estimations will not extend so far into the future. Third, and finally, the recommended procedure will give [us] flexibility in addressing the special problems of each utility.1/

The Assemblymembers, on exceptions, complain that the savings attributable to Marcy-South should be put in perspective by computing what the average residential ratepayer would gain. They say it would be inappropriate to hide behind impressive aggregate figures and that the impact on "real people" should be determined.

In reply, the Power Authority argues that the only economic issue properly before us is whether the project produces benefits, not how the benefits are distributed. It notes also that simply measuring benefits on a per capita basis fails to take account of the detriments weighing against the economic savings or the benefits of system reliability. Thus, it suggests that the proposed exercise is meaningless. This position is generally supported by staff.

1/R.D., p. 80.

The Judges properly declined to adopt a method for allocating savings. In the first instance, such an exercise, if it could be accomplished, would offer a meaningless distribution of savings absent a context in which to judge them. More importantly, our responsibility here is to adjudge the overall benefits of the line, on a statewide basis, and not to determine where the savings fall.

ENVIRONMENTAL TRADE-OFFS

As a result of the comprehensive stipulations in this case, the environmental issues are fairly straightforward and the contested ones are confined in large part to the relative visibility of the proposed structures. We note that the record is fully developed on the pertinent environmental issues, facilitating an affirmation of the Judges' general findings concerning the environmental effects of the line.[1/] Specific issues (environmental and other) will be discussed as they arise, in the context of their relation to line routing.

As part of the balancing test required, the Judges examined the relative environmental impacts of single- and double-circuit reinforcements. They noted that the visual impact may be judged in two ways: visibility and scale. They reported that the single-circuit facility is composed generally of 77-foot, wood or steel, H-frame structures on a right-of-way 160 feet wide. The double-circuit facility, on the other hand, generally employs steel lattice structures averaging 144 feet in height, single shaft steel poles 133 feet in height and a 150 foot right-of-way.

1/Among the important issues considered are protection of specific wet lands, vegetation management techniques (and related setbacks and precautions) and avoidance of specified hedgerows and woodlots. We especially note clause F of Stipulation No. 2 (Appendix F of the Judges' recommended decision), which establishes "a program for protection of endangered and threatened wildlife species, wildlife species of special concern, and rare plant species. . ."

The Judges noted that the taller a structure is the less the potential for screening from view and the greater the possibility for adverse visual impact. As for scale, the larger the structure, the greater the disproportion to other projections in the landscape. Thus, the larger facilities will be both more prominent and dominant. Moreover, it is explained that greater height increases the likelihood that more structures will be visible from any single viewing location. The resulting increased number of visible structures will exacerbate the adverse effect on the view.

In addition, as set forth by staff, another visual impact must be considered, namely, the effect of dissimilarity of structures. In this regard, staff noted that, in many locations, its proposal closely approximates existing structures, while the Power Authority's structures differ from them and hence cause a greater visual impact.

Three examples of areas that would be particularly affected by the Power Authority's proposal are set forth by staff: the Route 20 to Fraser segment; the Fraser to Coopers Corners segment and the Shawangunk River to Rock Tavern segment. Generally, staff argued that in two of these areas the impact of the power line can be minimized by lower structures that could more easily be concealed by vegetation and topography. Where concealment is not possible, it argued the lower structures would be more in scale with the surroundings. In the other segment (Fraser to Coopers Corners), staff pointed out that its single-circuit proposal would have the advantage of not requiring any construction, most notably in the Catskill Park (discussed further, infra).

With respect to agricultural impacts, staff acknowledged that right-of-way requirements are essentially the same, but it pointed out that its proposal would avoid having to cross 7.8 miles of agricultural lands, reduce the acreage that would have to be taken out of production for towers, and require lighter construction equipment, lighter duty access roads, smaller work areas and less excavation.

Finally, as to right-of-way management impacts, staff averred that the single circuit would eliminate effects across about 45 miles of land and would reduce the amount of herbicide required to control vegetation.

The Power Authority conceded that the single circuit has less potential for visual impact, but it argued that staff had failed to recognize the many specific accommodations reached in Stipulation No. 2, and their contribution to mitigating environmental effects.

The Judges concluded that the single circuit is environmentally superior and that, regardless of routing, the double circuit will have a significantly greater adverse effect on the environment.[1/] They note particularly their concern over intrusion into the Catskill State Park (discussed further, infra) and that it was an important factor weighing against the double circuit. Nonetheless, they concluded that the greater environmental impact did not overcome the economic and system advantages of the double circuit.

In the context of single versus double circuitry, the only environmental issue raised on exceptions concerns the possible future expansion of a single-circuit line.[2/] The Power Authority believes the Judges erred in failing to consider the impact of future construction along the route of an additional single-circuit line, which they see as necessary if a lesser reinforcement is certified now. It also faults

1/On exceptions, staff alleges a single circuit will have less impact on property values and that the Judges should have considered the impact on properties not adjacent to the line. The Power Authority, in reply, cited Miller v. State, 117 Misc.2d 444, 452 (1982), in which the Court of Claims held that transmission lines generally had no effect on property values.

2/As noted above, other exceptions on environmental issues pertain to specific routing matters rather than to the overall choice between single and double circuitry; they are discussed below.

staff for not evaluating the cumulative environmental impact of later expansion. Ag. and Markets supports this position as well and points to the greater impact on agricultural lands of a later reinforcement.[1/]

Staff and Friends reply. Friends argues that this issue was not raised until the Power Authority's rebuttal case and that there is no basis for the construction of a hypothetical second line. Staff similarly argues that for the foreseeable future there would be no need to expand a single-circuit facility. And it avers that it fulfilled its responsibility, set forth in an early Article VII opinion,[2/] to consider future requirements in order to improve long-range system planning.

It is clear the staff met its obligation to consider future requirements. It simply arrived at a conclusion different from the Power Authority's. As for the Judges' failure to consider the environmental impact of expansion, the Power Authority's argument has some merit, for, as discussed below, the double circuit offers benefits in terms of meeting increased capacity needs in the future. Therefore, it is possible that construction of only a single circuit now might require additional reinforcement in the future.

1/Ag. and Markets also points out that a double-circuit line built with lattice towers has the environmental advantage of requiring fewer structures in agricultural lands because there would be longer spans between towers.

2/Cases 25845 and 25741, Consolidated Edison Company (Southern Tier), Opinion No. 72-2, 12 NY PSC 267, 306.

DISCUSSION

As noted earlier, there is a transmission bottleneck that limits the flow of energy between the upstate and downstate areas of New York. We find the Power Authority's presentation on this issue persuasive and agree that some reinforcement is required to move energy along the North-South corridor and to prevent system degradation that might otherwise result from the increased levels of Canadian imports. That much said, we turn to whether a single- or double-circuit reinforcement should be constructed.

The MAPS runs we requested demonstrate that over the 11-year study period (1987-1997) the double- and single-circuit provide similar savings, with a slight advantage to the single circuit. However, as pointed out before, the double circuit offers significant additional benefits when the study period is extended. Moreover, system losses will be substantially less if the double circuit rather than the single circuit is adopted. Thus, we find, especially in light of the long-term surplus of Canadian capacity and energy, that the double circuit is economically advantageous in the long run.

The double circuit, moreover, has the advantage of providing signficant additional system benefits, immediately as well as in the long run, inasmuch as a system operated at a lower transfer level is more reliable or secure than one operated at or near its maximum transfer capability. The additional reliability benefits of the double circuit may be demonstrated by reviewing the operation of the New York Power Pool, which depends on transmission interconnections that were built for mutual support, diversity of system demand and economic interchange. At present, the Power Pool is driven by the need to supplant expensive oil generation in the southeastern part of the State; and, as a consequence, the large amounts of energy flowing from north to south have

taxed the system. Given the additional Canadian power that now is available, a portion of the transmission system, if a single circuit were certified, would continue to operate at close to capacity for a significant part of the year. Thus, a double circuit would provide an additional degree of security and reliability and enhance the State's ability to diminish its reliance on foreign oil.

In addition, the double circuit bolsters the reliability of the existing transmission network by providing a greater margin for withstanding system disruptions. For example, the double circuit would provide for the future a comfortable safety margin in terms of system stability and would reduce or eliminate the load shedding that might be required in severe contingencies. Further, the double circuit offers a greater strategic capability within the New York Power Pool in the event it is necessary to move large amounts of power.

Finally, the flexibility afforded by the double circuit will make a significant contribution to the State's electric power supply system. For while load will continue to grow (albeit at a rate that is debated), many existing generating plants will need replacement before too long. Specifically, by the year 2000 or shortly thereafter, a significant portion of existing thermal-generation plants will be more than forty years old, and experience with fossil units shows they become less reliable and more prone to forced outages, as well as more expensive to run, as they approach the end of their useful lives. Further, the five currently operating nuclear power plants will be near the end of their licensed lifetimes by 2005, and the status of the proposed Prattsville pumped storage facility is uncertain.

Finally, load growth projections suggest that, by about 2000, capacity in New York will fall short of meeting the Power Pool's minimum reserve margin. These factors, together with the historical opposition to siting new power plants downstate, suggest that replacement capacity will be required and may likely be located upstate. As a consequence, the prudent course to insure a reliable electric power supply system for the downstate area is to construct the double-circuit line, which will be able to transfer downstate approximately 2,000 MW of additional power--twice that of the single-circuit alternative.

Posed against the economic, capacity and reliability advantages of the double circuit is the environmental advantage of the single circuit. However, the record in this case demonstrates the numerous measures already taken to mitigate the impact of the double circuit; they are reviewed in detail in the recommended decision and some are described further below.[1/] Moreover, the intrusion into the Catskill Park is among the most serious drawbacks of the double circuit, and our routing decisions, discussed below, include circumvention of the Park. On balance, we find that the various advantages of the double circuit outweigh its substantially mitigated (though still comparatively greater) effects on the environment, and we conclude the double circuit should be certified.[2/]

1/See also above, p. 37, n. 1.

2/We thus adopt the Judges' recommendation in this regard, though we do not endorse all aspects of their reasoning. The Power Authority's brief on exceptions offers a group of minor corrections to the recommended decision, but they have no effect on our decision and need not be discussed in detail.

ROUTING

INTRODUCTION

In selecting a Primary Route, the Power Authority considered numerous alternate routes, methods and facilities. Specifically, it considered and rejected a 765 kV (AC) Alternate, a 450 kV Direct Current (HVDC) Alternate, undergrounding, and an Eastern Energy Alternate (which would travel east to Albany and then south along the Hudson River). The Judges examined these alternatives and agreed with the Power Authority that they were less desirable than the Modified 345 kV Primary Route. Specifically, they found: a 765 kV reinforcement offers no necessary technical or economic advantage and would be environmentally more harmful; a 450 kV HVDC has disadvantages due to system implications, schedule delays, production cost penalties, and increased costs; undergrounding is prohibitively costly; and, the Eastern Energy Alternate would suffer from a lack of system diversity, risks of system interruption, higher capital costs, production cost penalties resulting from longer construction time, and greater potential environmental impact. As noted before, the Judges also rejected staff's single-circuit alternative because they found it would not be adequate to satisfy transfer capability requirements.

During the course of this proceeding, the Power Authority, staff, DEC, the City, Ag. and Markets, DCCOPRA and Niagara Mohawk executed a stipulation pertaining to routing issues, structure types, special agricultural resources and other matters (Stipulation No. 2).[1/] The result is an alternative route and configuration referred to as the "Modified Primary Route."[2/]

1/Some of the parties chose not to adopt the entire agreement but agreed only to certain paragraphs. The Stipulation is set forth as Appendix F of the recommended decision.

2/See, R.D., pp. 125-144 for a detailed description.

The Judges explain as well that, despite the stipulation, other parties object to the Modified Primary Route. Friends supports the Western Alternative[1]; PROTECT opposes any line but particularly objects to construction within the Catskill Park Forest Preserve; DEC also opposes new transmission lines in the Catskill Park;[2] and Mamakating opposes a new corridor through Sullivan County.

With respect to the Catskill Park, staff proposed alternatives referred to as the Catskill Park By-Pass and the Catskill Park By-Pass Link Alternative. The Judges point out that, as a result of Stipulation No. 2, the Power Authority, staff, Ag. and Markets and DCCOPRA agree that the Catskill Park By-Pass Link should no longer be considered reasonable. Further, they agreed that if the Modified Primary Route is certified, then the Catskill Park By-Pass is not preferred.

SPECIFIC ROUTING ISSUES

Western Alternative[3]

In rejecting the Western Alternative, the Judges pointed out that, between Marcy and Fraser substations, the Primary Route consists of about 12.8 miles of existing lines

1/The Western Alternative allows for avoidance of exposed crossings of US Route 20, Cherry Valley and Charlotte Valley, and affects the Otsego Lake-Cooperstown-Glimmerglass Lake State Park, Crumhorn Mountain and Goodyear Lake areas, all of which are environmentally significant.

2/As part of Stipulation No. 3, DEC withdrew its opposition to the Power Authority's proposal, as modified by that stipulation, within the Catskill Park.

3/The Western Alternative is discussed in general terms in order to reflect the difference between it and the Primary Route. In fact, the Western Alternative considered here is a modification of that originally proposed with the most notable modification occurring around Gilbert State Park.

that will be rebuilt, 35.2 miles of existing line that will be paralleled, 21.3 miles of vacant right-of-way, and 14.6 miles of new right-of-way. On the other hand, the Western Alternative parallels only about 1.7 miles of existing right-of-way and makes no use of vacant right-of-way for its 58.1 mile length. Consequently, while the Primary Route requires for most of its length a significant widening of the existing rights-of-way, the Western Alternative requires a completely new intrusion into the landscape.

The Judges also found that the Western Alternative would affect more farm land, and that effects on agriculture would be more difficult to mitigate. Finally, they maintained that the Primary Route would require less land clearing and affect fewer newly built residences.

Friends, which continued to favor the Western Alternative after staff withdrew its support for it, had argued that the area around the Primary Route was unique in terms of historic, cultural and scenic resources. It argued particularly that the "Leatherstocking Country" of James Fenimore Cooper should be preserved.

The Judges observed that they were "at a loss to fathom the basis inherent in Friends' assertions in brief from which it would want us to infer that the line routing will destroy its community, if not its residents' lives."[1/] They observed also that Friends opposed the line without any independent comparative analysis of available options. Moreover, the Judges pointed out that, near Cooperstown, the Western Alternative is only about 13.5 miles from the Primary Route and that it was difficult for them to understand how adopting the alternative route would save "Leatherstocking Country." Finally, the Judges claimed that Friends ignored

1/R.D., p. 159.

the substantial efforts to mitigate impacts along the Primary Route. As a result the Judges dismissed the Western Alternative.

On exceptions, Friends takes issue with several of the Judges' findings. It points out that the area it is concerned about is traversed by substantial numbers of travelers annually and is centered on the Otsego Lake and Cherry Valley areas and not the Village of Cooperstown[1/] as the Judges incorrectly inferred. It objects to the exclusion of its witnesses on the grounds their testimony was late-filed and suggests there is a bias against learning the true impact of the line. Friends asserts it is arguing for a public interest in preserving the integrity of a major tourist region, which attracts people because it embodies the American frontier. Moreover, it disputes the Judges' findings that the Primary Route would have less effect on residences and agriculture and points out that numerous new or restored houses are in proximity to the Primary Route, and that agricultural impacts will be about the same for both routes. Finally, it attacks the stipulation process as being unresponsive to local concerns.[2/] The Power Authority responds to Friends' procedural and substantive arguments and endorses the recommended decision.

As noted earlier, staff presented extensive testimony in support of the Western Alternative, but later changed its position, after the hearings closed, as a result of the agreement with the Power Authority on Stipulation

1/It notes that "Cooper's Indians did not paddle down the Western Alternate, but down Otsego Lake and the Susquehanna." Friends' Brief on Exceptions, p. 12.

2/Friends excepts also to being prevented from cross-examining staff's decision to change its position on the Western Alternative. In light of our adoption of the Western Alternative, this exception is moot.

No. 2.[1] However, even though Stipulation No. 2 contained several modifications that significantly improved the Power Authority's Primary Route proposal, we find the Western Alternative to be superior.

To begin with a general observation, we do not see the Western Alternative as posing an intrusion into an unspoiled landscape. The land through which it is plotted is subject to mixed rural uses, including modern and subsistence farming, old and new residences, varied forests, public lands, and abandoned farms reverting to early succession woodlands.

More specifically, the Western Alternative is shorter, requires fewer structures and is less costly than the Primary Route. Further, the Western Alternative has less impact on land use in that it traverses a more sparsely-developed and less populous area, thus avoiding the more substantial residential areas and travel corridors of the Primary Route. It also traverses fewer miles of farmland and forest land.[2] In addition, the Western Alternative is far less visually sensitive than the Primary Route. This is because the topography along the Western Alternative consists of many small valleys and steeply-sloped, wooded hills, which will conceal the line more than would the broad, long valleys crossed by the Primary Route. The Primary Route would also follow and significantly widen a partially overgrown, abandoned right-of-way that was poorly

1/We note also that the Western Alternative was the Power Authority's initial preferred route. Following NYSEG's decision to dismantle its old 115 kV line between East Springfield and the Collier's substation, the Power Authority opted to use the abandoned right-of-way as the Primary Route.

2/Notwithstanding the Judges' finding, the agricultural and new residence impacts appear similar for both routes.

sited when initially developed. Thus, use of the Western Alternative would negate the need to expand this poorly sited right-of-way and allow it to return to its natural state.

As argued by Friends, the Primary Route would also have a greater impact on the State's tourism industry, for the line would pass over the scenic approaches to Cooperstown, be visible from Otsego Lake and the Glimmerglass State Park, cross the historic Cherry Valley, parallel and be visible at various points to travelers on State Route 28 as it ran along Crumhorn Mountain, and affect the Goodyear Lake vacation community. The Western Alternative's impact on tourism, on the other hand, would be more limited and affect mainly the Gilbert Lake State Park area. Further, since the line will not impinge either physically or visually on the Park, any impact can be mitigated to a large degree. Thus, the Western Alternative is superior in terms of historic, cultural and tourism considerations.

For all of the above reasons, we conclude the Western Alternative is the preferred route, although we shall modify it in a number of ways to limit its effect on Gilbert Lake State Park and other sensitive areas. The modified Western Alternative we are approving is shown in Appendix A to this Opinion and Order.

Catskill Park

The Catskill Park lies within the Fraser-Coopers Corners segment, and the particularly sensitive area consists of three Forest Preserve parcels. Staff supported the Primary Route in this segment as the least costly and having the least environmental impact; however, it suggested the

By-Pass and By-Pass Link[1] in the event we determined it was improper to proceed through the Park.[2]

Through the Park, the Primary Route includes about 14.72 miles of line, of which about 0.9 miles are through the Forest Preserve. For the entire length through the Park, the line would parallel or be consolidated with an existing 345 kV line on a right-of-way that has been in continuous use for about fifty years. For the most part, a new single-circuit line would be built parallel to the existing line, but--for almost two miles--taller double-circuit lattice towers would be required.

The focus of the Catskill Park dispute concerns the Forest Preserve and the "forever wild" provision of the New York State Constitution, which states,

> [t]he lands of the State, now owned or hereafter acquired, constituting the forest preserve as now fixed by law, shall be forever kept as wild forest lands. They shall not be leased, sold or exchanged, or be taken by any corporation, public or private, nor shall the timber therein be sold, removed or destroyed.[3]

The parcels in question here were acquired by the State subject to reservation of a utility easement to New York State Electric & Gas Corporation (NYSEG) made by the former owners.

1/By stipulation, staff and other parties agree the By-Pass Link, which would connect the Western Alternative to the By-Pass Alternate, should not be considered a reasonable alternative. We agree that the By-Pass Link is unnecessary and should not be employed, for it is environmentally more intrusive.

2/Ag. and Markets and DCCOPRA agree with staff. It may be noted that if a single circuit were certified it would not be necessary to consider the By-Pass inasmuch as no new construction would be required in the Park.

3/N.Y.S. Constitution, Article XIV, §1.

DEC argued that the "forever wild" clause requires State agencies to maintain the wilderness character of the Forest Preserve and that the presence of a transmission facility on an existing right-of-way is not a sufficient basis for the addition of new and larger structures. It did not on that account advocate the By-Pass; rather, it favored a single-circuit facility, which would obviate construction within the Catskill Park. For any construction between Fraser and Coopers Corners, DEC favored the Primary Route over the By-Pass; thus, it believed a line could be approved only if it were found to be consistent with the "forever wild" clause.[1/] The measures agreed upon in Stipulation No. 3 appear to satisfy DEC in this regard.

PROTECT contended the "forever wild" provision means that any new construction, even if away from or adjacent to the Forest Preserve, would visit a fatal adverse impact on the Forest Preserve and is thus barred.

The Power Authority found its proposal consistent with the State Constitution. It contended that by employing the existing right-of-way it would avoid infringing on any interest owned by the State and that all necessary land rights would be obtained from NYSEG.

To DEC's contention that the line would not be environmentally compatible, the Power Authority replied that its impact would be mitigated by double circuiting or paralleling the existing line, selecting similar design structures and matching, where feasible, structure locations. Moreover, it maintained the line is consistent with the reported recommendations and philosophy of the Temporary

1/It should be noted that the double circuit would require higher poles--on average, an increase from 77 feet to 144 feet.

