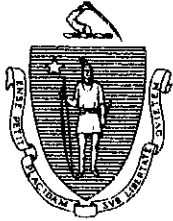


DECISIONS AND ORDERS
MASSACHUSETTS ENERGY FACILITIES SITING COUNCIL
VOLUME 1

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THE COMMONWEALTH OF MASSACHUSETTS

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TABLE OF CASES

In the Matter of:

	Page
Massachusetts Municipal Wholesale Electric Company, 76-1....	1
Northeast Nuclear Energy Company, 76-43.....	20
Massachusetts Electric Company <u>et al.</u> , 76-24.....	21
Berkshire Gas Company, 76-29.....	24
Massachusetts Municipal Wholesale Electric Company, 76-1....	52
Boston Edison Company, 76-12.....	63
New Bedford Gas and Edison Light Company, 76-4.....	70
Commonwealth Gas Company, 76-5.....	72
Hopkinton LNG Corporation, 76-6.....	74
New Bedford Gas and Edison Light Company, 76-7.....	75
Fall River Gas Company, 76-20.....	77
Holyoke Gas and Electric Department, 76-23.....	79
Fitchburg Gas and Electric Light Company, 76-11.....	87
Massachusetts Municipal Wholesale Electric Company, 76-1....	101
Algonquin Gas Transmission Company, rulemaking.....	108
Boston Edison Company, 76-12.....	112
Boston Gas Company, Massachusetts LNG, Inc., 76-25.....	117
Middleborough Gas Department, 76-18.....	122
Westfield Gas and Electric Light Department, 76-26.....	129
Boston Edison Company, 76-12.....	134
Cape Cod Gas Company, 76-19, 77-19.....	150
Massachusetts Municipal Wholesale Electric Company, 76-1....	154

	Page
New England LNG Company, Inc., 76-14.....	164
Amendment to EFSC Reg. chapter F.....	214
Cambridge Electric Light Company, 76-4.....	221
Northeast Utilities System, 76-17.....	227
Northeast Utilities System, 76-17.....	234
Athol Gas Company, 76-38, 77-38.....	238
Groveland Electric Light Department, 76-39.....	242
Haverhill Gas Company, 76-15, 77-15.....	246
Lowell Gas Company, 76-16, 77-16.....	252
Bay State Gas Company, 76-13, 77-13.....	259
Wakefield Municipal Light Department, 76-2.....	264
Rowley Municipal Lighting Plant, 76-47.....	270
Merrimac Municipal Light Department, 76-46.....	272
Russell Municipal Light Department, 76-31.....	275
Chester Municipal Electric Light Department, 76-30.....	278
Braintree Electric Light Department, 76-32.....	281
Concord Municipal Light Plant, 76-45.....	284
Fitchburg Gas and Electric Light Company, 77-11.....	287
Ware Gas Company, 76-44, 77-44.....	297
Blackstone Gas Company, 76-42, 77-42.....	299
Wellesley Municipal Lighting Plant, 76-40.....	302
Norwood Municipal Light Department, 76-41.....	305
Massachusetts Municipal Wholesale Electric Company, 77-1....	308
Eastern Utilities Associates, 76-33.....	312
Eastern Utilities Associated, 77-33.....	320
New Bedford Gas and Edison Light Company, 76-4.....	327
Berkshire Gas Company, Interim Order, 76-29A.....	335

In the Matter of the Massachusetts
Municipal Wholesale Electric Company, et al.
1 DOMSC 1 (August 6, 1976)

Docket: EFSC #76-1

Petition of the Massachusetts Municipal Wholesale Electric Company and twenty-eight municipal light departments for approval of a joint long-range forecast.

APPEARANCES: Maurice J. Ferriter, Esq.,
and Michael J. Lukakis, Esq.,
of Holyoke, Massachusetts,
for the Petitioners.

The Massachusetts Energy Facilities Siting Council hereby approves the first long-range forecast submitted by the Massachusetts Municipal Wholesale Electric Company and 28 municipal light departments, subject to certain conditions.

Background

The Massachusetts Municipal Wholesale Electric Company and municipal light departments (hereinafter, the Massachusetts Municipal Wholesale Electric Company shall be called MMWEC, the 28 municipal light departments shall be called the Municipals, and MMWEC and the Municipals together shall be called the Petitioners) filed with the Massachusetts Energy Facilities Siting Council (hereinafter called the Council) a long-range forecast including projections of demand for electricity and plans to meet such demand (hereinafter called

the Forecast)¹.

After due notice an informational hearing was held on June 8, 1976, in Ludlow and an adjudicatory proceeding (hereinafter called the Proceeding) was commenced in Boston on July 1, 1976. A second hearing in the Proceeding was held in Boston on July 23, 1976. Although the Proceeding has not yet concluded, Petitioners moved at the close of the July 23 hearing for approval of the Forecast. Petitioners stated that approval might enable them to obtain a more favorable interest rate for bonds to be issued in August 1976.

1. Two separate long-range forecasts were combined to make up the Forecast. The first, a joint forecast by MMWEC, the Ashburnham Municipal Light Plant, the Belmont Municipal Light Department, the Boylston Municipal Light Plant, the Chicopee Municipal Lighting Plant, the Danvers Electric Department, the Hingham Municipal Lighting Plant, the Holden Municipal Light Department, the Holyoke Gas and Electric Department, the Hudson Light and Power Department, the Littleton Electric Light and Water Department, the Mansfield Municipal Light Department, the Marblehead Municipal Light Department, the Middleborough Gas and Electric Department, the Middleton Municipal Light Department, the North Attleborough Electric Department, the Paxton Municipal Light Plant, the Peabody Municipal Light Plant, the Reading Municipal Light Department, the Shrewsbury Electric Light Plant, the South Hadley Electric Light Department, the Sterling Municipal Electric Light Department, the Templeton Municipal Lighting Plant, the Wakefield Municipal Light Department, the West Boylston Municipal Lighting Plant, and the Westfield Gas and Electric Light Department, was filed on April 15, 1976, along with a petition for approval; the filing commenced a proceeding designated EFSC #76-1. The second, a joint forecast by MMWEC, the Georgetown Municipal Light Department, the Groton Electric Light Department, and the Ipswich Municipal Light Department, was filed on June 4, 1976, along with a petition for approval; the filing commenced a proceeding designated EFSC #76-35. Upon motion by the Petitioners, the Council combined the two proceedings into a single proceeding designated EFSC #76-1.

The Forecast is divided into a projection of demand for electricity (hereinafter called the Demand Projection) and a statement of supply plans (hereinafter called the Supply Plan) for the years 1975 through 1985. The Demand Projection predicts that the demand for electricity of the 28 Municipals² will increase at the following rates:

	1975	1985	Annual Compound Growth Rate
Total Annual Sales ¹ (megawatts-hours)	2,841,126	4,833,040	5.5%
Peak Summer Demand ² (megawatts)	544	916	5.4%
Peak Winter Demand ² (megawatts)	566 ³	936 ⁴	5.2%

1. Includes losses and use by Petitioners.
 2. Demand figures are non-coincident for 28 Municipals.
 3. Peak for the winter of 1975 - 1976.
 4. Peak for the winter of 1985 - 1986.
-

The Supply Plan states that the Petitioners propose to increase their generating capacity from 191 megawatts (Mw)

2. MMWEC does not presently buy, sell or produce electricity; it serves as an agent of the Municipals to facilitate joint sales, joint purchases and joint construction of facilities. The Forecast assumes that MMWEC will not sell at retail through 1985. The Demand Projection predicts retail sales of electricity within the service areas of the 28 Municipals and wholesale sales by the Ipswich Light Department to the Rowley Lighting Plant. Rowley is an all-requirements customer of Ipswich under an annual contract due to expire on March 1, 1977. The Forecast assumes that the contract will be renewed at least through 1985. This decision constitutes an approval of the projections of both retail and wholesale sales by Ipswich, one of the 28 Municipals. The decision does not however, constitute an approval of a projection of retail sales by Rowley, which is not one of the 28 Municipals.