State Commission to Study the Catskills.[1] Finally, the Power Authority relied on an exhibit wherein former DEC Commissioner Robert Flacke purportedly acknowledged that by virtue of the NYSEG easement, the only restriction on the line is that no additional clearing or widening be permitted.

The Judges found no judicial precedent holding that constitutional prohibitions extend to interests in lands owned by the State or that the State Constitution proscribes the use of the easement here for additional lines and larger structures because they would constitute a use of the Forest Preserve. Nevertheless, they found that the "forever wild" clause does impose a "burden to determine whether in all events and under all conditions the wilderness character of the Forest Preserve will be maintained if the Primary Route is approved."[2] They found the issue goes beyond the narrow issue of property rights, and that we must determine whether the wilderness character of the Forest Preserve will be impaired.

Noting that the determination is a subjective one, the Judges concluded, after having observed the sites and reviewed the evidence, that the proposed routing would not impair the integrity of the Forest Preserve or the Catskill Park. They said further that the State, by purchasing the Forest Preserve parcels subject to the easement, acknowledged the right-of-way could not be part of the Forest Preserve, and they concluded that the State must be deemed to have accepted existing and future uses as not being inconsistent with the character of the Forest Preserve. Nonetheless, the

1/On this point, the Judges concurred with DEC that the report cannot be cited as support for the "proposition that the Park would have to accommodate such facilities without regard for all other appropriate factors." R.D., p. 187.

2/R.D., p. 188.

Judges called this an exceedingly close question and commented that others balancing the same considerations might conclude the visual intrusions would impair the integrity of the Forest Preserve. Finally, they found the By-Pass alternate could be certified.

DEC and PROTECT excepted to the Judges' findings.[1/] DEC contended the Judges adopted the proper test in making their decision, i.e., the one set forth in Association for the Protection of the Adirondacks v. MacDonald,[2/] but that their analysis of the issue of whether there would be impairment misapplies the test. Specifically, DEC alleged error in the Judges having based their conclusion on the fact that the State took the parcels subject to an existing easement and their inference that the State therefore should be deemed to have accepted the existing use. It argued further that the Judges' holding implies that some impairment of the wilderness character may be countenanced and that the holding violates the precept that an existing impairment is

1/After the record closed in this case, the Power Authority, staff, DEC and Ag. and Markets executed a stipulation (Stipulation No. 3) concerning the route through the Catskill Park. They agreed that, in the event a double-circuit facility were certified, the proposed route would be the most environmentally compatible option for traversing the Forest Preserve. Thus, these parties rejected the Catskill By-Pass alternative. At the same time, the Power Authority submitted a motion requesting that its analysis, entitled "Traversal of State-Owned Lands Within the Catskill Park," which provides the basis for the stipulation, be received into evidence as a late-filed exhibit. By agreeing to Stipulation No. 3, DEC has withdrawn its exception. We nevertheless discuss the points it raised.

2/228 App. Div. 73 (3rd Dept), 1930.

not a basis for allowing additional impairment. DEC concluded that the crucial issue was the impact the facility would have on the adjacent Forest Preserve parcels outside the actual easement.

PROTECT, for its part, renews its earlier arguments that the "forever wild" clause "governs not only what may be done on the Forest Preserve lands themselves but what may be done on immediately or closely adjoining Forest Preserve lands which adversely affect their 'forever wild' character."[1/] Thus, DEC's exception and PROTECT would effectively preclude construction of a double-circuit facility. (It should be noted that DEC opposes undergrounding[2/] and the Catskill By-Pass.)

The Power Authority, NYSEG and staff respond. In response to DEC, the Power Authority challenges the argument that the increased size and height of the proposed towers represent a drastic departure from the existing situation.

1/PROTECT's Brief on Exceptions, p. 18.

2/On exceptions, the Power Authority refers to the Judges' suggestion that we may wish to consider undergrounding, and staff and DCCOPRA recommend that hearings be reconvened if undergrounding is considered. The Power Authority believes this course would be prohibitively expensive as well as environmentally damaging and would significantly delay construction. Moreover, it says there are other solutions that may reconcile the objections of the parties. Specifically, it requests the present centerline be certified but that flexibility be retained in the EM&CP process to allow the route to be moved up to one-half mile to the west--as opposed to the usual one-eighth mile flexibility--in order to permit modifications that will avoid State-owned land while avoiding the serious environmental impacts of undergrounding or using the By-Pass. Ag. and Markets supports this general position in its reply brief on exceptions. We reject the alternative of undergrounding because of its prohibitive cost ($42 million).

and would be inconsistent with the wilderness character of adjacent lands. And the Power Authority distinguishes the MacDonald case by noting that case involved cutting an entirely new swath through previously unaffected land while here cutting will be no greater than already permitted. It concludes DEC failed to meet its burden of going forward to show how the wilderness character of the preserve would be impaired. Staff argues as well that construction along the easement would be legally allowable.

With respect to PROTECT's exception, the Power Authority argues that PROTECT, as well as DEC, is seeking to extend state land use control to areas not subject to constitutional or statutory protection. It notes the absence of factual or legal testimony from PROTECT and concludes there is no basis for its claims. Staff finds no compelling evidence that construction along the Primary Route would violate the intent of the "forever wild" clause.

In deciding this issue, we begin by recognizing the particular significance of the Catskill Park and the Forest Preserve. These areas comprise an important, irreplaceable resource, and the State has wisely afforded them special protection. We are not satisfied, accordingly, that the existing line within the Forest Preserve warrants our being less cautious than we otherwise might be in avoiding incremental adverse impacts on the Forest Preserve.

We note as well that the Judges did not reject the Catskill By-Pass out-of-hand, but simply regarded it as a less favored alternative. They noted, however, that the issue of building in the Forest Preserve was a close one and that other observers might reach a different conclusion.

On the basis of the record as a whole, we conclude that the Catskill By-Pass would impose a lesser adverse effect on the environment, and that the environmental benefits of certifying that route, and avoiding additional impact on the Catskill Park and protected Forest Preserve lands, are worth its modest additional cost. We recognize that use of the By-Pass route would impose a new presence in an area that includes productively managed forest land, wildlife support areas, and protected viewpoints and scenic vistas. Overall, however, the area is one of mixed land uses, variegated vegetation, and differing stages of succession, from prime farmland through early invasion brush and woodlands, to recreational buildings and exurban dwellings. Moreover, we are able to--and shall--require effective measures to insure protection of the real resources the line will encounter along the By-Pass. The Primary Route, in contrast, traverses the Catskill Park, which has been established and afforded constitutional and statutory protection in recognition of its history, delicate beauty and fragile nature. The Park therefore is ill-suited, under the circumstances of this case, for the construction of this major new transmission line. Accordingly, we do not approve Stipulation No. 3, but shall certify routing along the Catskill By-Pass.

Upland Disposal Site

The Ulster Landing Disposal Site has been identified to receive dredge material resulting from the underwater crossing of the Hudson River. The Power Authority plans to construct in the Town of Ulster a temporary barge unloading facility and to create an impoundment for dredge spoil. The Judges found the Power Authority's plan acceptable and recommend certification.

On exceptions, the Ulster County Planning Board (Ulster) submitted a number of comments. It averred it could not support use of the site until completion of a U.S. Army Corps of Engineers (Corps) study. It requested also that the Ulster County Health Department receive copies of all monitoring reports and notifications. Further, it recommended that no discharge above the limits set in Exhibit 94 (the Water Quality Certification) be allowed and that the Power Authority be required to monitor discharges for not less than one year. Finally, it proposed the EM&CP be amended to require a detailed operation and management plan for the site after disposal operations are completed.

In reply, the Power Authority and staff note that most of Ulster's requests are unnecessary. Specifically, it is pointed out that the Power Authority will be required to satisfy the permit conditions established by the Corps and that the Power Authority is committed to meeting the discharge limits under Exhibit 94. As for monitoring discharges, staff notes that the Power Authority is required to monitor the site every thirty days until we grant permission to eliminate testing. With respect to amending the EM&CP to include plans for the site after disposal is completed, the Power Authority says the EM&CP will include a plan for restoration and that it is premature to submit a plan now. Finally, as for supplying the Ulster County Health Department with monitoring reports, the Power Authority replies it will comply with the request.

Staff and the Power Authority have explained fully that the concerns of the Ulster County Planning Board have already been met. Accordingly, we find no basis for rejecting the recommended decision.

Sullivan County

Mamakating opposes overhead construction through Sullivan County on the grounds that a new corridor would threaten the County's critical environmental resources. The Judges rejected Mamakating's position, finding that "Mamakating ha[d] not offered any viable alternative line routings and/or facility configurations in said region"[1/] and that the requirements for routing through Sullivan County had been fully considered.

On exceptions, Mamakating renews its earlier arguments. Specifically, it contends the proposed line threatens the economic base of Sullivan County as a result of the visual impact on and possible contamination of its recreational resources, particularly its waterbodies. It objects also to the recommended structure types and argues there is "considerable hearing evidence" that undergrounding should have been more seriously considered.

The Power Authority responds that Mamakating's arguments of economic sensitivity are based on media reports not made part of the record. As for the effects on waterbodies, the Power Authority notes again that there is no record supporting Mamakating's position and that, in any event, it has addressed the expressed concerns before the Corps of Engineers as well as here and that it will continue to mitigate adverse impacts through the EM&CP process. With respect to structure types, the Power Authority argues it should be permitted flexibility but notes as well that individuals may express their opinion during the EM&CP process. Finally, it says there is a dearth of evidence supporting a direct current, undergrounding alternative, and it argues further that undergrounding is technically and economically infeasible.

1/R.D., p. 238.

Mamakating's various objections are generally without record support and lack a reasonable connection to the issues of need and environmental impact. The Judges reasonably resolved the issues it raised, and its exception is denied.

CONCLUSION

The Judges found the agreements in Stipulation No. 2, together with the Power Authority's commitment to comply with all applicable guidelines, policies, and standards have transformed a routing fraught with unacceptable impacts into one of remarkably diminished adverse impact, and they view this result as a "testament to the pragmatic viability of the Article VII process."[1/] Consequently, they recommend certification of the modified Primary Line Routing.

For the reasons already discussed, we depart from the Judges' recommended route in two notable respects--the Catskill By-Pass and the Western Alternative.[2/] We agree with them, however, that this case has shown the effectiveness of the Article VII process, and we are satisfied that the route we are certifying will keep to a minimum the overall adverse effects of this line on the environment.

1/Id., p. 264.

2/See Appendices A and B. Appendix A is a detailed map of the certified route and Appendix B is a narrative description of the route. On the map, the modified Western Alternative runs from Point A-1-M to Point J and the Catskill By-Pass runs from Point J2 to Point J4.

OTHER ISSUES

ENVRIONMENTAL EFFECTS AND MEASURES TO MITIGATE THEM

Electric and Magnetic Fields

The Judges concluded that the record in this case on electric and magnetic fields does not differ qualitatively from the material presented in Cases 26529 and 26559.[1/] They note that the Power Authority has complied with the limitations established in those cases for field strength at the edge of the right-of-way and that there is no basis for concluding that adverse biological effects would result from the fields produced by the proposed line.

On exceptions, Edward Hagovsky contends there is inadequate information concerning the dangers from high voltage transmission lines, and he recommends the Power Authority be required to perform an epidemiological study to determine whether the line is hazardous. In reply, the Power Authority argues Mr. Hagovsky has mischaracterized the state of knowledge regarding the effects of transmission lines. It notes our previous findings and concludes there is no justification for ordering epidemiological studies here.

The Judges' finding is reasonable and is adopted. There is no basis here for ordering the studies suggested by Mr. Hagovsky, and his exception is denied.[2/]

1/Cases 26529 and 26559, Common Record Hearings on Health and Safety of Extra-High Voltage Transmission Lines, Opinion No. 78-13 (issued June 19, 1978).

2/As the Judges note, in Cases 26529 and 26559 we required the initiation of a research project concerning the health effects of electric and magnetic fields. The project, which is being coordinated by the State Department of Health and funded by the Power Authority and the investor-owned utilities, is under way and includes epidemiological studies.

Mitigation Account

DEC urged that a fund equal to 2% of the project cost be established to mitigate the aesthetic impacts of the line. DEC envisioned that during the EM&CP process, problems could be identified and addressed. The Judges rejected the plan as impractical and oversimplified. They found that very substantial efforts had already been undertaken to mitigate visual impacts and that establishment of the proposed fund would waste time and money.

On exceptions, DEC argues the mitigation fund would be "an insurance policy to protect against environmental impacts and problems which may not have been considered or adequately discussed during the review and hearing process."[1/] It contends its proposal is reasonable because in all large-scale projects there is a likelihood of oversight and error. Finally, it compares its proposal to the community grant program--designed to mitigate impacts in municipalities--recommended by the Judges.

The Power Authority, NYSEG and staff reply that a mitigation account is unnecessary and should not be established. Staff points out that standard EM&CP and post-construction documents describe plans and policies for restoration and management of the project area and that any specific concerns of DEC may be voiced during the EM&CP process. Further, it says fixing a monetary ceiling would undermine our standard practice of requiring an applicant for certification to minimize impacts. The Power Authority points out also that the mitigation fund would likely cause more problems than it would resolve, and it concludes mitigation of visual impacts has already been incorporated into the process.

1/DEC's Brief on Exceptions, p. 15.

We decline to adopt DEC's proposed contingency fund, for the details of the proposal and its potential problems have not been adequately explored. More importantly, mitigation is an ongoing concern that has been incorporated into the process, and establishing a fund may undermine standard, well-defined procedures. DEC's exception is denied.

Viewshed Analyses

DEC proposed that the Power Authority be required to perform viewshed analyses[1/] during preparation of the EM&CP to provide assurance that the line will be situated within the corridor with minimal visual and aesthetic impact. The Power Authority opposed viewshed analyses as extremely burdensome, costly, and inappropriate for transmission facilities. It preferred instead the technique of field plotting, which it contends conservatively overestimates the amount of visible area seen from any point.

The Judges recognized that production of viewsheds for the entire line would greatly delay the EM&CP phase. And they pointed out that DEC's proposal is based on the mistaken impression that a corridor will be certified in this proceeding, which would require extensive post-certification analysis to determine the final location of the line within the corridor. They explained, however, that we would likely certify a centerline with a right to deviate, for good cause, up to a maximum of one-eighth mile on each side, and that any deviation would ultimately require

1/A viewshed analysis involves identifying on a map geographic areas from which an object may be seen. Viewshed maps assist in determining the visibility of a particular effect and aid in the selection of a route or configuration best suited to the area.

our approval. Consequently, the Judges concluded that requiring extensive viewshed analyses was unnecessary. Nevertheless, they suggested we may wish to consider viewshed analyses for particularly sensitive areas.

On exceptions and reply, the parties reargue their various positions regarding viewshed analyses. DEC continues to advocate them while the Power Authority, staff and NYSEG find them unnecessary. DEC favors a viewshed analysis because it is an objective tool that can be used to keep impacts at acceptable levels. Further, DEC says it favors the analyses only for sensitive areas, and it regards the Judges' distinction between a centerline with a range of deviation on the one hand, and a corridor on the other, as largely one of semantics. Thus, it finds no valid reason for not requiring viewshed analyses.

The Power Authority, NYSEG and staff, on the other hand, see no need for the analyses. Essentially, they contend the centerline developed by the Power Authority's field plotting method is reasonable, and that viewshed analyses are not required. Staff, for its part, reasons that the Power Authority should not be required to perform viewshed analyses unless that technique is shown to be critical to the overall process. The Power Authority and NYSEG point out that the resources necessary to perform viewshed analyses are substantial and their expenditure is not warranted in this instance.

DEC apparently regards viewshed analyses as the definitive tool for examining visual impacts, but there is simply no basis on this record for that belief. The Power Authority's own analyses are adequate, and viewshed analyses would impose added costs and delays without demonstrated benefits. Moreover, as staff noted, DEC may raise any particular concerns during the EM&CP process. Accordingly, we shall not now require viewshed analyses.

Visual Saturation

The Judges rejected DEC's proposal to require the Power Authority to identify and analyze areas of visual saturation--which results from an over-accumulation of elements in a landscape and is common near substations and generating complexes--and to develop a plan to mitigate the saturation. The Judges found it was not necessary to require such a plan inasmuch as the Power Authority has already taken steps, as illustrated by Stipulation No. 2, to mitigate visual concerns and the EM&CP phase allows for further mitigative responses.

DEC, on exceptions, highlights the problem of visual saturation and complains that it raised the issue simply to make sure that problem areas are addressed. It contends its plan is not burdensome and that successes reflected in Stipulation No. 2 prove its point.

Staff and the Power Authority oppose DEC's request for additional analyses. Staff views them as redundant and points out that the EM&CP and post-construction filing processes should be able to achieve similar results. The Power Authority, meanwhile, notes that it has been responsive to concerns raised by the parties and concludes a further analysis is unwarranted.

Staff and the Power Authority are correct. The record demonstrates the Power Authority's responsiveness to concerns of visual impact, and the EM&CP and post-construction processes provide for further response. DEC's exception is denied.

Environmental Monitor

In past proceedings we have required the Power Authority to designate a Resource Manager with the power to enforce environmental protection provisions. In this case, DEC urges an Environmental Monitor be retained to consider and act upon the environmental consequences of construction. The Judges found no reason to believe the Resource Manager designated by the Power Authority would lack adequate authority or expertise. Moreover, they noted the role of staff in monitoring compliance. Finally, they saw no evidence that a Resource Manager with the type of authority exercised in past Article VII projects would not suffice here.

DEC excepts and argues the magnitude of the Marcy-South project and the nature of the lands and habitats it will traverse establish the need for an Environmental Monitor. It renews its earlier arguments that its proposal is superior in that it would establish specific qualifications and responsibilities and provide "stop work" authority to an autonomous monitor who is in direct communication with regulatory agencies.

The Power Authority, staff and NYSEG oppose the concept of an Environmental Monitor. The Power Authority contends DEC's description of its Environmental Monitor conforms to the definition of a Resource Manager as employed in the past. Staff argues no need has been shown to change the standard monitoring procedures, and it points out that the qualifications and authority of the Resource Manager are subject to our approval. NYSEG supports these arguments and refers as well to the role of staff in the compliance process.

DEC's exception is denied, for it has demonstrated neither the superiority of its proposal nor any substantive difference between its effects and those of standard monitoring procedures.

EM&CP Process - Opportunity for Review

DEC proposed, in contrast to the normal thirty-day comment period on EM&CP filings, that hearings be convened sixty days after the EM&CP is filed. In the alternative, it suggested that EM&CP packages be submitted in draft form for thirty-mile segments before the formal filing and thirty-day comment period begins.

The Judges rejected DEC's primary proposal because they found it unnecessary to reconvene hearings. They pointed out that such hearings have not been found necessary in the past and that, in any event, all comments on the EM&CP are heard and considered. The Judges noted also that DEC's position appears to be based on the misconception that the centerline will not be approved until the EM&CP process. Finally, they observed that if a hearing were required, there is no reason to believe we would not order one. As to the alternative proposal, the Judges noted the Power Authority's commitment, in the interests of minimizing issues and expediting the process, to making its draft plan informally available before certification. Thus, they found DEC's conditions unnecessary.

On exceptions, DEC recites its earlier arguments and contends that the route will not be made final until the EM&CP even though a centerline has been identified; it sees the Judges' distinction as merely one of nomenclature. Further, it says this is a special case requiring hearings on the EM&CP and that the absence of hearings in the past is

an insufficient reason for denying its proposal. Finally, it notes its alternative proposal was raised only as an alternative to hearings and that the suggestion of apportioning the draft into thirty-mile segments was merely a guideline.

The Power Authority, NYSEG and staff again find DEC's proposals unwarranted. The Power Authority and NYSEG point out the DEC makes no affirmative argument in support of its position but merely expresses its disagreement with two of the Judges' reasons for rejecting DEC's position. Staff, meanwhile, supports the Judges' conclusion that it is not necessary to mandate hearings now inasmuch as we will convene them if needed.

The Judges' recommendation is adopted. There is no basis for concluding that the EM&CP will not be adequately reviewed, and, as the Judges recognized, we retain the option to require a hearing if one is necessary.

Site Stabilization

Staff urged, as a condition to certification, that the Power Authority be required to stabilize all disturbed soils subject to erosion within eight days after initial disruption. The Judges amended this condition to require stabilization as quickly as construction and/or site conditions permit. They saw the modification as justified by the length, magnitude, and complexity of the project and found that, in any event, it was in the Power Authority's interest to expedite the matter.

Staff argues, on exceptions, that the eight-day requirement should be reinserted. It argues project construction will be broken down into administratively manageable components so that stabilization could be accomplished within the eight-day guideline. And it contends that though the Power Authority has an interest in expediting the entire project, expedition could involve delaying stabilization until later, more convenient times. It concludes from extensive field experience that a specified time is needed to avoid erosion and that the proposed time is not burdensome.

The Power Authority replies that a rigid eight-day requirement has no foundation in the record, and it reasserts its need for flexibility. Further, it notes its commitment to stabilization, and it points out that in certain situations complicating factors may lead to the conclusion that stabilization within eight days is not optimal.

Staff makes a valid point that situations may arise in which the Power Authority might want to defer site stabilization. The eight-day requirement would insure at least temporary stabilization in those circumstances, and would not be unduly burdensome. Staff's exception therefore is granted.