in 1975 to 1,091 Mw in 1985 as follows:

Existing Capacity ¹	190.52 Mw
Planned Units Under 100 MW ²	187.91 Mw
Planned Units in Other States ³	161.3 Mw
Proposed Facilities ⁴	560.57 Mw
Planned Retirements	<u>(9.5 Mw)</u>
Total Capacity Planned	1,090.8 MW

-
1. Includes small units and small shares of larger units.
 2. Of this total 5.41 Mw should have been included in the next two categories.
 3. Of this total, 6.77 Mw in Pilgrim 2 should have been included in the next category.
 4. Includes a 30 Mw downward adjustment made elsewhere in the Forecast.
-

The Forecast states that the 1,090.8 Mw of capacity would be insufficient to meet the predicted demand and provide a necessary reserve margin. It states that 156.14 Mw of firm wholesale power should be purchased in 1985 by the Municipals from other utilities in order to insure adequate capacity.

On the basis of evidence presented to date, it appears that certain adjustments may be made in the above schedule of capacity planned. A witness for the Petitioners stated that they intend to purchase an additional 165 Mw in shares in Pilgrim 2 and Millstone 3. The witness also stated that the scheduled completion date for the Sears Island 1 nuclear plant has been slipped until after 1985. The Forecast includes 180 Mw of generating capacity proposed to be completed at Ludlow in 1984³. The forecast provides no details, nor has

3. This 180 Mw is in addition to the 390 Mw of fossil-fueled generation proposed to be completed in Ludlow in 1981 and 1982.

any evidence been introduced to support the proposal of the 180 Mw. Therefore, the following modifications are made in the Plan, subject to further modifications as a result of future hearing sessions:

Total Capacity Planned from Forecast	1,090.8 Mw
Additional Pilgrim 2 and Millstone 3	165.23 Mw
Delay of Sears Island 1	(50.38 Mw)
Delay of Unidentified Ludlow Capacity	<u>(180 Mw)</u>
Adjusted Total Capacity Planned	1,025.65 Mw

The Petitioners plan to issue between \$50 and \$75 million in bonds in August 1976. Most of the proceeds would be used to finance part of the Petitioners' participation in Pilgrim 2, Millstone 3, Seabrook 1 and Seabrook 2. All are major nuclear plants planned to be completed between 1981 and 1983; only Pilgrim 2 is proposed to be built in Massachusetts. The remainder, about \$5 million, would be used to finance part of the Petitioners' participation in Montague 1, Montague 2, Charlestown 1, Charlestown 2, and Sears Island 1. All are major nuclear plants planned to be completed between 1984 and 1988; the Montague units are proposed to be built in Massachusetts.

The Petitioners have moved that the Council approve the Demand Projection and approve that part of the Supply Plan which involves the purchase of shares of nuclear plants.

Authority to Issue an Approval Subject to Conditions.

General Laws, Chapter 164, Section 69J, provides the authority for the Council to approve a long-range forecast.

It also authorizes the Council to "reject in whole or in part the long-range forecast setting forth in writing its reasons for such rejections, or approve the long-range forecast subject to stated conditions." In this Proceeding the Council could approve the forecast in part, or it could approve it subject to conditions relating to the remainder of the Supply Plan.

It should not become a common practice for the Council to issue partial or conditional approvals prior to consideration of all parts of a long-range forecast. In this proceeding, however, the Council is faced with uncommon circumstances. Because this is the first year of forecast review by the Council, some long-range forecasts include proposals which the Council must review quickly in order to avoid delays. In future years the Council will have a longer lead time to review supply plans. The position of the Petitioners is unique. Because of reduced growth, most electric utilities have recently delayed or cancelled plans to construct or acquire new generating capacity. The Petitioners, however, have embarked upon a program intended to take them from primary reliance upon wholesale power purchases from other companies to self sufficiency. Delay until all elements of the program are fully reviewed might impose unnecessary economic penalties upon the Petitioners.

It is both within the Council's authority and appropriate to issue an approval subject to conditions in the Proceeding.

The Projection of Demand

The Petitioners have utilized a unique methodology to forecast demand for electricity. A separate forecast was prepared for each of the 28 municipal systems. The four most

important determinants of the projected sales are, in order, (1) the judgments of the managers of each of the Municipals, (2) a moderately detailed forecasting algorithm, (3) historical trends, and (4) occasional judgments by MMWEC.

Reliance upon the collective opinions of individuals who are intimately familiar with localities have proven to be an effective method for producing forecasts for larger areas. The Los Angeles Department of Water and Power is reported to have had good experience with electricity forecasts based upon a poll of local managers.

In the Demand Projection by MMWEC and the 28 Municipals, the mistakes or biases of any individual municipal manager have little effect upon the overall results and may be offset by the mistakes or biases of another. The greatest strength of the Petitioners' methodology is the dispersal of assumption making. Dispersal is not necessarily good in the abstract. In this Proceeding, based upon evidence presented by the Petitioners and based upon the resulting projections, the Council concludes that dispersal has worked well. Review of detailed questionnaires and worksheets for individual municipals has found no evidence of any consistent bias on the part of the managers or of MMWEC.

The forecasting algorithm considers separately the major customer classes of each municipal. It further considers individually the largest industrial or commercial customers of each municipal. It also attempts to forecast separately the demand for air conditioning and electric space heating.

Separate forecasts are made for each customer, customer class, and temperature-sensitive use. Those separate forecasts are then combined to produce a total forecast for each municipal. The forecasts of the 28 municipals are further combined to produce the total Demand Projection of the participants. In effect, 200 or 300 separate forecasts are combined to produce a total forecast.

The Council might consider the Petitioner's algorithm inadequate for a larger utility or for a forecast not based upon the independent judgments of a large number of local experts. For MMWEC and the 28 Municipals it appears to be perfectly suitable. In fact, a more complex or sophisticated algorithm might tend to counteract the benefits of relying upon the experience of local managers.

At several important points, the forecasting algorithm relies upon extrapolation from historical trends. Although total reliance upon recent trends, once a widespread methodology for utility forecasting, has been discredited, all other methodologies make some use of historical data.

The Petitioners' general approach was to take data for the years from 1971 through 1974, to adjust the data for 1973 and 1974 upward to compensate for the past effects of conservation, to project future growth on the basis of the adjusted historical trend, and to adjust the forecast figures downward to compensate for the future effects of conservation. Implicit in this approach is the assumption that to rely upon the low growth between 1971 and 1974 would lead to underforecasting.

The Petitioners' witnesses indicated that for most municipals the assumption was made that the effects of conservation would decline in future years - in other words that there will be less energy conservation in the future than now. On its face this assumption would be difficult for the Council to accept without much stronger evidence than the Petitioners presented. Energy conservation is rapidly becoming a major governmental policy and will probably be given greater attention in future years. It is also probable that as businesses and individuals buy more efficient electrical equipment, the long-term effect of recent electric price increases upon demand will exceed the short-term impact.

Petitioners' projections are, however, not necessarily inconsistent with an assumption of increased conservation. A witness stated that only use decisions, such as to change thermostat settings, were taken into account in adjusting historical trends. It is not unreasonable to argue that there may be some reduction in this type of conservation. The witness indicated that capital investment decisions, such as to purchase an efficient air conditioner or to add insulation, are accounted for implicitly elsewhere in the forecasting algorithm. He also stated that the possibility of implementation of load management, a factor which would reduce the growth of peaks, and the possibility of a federal policy favoring conversion to electricity, a factor which would increase growth, were taken into account implicitly. The Petitioners' methodology makes it very difficult to determine exactly where and how such implicit assumptions

are used. However, it is clear from the resulting forecast rates of growth that they are taken into account, probably primarily in assumptions made by individual managers, and that their net effect is to reduce predicted growth rates.