Landscaping

Staff argued and the Judges agreed that continued operation of the certified facilities should be conditioned upon our approval of the Power Authority's landscaping plans. The Judges credited staff's argument that without such a condition, the Power Authority could submit an unacceptable landscaping plan and still be in compliance

with its certificate. Thus, they concluded, an incentive was required in this instance to insure compliance.

The Power Authority excepts. It argues that standard procedures are sufficient to insure compliance, and views the proscription of continued operation as unnecessary and draconian. Moreover, it notes no precedent for such a measure.

Staff responds that no mechanism is available after the project is completed to insure that filings from entities not subject to our general regulatory authority (such as the Power Authority) will be acceptable. It therefore considers the condition justified here to eliminate a technical loophole.

The Power Authority is right that the measure recommended here is too severe. Accordingly, its exception is granted. At the same time we expect the Power Authority to cooperate fully in preparing and executing satisfactory landscaping plans.

Agricultural Stipulations

Ag. and Markets, in its brief on exceptions, suggests that the agricultural stipulations developed here could be adopted for generic application. Staff points, however, to its continued concern that the agricultural conditions may not allow for proper balancing of other environmental interests, though it notes as well its belief that any flaws will be manageable and that suitable modifications could lead to generic application.

NYSEG, in response, argues the stipulations should not be included in future Article VII proceedings. It objects to assuming that any condition ordered in a particular case should be more widely applied and it suggests that other views be solicited before making these conditions generic.

NYSEG's point is well taken. The guidelines adopted here are sound, but it does not appear they have been adequately considered for generic application. Accordingly, inasmuch as widely differing situations may arise in future cases, Ag. and Markets' suggestion will not be adopted.

Grant Programs

The Power Authority proposed a $12 million grant program for projects that serve public purposes in communities traversed by the Marcy-South line. Eligible projects would include those involving environmental protection, historic preservation, education, recreation, health and social services, public transporation and safety. Grants would be available in proportion to the mileage of the route traversing the community, and citizen advisory panels would recommend the projects.

At the same time, staff urges continuation of the long-standing procedure of establishing a 2% matching grant program designed to make full use of rights-of-way by developing public outdoor recreational and educational projects. Under this scheme, a fund equal to 2% of the cost of the project would be allocated for a program of matching funds.

The Judges concluded both programs should be adopted. They rejected the Power Authority's contention that the $12 million grant program is a meaningful substitute for the matching grant program. They recognized that few communities have taken advantage of the latter program; but they pointed out that the program has been suspended awaiting the outcome of research being conducted by the New York State Health Department,[1/] and they concluded that the proposed programs are "sufficiently diverse to maintain them as separate and discrete entities."[2/]

With respect to the $12 million grant program, the Judges recommend that disbursements be restricted to those communities through which new construction will be required. As for the matching program, they recommend it be implemented in compliance with stipulations reached in this case.

On exceptions, the Power Authority points out that no funds have been disbursed for the matching program since it was established in 1972. It thus argues the program has failed to meet its objectives and that the $12 million grant program should be adopted as a substitute. The Power Authority also takes exception to restricting funds to communities in which new construction will take place. It contends the line has been conceived as an "organic unity" and all communities should be treated the same.

Ulster County excepts to the recommendation that funds from the $12 million grant program be allocated only where new transmission line is constructed. It is joined in this argument by letters from the towns of Montgomery, Marlborough, Newburgh, Plattekill and New Windsor. The County contends the existing transmission line affects the

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1/See above, p. 60.

2/R.D., p. 283.

communities through which it passes and that the program should be administered as proposed by the Power Authority. It also objects to restricting funds to areas where transmission line construction takes place and points to the effect of dredge disposal in Ulster County.

Staff replies that the purposes of the programs differ. It views the matching program as confined to multiple-use facilities that are compatible with transmission facilities and designed to make use of the linear corridor. On the other hand, it regards the $12 million grant program as compensation for a loss visited by the transmission facility. It points also to the differences in administration, community participation, and types of projects. Consequently, it concludes the programs are separable and the $12 million grant program is not a reasonable substitute for the matching program. Staff also supports the recommendation that funds from the $12 million program be allocated only where new transmission lines will be constructed. It opposes funding for the Ulster County disposal site in that disposal operations will result in a significant improvement of the site and will permit its use for other purposes.

The Judges reasonably concluded that the programs are different enough to be separately maintained. They pointed out correctly that the 2% matching grant program focuses on using assets currently existing in a linear corridor while the Power Authority's program provides for a multitude of public benefit projects not restricted to the corridor. Accordingly, we shall adopt both programs. As for the allocation of funds from the $12 million grant program, we leave that to the Power Authority's discretion

and see no need to exclude particular communities from the program. To that extent, accordingly, the Power Authority's exception is granted.

LEGAL ISSUES

Balancing Environmental Values and Energy Needs

On exceptions, PROTECT argues the Judges failed to consider whether the Power Authority has demonstrated a clear preponderance of benefits over detriments. It claims the Constitution and the Public Service Law require that coequal weight be accorded environmental values and energy needs, and it contends the balancing of these concerns must be the basis of the decision whether to construct and "not merely a post hoc rationalization of how the line should be routed."[1/] PROTECT alleges the Power Authority pursued an "unlawful course of decisionmaking" in that it assumed the line would be built and then sought to make it compatible with the environment. PROTECT also criticizes the lack of a dollar assessment of the environmental impacts of the line and the short shrift allegedly given scenic resources. It concludes the Judges followed the process adopted by the Power Authority and "substantially abdicated the duty to balance energy and environmental impacts."[2/]

In reply, the Power Authority charges--as does staff--that PROTECT misunderstands the function of an Article VII case, and misstates the applicable test. The Power Authority sees the proper test as a two-step process in which the basis of need is first determined and then the probable environmental impact is adjudged in order to determine the minimum adverse effect. It contends this

1/PROTECT's Brief on Exceptions, p. 9.

2/Id., p. 15.

process represents the legislatively mandated "balancing" and that the Judges' recommendation satisfied this test. In this regard, staff notes it supports a different result but argues nonetheless that the Judges performed the proper balancing test. Moreover, the Power Authority points out that PROTECT fails to address or refute the Judges' conclusion that the Power Authority's decision making method was proper.

PROTECT's position would place on an applicant the burden of identifying and measuring environmental impacts in a way that the Judges recognized is impossible. Moreover, as the Power Authority points out, the Judges in fact did perform a balancing test as mandated by the Public Service Law, and we have done the same. Accordingly, PROTECT's exception is denied.

Lack of Authority to Build Marcy-South

The Utility Workers argue that the Power Authority is not authorized to build Marcy-South. They claim that the line at issue here goes beyond the developmental goals expressed in the Public Authorities Law and that the Power Authority comes before us as would any private utility and is thus overstepping its authority. Relying on a recent Appellate Division holding,[1/] they conclude that the Power Authority, while it may build a line to import Canadian energy, may do so only in the context of developing facilities along the river borders with Canada and may not construct a line designed simply to provide electricity to any consumer in conjunction with private utilities.

1/Atwell v. PASNY, 67 A.D. 2d 365, 415 N.Y.S.2d 476 (3rd Dept. 1979), app. denied, 49 N.Y.2d 797, 426 N.Y.S.2d 733 (1980).

The Power Authority rejoins that the Utility Workers' argument is contrary to the plain language of the Public Authorities Law and has been rejected by the courts in Atwell. In pertinent part, that decision states:

> Section 1005 of the Public Authorities Law grants to PASNY power to contract with and cooperate with Canadian authorities to effectuate the development and enhancement of hydroelectric power and projects related thereto. Plaintiffs' contention that section 1001 of the Public Authorities Law confines the development of power and energy by PASNY solely to the natural resources of the Niagara and St. Lawrence Rivers is meritless when section 1001 is juxtaposed to paragraph 7 of section 1005 of the same law, which specifically authorizes PASNY "to undertake the construction of any project in one or more steps as it may find economically desirable or advantageous, and as it may agree with the appropriate Canadian and/or United States authorities." Further, the third unnumbered paragraph in section 1005 of the Public Authorities Law, specifically authorizes PASNY to construct and/or acquire transmission facilities which would assist in the supply of electricity to Metropolitan New York City. While some limitation is imposed by section 1005 as to PASNY's employment of power generated from acquired facilities in Metropolitan New York City and its environs, no such proscription is stated or can be inferred on PASNY's right to construct transmission lines anywhere in the State for the purpose of maintaining an adequate energy supply in New York City.1/

1/Id., 415 N.Y.S.2d 476, 478 (emphasis in original).

While the Utility Workers argue the court's language ought not to be taken too literally, the Power Authority's arguments are persuasive. Accordingly, the Utility Workers' exception is denied.

Waiver of Local Ordinances

The Power Authority has requested, pursuant to Public Service Law §126, that we waive unduly restrictive local ordinances as part of the grant of certification.[1/] Staff also has argued that all local ordinances that would prevent, modify or alter the construction, maintenance or operation of the facilities should not be binding upon the Power Authority.

PROTECT opposed the waiver of local ordinances on the grounds that the Power Authority had not met its burden of demonstrating how the local laws would be unduly restrictive. PROTECT also suggests the basis of the Power Authority's request is a claim of sovereign immunity. No municipality has come forward to argue that any particular ordinance should not be waived.

The Judges concluded that the doctrine of sovereign immunity does not apply in this case but that §126 of the Public Service Law, which provides for waivers, is controlling.[2/] They found, in light of the Power Authority's presentation and the absence of countervailing evidence, that the Power Authority had met its burdens of persuasion and proof and that the inventoried local laws would be

1/In Exhibit 7, the Power Authority has listed all local laws it asserts would automatically preclude transmission line construction. It has also submitted testimony that various local noise ordinances are unduly restrictive and should be waived.

2/See, Public Service Law, §126(1)(f).

unreasonably restrictive in that they would prevent construction.

On exceptions, PROTECT renews its arguments before the Judges. It contends the Power Authority has not met its burden of proving compelling reasons supporting a waiver and it cites Koch v. Dyson[1/] as according substantial deference to local considerations. It concludes that only extraordinary circumstances merit a waiver and that these circumstances are not present here. Moreover, it argues the Judges have reversed the burden of proof and that it should not have to show that local laws are not unreasonably restrictive.

The Power Authority and staff respond. Staff argues that the Power Authority has provided justification for a waiver by showing that each of the ordinances would contravene the intent and purpose of Article VII in that they would preclude any transmission line construction. The Power Authority maintains that Koch v. Dyson is easily distinguished, for the City there had countered with evidence that certain local laws should be applied, thus shifting the burden of persuasion back to the Power Authority. In this case, however, there has been no rebuttal to the Power Authority's presentation. Therefore, the Power Authority concludes, the burden has shifted to PROTECT, and that party's failure to identify any laws or produce any evidence that any local laws should be applied is fatal to its claim. Further, it points out the shortcomings of PROTECT's witness with respect to land use and planning concerns and local zoning laws related to the proposed facilities.

1/ 85 A.D. 2d 346, 488 N.Y.S.2d 698 (2d Dept. 1982). That case involved the Power Authority's application for authority, under Article VIII of the Public Service Law, to construct a generating station on the Arthur Kill, in Staten Island.

One element of the Judges' decision to grant a waiver is the fact that the ordinances cited by the Power Authority would prevent construction and thus, absent evidence to the contrary, contravene the intent of Article VII. In Koch, other evidence was submitted by the City supporting a finding that the local laws were not restrictive and should therefore not be waived. Here, however, no other evidence was submitted. Consequently, the ordinances cited by the Power Authority appear unreasonably burdensome. We are satisfied that the Power Authority has met its burdens of persuasion and proof on this issue, and PROTECT's exception is denied. On that basis, moreover, we grant a waiver of all local laws and ordinances inconsistent with the certificate granted in this case.

CONCLUSION

We find, on the basis of the record in this proceeding, that the proposed facility is needed to serve the public interest, convenience and necessity, and will have, if constructed and operated on the route we are approving and in accordance with the design approved and other conditions imposed here, the minimum adverse environmental impact considering the state of available technology and the nature and economics of the various alternatives; that no part of the line (except the Hudson River area crossing) should be constructed underground; that the facility conforms to a long-range plan for expansion of the electric power grid of the electric system serving this State and interconnected utility systems, which will serve the interests of electric system economy and reliability; and, that the approved location of the facility conforms to

applicable State and local laws and regulations issued thereunder except to the extent such local laws and regulations are here waived.

The Commission orders:

1. Except as here modified, the recommended decision of Administrative Law Judges John T. Vernieu and Walter T. Moynihan is adopted as part of this Opinion and Order. Except as here granted, all exceptions to the recommended decision and pending motions are denied.

2. Subject to the conditions set forth in this Opinion and Order, the New York Power Authority (the applicant) is granted a certificate of environmental compatibility and public need authorizing (i) construction of approximately 180 miles of 345 kV transmission facilities from the vicinity of the Marcy and Edic substation in Marcy, Oneida County, to a proposed substation in East Fishkill, Dutchess County, along the route shown on the map attached as Appendix A and in accordance with the configuration generally described in Appendix B, and (ii) the associated substation modifications and additions.

3. The applicant shall not commence any proceeding under the Eminent Domain Procedure Law (except for the right to survey and inspect the property or to obtain the land required for the East Fishkill substation) or begin site preparation or construction (except for surveying, boring and such other related activities as are necessary to prepare final design plans), before it has submitted to the Commission, and the Commission has approved, an Environmental Management and Construction Plan (EM&CP) generally consistent with the guidelines set forth in Appendix C and covering the portion of the project for which the activities

are necessary. For purposes of computing the three-year period of acquisition of property pursuant to the Eminent Domain Procedure Law §401(A), the date of approval of the EM&CP covering the affected parcel shall be regarded as the date on which this Article VII proceeding was completed.

4. (a) The applicant shall submit three copies of the EM&CP to the Commission, serve one copy on the Commissioner of the New York State Office of Parks, Recreation and Historic Preservation [pursuant to 9 NYCRR Part 428 §428.2(c)], serve at least one copy on any other New York State agency which requests the document, serve one copy on active parties on the service list who request the document, and place copies for inspection by the public in at least one public library or other convenient location in each municipality in which construction will take place. Contemporaneously with the submission and service of the EM&CP, the applicant shall provide notice, in the manner specified below, that the EM&CP has been filed. The applicant shall serve written notice(s) on all active parties to this proceeding, on each person on the Commission's service list considered potentially affected by the subject matter in the EM&CP, and on all statutory parties to this proceeding, and shall attach a copy of the notice to each copy of the EM&CP. The applicant also shall attempt to serve similar written notice(s) on each person from whom rights-of-way are required, on each person owning the underlying land rights to an easement being acquired from another utility, and on each person currently leasing a portion of any right-of-way to be used for the certified facility. Further, the applicant shall publish the notice(s) in a newspaper or newspapers of general circulation in the vicinity of the certified facility. The written notice(s)

and the newspaper notice(s) shall contain, at a minimum, the following: a statement that an EM&CP has been filed; a general description of the EM&CP; a listing of the locations where the EM&CP is available for public inspection; a statement that any person desiring additional information about the specific geographical location or specific subject may request it from the applicant; the name, address and telephone number of the applicant's representative; the address of the Commission, and a statement that any person may comment on the EM&CP by filing written comments with the Commission and the applicant within thirty days of the filing date with the Commission of the EM&CP (or within thirty days of the date of newspaper notice, whichever is later). A certificate of service indicating upon whom all EM&CP notices and documents were served and a copy of the written notice shall be submitted to the Commission at the time the EM&CP is filed and shall be a condition precedent to approval of the EM&CP.

(b) The applicant shall report any proposed changes in an approved EM&CP to the Commission staff. Staff shall refer to the Secretary of the Commission reports of proposed changes that do not cause substantial change in the environmental impact or are not related to issues contested during the proceeding. All other proposed changes in the EM&CP shall be referred by staff to the Commission for approval. Upon referral to the Commission, the applicant shall notify all statutory and active parties and attempt to notify all affected property owners and applicant's lessees. The notice shall describe the requested change, state that documents supporting the request are available for inspection

at specified locations, and state that persons may comment by writing to the Commission within ten days of the notification date.

5. (a) In preparing the EM&CP, the applicant shall consult with each local department or agency normally having jurisdiction over the roads in the project vicinity that would be crossed by the certified transmission line or used for direct access to the right-of-way. At least thirty days before the applicant begins construction within the right-of-way limits of such roads or takes direct access therefrom, the applicant shall notify each such department or agency of the approximate date work will begin.

(b) All work within State highway rights-of-way shall be performed according to the traffic and safety standards and other requirements contained in 17 NYCRR Part 131, entitled "Accommodation of Utilities within State Highway Right-of-Way." The detailed manner of State highway crossings shall be developed by the applicant in consultation with the New York State Department of Transportation (DOT) and, where appropriate, the New York State Thruway Authority, and the information responding to the requirements of 17 NYCRR Part 131 shall be included by the applicant in the EM&CP. If the applicant and the highway officials cannot agree on the details of work within a State highway right-of-way or if those officials fail to respond in a timely fashion, the applicant shall notify the Commission in its EM&CP filing and describe fully the disagreements. Nothing in this paragraph alters the Commission's jurisdiction as the ultimate decisionmaking authority with respect to the siting of major utility transmission facilities.

6. Before or at the time the applicant or its representative next contact property owners in the project area to obtain permission to conduct engineering surveys or environmental studies on their land or to negotiate for the purchase of rights to their land or to notify them of the filing of the EM&CP, the applicant shall provide them with a letter describing the surveys and studies to be undertaken and fully disclosing the property owner's rights to comment on the EM&CP. The letter shall include, at a minimum: background information on the proceeding; a statement that the Commission has issued a Certificate of Environmental Compatibility and Public Need; an explanation of why engineering surveys and environmental studies are needed; a listing of the precautions and protective measures to be used during the surveys and studies which will minimize damage to the owner's property; an explanation of the EM&CP process; a statement that property owners will receive notice of the filing of the EM&CP and will have the right to comment upon it; and the name and telephone number of an employee or agent of the applicant who will answer questions or complaints. Before the letter is provided to property owners, the applicant shall confer with the Commission staff concerning its contents. A copy of the letter and a list of the names and addresses of persons to whom it was sent shall be submitted to the Commission at the time the EM&CP is filed.

7. Except where this Opinion and Order requires otherwise, the terms of Stipulations 1 and 2 in this proceeding (set forth, respectively, as Appendix D to this Opinion and Order and Appendix F to the recommended decision) and the environmental protection measures contained

in the application and in related statements made by the applicant shall be applied during preparation of the EM&CP and during construction, operation and maintenance of the certified facility.

8. The applicant shall obtain, preferably before completion of the EM&CP, an archaeological survey of those portions of the right-of-way and associated sites which will be disturbed significantly by construction. Such disturbed areas include, but are not limited to, transmission structure locations, lay down and fabrication sites, storage sites, wire pulling sites, access road locations and substation locations. The archaeologist may use professional judgment to limit the areas to be physically surveyed and to decide which sections of the right-of-way should receive particular attention. In exercising professional judgment, the archaeologist shall give due regard to any area likely to contain archaeological resources, as identified in the literature or by means of predictive modeling techniques, and the archaeologist may decide not to physically survey areas which have been disturbed previously by construction or other activities. The archaeologist shall describe the basis for decisions concerning the design and extent of the survey, along with any findings, in a report, copies of which shall be submitted to the Commission and the State Archaeologist by the applicant as soon as practicable.

The survey may be conducted by a qualified archaeologist on the applicant's staff or by an outside contractor. If the applicant intends to use a contractor, the contractor shall be chosen on the basis of a proposal setting forth at least the following:

(a) the qualification of the supervising archaeologist;

(b) unit and total cost data;

(c) the scope of a literature search update;

(d) the proposed extent of the survey and the methods to be employed, including the number and general location of proposed samples; and

(e) work schedules.

All proposals received by the applicant in response to its solicitations shall be made available to the Commission or its staff upon request. The applicant shall immediately advise the Commission if it cannot obtain a survey at a reasonable cost or on reasonable terms.

The applicant shall not begin preparation or construction at any site until the archaeologist has completed the survey of the site. If the survey uncovers significant archaeological resources, the applicant, preferably in the EM&CP, shall report the discovery to the Commission and propose a course of action to protect the archaeological resource. No site preparation or construction may then take place at that location until the Commission acts. The Commission may require the applicant to modify the facility to avoid any archaeological resources or to salvage any such resource. Any salvage operation shall be performed by competent persons, and the applicant may be required to bear all or part of its costs.

9. If, during construction, the applicant or its contractors discover what may be an archaeological resource, the applicant shall immediately cease work at the site and notify staff and the State Archaeologist. The applicant and the State Archaeologist shall attempt to develop a mutually acceptable plan to salvage or protect the archaeological resource. Any differences between the applicant and the State Archaeologist shall be resolved by the Commission. The financial responsibilities of the applicant for salvaging or otherwise protecting archaeological resources shall be specified by the Commission and shall be based on conditions peculiar to each case.

10. A matching grant program for recreational or educational purposes shall be established as follows:

(a) The applicant shall allocate an amount equal to 2% of the estimated total cost of the certified transmission line for a program of matching grants affording eligible sponsors an opportunity to develop and administer portions of the right-of-way for public outdoor recreational or educational use. Eligible sponsors are defined in Commission Opinion No. 72-2 and include: (i) municipalities and special local districts traversed by any part of the right-of-way; (ii) other governmental bodies of the kind referred to in Opinion No. 72-2; and (iii) subject to the approval of the Commission, quasi-public non-profit organizations. A sponsor shall be required to provide matching funds (which it may obtain from public or private sources) in an amount at least equal to the amount provided by the applicant for the particular recreational or educational project, as determined by the guideline provisions of Opinion No. 72-2, supra. A prospective

sponsor must demonstrate to the Commission that there is no significant opposition from abutting property owners to the proposed recreational or educational use. Furthermore, a sponsor shall be required to protect the applicant against liability from harm to persons and loss or harm to property as a consequence of the proposed recreational or educational activity, provided that the applicant will not be relieved of liability due to its own wanton or malicious conduct. Prior to the date set for use of the right-of-way for any educational or recreational uses approved by the Commission under this program, the applicant shall obtain the necessary land rights to accommodate such uses. The applicant shall be afforded reasonable time after Commission approval to acquire such land rights pursuant to the Eminent Domain Procedure Law if implementation of the Eminent Domain Procedure Law is required.

(b) If a matching grant program may affect the location of a transmission line or the manner in which the transmission line is constructed, the prospective sponsor of such a program must file with the Commission and serve on the applicant, not later than thirty days after the issuance of this Opinion and Order, a notice of its intention to submit a recreational or educational proposal. Such proposal, containing the information called for in Opinion No. 72-2, must be submitted to the Commission with a copy to the applicant not later than sixty days after issuance of this Opinion and Order.

(c) Recreational or educational proposals filed under this program will not be acted upon by the Commission until the research program specified in Opinion No. 78-13, issued June 17, 1978 in Cases 26529 and 26599, the Common Record Hearings on the Health and Safety of High Voltage

Transmission Line, has been completed. Such proposals which do not affect the location or manner of construction of the transmission line must contain the information specified in Opinion No. 72-2 and may be filed at any time during this period of program suspension and up to two years after final action on the biological effects research program.

(d) All other matters pertaining to a matching grant program (including the Commission's disposition of recreational and educational proposals, the availability and use of funds, the nature of permissible recreational or educational uses, and their maintenance and administration) shall be subject to and governed by the provisions of Opinion No. 72-2, rules or regulations which the Commission may from time to time adopt, and other applicable laws and regulations.

11. The applicant shall confine clearing and subsequent herbicide treatment of vegetation to the minimum necessary for construction, operation and maintenance of the certified facility.

12. All trees over two inches dbh or shrubs over four feet in height damaged or destroyed by the applicant's activities during construction, operation or maintenance, regardless of where located, shall be replaced by the applicant with equivalent trees or shrubs, except where:

(a) permitted by an approved EM&CP;

(b) equivalent replacement trees or shrubs would interfere with the proper clearing, construction, operation or maintenance of the certified facility;

(c) replacement would be contrary to sound right-of-way management practices; or

(d) a property owner (other than an applicant) on whose land the damaged or destroyed trees or shrubs were located declines replacement.

13. The applicant shall not wash equipment or machinery in any watercourse along the construction corridor and shall not permit run-off resulting from washing operations to directly enter any watercourse.

14. The applicant shall not store petroleum products or refuel equipment within 100 feet of a watercourse.

15. The applicant shall exercise all necessary and reasonable precautions to prevent or minimize stream sedimentation and water- and wind-caused erosion in work areas and on the right-of-way and shall take prompt and effective action at all times to control such erosion, and shall comply with the standards for erosion protection contained in 6 NYCRR Part 505 for coastal zone management areas.

16. All disturbed soils subject to erosion, especially in cut-and-fill areas associated with access road construction, shall be stabilized within eight days after initial disruption. Where construction activity is likely to continue or when permanent cover cannot be readily established because of seasonal conditions, the applicant may use temporary stabilization measures, such as mulching or mulching with seed, lime and fertilizer. The inclusion of legumes, such as crown vetch and flat pea in seed mixtures, should be considered on a site-specific

basis. The Soil Conservation Service shall be consulted regarding seed mixtures and rates of application of mulch, lime and fertilizer.

17. All disturbed areas shall be restored to original grades and conditions, except where different grades or conditions will improve an area. Disturbed pavement, curbs and sidewalks shall be restored to at least the condition required by State and local published regulations.

18. The applicant shall make reasonable efforts to avoid house and structure taking. Where structure taking is appropriate, the applicant shall make reasonable efforts to have the building relocated and thereafter inhabited, rather than demolished or abandoned. Such efforts shall be commenced at least sixty days prior to demolition (one hundred and twenty days if any of the sixty-day period would fall within winter). If a dwelling unit must be removed from the right-of-way, the applicant shall notify its owners, in writing prior to any initial or further negotiation for the dwelling unit, that they may, instead of selling the dwelling unit, request that it be moved to another site. The notice also shall state that the applicant will provide reasonable assistance in the relocation efforts and will pay the cost of such move to the extent it does not exceed the appraised market value of the dwelling unit [or (if higher) such other value as may be agreed between the parties]. At least one week before a dwelling unit is demolished or moved, the applicant shall submit to the Commission a copy of such notice and a verified list of the persons to whom it was sent.

19. Within ten days after the facility is energized, the applicant shall so notify the Commission.

20. Within ten days of the completion of final restoration, the applicant shall notify the Commission that all restoration has been completed in compliance with the EM&CP.

21. The applicant shall (a) submit an EM&CP not later than six months from the date of the Opinion and Order (for segmented EM&CP filings, the final submission shall be submitted not later than one year from the date of this Opinion and Order); (b) schedule construction so that the facility will be completed and in service by September 1, 1987; and (c) if at any time it becomes apparent that the dates for filing the EM&CP or for completion of construction cannot or should not be met, notify the Commission's staff, explain and justify the slippage, and provide alternate dates.

22. The applicant shall comply in all respects with the provisions and requirements pertaining to right-of-way vegetation management contained in Stipulation No. 1, as set forth in Appendix D.

23. No major right-of-way maintenance following initial clearing and follow-up treatment shall commence until the applicant has submitted to the Commission, and the Commission has approved, a right-of-way management plan for the certified facility. The plan shall contain the following:

(a) Specific goals and objectives, which include a statement of how choices among chemical and mechanical vegetation management techniques and equipment will be selected to assure

that only undesirable plants which would compromise the operation and maintenance of the facility are treated or removed.

(b) Important factors influencing right-of-way management.

(c) A vegetation and land use inventory.

(d) Updated information on right-of-way restoration and vegetation treatment results.

(e) Provisions for reporting to the Commission results of future major right-of-way maintenance activities, including summaries of treatment types and area, cost units, inventories, herbicide amounts and treatment effectiveness.

(f) Procedures for coordinating vegetation maintenance schedules and practices between rights-of-way used for the new transmission facilities and those used for existing paralleled transmission or sub-transmission facilities.

24. The applicant shall, upon completion of the project, conduct an assessment of needs for vegetation plantings to screen or landscape the transmission and substation facilities, including all road crossings, and including the removal or rearrangement of existing plantings. The results of the assessment and any proposals for the addition of new plantings or rearrangement of existing plantings, and specifications for plantings shall be submitted for Commission review and acceptance no later than six months after the facility is energized. In formulating its proposals and specifications, the applicant shall cooperate fully with the Commission's staff and shall submit a plan satisfactory to the Commission.

25. The applicant shall comply with the portions of 16 NYCRR 126 listed below:

(a) Lattice metal towers located in populated areas shall be marked with warning signs visible from two opposite faces of the tower and located at a height that makes them clearly visible to persons on the ground approaching the tower.

(b) Fences, barbed wire, or other anti-climbing shields shall be used to limit access to lattice tower structures adjacent to school property or playgrounds sanctioned by municipal authorities or recognized recreational bodies and at other sites where a significant hazard could exist.

(c) No ladder, step or other intended climbing device shall be allowed less than eight feet above the ground on any power line structure.

26. The applicant shall design the proposed transmission line such that the minimum conductor to ground clearance under worst-case, short-time emergency conditions shall be no less than 28 feet over public roads and no less than 26 feet elsewhere.

27. The applicant shall acquire sufficient rights throughout the project area to ensure that no dwelling unit may be installed or continue to occupy any area where the resulting total electric field strength would normally exceed 1.6 kV/meter measured at one meter above ground.

28. The applicant shall take all measures necessary to resolve expeditiously any and all induced shock, radio and television, communication system, or audible noise problems caused by the transmission and substation facilities.

The applicant shall notify the Commission's staff of any such complaints within thirty days of their receipt and shall keep the staff informed of the resolution efforts.

29. The applicant shall undertake a suitable program for bonding and grounding fixed metal objects on or near the right-of-way and large movable objects likely to be brought onto the right-of-way. It shall also undertake a suitable program for informing persons living near the right-of-way of the possibility of induced shocks from the lines and the best methods for avoiding them.

30. The applicant shall establish a procedure for receiving, responding to and reporting to the Commission staff every complaint concerning the construction and operation of the certified facilities.

31. The applicant shall generally follow the methods, formats and procedures, detailed in Exhibit 89 of this proceeding, for the collection, documentation, and presentation of data necessary for developing acceptable Environmental Management and Construction Plans. The applicant shall make all such information available to staff upon request.

32. Any substation or other facilities authorized under this certificate which will be owned, constructed, reconstructed or operated by entities other than the applicant or which will be transferred to such other entities by the applicant shall be subject to the conditions of this certificate, and the entities that will own, construct or operate such facilities shall assume, in conjunction with the Power Authority, the duties and obligations of the applicant with respect to those facilities.

33. The applicant shall, no later than thirty days after the issuance of the certificate, submit to the Commission a verified statement that it accepts and will comply with the terms and conditions of the certificate. Failure to submit such a verified statement shall render this certificate void.

34. The applicant shall organize and conduct, with the Commission's staff in attendance, site compliance audits during the clearing, construction and restoration phases of the project. These audits shall be held along the project route on a quarterly basis prior to completion and energization of the overall project and at least semi-annually for at least two years after the project is energized fully. The audit agenda shall include an office review of the status of all certification conditions, requirements, and commitments, as well as a field review of the project. The agenda shall also include: (a) reviews of all complaints received, and their proposed or actual resolutions; (b) reviews of any significant comments, concerns or suggestions made by the public, local governments, or State agencies; (c) reviews of the status of the project in relation to the overall schedule established prior to the commencement of construction; (d) reviews of the status of the expected capital cost of the project in relation to the overall estimate established prior to commencement of construction; and (e) any other items the applicant or the staff consider appropriate. Within thirty days after each audit, the applicant shall submit to the Secretary of the Commission a brief report, verified by one of the staff members in attendance at the audit, describing the results of the audit and any actions planned to remedy any problems or deficiencies noted.

35. All local ordinances, laws, resolutions, standards, etc. that would prevent, modify or alter the manner or type of construction, maintenance or operation of the certified facilities or of the soil disposal site detailed in Exhibit 73 of this proceeding shall not be binding on the applicant with respect to the certified facilities.

36. The applicant's requests for waivers of certain portions of the Commission's Article VII filing requirements are granted.

37. Non-specular conductors shall be used for all overhead 230 kV and 345 kV segments of the project.

38. Deviations of up to 1/8 mile in either direction from the certified centerline shall be allowed for appropriate environmental or engineering reasons. Further deviations up to the limits illustrated on the location maps of the certified route shown in Appendix A shall be allowed in the vicinity of Gilbert Lake State Park, the Susquehanna River Valley crossing and the Catskill Park to permit centerline adjustments for environmental and engineering reasons.

39. The applicant shall comply with the water quality certification conditions described in Appendix E, which have been developed pursuant to Section 401 of the Federal Clean Water Act, Article VII of the New York State Public Service Law, and New York State Water Quality Standards 6 NYCRR Part 701.4.

40. The applicant shall comply with the Solid Waste Management conditions described in Appendix F, which have been developed under the New York State Environmental Conservation Law, Article 27, Title 7; 6 NYCRR, Part 360; and the New York State Public Service Law, Article VII.

41. The East Fishkill substation shall be sited to avoid filling the pond and wetland on the south side of the site.

42. The applicant shall, to the extent consistent with other provisions of this Opinion and Order, comply with the agricultural conditions listed in Appendix G to Stipulation no. 2. (Stipulation No. 2 is set forth as Appendix F to the recommended decision.)

43. The applicant shall comply with the recommendations of the Administrative Law Judges regarding evaluation of possible line consolidations as a means of mitigation of visual impacts in the Scotch Mountain region of the Fraser to Coopers Corners substation segment of the line.

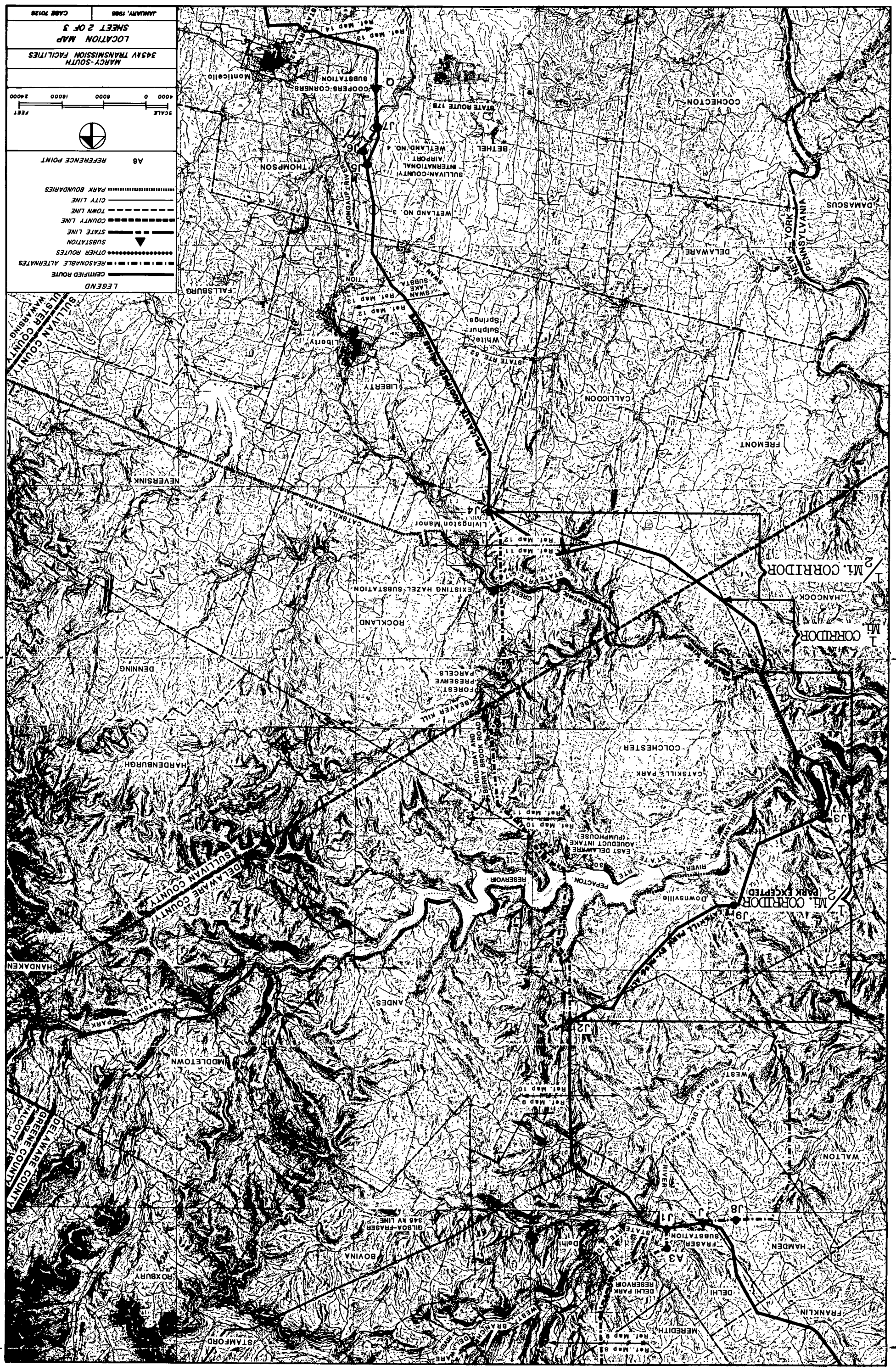
44. The applicant shall design the facility to meet or exceed the requirements specified in the most recent edition of the National Electrical Safety Code.

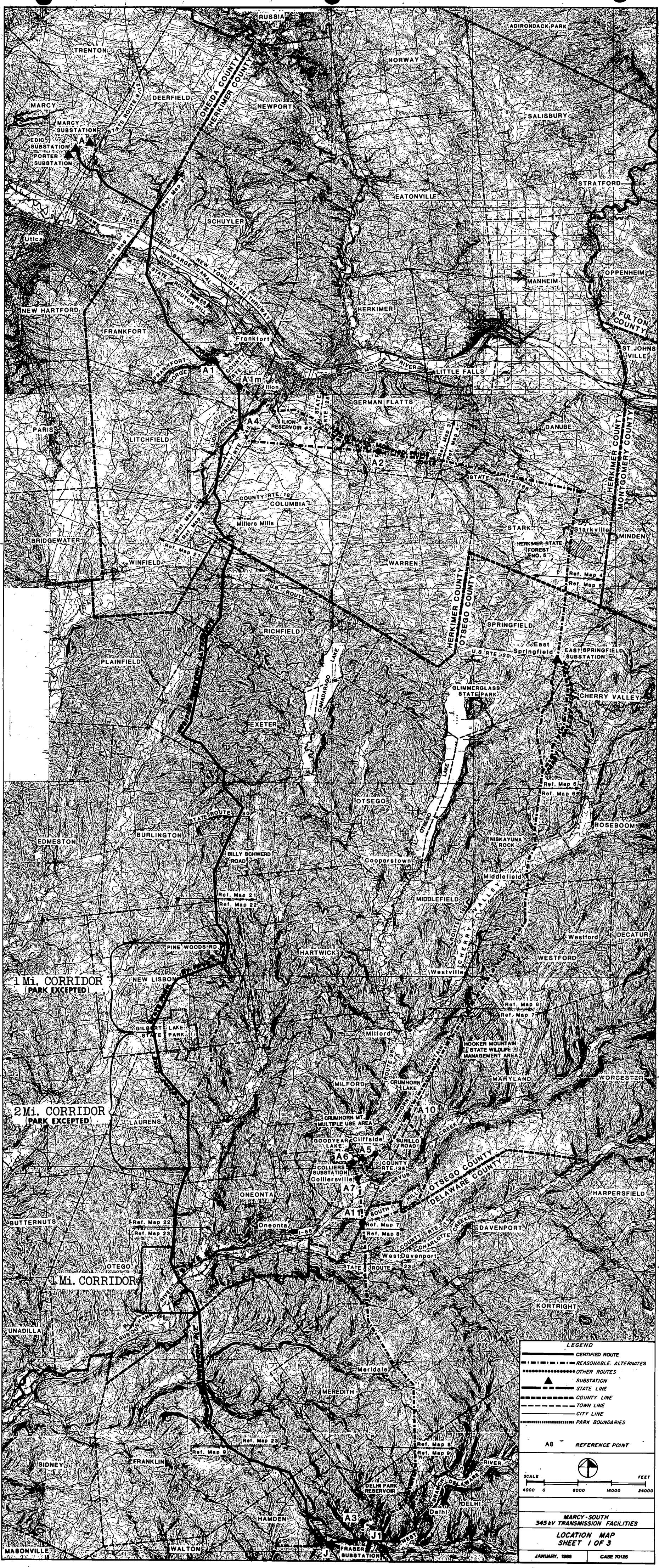
45. This proceeding is continued.