At certain points in the forecasting algorithm for some, but not all, municipal departments, MMWEC exercised independent judgment and indicated to managers that it thought some other assumptions appropriate. It appears from testimony by Petitioners' witnesses that MMWEC suggested such adjustments sparingly. It is entirely appropriate that someone with an overview and with independent knowledge should propose selectively to modify the managers' assumptions.

The methodology used to produce the Demand Projection has weaknesses. One is that MMWEC may have been excessively reluctant to adjust assumptions made by managers. For example MMWEC accepted uncritically assumptions that between 10 and 20% of the electricity sold annually by some municipals was used for air conditioning. This is so far above the norm for New England as to be improbable at best. Those assumptions, however, probably have very little impact upon the results of the forecast. In fact, if MMWEC played a more active roll and relied less upon managers' assumptions, the overall quality of the forecast might be reduced rather than increased. As mentioned above, the dispersal of assumption making is a considerable virtue in this Demand Projection.

Another weakness is that the forecasting algorithm is used only through 1980. After that year the projections for

each municipal are based upon straight-line extrapolation. While this approach might not be acceptable from a utility which is not forecasting on a geographically disaggregated basis, the Petitioners' disaggregation probably causes any resulting errors to offset each other to a large extent.

From the Council's point of view the dispersal of assumption making presents some problems. Because no single assumption has a significant impact upon the resulting Demand Projection, it is difficult to identify crucial variables and to test the effect of modifying them. For the Council to determine exactly what lies behind the Petitioners' Demand Projection requires a great deal of staff work and an extensive and intensive hearing.

The Council has performed sufficient analysis and conducted a hearing sufficient to satisfy itself. It has investigated the Petitioners' methodology and algorithm. It has inquired as to the general nature of the assumptions made, and has examined some specific assumptions in detail.

The highly subjective nature of the Demand Projection lends itself to subjective review rather than objective. The Council is able to approve the Demand Projection without review of every assumption, because the methodology appears reasonable and, most importantly, because the results appear reasonable. If the same methodology produced a forecast for Petitioners with a compound growth rate of 3% or 7% per year, it would merit much closer scrutiny, if not outright disapproval.

The Petitioners introduced evidence to show that in Massachusetts sales by municipal light departments have grown

at a faster rate than sales by the investor-owned utilities who serve the great majority of the state's consumers. Following are annual retail sales figures for all electric utilities in Massachusetts:

	1965	1974	Annual Compound Growth Rate
Municipals	<u>1,843,654 MWH</u>	<u>3,531,503 MWH</u>	<u>7.5%</u>
Investor Owned	14,684,000 MWH	25,800,000 MWH	6.5%

The higher growth rate of municipals was attributed by a witness for Petitioners to the predominance of suburban and smaller communities among the municipals. It was stated that the larger cities in the service areas of the investor-owned utilities generally have slower growth than other communities. It was testified that the municipals should continue to grow at a faster rate. It was further testified that the differential might be reduced as a result of economic recovery and higher sales to the industrial customers of investor-owned utilities. The growth figures for the period from 1965 through 1974 are for all 40 municipal light departments. The witness testified that the 28 Municipals which joined the Forecast are representative of all 40. The 28 Municipals had 73% of all sales by the 40 municipals in 1974.

Petitioners' projected growth rates of 5.5% per year for annual sales, 5.4% for the summer peak and 5.2% for the winter peak, when one takes into account their history of higher than average growth, appear to be consistent with statewide growth rates for all electric utilities of about 4.5%. The Council finds the Demand Projection to be reasonable and hereby approves it.