By the Commission,

(SIGNED) JOHN J. KELLIHER
Secretary

APPENDIX A


LEGEND
CERTIFIED ROUTE
REASONABLE ALTERNATES
OTHER ROUTES
SUBSTATION
STATE LINE
COUNTY LINE
TOWN LINE
CITY LINE
PARK BOUNDARIES
A8 REFERENCE POINT
SCALE FEET
4000 0 8000 16000 24000
MARCY-SOUTH
345kV TRANSMISSION FACILITIES
LOCATION MAP
SHEET 2 OF 3
JANUARY, 1985
CASE T0126
COOPERS CORNERS SUBSTATION
Monticello
STATE RTE. 42
Ref. Map 14
Ref. Map 13
STATE ROUTE 17B
BETHEL
WETLAND NO. 4
SULLIVAN-COUNTY INTERNATIONAL AIRPORT
WETLAND NO. 3
THOMPSON
MONGAUP RIVER
COCHECTON
DAMASCUS
PENNSYLVANIA
NEW YORK
DELAWARE
FALLSBURG
SWAN LAKE SUBSTA.
Ref. Map 12
Ref. Map 11
Liberty
Sulphur Springs
White
LIBERTY
STATE RTE. 52
CALLICOON
SULLIVAN COUNTY
ULSTER COUNTY
WAWARSING
NEVERSINK
CATSKILL PARK
Livingston Manor
Ref. Map 12
Ref. Map 11
J4
EXISTING HAZEL SUBSTATION
STATE RTE. 17
WILLOWEMOC CREEK
ROCKLAND
FOREST PRESERVE PARCELS
BEAVER KILL
DENNING
HOLLIDAY AND BERRY BROOK ROAD
COLCHESTER
CATSKILL PARK
EAST BRANCH
1 1/2 Mi. CORRIDOR
HANCOCK
1 1/2 Mi. CORRIDOR
FREMONT
J3
J2
J9
DELAWARE RIVER
Downsville
PEPACTON RESERVOIR
STATE RTE. 30
EAST DELAWARE AQUEDUCT INTAKE (PUMPHOUSE)
Ref. Map 10
Ref. Map 9
HARDENBURGH
SHANDAKEN
ANDES
MIDDLETOWN
HALCOTT
GREENE COUNTY
DELAWARE COUNTY
SULLIVAN COUNTY
ROXBURY
BOVINA
STAMFORD
WEST BRANCH DELAWARE RIVER
GILBOA-FRASER 345 kV LINE
Delhi
STATE RTE. 10
FRASER SUBSTATION
A3
DELHI PARK RESERVOIR
DELHI
MEREDITH
FRANKLIN
HAMDEN
WALTON
J1
J
J8
Ref. Map 8
Ref. Map 9
Ref. Map 10
WEST BRANCH DELAWARE RIVER


RUSSIA
ADIRONDACK PARK
TRENTON
NORWAY
ONEIDA COUNTY
HERKIMER COUNTY
DEERFIELD
NEWPORT
MARCY
MARCY SUBSTATION
STATE ROUTE 8/12
SALISBURY
EDIC SUBSTATION
PORTER SUBSTATION
A
STRATFORD
Ref. Map 2
EATONVILLE
MOHAWK
STATE
SCHUYLER
Utica
ROUTE 5
Ref. Map 1
BARGE CANAL
NEW YORK STATE THRUWAY
OPPENHEIM
MANHEIM
STATE ROUTE 69
DUTCH HILL
NEW HARTFORD
HERKIMER
FULTON COUNTY
FRANKFORT
Frankfort
ST. JOHNSVILLE
FRANKFORT GORGE
A1
COUNTY RTE. 27
MOHAWK RIVER
LITTLE FALLS
A1m
Ilion
GERMAN FLATTS
STATE RTE. 28
PARIS
ILION GORGE
A4
ILION RESERVOIR #3
DANUBE
LITCHFIELD
COUNTY RTE. 13
Ref. Map 4
A2
HERKIMER COUNTY
MONTGOMERY COUNTY
STATE ROUTE 169
COUNTY RTE. 18
COLUMBIA
Ref. Map 2
Ref. Map 3
Millers Mills
STARK
Starkville
MINDEN
BRIDGEWATER
HERKIMER STATE FOREST NO. 5
Ref. Map 21
WINFIELD
WARREN
Ref. Map 4
Ref. Map 5
U.S. ROUTE 20
HERKIMER COUNTY
OTSEGO COUNTY
SPRINGFIELD
RICHFIELD
East Springfield
EAST SPRINGFIELD SUBSTATION
U.S. RTE. 20
PLAINFIELD
CANADARAGO LAKE
GLIMMERGLASS STATE PARK
CHERRY VALLEY
EXETER
OTSEGO
Ref. Map 6
Ref. Map 8
STATE ROUTE 80
ROSEBOOM
BURLINGTON
EDMESTON
NISKAYUNA ROCK
BILLY SCHWERD ROAD
Cooperstown
Middlefield
Ref. Map 21
Ref. Map 22
MIDDLEFIELD
ROUTE 166
CHERRY VALLEY
Westford
DECATUR
PINE WOODS RD.
HARTWICK
WESTFORD
1 Mi. CORRIDOR (PARK EXCEPTED)
NEW LISBON
Westville
Ref. Map 6
Ref. Map 7
GILBERT LAKE STATE PARK
Milford
HOOKER MOUNTAIN STATE WILDLIFE MANAGEMENT AREA
ROUTE 28
MILFORD
CRUMHORN LAKE
MARYLAND
WORCESTER
2 Mi. CORRIDOR (PARK EXCEPTED)
A10
CRUMHORN MT. MULTIPLE USE AREA
LAURENS
CRUMHORN
CREEK
GOODYEAR LAKE
Cliffside
A5
BURILLO ROAD
A6
COUNTY RTE. 35
COLLIERS SUBSTATION
Colliersville
OTSEGO COUNTY
DELAWARE COUNTY
A7
ONEONTA
HILL
HARPERSFIELD
A11
SOUTH
Ref. Map 7
Ref. Map 8
BUTTERNUTS
Ref. Map 22
Ref. Map 23
Oneonta
I-88
COUNTY RTE. 11
CHARLOTTE CREEK
DAVENPORT
West Davenport
STATE ROUTE 23
OTEGO
7 Mi. CORRIDOR
KORTRIGHT
SUSQUEHANNA RIVER
UNADILLA
Meridale
MEREDITH
Ref. Map 23
Ref. Map 8
Ref. Map 9
Ref. Map 9
SIDNEY
FRANKLIN
RIVER
DELAWARE
BRANCH
DELHI PARK RESERVOIR
DELHI
Delhi
A3
HAMDEN
J1
WEST
WALTON
FRASER SUBSTATION
J
MASONVILLE
LEGEND
CERTIFIED ROUTE
REASONABLE ALTERNATES
OTHER ROUTES
SUBSTATION
STATE LINE
COUNTY LINE
TOWN LINE
CITY LINE
PARK BOUNDARIES
A8 REFERENCE POINT
SCALE
FEET
4000 0 8000 16000 24000
MARCY-SOUTH
345 kV TRANSMISSION FACILITIES
LOCATION MAP
SHEET 1 OF 3
JANUARY, 1985
CASE 70126

APPENDIX A

APPENDIX A


LIBERTY
Ref. Map 12
Ref. Map 13
WETLAND NO. 3
WETLAND NO. 4
SULLIVAN COUNTY INTERNATIONAL AIRPORT
BETHEL
STATE ROUTE 17B
THOMPSON
FALLSBURG
ROCHESTER
WAWARSING
ULSTER COUNTY
SULLIVAN COUNTY
NEW PALTZ
ESOPUS
HYDE PARK
PLEASANT VALLEY
LLOYD
ULSTER COUNTY
DUTCHESS COUNTY
MID-HUDSON BRIDGE
POUGHKEEPSIE
LAGRANGE
GARDINER
PLATTEKILL
MARLBOROUGH
J5
J6
J7
Q
COOPERS CORNERS SUBSTATION
Monticello
Ref. Map 13
Ref. Map 14
Q1
MELODY LAKE
Q13
MAMAKATING
HIGHLAND
FORESTBURG
WOLF LAKE
YANKEE LAKE
WOLF LAKE MULTIPLE USE AREA
Q9
Ref. Map 15
Ref. Map 16
STEPHEN CRANE LAKE
Q8
Q2
CRAWFORD
Walden
MONTGOMERY
EXISTING TRANSMISSION FACILITIES
LUMBERLAND
SULLIVAN COUNTY
ORANGE COUNTY
Q20
MT. HOPE
WALLKILL
Newburgh
NEWBURGH BEACON BRIDGE
Q11
Cuddebackville
Maybrook
Beacon
DELAWARE & HUDSON CANAL PARK
Q3
ABANDONED R.R.
Q14
Q4
Middletown
Campbell Hall
Q7
Q19
ROCK TAVERN SUBSTATION
NEW WINDSOR
DEERPARK
Q5
Q6
Q17
Q15
Q16
PHILLIPSTOWN
Q12
SAYERS HILL
APPLICANT'S MODIFIED ARTHUR KILL ROUTE
HAMPTONBURGH
Goshen
CORNWALL
GREENVILLE
WAWAYANDA
GOSHEN
BLOOMING GROVE
PUTNAM VALLEY
LEGEND
CERTIFIED ROUTE
REASONABLE ALTERNATES
OTHER ROUTES
SUBSTATION
STATE LINE
COUNTY LINE
TOWN LINE
CITY LINE
PARK BOUNDARIES
A8 REFERENCE POINT
SCALE
FEET
4000 0 8000 16000 24000
MARCY-SOUTH
345 kV TRANSMISSION FACILITIES
LOCATION MAP
SHEET 3 OF 3
JANUARY, 1985
CACE 70123

be used to accommodate both the 345 kV circuits. From Point A-1-M to Fraser, the Modified Western Alternate Route will be followed as described below.

2. Point A-1-M to Fraser (Modified Western Alternate)

The Certified Route turns south from Applicant's Modified Prime Route at Point A-1-M in the Town of Frankfort, Herkimer County and proceeds along the Modified Western Alternate in a southerly direction for approximately 60 miles along primarily new R/W to Point J (the Fraser Substation) located in the Town of Delhi, Delaware County.

Steel lattice, double-circuit structures on 150-foot R/W shall be utilized for most of the distance. At visually sensitive road crossings [e.g., State Route 80, U.S. 20, State Route 7 and Interstate 88 (I-88)], single-shaft, double-circuit steel poles shall be utilized on 150' wide R/W, as described below. Single shaft structures may also be used elsewhere on a selective basis to minimize impacts on active agricultural lands. At point A-1-M the new 345 kV circuits shall pass over the existing 230 kV circuit.

From Point A-1-M southward to Point A-4, approximately 1.8 miles, the Modified Western Alternate traverses forest land and fields and crosses County Route 14, State Route 51 and Steel Creek in Ilion Gorge.

From Point A-4 southward to County Route 43, the Route passes through predominantly wooded areas interspersed with farm fields. Continuing southward, the Route traverses several active farmlands, crosses County Route 18 and a series of active agricultural fields, and then turns southwesterly to descend Jones Hill, near County Route

85, approximately one mile west of the hamlet of Millers Mills. Southwest of Millers Mills, several active farmlands are crossed, as well as an abandoned railroad R/W. The Route turns east at the base of Richfield Hill, parallel to the abandoned railroad R/W, and then turns south passing through woodlands and active agricultural fields which lie on both sides of Richfield Hill Road.

Continuing southward, the Route follows hedgerows located between active farmlands on either side of Bargly Road. As the Route approaches U.S. Route 20, through a wood area, single-shaft steel poles shall be used from a point about 1,400 feet north of U.S. 20 to a point about one mile south of it; steel lattice structures shall then resume. From this point, beginning north of County Route 26, several cultivated fields are then traversed, along with smaller fields, woodlands and pine plantations.

The Route then by-passes a large, unnamed State Reforestation Area to its west, paralleling Sullivan and Carson roads to their east for several miles. From north of County Route 23 to Wright Road, primarily forested areas are traversed, except where the Route passes between active farmlands. From Wright Road, forested areas are traversed and then County Route 22. From that road crossing south, a series of active farmlands and forests are crossed and then the Route turns southeasterly to pass over County Route 19 and Joslin Road.

The Route then continues southeasterly going past Brainard Corners, skirting the northeastern tip of Bass Wood Pond State Reforestation Area. Continuing southeasterly, the Route crosses

woodlands, Eckert Road and then several active agricultural fields before turning southerly to cross County Route 16 and then southeasterly again to cross the woodlands north of Hovick Road.

East of Hovick Road, active agricultural lands and forest lands are crossed as the Route proceeds toward State Route 80. Beginning about 0.5 mile north of Route 80, where the route turns southwesterly, and continuing for about 1.2 miles, single-shaft steel poles shall be used.

South of State Route 80, where steel lattice structures shall resume, the Route crosses forest lands and Zackow Road before skirting the eastern edge of an unnamed State Reforestation Area and crossing Cranberry Bog Road. Continuing southwesterly, the Route traverses forest lands, and several agricultural fields, crosses Billy Schward Road, and then passes through forest lands near the hamlet of Patent.

Continuing southward, the Route parallels the Billy Schward Crossroad to the west at the rear of active agricultural fields and then crosses Quinlog Road, forest lands and a large agricultural complex along John Turnball Road. The Route then parallels Texas and Stevens Corners Roads to their east, passing through woodlands and along the edges of active agricultural lands before crossing Pine Woods Road in the Town of New Lisbon.

To the immediate south of Pine Woods Road, the Route turns southwesterly to follow the alignment of the Gilbert Lake State Park By-Pass Alternate for a distance of approximately ten miles before it rejoins the Modified Western Alternate near County Route 10 in the Town of Laurens. A combination of single-shaft pole and steel lattice

structures shall be used in this segment, depending on site-specific conditions which shall be identified in the Environmental Management and Construction Plan (EM&CP).

South of Pine Woods Road, the Route turns westerly along the alignment of the Gilbert Lake State Park By-Pass where it crosses Stevens Corners Road, and traverses active farmlands and forest lands which lie immediately south of an unnamed State Reforestation Area. As it moves southwesterly crossing over Warren Card Road and County Route 16, the Route traverses forest lands interspersed with active farmlands. It then crosses County Route 14 and Wheat Road, passing to the west of Gilbert Lake State Park, as well as the Meadow Vale Campground, before turning southerly to parallel the western boundary of the Park, approximately one-half mile to the west of the Park.

As the Route crosses Stahl Road, it traverses forest lands and then a series of active agricultural lands to the west of Phil Gross Road and fields located both north and south of County Route 12 east of Naylor Corners. Continuing southerly, the Route traverses a series of agricultural lands and Nola Road, which is the entrance to a planned development called Belaire Estates. At Nola Road, the Route turns southeasterly, passing through the western end of Belaire Estates to the east of Naylor Corner Road but west of Edgewood Country Club, and then passes through woodlands and active farmlands. As the Route approaches County Route 10, it traverses additional farmlands and forest lands and then rejoins the alignment of the Modified Western Alternate at County Route 10. To allow opportunities for overcoming potential conflicts with farmlands and development found along the Gilbert Lake State Park By-Pass, deviations of up to

one-half mile from the certified centerline (a corridor one mile in width--Gilbert Lake State Park excepted) will be allowed from Pine Woods Road to a point approximately 3,000 feet south of Stahl Road. From that point south to State Route 23, deviations of up to one mile from the certified centerline (a corridor two miles in width--Gilbert Lake State Park excepted) will be allowed.

South of County Route 10, steel lattice structures shall resume as the Route traverses woodlands and pasture, crosses New Road, and then continues south through forest lands before traversing some active agricultural lands north of State Route 23.

After crossing State Route 23, the Route traverses a complex of open fields and then rises through a woodland, before crossing Baker Hill Road, County Route 8 and open fields. After crossing County Route 8 in Hell Hollow, which is wooded, the Route continues south into Mill Creek valley, passing over Oneonta and Mill Creek Roads and then parallels Mill Creek Road to its east for about three miles, generally along the breakpoint between field edges and woodlands as it approaches the Susquehanna River Valley.

Beginning approximately 1.6 miles north of State Route 7 in the Susquehanna River Valley, single-shaft steel poles shall be used for the crossing of the Susquehanna Valley floor and sides, including Route 7, I-88, and County Route 48, terminating at a point approximately 1.7 miles south of State Route 7 near the Otsego-Delaware County line. Deviations of up to one-half mile from the certified centerline (a corridor one mile in width) will be allowed in this approximately 3.3 mile segment to permit centerline adjustments as the EM&CP is developed.

From the Otsego-Delaware County line southward, the Route continues, with the use of primarily steel lattice structures again, going through forest lands interspersed with active agricultural lands which lie to the north and east of Chamberlain Hill and Westcott Roads. The Route then descends into the State Route 357 valley, crossing Route 357, as well as active agricultural lands, County Route 14, and then a fairly steep, wooded hillside. Thereafter, it crosses Post Road and Carey Road and then follows field and pasture edges along a hedgerow, passing over Derke Road, through woodlands and along other field edges and hedgerows.

Continuing southeasterly, the Route angles across active agricultural lands, crosses Tupper Hill Road in the Town of Franklin, moves diagonally across both active farm fields and woodlands, and then crosses Douglas Hall Road and a sharp bend in West Platner Road. Thereafter, it parallels West Platner Road for approximately two miles, going in a southerly direction, crossing active agricultural fields and pastures, paralleling hedgerows, and moving into a forested area south of the Delhi Town line.

The Route then turns southwesterly, crosses another bend in West Platner Road and crosses over New York State Electric & Gas Corporation (NYSEG's) existing Delhi to Oakdale and Delhi to Jennison 115 kV lines. Turning southerly, the Route then follows an existing vacant R/W owned by NYSEG which traverses an open area at the easterly end of the Brooks Bird Club tract. It then continues southeasterly along the vacant NYSEG R/W through active agricultural and forest

lands until it reaches NYSEG's Fraser Substation (Point J). One circuit terminates at the Fraser Substation and the other continues southeasterly to NYSEG's Coopers Corners Substation.

b. Fraser - Coopers Corners (See Location Map: Sheet 2 of 3)

1. Fraser to Point J-2

The structure type for this segment of the Route shall be primarily wood pole H-frame with steel pole H-frame structures at angles, except as noted below. The Route shall parallel Applicant's existing Fraser-Gilboa and NYSEG's Fraser-Coopers Corners single-circuit 345 kV lines for about 5.5 miles from Fraser Substation. This segment of the line shall be built, between Fraser Substation and Point J1 on the northerly side of the existing lines, and from Point J1 southward on the easterly side, utilizing existing R/W. In this configuration, the Route shall cross County Route 16, East Platner Brook, State Route 10 and the West Branch of the Delaware River, and then angle up Scotch Mountain southeast of the river to the point where the Fraser-Gilboa line leaves the Fraser-Coopers Corners line. In the Scotch Mountain region, consolidation of the several lines shall be evaluated in the EM&CP development process.

At this point, the new 345 kV circuit shall cross over the existing Fraser-Gilboa 345 kV line, and continue southward about 5.2 miles to point J-2. This segment shall parallel the existing Fraser-Coopers Corners 345 kV line to its east, requiring new R/W 110 feet in width. From Point J-2 to Point J-4, the Route shall follow the Catskill Park By-Pass alternate as described below.

2. Point J-2 to Point J-4 (Catskill Park By-Pass Alternate)

The Catskill Park By-Pass Alternate Route is approximately 31.4 miles in length and begins at Point J-2, approximately 1,500 feet south of Tait Hill Road in the Town of Hamden, Delaware County. Generally, the Alternate Route makes a circumferential loop around and to the west of the Catskill Park, passing through Point J-3 in the Delaware River Valley and ending at Point J-4, approximately 800 feet northwest of County Route 149 in the Town of Rockland, Sullivan County.

The Catskill Park By-Pass Alternate shall utilize primarily single-circuit, wood, H-frame structures located on new R/W 160 feet in width. At selected locations, steel towers, steel poles, or wider R/W may be required to meet site-specific field conditions.

Generally, the area along the Catskill Park By-Pass is hilly and wooded, with farmlands located mainly in valley floors. Major rivers and river valleys crossed are the East Branch of the Delaware and the Beaver Kill. To allow for adjustments which are expected to be necessary through this hilly terrain, deviations of up to one-quarter mile from the centerline (a corridor one-half mile in width) will be permitted for the entire length of this alternate route except as noted below and except that no portion of the R/W may be located within the Catskill Park.

The Catskill Park By-Pass Route goes southwesterly from Point J-2 through forest land and farmland, crosses Terry Clove Road, Basin Clove Road and then enters Tiffany Hollow where it parallels Bull Run Road approximately 1,000 feet to its northwest. It then crosses Gregory Hollow Road, where more agricultural land is traversed, moves

along the north side of Gregory Hollow, crossing Doe Brook Road, Telford Hollow Road (County Route 26) and then Money Point Road as it continues southwesterly along wooded hillsides.

As the Route approaches Wilson Hollow, it turns westerly, crosses State Route 206, and then turns southwesterly, crossing Tub Mill Road, and continues to a point at the north end of Mills Hollow. There it turns more southwesterly to cross Trout Brook Road north of the hamlet of Shinhopple. After the route crosses the Hancock-Colchester Town Line, it turns southerly at Point J-3 staying slightly west of the crest of a prominent ridge which forms the north side of the East Branch of the Delaware River Valley.

The Route then crosses the East Branch of the Delaware River Valley, as well as State Route 30, to the immediate west of and paralleling, for approximately one mile, both a buried New York City aqueduct and NYSEG's existing 115 kV Hancock to Hazel aerial transmission line. Steel lattice structures may be required here to support the single span across this river valley, a distance exceeding 3,600 feet.

As the Route approaches the Catskill Park Boundary, which coincides with the Hancock-Colchester Town Line, it turns southeasterly and remains approximately 500 feet outside of the Park Boundary to its west, passing through forest lands and steep terrain. The Route parallels the Park Boundary to its west for a distance of approximately three miles, where deviations of up to one-quarter mile from the certified centerline (a one-half mile wide corridor--except that no portion of the R/W may be within the Catskill Park) will be permitted.

The route then proceeds southwesterly across State Route 17, the Beaver Kill and Chiloway Road, continuing through steep, wooded terrain to a point approximately one-half mile south of Route 17. It then turns southerly and then southeasterly, re-crosses the Hancock-Colchester Town Line, and then continues southeasterly to the Delaware-Sullivan County Line. Next it crosses the northern end of Cherry Ridge Road and continues easterly as it crosses Bowers Road and goes through pastureland and over a small power line located south of Youngs Road. The Route continues easterly across County Route 92, turns northeasterly near the Fremont-Callicoon Town Line, crosses Dutch Hill Road on a northeasterly alignment, continues over the Rockland Town Line, descending into the Stewart Brook Valley where it crosses County Route 124 and Huber Road.