Construction of Nuclear Capacity

The Petitioners propose to purchase shares in some nine nuclear generating plants now under construction or planned to be constructed in New England. Following are the shares in six plants which MMWEC proposes to purchase:

<u>Plant</u>	<u>Planned Completion Date</u>	<u>Total Capacity</u>	<u>Petitioners' Share</u>	
Seabrook 1	1981	1,150 Mw	2.54 Mw	0.2%
Millstone 3	1982	1,150 Mw	55.324 Mw ¹	4.8%
Pilgrim 2	1982	1,180 Mw	158.284 Mw ²	13.4%
Seabrook 2	1983	1,150 Mw	2.54 Mw	0.2%
Charlestown 1	1984	1,150 Mw	47.14 Mw	4.1%
Sears Island	1986	1,150 Mw	50.38 Mw	4.4%
Total		6,930 Mw	316.22 Mw	4.6%

1. According to a witness, includes 18.44 Mw expected to be purchased from shares of other participants put up for sale.
2. According to a witness, includes 146.79 Mw expected to be purchased from shares of other participants put up for sale.

Proposed shares for Montague 1 (1986), Charlestown 1 (1986) and Montague 2 (1988) have not been stated by the Petitioners. Since the Forecast covers the period through December 31, 1985, Montague 1 and 2, Charlestown 2 and Sears Island 1 are outside the scope of this proceeding. The Council makes no finding in regard to those four plants.

It appears that the Petitioners now propose to purchase 265.84 Mw in Seabrook 1 and 2, Millstone 3, Pilgrim 2, and Charlestown 1. Since the proposed shares have changed and may change again, the Council, for purposes of this decision, will

treat Petitioners' motion as a motion for approval of the acquisition of up to 300 Mw in the said five nuclear plants.

Most of the proposed nuclear capacity (165.23 Mw) is expected to be available as a result of sales of approximately 740 Mw in shares of Seabrook 1 and 2, Millstone 3, and Pilgrim 2, which shares are currently or were previously owned by Northeast Utilities Service Company and United Illuminating Company. The 740 Mw was put up for sale when the two utilities found themselves with too much generating capacity. Other participants in the four plants have been given priority in the sales. The shares for sale in Seabrook 1 and 2 and Millstone 3 have been oversubscribed; as a result the Petitioners have been able to purchase no additional capacity in Seabrook 1 and 2 and only a limited amount of additional capacity in Millstone 3. The shares for sale in Pilgrim 2 were undersubscribed; the Petitioners believe that they will be able to buy 146.79 Mw, most of the capacity for sale. The other participants who oversubscribed the shares of three plants and undersubscribed the shares of Pilgrim 2 are generally the major investor-owned utilities in New England. Petitioners' witness was unable to explain why those major utilities show a preference for the other three plants over Pilgrim 2.

Two important procedural issues are faced by the Council for the first time in reviewing the Petitioners' plans to purchase shares of nuclear plants. The first is the question of the extent to which the Council will examine a facility proposed to be built in Massachusetts in the context of a

proceeding concerning the forecast of a co-owner which is not the lead company. The second is the question of the extent to which the Council will examine a facility proposed to be built in another state.

In this Proceeding Petitioners seek approval of plans to purchase a minority share of Pilgrim 2. Boston Edison, the lead company for Pilgrim 2, has claimed in its first long-range forecast (docket EFSC #76-12) that Pilgrim 2 is exempt from Council jurisdiction under the grandfather clause, Section 15 of Chapter 617 of the Acts of 1975. The Council will have a full opportunity during the Boston Edison proceeding to consider the claim of exemption and, if jurisdiction is asserted, to review the plans for Pilgrim 2. Therefore the Council determines that in the context of this Proceeding there is no reason to consider the merits of the claim of exemption or the merits of Pilgrim 2. It is sufficient for the Council to determine that the Petitioners do indeed intend to purchase 158 Mw in Pilgrim 2 and are able to do so.

The question of the extent to which the Council should examine plans to purchase shares of plants outside Massachusetts or to build wholly owned plants outside Massachusetts is not so easily answered. In the case of Seabrook 1 and 2, for example, the Council may not even have jurisdiction over the Public Service Company of New Hampshire, the lead company. Therefore if the Council desires to review plans for Seabrook 1 and 2, it may be able to do so only in the context of a proceeding such as this one.