Approximately 1,500 feet east of Huber Road, the Route turns southeasterly, crosses Hazel Brook Road and Shandelee Road and then descends through forest land into Cattail Creek Hollow to Point J-4, approximately 800 feet northwest of County Route 149. Point J-4 is the southern terminus of the Catskill Park By-Pass Alternate.

3. Point J-4 to Coopers Corners Substation

From Point J-4 southward for about 7.6 miles toward State Route 52, the new 345 kV line shall parallel NYSEG's existing Fraser-Coopers Corners 345 kV line as well as its existing 115/230 kV line on primarily single-circuit wood-pole H-frame structures. This will require additional R/W 110 feet in width.

The Route crosses State Route 52 approximately midway between the village centers of Liberty and White Sulphur Springs. At the crossing of Route 52 (in a segment about 0.4 mile long), the new 345

kV line shall be consolidated with the existing Fraser-Coopers Corners 345 kV line on double-circuit single-shaft steel poles within the existing R/W. In this vicinity, a 34.5 kV line joins the R/W to the west side of the existing Fraser-Coopers Corners 345 kV line and continues in this configuration for about 1.2 miles.

After the 345 kV double-circuit consolidation ends south of State Route 52, the Route proceeds (with wood-pole H-frame structures to be used) adjacent to the east side of the existing 345 kV circuit to the vicinity of Swan Lake Substation, where the line shall be placed on steel towers for a short distance to cross the Hazel-Ferndale 115 kV line and the Coopers Corners-Ferndale 115 kV line.

The Route then proceeds southerly generally adjacent to the east side of the existing 345 kV line to a point about 2.9 miles north of the Coopers Corners substation. This portion of the Route will generally require additional R/W 110 feet in width. In this segment, Wetland No. 3 shall be passed, with an environmentally compatible configuration to be developed during the EM&CP phase in conjunction with DPS staff and DEC staff.

At the previously-noted point approximately 2.9 miles north of NYSEG's Coopers Corners Substation and immediately north of Wetland No. 4, the Route deviates to the west of the existing R/W, requiring new independent R/W 160 feet in width for about 1.5 miles. The Route rejoins the existing R/W about 1.4 miles north of Coopers Corners Substation. Relocation of the existing 345 kV line in this vicinity to parallel the new route, as well as reconductoring and/or rebuilding

the existing line into the Coopers Corners Substation, shall be evaluated during preparation of the EM&CP. Where both the new and existing lines are placed on new R/W, its width shall be 265 feet.

The Route rejoins the existing R/W about 1.4 miles north of the Coopers Corners Substation and continues adjacent to the west side of that R/W to the substation. Additional R/W 110 feet in width will be required for that distance. In this configuration, the Route crosses the Mongaup River and continues south to where the new circuit will pass through, but not connect into, the Coopers Corners Station in the Town of Thompson, Sullivan County.

c. Coopers Corners - Rock Tavern (See Location Map: Sheet 3 of 3)

Two circuits will proceed from the Coopers Corners Substation, (Point Q), one originating therein and the second originating at Fraser Substation. These circuits will proceed from the Coopers Corners Substation southerly and then easterly generally parallel to an existing NYSEG 34.5 kV /115 kV double-circuit line. The Route parallels this existing line on its west side (about 1.4 miles) and then its south side (about 4.2 miles). Double-circuit 345 kV steel lattice towers shall be used. Exceptions to this structure type may occur on either side of State Route 17B and County Route 42 where double-circuit single-shaft steel poles shall be considered during development of the EM&CP. Existing R/W shall be used for all but the easterly approximately 0.6 mile segment where 125 feet of additional width will be required.

From this point, the Route angles southward, away from the existing 34.5 kV/115 kV line, and proceeds (continuing use of double-circuit 345 kV steel lattice towers, but on new R/W 150 feet wide) approximately 1.1 miles to Point Q1.

At Point Q1, the Route (still using double-circuit lattice towers) proceeds easterly and then southeasterly using existing R/W for about 2.2 miles and then new R/W 150 feet in width for about 0.6 mile to a point about 0.5 mile west of the Neversink River. Proceeding from that point easterly about 1.5 miles through Point Q13, including a crossing of the Neversink River, the Route uses new R/W 170 feet in width and utilizes double-circuit low-profile steel-pole H-frame structures.

From this point approximately 1.0 mile east of the Neversink River, the Route proceeds southerly on two sets of single-circuit 345 kV primarily wood-pole H-frame structures for about 2.3 miles (requiring R/W 265 feet in width). In this configuration, the Route traverses approximately 0.9 miles of the Wolf Lake Multiple Use Area in the Town of Thompson, Sullivan County.

From this point southwest of Wolf Lake, the Route proceeds for about 6.4 miles (using primarily double-circuit 345 kV steel lattice structures) through Points Q9, Q2 and Q20 to a point located to the west of the Basher Kill and State Route 209. This portion of the Route will utilize a new R/W 150 feet in width.

The Route then proceeds eastward and southeastward to cross State Route 209 and the Basher Kill (using double-circuit steel-pole structures on R/W). The Route then crosses State Route 211 and

follows an abandoned railroad R/W across the side slopes of the Shawangunk Mountains for a total distance of approximately 2.4 Miles to Point Q14.

From Point Q14 to Point Q4, the Route proceeds eastward adjacent to the north side of the existing Orange & Rockland Mongaup-Shoemaker 138 kV line (operated at 69 kV) for approximately 0.8 mile. This alignment will require 150 feet of additional R/W width and utilize double-circuit single-shaft steel poles.

At Point Q4 the Route crosses over the 138 kV line and proceeds along the alignment described in Exhibit 20 as Alternate No. 9, but modified as depicted on Exhibit 251, through Point Q12 to the vicinity of Point Q6, a distance of about 6.7 miles.

With one exception, this segment of the Route shall be built using double-circuit single-shaft steel poles, requiring new R/W 150 feet in width. The exception occurs in crossing Sayers Hill in the Town of Wawayanda, Orange County, where the proposed line shall be constructed on double-circuit low-profile steel-pole H-frame structures for approximately 0.6 mile, requiring new R/W 170 feet in width.

From a point located about 0.3 mile south of Point Q6, the Route proceeds eastward (using double-circuit single-shaft steel poles, for approximately 2.4 miles) requiring new R/W 150 feet in width.

Beginning at a point approximately 300 feet west of State Route 17 M/U.S. Route 6 in the Town of Wawayanda, Orange County, the Route proceeds east for approximately 2.0 miles along an alignment referred to as the Wawayanda Alternate (see Exhibit 252). This

alternate includes construction of two sets of single-circuit 345 kV primarily wood-pole H-frame structures on new right-of-way 265 feet in width for about 1.1 miles, beginning east of Routes 17 M/6 and continuing to the east side of the Erie-Lackawanna Railroad R/W. Shortly after crossing the railroad, the Route parallels an existing 138 kV line (operated at 115 kV) and a 115 kV line on their southwesterly sides, using double-circuit single-shaft steel poles and requiring additional R/W 135 feet in width. This segment includes the crossing of I-84 in the Town of Wawayanda, Orange County.

The Route then crosses over the existing lines and proceeds easterly, using new R/W 150 feet in width and single-shaft steel poles, to Point Q15. This segment of the Route crosses State Route 17 approximately 0.8 mile south of the Wallkill River in the Town of Goshen, Orange County. From just east of Point Q15 to Point Q17, the Route then follows the Staff Hamptonburgh Modification as adjusted by the Gurda Alternate (Exhibit 253).

From Point Q17, the Route generally follows an abandoned Erie-Lackawanna Railroad R/W in a northeasterly direction for a short distance, then angles eastward and crosses the Otter Kill. Shortly after it crosses the Otter Kill, the Route generally parallels the south side of an active Erie-Lackawanna Railroad R/W for approximately 1.25 miles.

After crossing over the active railroad, the Route proceeds northward to Point Q7 along an abandoned railbed and then eastward through Point Q19 to a termination at the Rock Tavern Substation (Point S) in the Town of New Windsor, Orange County.

d. Roseton-East Fishkill (See Location Map: Sheet 3 of 3)

From the Roseton Substation (Point T) the Route proceeds easterly on land owned by Central Hudson Gas & Electric Corporation (CHG&E) where single-circuit steel-pole H-frame structures shall be used. For the first approximately 0.1 mile, the Route will require new R/W 160 feet in width. For the next approximately 0.5 mile, the Route parallels the south side of two existing 115 kV lines and will require additional R/W 136 feet in width. The Route then requires new right-of-way 160 feet in width for the final approximately 0.3 mile distance to the transition station that will be built on the west side of the Hudson River (Point U).

The Route then crosses the Hudson River between Points U and V, a distance of about 0.9 mile, as an underground/submarine transmission line. The underground/submarine Route follows the alignment which has been referred to as the "Alternate Alignment." Six underground/submarine pipe-type cables will be utilized to cross the Hudson River to the second underground/overhead transition station which will be built on the east side of the river (Point V). The underground/submarine facilities to be installed shall be generally consistent with the design concepts discussed during the proceeding and described in the Recommended Decision.

From the transition station, the Route proceeds southeasterly and then turns northeasterly using new R/W 160 feet wide and single-circuit steel H-frame structures for a total distance of about 0.5 mile. At this point, the Route then crosses over and begins to parallel the northerly side of two existing single-circuit 115 kV lines for about 0.35 mile, requiring additional R/W 126 feet in width.

At this point, the Route then crosses State Route 9D and passes by, without going into, the North Chelsea Substation in the Town of Wappinger, Dutchess County, using 160 foot wide R/W.

Then, beginning at a point approximately 0.2 mile east of the substation and continuing for the next approximately 0.8 mile distance, the Route parallels the northerly side of the existing North Chelsea-East Fishkill 115 kV line, requiring additional R/W 64 feet in width. For the next approximately 0.25 miles, the parallel R/W will require 39 feet of additional width. At the existing angle point east of Ketchamtown Road, the Route crosses to the southerly side of the existing 115 kV line and then parallels the southerly side of the existing R/W for approximately 2.0 miles to Point V2, requiring 101 feet to 126 feet of additional R/W.

At Point V2, the Route departs from the existing 115 kV line and proceeds easterly for about 2.7 miles to the site of the planned East Fishkill Substation, Point W. The line in this segment shall be located along new R/W 160 feet in width and use single-circuit steel-pole H-frame structures. The general alignment of the Route as it enters the East Fishkill Substation is depicted on Exhibit 254, which also shows the size and general layout of the planned substation.

e. Upland Disposal Site

The proposed upland disposal site, referred to as Ulster Landing (formerly known as the Terry Brickyard), is located adjacent to the Hudson River in the Town of Ulster, Ulster County, near River Mile 94. It is about 4,000 feet south of the Kingston-Rhinecliff Bridge and approximately 3.5 miles north of Rondout Creek. The site extends from the west shore of the Hudson River to approximately 3,000 feet inland, and is crossed by Ulster Landing Road, which is about 1,100 feet west of, and generally parallel to, the Hudson River. In a north-south direction, the property size ranges from about 1,500 feet near the river to about 1,000 feet at its western boundary. The total area of the property is approximately 94 acres. The facilities to be installed on the site shall be generally consistent with the design concepts discussed during the proceeding and described in the Recommended Decision.

GENERAL GUIDELINES FOR
ENVIRONMENTAL MANAGEMENT AND CONSTRUCTION PLAN(S)

The plan(s) consisting of appropriate maps, charts, illustrations, and text, shall include, but need not be limited to, the following features:

I. A Line Profile[1/] (at an appropriate scale) and Photostrip Maps or plan drawings[2/] (scale 1 inch equals 200 feet minimum) showing:

   A. The boundaries of any new, existing and/or expanded right-of-way[3/] to be used; the locations of any areas contiguous to the right-of-way within which the applicant will obtain additional rights and their respective purposes.*

   B. The location of:

      1. each structure (showing* its size, material and type and indicating* the GSA-595A Federal standard color designation to be used for painted structures), down-guy anchor, and any counterpoise* (typical counterpoise drawings will suffice) required for the proposed facility;

1/ The lowest conductor should be shown in relation to ground at the maximum permissible conductor temperature for which the line is designed to operate, i.e., normally the short-time emergency loading temperature specified by the New York Power Pool. If a lesser conductor temperature is used for the line profile, the maximum sag increase between the conductor temperature and the maximum conductor temperature shall be indicated* for each ruling span.

2/ Contour lines (preferably at 5-foot intervals) are desirable on the photostrip map if they can be added without obscuring the required information.

3/ The term "right-of-way" in these guidelines includes property to be used for substations, disposal sites, underground terminals, storage yards, and other associated facilities. Where such properties cannot reasonably be shown on the same photostrip maps or plan drawings used for the transmission line, additional maps or drawings at convenient scales may be used.

* Items with asterisks may be indicated by charts, forms, drawings and/or text as appropriate.

2. existing utility or non-utility structures on the right-of-way, and indicate* those to be removed or relocated (include* circuit arrangements where new structures will accommodate existing circuits, indicate* methods of removal of existing facilities, and show* the new locations, types, and configurations of relocated facilities); and

3. any relocated or undergrounded facility.

(Show the relationship of each facility to nearby fencelines, roads, railways, airfields, property lines, hedgerows, waterbodies, associated facilities, flowing water springs, nearby structures, major antennas, oil or gas wells, and pipelines or blowdown valves. State* any objections raised by Federal, State, or local transportation [highways, waterways, aviation] officials to the final location of, manner of installation, or access to the facilities.)

C. The location of any proposed new or expanded switching station, substation, or other terminal facility (attach* plan[4]/-- plot, grading, drainage, and electrical -- and elevation views at appropriate scales; if available, also attach* architectural sketch drawings). Indicate* the type and expected impact of outdoor lighting, the color and finish of all structures, the locations of access roads, parking areas, construction contract limit lines, property lines, flood-prone area limits, buildings, sheds, relocated structures, and any plans for water service and sewage and waste disposal.

4/ Preferably 1" = 50' scale with 2-foot contour lines.

*Ibid.

D. The locations of sites requiring trimming, topping or clearing of vegetation and the geographic limits of such trimming or clearing. Indicate* the specific method, including the type and manner of cutting and the disposition of cut vegetation and, if known, disposal location for each site. (The basis for these locations and site prescriptions shall be an initial [generalized] right-of-way vegetation inventory conducted prior to clearing and access road construction.)

E. The locations of sites where pesticides are to be applied. Provide* a general discussion of the site conditions (e.g., land use, vegetation, species composition, height and density) and the choice of pesticide, formulation, and application method. Also, provide* a general comparative analysis of all reasonable pesticide applications using the following selection criteria: selectivity, effectiveness, toxicity, persistence, and cost. Show all sensitive resources, including highly visible areas, waterbodies and courses, wetlands, streams, potable water sources and land uses, on and off the right-of-way which may be of concern. Describe* the procedures that will be followed to protect such sensitive resources.

F. The name, if any, and course of all rivers and streams (both perennial and intermittent) within or crossed by the proposed right-of-way or any off-right-of-way access road constructed, improved, or maintained for this facility. Indicate* the procedures that were followed to inventory such resources and attach* copies of any resulting data sheets. Describe the measures to be taken in each instance to protect stream habitat and water quality including, but not limited to, fording or crossing technique and structure type. On the plan maps, delineate the designated streamside "protective or buffer zone" in which construction activities will be restricted to the extent necessary to protect rivers and streams. Indicate* the activities to be restricted in such zones. Delineate any flood-prone areas and known floodways to be traversed by the proposed facility or used for the site of associated facilities. Describe* applicant's plans to mitigate to the maximum extent practicable adverse environmental impacts to the Beaver Kill, Susquehanna, Delaware, Neversink and Wallkill Rivers.

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*Ibid.

G. The location and type* of all wetlands (e.g., marsh meadows, bogs, wooded swamps) one acre or larger on or extending into the right-of-way, indicating* on a site-by-site basis the precautions to be taken to protect such wetland drainage patterns, flora and fauna.

H.* The locations and descriptions of highly erodible sites, i.e., steep slopes (over 25 percent) and/or sensitive soils traversed.

I. The location and boundaries of any areas on or off the right-of-way proposed to be used for fabrication, designated equipment parking, staging, lay-down, and conductor-pulling. Indicate* also any planned fencing or screening of storage and staging areas.

J. The proposed location of all on- and off-right-of-way access, construction and permanent maintenance roads, and indicate* measures to be taken to preserve existing drainage and to properly dispose of water collected or diverted by construction of access roads or other portions of the facility. Indicate* also whether roads are permanent or temporary. To the extent practicable, show* where significant grading and/or filling for roads will occur, and the extent and nature of any imported fill materials needed to reinforce the roadbed. Explain* how the integrity of fencing will be maintained.

K.* The general (as distinguished from precise or specific) locations of any known ecologically and environmentally sensitive sites (including rare and endangered floral or faunal habitat, deer softwood shelters and archaeological sites) within the proposed right-of-way or along the general alignment of any access roads constructed, improved, or maintained for this facility, and indicate the procedures that were followed to identify such resources and indicate measures that will be taken to protect or preserve them. (Reports prepared to identify such sites shall be made available to Staff upon request.)

L.* The locations of noise sensitive areas, if any, along the proposed right-of-way and the procedures to be followed to minimize clearing and construction noise impacts. (State the definition of "noise sensitive areas" used in determining such locations.)

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*Ibid.

M. The locations of any buildings which now exist on the proposed right-of-way or within 150 feet of the centerline of each new transmission facility.

N.* Those locations on or adjacent to the proposed right-of-way where recreation plans proposed by appropriate sponsors, if known to the applicant at the time of the submission of the Environmental Management and Construction Plan, would affect construction or other right-of-way preparation and how those recreational plans were (or can be) accommodated.

O.* The locations of prime, unique and significant agricultural lands, vulnerable soils, and underground drainage systems and the locations of sites under cultivation or in active agricultural use where structures, access roads, counterpoise wires, lay-down areas or wire stringing operations will be located.

II. Statements or Documents:

A. Describing the temporary or permanent measures to be taken during all construction phases to stabilize soils, control erosion, and preserve natural drainage patterns in areas where significant soil disturbances (including removal of vegetative cover) are expected to occur, and to be in compliance with the standards for erosion protection required by 6 NYCRR Part 505 for coastal zone management areas. Also, describe applicant's plans for erosion control adjacent to the Hudson River.

B. Describing the applicant's program for right-of-way restoration, including the removal of any temporary roads, the finish grading of any scarified or rutted areas, the removal of scrap materials or equipment used in construction, and the restoration of vegetative cover. The statement shall indicate the projected dates of any seedings and/or plantings.

C. Outlining precautions to be followed during clearing, construction, and site restoration:

1. to control the storage, handling, transporting and disposal of fuels, oils, chemicals, and other potentially harmful substances; and

2. to avoid their spillage or improper placement in the vicinity of any wetland, river, creek, stream, lake, reservoir, spring, well or other ecologically sensitive site along the proposed right-of-way.

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*Ibid.

D. Describing the applicant's plans for supervising demolition, clearing (including any use of herbicides), construction and site restoration activities to ensure minimization of environmental impact and compliance with the environmental protection provisions specified by the Commission. The statement shall include the title(s) and qualifications of personnel proposed to be responsible for ensuring minimization of environmental impact throughout the demolition, clearing, construction, and restoration phases and for enforcing environmental protection provisions. Indicate the amount of time each is expected to devote to the project and explain how all environmental protection provisions will be incorporated into contractual specifications or otherwise imparted to those engaged in demolition, clearing, construction, and restoration. Describe the procedures to "stop work" in the event of a certification violation.

E. Describing the proposed construction schedule for the facility.

F. Describing the interim right-of-way management plans to be used for the proposed facility from the beginning of vegetative clearing until the comprehensive site-specific, long-range right-of-way management plan is submitted, including a description of the initial retreatment techniques and the proposed contents of any planned, post-construction/pre-maintenance and long-range right-of-way management plan. Such plans, when submitted, shall describe the goals and objectives and include supporting inventories and analyses, proposed and alternative techniques, schedules, and other important environmental information deemed necessary.

G. Describing the program, policies and procedures to mitigate agricultural impacts and explaining how construction was planned to avoid or minimize soil compaction, crop production losses, and potentially wet agricultural land. Also, listing locations where such procedures have been or will be undertaken.

H. Describing and detailing the applicant's plans for disposal of the Hudson River dredged materials at the Ulster County disposal site.

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* Ibid.

I. Listing the Commission's Environmental Management and Construction Plan guidelines and indicating the location in the plan of each required item. (If any particular requirements are not applicable, so indicate.)

J. Listing the Commission's certification conditions and describing the procedures undertaken or that will be undertaken to comply with those requirements.

K. Listing the portions of Stipulations 1 and 2 adopted by the Commission and indicating how the terms of each of those portions will be met.

III. AGRICULTURAL GUIDELINES FOR ENVIRONMENTAL MANAGEMENT AND CONSTRUCTION PLAN

The plan, consisting of appropriate maps, charts, illustrations, and text, shall include but need not be limited to the following features:

A. A Line Profile (at an appropriate scale) and Photostrip Map (scale 1 inch equals 200 feet minimum) showing:

1) The boundaries of any new, existing, and/or expanded right-of-way to be used; the locations of any areas contiguous to the right-of-way within which the company will obtain additional rights and their respective purposes; and the location of sites under cultivation or active agricultural use where structures, access roads, laydown areas, or wire stringing areas will be located.

2) The site-specific method by which the Applicant will apply its program to avoid the functional interruption of surface and subsurface agricultural drainage systems.

3) The specific areas where the Applicant will use vegetative management techniques designed to avoid adverse effects on farming operations, including the avoidance of herbicide spray along right-of-way through or adjacent to livestock pasture or grazing areas.

B. The Applicant's program for avoiding or mitigating the impacts of the project on the agricultural resources of the state shall be itemized by statements or documents:

1)* Describing the Applicant's program for minimizing the effects of the project on farming operations where transmission lines already exist by correlating the locations of new structures to existing structures so as to facilitate such farming operations, and in specific instances by the replacement of existing structures, or by the consolidation of the existing line with the new line on new structures and the corresponding removal of existing structures.

2)* Describing the Applicant's program component for spanning or by the use of other techniques to avoid, to the maximum extent possible, the placement of structures on crop fields or on other sites where the introduction of structures may interfere with normal farmstead operation activities in locations where the route unavoidably crosses an actively operated agricultural enterprise.

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* In addition to statements or documents which describe each of the program components, the site-specific features of components identified with an asterisk may be indicated by maps, with supplementary text as appropriate.

3)* Describing the Applicant's program component for utilization of the single-shaft structure at locations where the siting of structures is unavoidable on actively operated agricultural fields or on other locations where the introduction of structures may interfere with normal farmstead operation activities.

4) Describing the Applicant's program component for avoiding the compaction of agricultural soil through all phases of construction activity including the maximum use of public highways and other access roads enabling direct entry and exit at the right-of-way, the designation of reasonable routes by the farm operator affording temporary access, the implementation of construction equipment of an appropriate weight limit or with means of surface weight distribution which will avoid the long-term compaction of the top soil and subsoil of such land and the amendment of soils unavoidably compacted by means of deep subsoiling operations by the Applicant.

5)* Describing the Applicant's program component for maintaining the soil profile or the restoration of the soil profile on crop fields including how excess subsoil and rock, which is not used for backfill, will be removed and disposed of at locations which do not impede farming and farmland management.

6)* Describing the Applicant's program component for managing construction activities which could damage active agricultural lands during wet conditions in early spring or late fall to insure that such activities will avoid damaging such lands during wet conditions.

7) Describing the Applicant's program component for the implementation of management techniques, including, but not limited to, the use of a temporary work shut down or the use of alternate operating techniques, to maintain the integrity of the land resource when a vulnerable soil is encountered which, due to its physical character, is either subject to rutting or compaction or contains a portion of a soil drainage or erosion control system.

8)* Describing the Applicant's program component for avoiding the functional interruption, by construction and maintenance activities, of natural or manmade surface drainage systems (e.g., creeks and other natural waterways, field ditches, diversion terraces, drainage outlets, etc.) and associated access routes within the right-of-way including how surface drainage systems (e.g., diversion terraces) will not be breached.

9)* Describing the Applicant's program component for protecting subsurface drainage systems from damage during construction and operation by utilizing techniques to reduce soil compaction and possible impairment of drainage lines including restricting

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* Ibid.

access to such areas and following the completion of construction activities on such fields, how such fields will be inspected and analyzed for impaired function and prompt replacement of all impaired drain lines.

10) Describing the Applicant's program component for scheduling maintenance activities which require vehicle access over crop land to those portions of the year when crops are not in the fields.

11)* Describing the Applicant's program component for its utilization of vegetative management techniques designed to avoid adverse effects upon soils, crops, and livestock in or adjacent to the right-of-way including the avoidance of aerial spraying, the providing of advance notice of the primary and alternate schedule of vegetative management for the right-of-way through or adjacent to each respective farming operation to each such farm operator, and the avoidance of spray along right-of-way through or adjacent to livestock pasture or grazing areas including land identified by the farm owner or operator as land in active use for livestock grazing but which may not exhibit the characteristics of open grazing areas or rotation pastures because of such things as slope or the occurrence of brush or trees.

12)* Describing the Applicant's program component for use in agricultural areas immediately following construction activity for the thorough clearing of the right-of-way, especially at structural sites and respective work areas, of nuts, bolts, spikes, wire, pieces of steel and other assorted items.

13)* Describing the Applicant's program component for the maintenance, during construction, of the functions served by any farm fences and gates affected by right-of-way activity and for the restoration of such farm fences and gates to like new condition upon completion of construction.

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* Ibid.

STATE OF NEW YORK

PUBLIC SERVICE COMMISSION

Case 70126 - Power Authority of the State of New York
Marcy-South 345 kV Transmission Facilities

STIPULATION NO. 1

This stipulation resolves issues among the signing parties related to right-of-way vegetation management that have been contested in this proceeding. This stipulation recognizes that it is in the best interests of the parties to reach a negotiated agreement on these technical issues. Accordingly, condition No. 20 of Exhibit 79A is rewritten; we agree to the following wording:

"20. The applicant shall enter into negotiations with the investor-owned utilities whose rights-of-way will be paralleled or shared by the certified facilities, for the purpose of entering into agreements for vegetation management of the parallel or common rights-of-way of both utilities by either the investor-owned utility or applicant. The applicant is not prohibited from entering into agreements with the investor-owned utilities whose franchise areas will be traversed by the Marcy-South facilities for the purpose of allocating maintenance responsibilities on new, non-parallel or non-common Marcy-South right-of-way.

"By January 1, 1987, the applicant shall submit, for Commission approval, all right-of-way management agreements entered into with the investor-owned utilities.

"Where vegetation management is performed by an investor-owned utility, that utility shall employ those vegetation management techniques that are described in its Long-Range Transmission System Rights-of-Way Management Plan approved in accordance with 16 NYCRR 84.2.

"Where vegetation management is performed by the applicant, all herbicide application will conform to applicant's Generic ROW Management document and related statements by the applicant in this proceeding, with the exception of the group selective foliar technique, which will not be used. In areas where the Power Authority would have used the group selective foliar technique, the stem-foliar* technique will be used instead. The criteria for use of the stem-foliar technique are:

a) High density non-compatible vegetation or suckering species in medium to high densities are present on the site and are less than 8' tall; and

b) Compatible species (woody shrubs) do not exceed 30% of the site; and

c) The site of application is not within 50' of a water body or wetland, nor within 250' of an occupied dwelling and its appurtenances, nor within an active pasture, nor within 50'-250' of active cropland, depending on the type of crop.

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*The stem-foliar technique is defined as the close application (within 15 feet) of coarse sprays of herbicides, targeted at individual stems or clumps of non-compatible tree species. The stem-foliar application technique will be used by maintenance personnel from the ground. Where extremely difficult site conditions require the applicator to work from a vehicle, those sites will be noted in the submittal to the Commission.

"Following initial construction and each year prior to any use of the stem-foliar technique, the applicant shall submit for Commission review a list of sites proposed for such treatment. Such a list will be submitted by March 1st of each year, accompanied by maps and inventory sheets indicating

a) non-compatible vegetation cover--density, height and species composition;
b) woody shrub cover--density and species composition;
c) other important natural resource or land use conditions noted.

The Commission will either approve or disapprove each site for the stem-foliar technique within 60 days based on compliance with the criteria noted above. Unless the Commission acts within 60 days, the sites will be approved for stem-foliar treatment. If the Commission disapproves of treatment of any site by the stem-foliar technique, the applicant will be limited to the use of stem-specific techniques for that site."

Dated: December 6, 1983

STIPULATED AND AGREED

DEPARTMENT OF PUBLIC SERVICE

By _____

POWER AUTHORITY OF THE STATE OF
NEW YORK

By _____

NEW YORK STATE PUBLIC SERVICE COMMISSION

WATER QUALITY CERTIFICATION

Pursuant To: Section 401 of the Federal Clean Water Act; Article VII of the New York State Public Service Law; New York State Water Quality Standards 6 NYCRR Part 701.4.

Certification Issued To: New York Power Authority
Ten Columbus Circle
New York, NY 10019

Location of Project: Hudson River near Danskammer Generating Station (Towns of Newburgh, Orange County, and Wappinger, Dutchess County); and at Terry Brickyard in Ulster Landing, (Town of Ulster, Ulster County).

Description of Project: The dredging for this project will be done in the vicinity of the Danskammer Generating Station. A trench for a submarine cable will be dug across the Hudson River using a clamshell and will be six feet deep, 155 feet wide at the top, and 45 feet wide at the bottom. This trench will be approximately 3,800 feet long, and it is anticipated that 85,000 cubic yards of sediment material will be removed during the excavation. The trench will be backfilled with approximately 90,000 cubic yards of gravel. Dredge spoil will be removed from the site by barge and transported about 27 miles upstream

to the upland disposal site. The dredge spoil will be pneumatically pumped from the transport barges to a clay pit about 2500 feet from the Hudson River shoreline at Terry Brickyard in Ulster Landing.

Certification Expiration Date: Thirty-six months from the date of approval of the Environmental Management & Construction Plan (EM&CP).

General Conditions:

1. The Power Authority shall file in the Office of Secretary of the Public Service Commission, a Notice of Intention to commence work at least one week in advance of the time of commencement and shall also notify him promptly in writing of the completion of the work.

2. The certified work shall be subject to inspection by authorized representatives of the Department of Public Service and the Department of Environmental Conservation. The work may be ordered suspended by the Secretary of the Public Service Commnission or his authorized representative in accordance with procedures and criteria outlined in the approved EM&CP.

3. As a condition of the issuance of the certification, the Power Authority has accepted expressly, by the execution of the application, the full legal responsibility for all damages, direct or indirect, of whatever nature, and by whomever suffered, arising out of

the project described herein and has agreed to indemnify and save harmless the State suits, actions, damages, and costs of every name and description resulting from the said project.

4. Any material dredged in the prosecution of the work herein permitted shall be removed evenly, without leaving large refuse pile ridges across the bed of the waterway or floodplain or deep holes that may have a tendency to cause injury to navigable channels or to the banks of the waterway.

5. Any material to be deposited or dumped under this certification, either in waterway or on shore above the high-water mark, shall be deposited or dumped at the locality shown on the drawing hereto attached, and, if so prescribed thereon, within or behind a good and substantial berm, such as will prevent escape of the material from the disposal area.

6. There shall be no unreasonable interference with navigation by the work herein authorized.

7. That if future operations by the State of New York require an alternation in the position of the structure of work herein authorized, or if, in the opinion of the Public Service Commission, it shall cause unreasonable obstruction to the free navigation of said waters or flood flows or endanger the health, safety, or welfare of the people of the State, or loss or destruction of the natural resources of the State, the owner may be ordered by the Commission to remove or alter the structural work, obstructions, or hazards caused thereby without expense to the State; and if, upon the expiration or

revocation of this certification, the structure, fill, excavation, or other modification of the watercourse hereby authorized shall not be completed, the owners shall, without expense to the State, and to such extent and in such manner as the Public Service Commission may require, remove all or any portion of the uncompleted structure or fill and restore to its former condition, the navigable and flood capacity of the watercourse. No claim shall be made against the State of New York on account of any such removal or alteration.

8. That the State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations, undertaken by the State for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.

9. That if the display of lights and signals on any work hereby authorized is not otherwise provided for by law, such lights and signals as may be prescribed by the U.S. Coast Guard shall be installed and maintained by and at the expense of the owner.

10. All work carried out under this certification shall be performed in accordance with established engineering practice and in a professional manner.

11. This certification shall not be construed as conveying to the Power Authority any right to trespass upon the lands or interfere with the riparian rights of others to perform the certified work or as

authorizing the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the certification.

12. The Power Authority is responsible for obtaining any other permits, approvals, lands, easements, and rights-of-way which may be required for this project.

13. By acceptance of this certification, the Power Authority agrees that this certification is contingent upon strict compliance with the special conditions specified below.

Special Conditions:

1. The sedimentation basin at Terry Brickyard shall be designed and operated so as to provide for a minimum of a 24-hour holding period at all times. Storm runoff flows from areas adjacent to the basin shall be taken into consideration in designing to meet this requirement. These runoff flows shall be diverted away from the sedimentation basin to the maximum extent possible. If monitoring results show that the holding period is inadequate, the holding period shall be increased or additional treatment required.

2. Flow releases from the holding basin shall be no greater than 20 cubic feet per second and shall be controlled so as to prevent erosion of the stream channel downstream from the basin. If erosion of the stream channel is observed, these flow releases shall be further reduced to prevent erosion from occurring. A stilling basin or other flow velocity reduction device shall be constructed at the

downstream toe of the dam in order to minimize the potential for erosion in the stream channel.

3. Prior to each discharge from the basin, a representative grab sample shall be collected and analyzed for settleable solids, total suspended solids, oil and grease, and pH, as well as any additional parameter identified by the certification administrator. Samples shall be taken in the vicinity of the outlet and at the pond water depth from which the discharge flow will be withdrawn. For continuous discharges, samples will be collected and analyzed at daily intervals. No discharge from the sedimentation basin shall occur unless the criteria given in Schedule B are complied with and the following limitations are met:

Parameter	Limitation
Settleable solids	0.2 ml/l (max)
Total suspended solids	50 mg/l (max)
Oil and grease	15 mg/l (max)
pH	not less than 6.0
	not more than 9.0

If a noticeable increase in turbidity is observed in the receiving water as a result of the discharge from the basin, the discharge shall be halted until this condition is corrected.

4. Within one week of the initial discharge of dredge spoil to the containment basin, but prior to discharge of effluent from the basin, and once every 30 days thereafter, a representative grab sample of the water in the basin shall be collected. The sample shall be analyzed for the parameters and to the detection limits shown in Schedule B. A sample shall be collected from the Hudson River at the point of intake 100 feet upstream of the Ulster Landing unloading area concomitantly with the collection of the sample in the basin. This sample shall also be analyzed for the parameters and to the detection limits shown in Schedule B.

5. The results of the analyses of samples collected pursuant to special conditions numbers 3 and 4 shall be filed with the Secretary of the Public Service Commission and with the Department of Environmental Conservation within two weeks of the date of sampling. The initial sampling results shall be filed prior to the start of discharging operations from the sedimentation basin. In the event that the concentrations of the parameters tested are found to exceed any of the discharge limitations or criteria shown in Schedule B, the authorized representatives of the Department of Public Service and the Department of Environmental Conservation will be notified by telephone within 24 hours of the time of the analyses and in writing within seven days.

6. The Power Authority may petition the Secretary of the Public Service Commission for the elimination of testing for any of the water quality parameters listed in Schedule B. This petition

shall be based on the Power Authority's initial sampling and testing results as well as on any other available information.

7. The standards given in Schedule A will not be contravened at the point of discharge from the sedimentation basin to the unnamed Class "D" stream or at the point that the unnamed Class "D" stream enters the Hudson River (a Class "A" waterway) at Ulster Landing.

8. No dredged solids shall be allowed to escape from the disposal site. Dike restoration and repair will be performed at any time, as necessary.

9. Dredged material will be piped to a point at least 500 feet from the outlet of the sedimentation basin.

10. No dredging operations will be conducted between April 1 and July 15 and between December 1 and February 28 in order to protect aquatic life in the Hudson River.

11. The name, position, and qualifications of the on-site compliance supervisor shall be included in the EM&CP filing and shall be provided to Department of Public Service staff prior to construction of the disposal site. The on-site compliance supervisor is responsible for assuring that all of the conditions of this certification are complied with and that spills of dredged material are prevented during transit, off-loading, and along the pipeline.

Water Quality Certification:

Based upon a review of this project and a request for water quality certification pursuant to Section 401 of the Federal Water Pollution Control Act Amendments of 1972, Public Law 92-500 (the "Act") public notice for which has been duly given, the Public Service Commission hereby certifies that the applicant will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the Act, provided that:

1. There are no future changes in any of the following that would result in noncompliance with Sections 301, 302, 303, 306, and 307 of the Act:

   A. the project as described herein,

   B. the water quality criteria applicable to such waters, or

   C. applicable effluent limitation or other requirements, and

2. The applicable provisions of State law and regulations as well as the conditions of this certification are complied with.

Certification Issue Date: January 30, 1985

Certification Administrator: Director, Office of Energy Conservation and Environmental Planning

Address: Department of Public Service
Three Empire State Plaza
Albany, NY 12223

SCHEDULE A

The following standards are found in 6 NYCRR Part 701.4 for Fresh Surface, Class "A" and Class "D" Waters.

Quality Standards for Fresh Surface Waters

Items	Specifications
1. Turbidity	No increase except from natural sources that will cause a substantial visible contrast to natural conditions. In cases of naturally turbid waters, the contrast will be due to increased turbidity.
2. Color	None from man-made sources that will be detrimental to anticipated best usage of waters.
3. Suspended, colloidal or settleable solids	None from sewage, industrial wastes or other wastes which will cause deposition or be deleterious for any best usage determined for the specific waters which are assigned to each class.
4. Oil and floating substances	No residue attributable to sewage, industrial wastes or other wastes nor visible oil film nor globules of grease.
5. Taste and odor-producing substances, toxic wastes and deleterious substances.	None in amounts that will be injurious to fishlife or which in any manner shall adversely affect the flavor, color or odor thereof, or impair the waters for any best usage as determined for the specific waters which are assigned to each class.
6. Thermal discharges	(See Part 704 of this Title.)

Quality Standards for Class "A" Waters

Items	Specifications
1. Coliform	The monthly median coliform value for one hundred ml of sample shall not exceed five thousand from a minimum of five examinations and provided that not more than twenty percent of the samples shall exceed a coliform value of twenty thousand for one hundred ml of sample and the monthly geometric mean fecal coliform value for one hundred ml of sample shall not exceed two hundred (200) from a minimum of five examinations.
2. pH	Shall be between 6.5 and 8.5.
3. Total Dissolved Solids	Shall be kept as low as practicable to maintain the best usage of waters, but in no case shall it exceed 500 milligrams per liter.
4. Dissolved Oxygen	For cold waters suitable for trout spawning, the DO concentration shall not be less than 7.0 mg/l from other than natural conditions. For trout waters, the minimum daily average shall be not less than 6.0 mg/l. At no time shall the DO concentration be less than 5.0 mg/l. For non-trout waters, the minimum daily average shall not be less than 5.0 mg/l. At no time shall the DO concentration be less than 4.0 mg/l.
5. Phenolic Compounds	Shall not be greater than 0.005 milligrams per liter (Phenol).

Quality Standards for Class "A" Waters

Items	Specifications
6. Radioactivity	
a. Gross Beta	Shall not exceed 1,000 picocuries per liter in the absence of Sr^{90} and alpha emitters.
b. Radium 226	Shall not exceed 3 picocuries per liter.
c. Strontium 90	Shall not exceed 10 picocuries per liter.

Note 1: Refer to Note 1 under Class "AA" which is also applicable to Class "A" Standards.

CLASS "D"

Best usage of waters. These waters are suitable for secondary contact recreation, but due to such natural conditions as intermittency of flow, water conditions not conducive to propagation of game fishery or stream bed conditions, the waters will not support the propagation of fish.

Conditions related to best usage of waters. The waters must be suitable for fish survival.

Quality Standards for Class "D" Waters

Items	Specifications
1. pH	Shall be between 6.0 and 9.5.
2. Dissolved Oxygen	Shall not be less than 3 milligrams per liter at any time.

Note: Refer to Note 1 under Class "AA" which is also applicable to Class "D" Standards.

Note 1: With reference to certain toxic substances affecting fishlife, the establishment of any single numerical standard for waters of New York State would be too restrictive. There are many waters, which because of poor buffering capacity and composition will require special study to determine safe concentrations of toxic substances. However, most of the non-trout waters near industrial areas in this State will have an alkalinity of 80 milligrams per liter or above. Without considering increased or decreased toxicity from possible combinations, the following may be considered as safe stream concentrations for certain substances to comply with the above standard for this type of water. Waters of lower alkalinity must be specifically considered since the toxic effect of most pollutants will be greatly increased.

Ammonia or Ammonium Compounds	Not greater than 2.0 milligrams per liter expressed as NH_3 at pH of 8.0 or above.
Cyanide	Not greater than 0.1 milligrams per liter expressed as CN.
Ferro-or Ferricyanide	Not greater than 0.4 milligrams per liter expressed as Fe(CN)6.
Copper	Not greater than 0.2 milligrams per liter expressed as Cu.
Zinc	Not greater than 0.3 milligrams per liter expressed as Zn.
Cadmium	Not greater than 0.3 milligrams per liter expressed as Cd.

Schedule B

Parameter	Detection Limit	Criteria[1]
Oil & Grease	1.0 mg/l	15 mg/l
Total Suspended Solids	1.0 mg/l	50 mg/l
pH	0.1 pH unit	not less than 6.0 not more than 9.0
Settleable Solids	0.1 ml/l	0.2 ml/l
Cyanide	50 ug/l	100 ug/l
Iron	50 ug/l	300 ug/l
Nickel	50 ug/l	2500 ug/l
Ammonia	20 ug/l	100 ug/l
Copper	20 ug/l	50 ug/l
Chromium	10 ug/l	10 ug/l
Lead	10 ug/l	30 ug/l
Zinc	10 ug/l	145 ug/l
Phenols	5 ug/l	5 ug/l
Arsenic	1 ug/l	50 ug/l
Cadmium	1 ug/l	10 ug/l
Mercury	0.5 ug/l	2 ug/l
PCB	0.1 ug/l	1 ug/l

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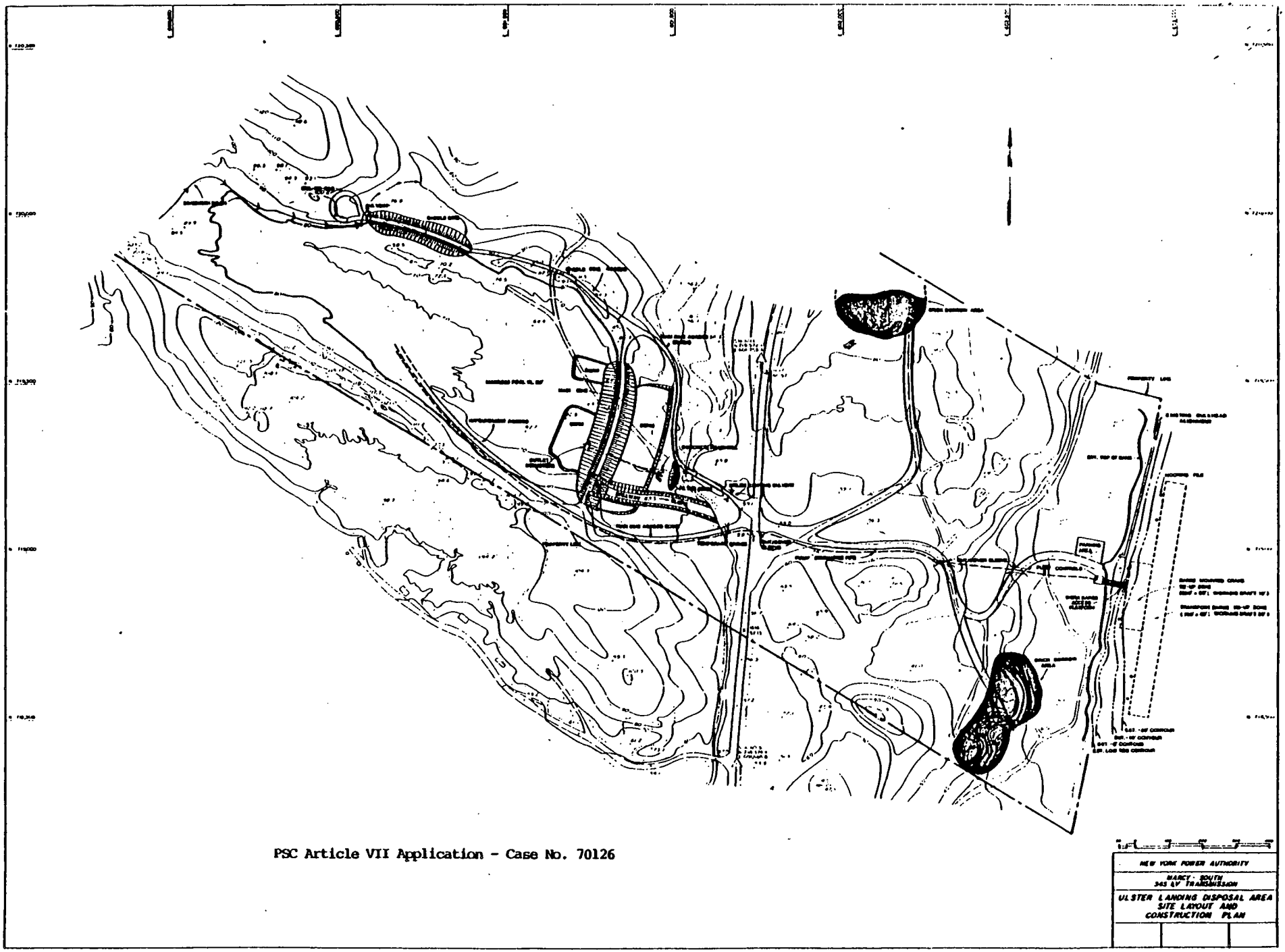
[1] In any case where the Hudson River concentration of these parameters exceeds the criteria, the concentration of that parameter in the discharge from the containment basin shall not exceed the Hudson River value by more than 10%.



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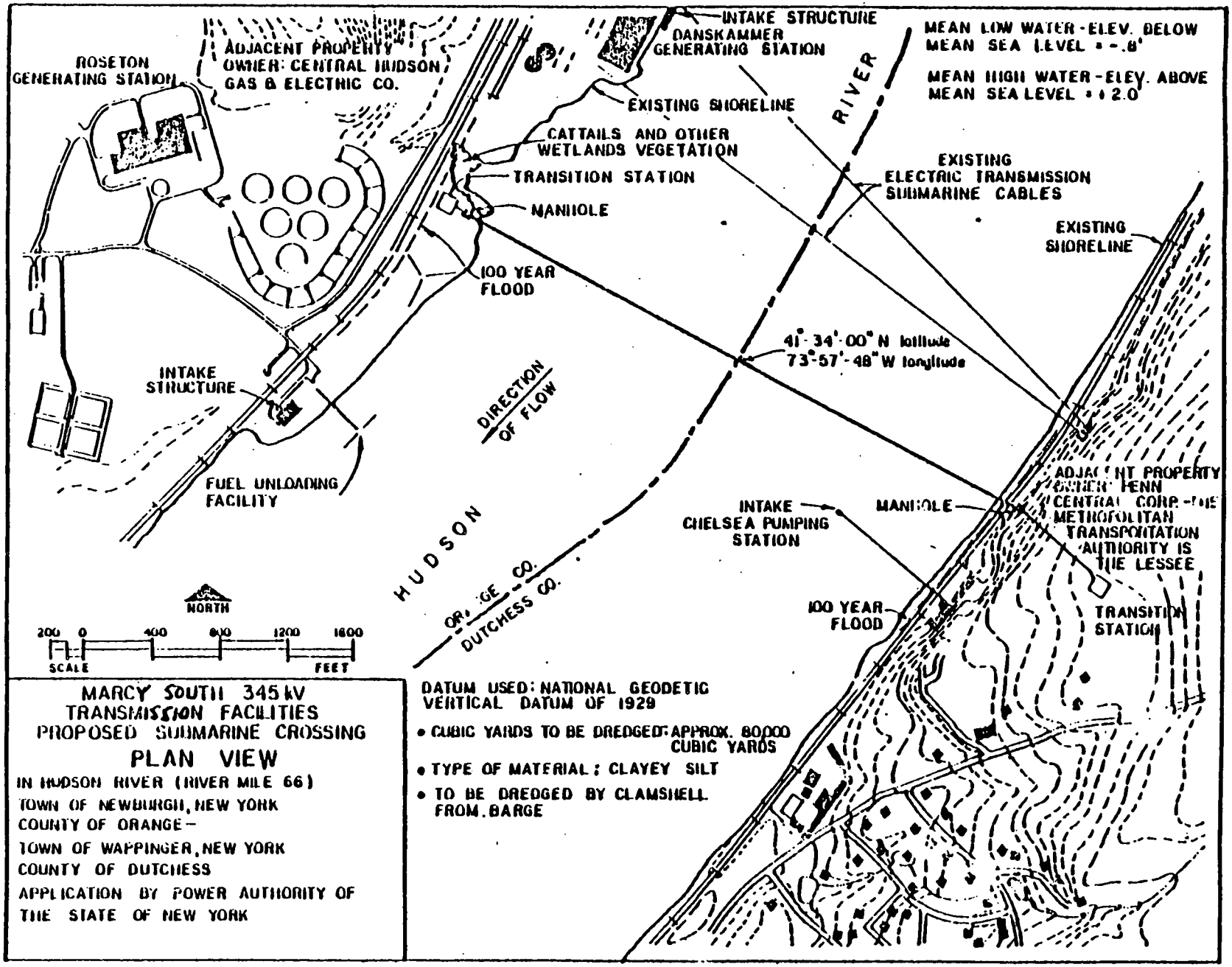

MARCY SOUTH 345 kV
TRANSMISSION FACILITIES
PROPOSED SUBMARINE CROSSING

PLAN VIEW

IN HUDSON RIVER (RIVER MILE 66)
TOWN OF NEWBURGH, NEW YORK
COUNTY OF ORANGE -
TOWN OF WAPPINGER, NEW YORK
COUNTY OF DUTCHESS
APPLICATION BY POWER AUTHORITY OF THE STATE OF NEW YORK

DATUM USED: NATIONAL GEODETIC VERTICAL DATUM OF 1929

- CUBIC YARDS TO BE DREDGED: APPROX. 80000 CUBIC YARDS
- TYPE OF MATERIAL: CLAYEY SILT
- TO BE DREDGED BY CLAMSHELL FROM BARGE

Solid Waste Management Compliance

(Under the Environmental Conservation Law Article 27, Title 7, 6 NYCRR, Part 360 and Public Service Law, Article 7)

Location of Project:
Town of Ulster, Ulster County, DEC Region 3

Description of Project:
Dredge spoil sediment disposal

I. GENERAL CONDITIONS:

1. The Power Authority shall file with the Public Service Commission and the Region 3 Office of the Department of Environmental Conservation, notices of intent to commence work at least 48 hours in advance of the time of commencement and shall also notify said offices promptly in writing of the completion of the work.
2. The on-site work shall be subject to inspection by authorized representatives of the Public Service Commission. The Commission may order the work suspended in accordance with the procedures for such actions to be submitted by the applicant, as outlined in the Environmental Management and Construction Plan (EM&CP).
3. As a condition of the acceptance of the Certificate, the applicant expressly accepts, the full, legal responsibility for all damages, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein, and agrees to indemnify and save harmless the State from suits, actions, damages, and costs of every name and description resulting from the said project.

4. All work shall conform to the approved plans and specifications set forth in the Environmental Management and Construction Plan. Any amendments must be approved by the Public Service Commission prior to their implementation, as outlined in the Certificate.
5. The Power Authority shall be responsible for obtaining any other approvals, easements, and rights-of-way which may be required for this project.
6. By acceptance of the Certificate, the Power Authority agrees to comply strictly with applicable sections of 6 NYCRR, Part 360 and the conditions contained herein. Exemptions granted by the Public Service Commission are attached hereto.

II. SPECIAL CONDITIONS

Submittals

1. Unless otherwise specified, all submittals here provided for shall be directed to the Secretary of the Public Service Commission (PSC) (Three Empire State Plaza, Albany, NY 12223) with a copy to the Department of Environmental Conservation (DEC) (50 Wolf Road, Albany, NY 12233), to the attention of the Division of Regulatory Affairs. All approvals required shall be obtained from the Public Service Commission.

2. All construction, operation and restoration plans must be submitted for review and approval as part of the EM&CP. All changes to the design and construction plans must be approved in accordance with the EM&CP revision procedure set forth in the Certification order.

3. The position and qualifications of the individual responsible for on-site compliance supervision shall be included in the EM&CP filing. The name of this individual shall be provided to Department of Public Service staff prior to construction of the disposal site.

Construction Conditions

4. The facility shall be constructed in such a manner as to control access to, and use of the facility by fencing, gates, and signs or other suitable means, as outlined in the EM&CP.

5. The Power Authority shall provide in the EM&CP site and restoration plans showing all existing and proposed grades, structures, berms, dams, discharges, drainage, haul roads, vegetation, and any other facilities to be placed on the site.

6. The Power Authority shall assure that all areas under the containment area will be underlain with clay.

7. The Power Authority shall provide a contingency plan for potential construction accidents.

8. The Power Authority shall be responsible to assure dam safety by design and monitoring, complying with the DEC Guidelines for Design of Small Dams and filing a dam safety design report in the EM&CP.

9. All surface water control structures, berms, and ditches shall be vegetated or otherwise stabilized during and after construction.

Operating Conditions

10. Discharge to surface waters will be allowed pursuant to the

conditions of the Public Service Commission's Section 401 Water Quality Certification.

11. The operations shall not cause excessive sound levels at residential locations. The sound levels shall be in accordance with the DEC solid waste guidelines.

12. Operational plans shall include a contingency plan for potential accidents during operations.

13. A minimum of two feet of freeboard shall be maintained in a containment area with an emergency spillway for a storm exceeding the ten-year, 24-hour storm when the pond is full.

Closure

14. The Power Authority shall assure the long-term safety of any dam remaining on the site.

15. The Power Authority shall restore the site to a productive state, whether it be open space, recreation, or landfill and attempt to conform with the plans of local governments. A grass or cover crop shall be established.

On-Site Water Quality Monitoring

16. To the extent possible, groundwater shall be sampled for the chemical data listed in Table A before the sediment is placed on the site.

17. To the extent possible, observation wells shall be monitored for groundwater flow and elevations prior to, during, and after filling of the sediment pond. A significant change in groundwater flow or elevation at any observation well shall require a chemical sampling as listed in Table A.

18. All chemical analyses shall be provided to both the DPS and DEC staffs on a timely basis within one month of sampling.

III. EXEMPTIONS

1. Cover (topsoil or other material) is not required at the site unless necessary to develop and maintain plant life [6 NYCRR 360.8(b)(1)(vii)].

2. Vector control, fire control, litter control and gas venting are not required for the containment area [6 NYCRR 360.8(a)(7), 6 NYCRR 360.8(a)(8) and 6 NYCRR 360.8(a)(15)].

Table A

Arsenic

Cadmium

Copper

Lead

Mercury

Nickel

Zinc

PCB

Oil and Grease

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

CASE 70126 - Application of the Power Authority of the State of New York for a certificiate of environmental compatibility and public need to construct a 345 kv transmission line from the Town of Marcy, Oneida County to the Town of East Fishkill, Dutchess County, State of New York

ANNE F. MEAD, Commissicner and ROSEMARY S. POOLER, Commissioner, dissenting:

We dissent from various portions of the majority opinion and order in this proceeding. While we agree that system reinforcement is required by the construction of a 345 kv transmission line, we disagree with the necessity for a double circuit line as well as the routing of the line as proposed by the majority.

This proceeding addresses the application filed by the Power Authority of New York to construct 130 miles of double circuit and 54 miles of single circuit 345 kv transmission lines from the Marcy and Edic substations in Marcy, Oneida County to a proposed substaticn in East Fishkill, Dutchess County, New York, as well as a submarine cable system for crossing the Hudson River and work at various substations.

The application was filed pursuant to Article VII of the Public Service Law, which requires that a certificate of environmental compatibility and public need be issued before a major transmission facility may be constructed in New York State.

On June 25, 1984, after lengthy public statement hearings and formal evidentiary hearings resulting in 12,515 transcript page and 295 exhibits, a recommended decision by Administrative Law Judges John T. Vernieu and Walter T. Moynihan was issued. In addition to the applicant, the staff of the Department of Public Service and ten intervenors presented witnesses.

This proceeding engendered very strong feelings both for and against the construction of the proposed line raising a variety of issues that require resolution. However, the basic issues to be resolved by the Commission are set forth in Section 126(1) of the Public Service Law, which requires among other things that the Commission find and determine:

(a) the basis of the need for the facility;
(b) the nature of the probable environmental impact;
(c) that the facility represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, and other pertinent considerations;
(d) in the case of an electric transmission lines, (1) what part, if any, of the line shall be located underground; (2) that such facility conforms to a long range plan for expansion of the electric power grid of the electric systems service this state and interconnected systems, which will serve the interests of electric system economy and reliability.[1]

In analyzing the need for the facility the Administrative Law Judges based their decision primarily on the economic benefits that would result from the construction of the line. They found that a double circuit line would be preferable based upon their conclusion as to economic benefit. The linchpin of their argument is that the Hydro-Quebec contract would be cancelled if a single circuit line were constructed. On this basis the Administrative Law Judges used MAPS runs that incorporated the assumption that the Hydro-Quebec Energy Contract would only be in force for the double circuit configuration. These MAPS runs showed a significant economic advantage for the double circuit compared to the single circuit. The majority has properly rejected this position by choosing not to rely on cancellation of the Energy Contract and relies instead on the additional benefits of the double circuit line in the period beyond the existing contracts. We dissent from the majority's position on the economic benefits of the double circuit line.

To reach the conclusion that the double circuit is preferable, the majority relied on benefits beyond the terms of the existing contracts. We believe the Judges were correct in their finding that predicting longer term savings beyond the contract terms were too speculative and involved numerous assumptions such as the price of Canadian imports in the years 2000 to 2006, whether or not Canadian surplus will be available during that period; the location of future generation units within New York State; curtailment of

[1] Section 126(1), Article VII, Public Service Law.

construction by Canada, which could reduce potential surpluses; and purchase of Canadian imports by other systems, which could curtail access to remaining surplus energy.

In addition, the single circuit line is cheaper to build than the double circuit facility. It costs $497 million to build the single circuit as opposed to $708 million to build the double circuit. If one uses the term of the contract as the study period -- which we advocate, given the above problems in speculating beyond the contract term -- the economic advantage of the single circuit is greater than that associated with the double circuit, i.e., annual net savings of $1,412 million with a single circuit and only $1,261 million with the double circuit.

Finally we acknowledge that the second circuit would be useful for 15 percent of the time, to take all of the economic power available from Canada under the present NYPA contracts. However, we don't believe that spending another $211 million for a second circuit, just to save an additional $61 million over the contract period,[2] is worthwhile, particularly given the increased environmental impact. The majority's decision to certify a double circuit facility is an example of believing that bigger is better. You would think that by now Shoreham and Nine Mile II would have taught us that spending more to get less doesn't build a sound future. It only gets us a future filled with costly problems.

Based on the above it is obvious that the economic benefits of the single circuit line outweigh those of the double circuit line during the contract period.

Turning to the issue of reliability, the majority has adopted the Judges' findings that the double circuit line would offer greater reliability, flexibility and diversity to the state system.

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2 Since the contract covers the period from 1984 to 1997 and it is going to take time to build this line, the additional savings are likely to be much smaller.

While no one denies that the single circuit line can always be operated to meet the stability criteria of the New York Power Pool, it is obvious that additional circuits would increase reliability. The question is whether they are necessary. Staff has properly argued, in our view, that a single circuit reinforcement is sufficiently reliable for the purposes required, and the evidence bears this out. The majority is relying on system benefits that are redundant and unnecessary, and these benefits do not outweigh the proven economic and environmental advantages of the single circuit line.

The Power Authority has raised the issue of the need for an additional circuit in the future should a single circuit be certified. It faults staff for not relying on the Commission's dictum in Opinion 72-2 in the Southern Tier proceeding (Case 25845). But staff has properly disposed of this red herring in its Reply Brief on Exceptions, and we concur in staff's conclusions, for not one of the witnesses in this case indicated any need for additional capacity. Moreover, if such a capacity need had been developed, then the alternative of end use conservation would have to be evaluated. As we noted last May, it is likely that energy conservation will be even "...more economically attractive in the future -- as the need for more transmission and generation capacity develops."[3] There is no justification on the record for a second circuit because of capacity need, which has no relationship to the need for economy energy.

The Power Authority has raised the spectre of blackouts and brownouts if the double circuit line is not constructed. Once again the Authority is attempting to terrorize instead of rationalize. We should not be stampeded into a double circuit line because of the "blackout baloney," as staff refers to it, promulgated by the Authority.

We are mindful of the benefits to be derived from the reinforcement of the transmission system whether it is single or double circuit. However, we believe the extent of the benefits of the Marcy-South line have been

3 Case 28223, Proceeding to Inquire into the Benefits to Ratepayers and Utilities from Implementation of Conservation Programs that will Reduce Electric Use, Opinion No. 84-15 (issued May 21, 1984), mimeo p. 74.

mischaracterized by the Power Authority. It is true that the overall monetary benefits appear substantial, but it is equally true that individual savings to consumers are miniscule. A LILCO residential customer using 500 kwh per month will realize savings of only $12.36 annually. Similar savings will be had by other ratepayers in New York State. The Marcy-South line is not the panacea of downstate consumers' high energy costs as suggested by those favoring the line. The savings provided by a line, single or double circuit, pall in light of the monumental costs that ratepayers statewide will endure if and when Nine Mile II and/or Shoreham go into operation.

We turn now to the most important issue in our view, which is the environmental impact of the double circuit line, whether it be on the primary route or the route devised by the majority.

Everyone in this case -- including the Power Authority -- agrees that a single circuit line will impose the least adverse environmental impact. It is easy to see why agreement was reached on the environmental impact. The single circuit project would avoid 45.4 miles of construction, and would remove the most important environmental issue in the entire case: how to get through or around the Catskill Park and its associated forest preserve lands. Furthermore, the single circuit line would use transmission structures that are in scale with their landscape and tree cover and therefore can be sited in a manner that will minimize their visual intrusion. The most common single circuit structures are likely to be wood H frames that are, in general, 77 feet tall. In contrast, the double circuit facility would require steel transmission structures (mostly lattice) that will loom up wherever they are placed in the landscape; the typical double circuit structures are likely to be 144 feet tall.

Perhaps the most telling statement on the environmental superiority of the single circuit line is that of the Administrative Law Judges:

> The Judges have also concluded, supra, that there is shown upon this record a demonstrable environmental superiority for a single-circuit facility constructed upon the so-called Modified Primary Line Routing, as opposed to a double-circuit facility (Marcy-South) upon the same line routing. It is obvious, and not a subject of

> contention, that no matter to what extent the Primary Route is or may be configured, a double-circuit facility will have significantly more adverse environmental impact than a single-circuit one.[4]

In our judgement the project should be single-circuit and constructed on the Primary Route. That would represent the least environmental impact considering the state of available technology and the nature and economics of all of the alternatives dealt with in this case.

4 Case 70126, Recommended Decision issued June 25, 1984, pages 339 and 340.

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