The important question of Council review of out-of-state facilities has not been raised in this Proceeding by any party or by the Council. If it had been raised, the Council would have to determine the extent of its authority to conduct such a review and the desirability of conducting it. The Council herein determines that the Petitioners do intend to purchase 108 Mw in Seabrook 1 and 2, Millstone 3, and Charlestown 1 and are able to do so. In light of that determination and without prejudice to its right and power to review in any future proceeding the merits of any facility proposed to be built outside of Massachusetts, the Council approves the Petitioners' plans to purchase shares of four nuclear plants outside of Massachusetts.

The Council hereby determines that the part of the Supply Plan which involves the purchase of up to 300 Mw in Seabrook 1 and 2, Millstone 3, Pilgrim 2, and Charlestown 1 is approved.

The Stated Conditions

The Forecast is approved subject to the stated condition that further hearings be held and further information provided by the Petitioners concerning matters included in the Forecast but not expressly approved by this decision. This decision approves the Demand Projection in entirety and the Supply Plan in part.

No determination is made at this time concerning the Petitioners' proposal to construct at Ludlow 270 Mw of fossil-fueled combined-cycle generating capacity, 120 Mw of fossil-fueled combustion-turbine generating capacity, and a

345 kilovolt transmission line. No determination is made concerning the Petitioners' proposal to purchase small shares of fossil-fueled steam-cycle generating plants within or outside of New England. No determination is made concerning Petitioners' plan to construct generating units with a capacity less than 100 Mw.

Findings

The following findings are hereby made pursuant to the Petitioners' requests:

(1) All information in the long-range forecast relating to current activities, environmental impact, facilities agreements and energy policies as adopted by the Commonwealth is substantially accurate and complete.

(2) Projections for demand for electric power and of the capacities for existing and proposed facilities are based on substantially accurate historical information and reasonable statistical projection methods.

(3) Projections relating to service area; facility use and pooling or sharing arrangements are consistent with such forecasts of other companies subject to Chapter 164 as may have already been approved, and reasonable projections and activities of other companies in the New England area.

(4) MMWEC's financing schedule required Council action prior to the date of the hearing to question MMWEC's witnesses regarding its Phase I units.

(5) The publication of notice and service of notice of the filing of the long-range forecast and supplement thereto

In the Matter of the Northeast Nuclear Energy
Corporation, the Hartford Electric Light Company, the
Connecticut Light and Power Company, and the
Western Massachusetts Electric Company
1 DOMSC 20 (October 18, 1976)

Docket: EFSC #76-43

Order

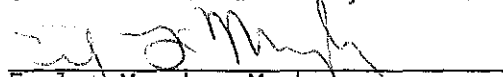
The Energy Facilities Siting Council has received a petition from the Attorney General for determination of Council jurisdiction pursuant to Rule 62.10 and C.617, S.15 of the Acts of 1975.

The Council hereby agrees to hear this petition and orders that an adjudicatory proceeding be commenced for determination of Council jurisdiction over the Montague Nuclear Power Station Units 1 and 2 proposed by the Northeast Nuclear Energy Corporation, et. al.

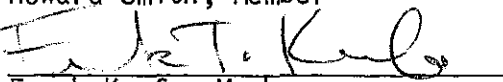
The first hearing session is ordered to be held November 1, 1976 at 10 A.M. in Room 2105, One Ashburton Place, Boston, MA 02108. Notice is hereby ordered to be given by publication and by mailing to the Council mailing list.

,By Order of the Energy Facilities Siting Council

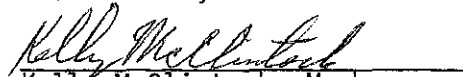

Christine B. Sullivan, Chairman

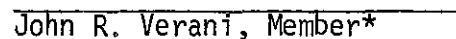

Evelyn Murphy, Member


Howard Smith, Member


Frank Keefe, Member


David Marks, Member


Kelly McClintock, Member


John R. Verani, Member*

Because approval of this forecast is a matter related directly to the electric industry and not a matter related directly to the gas industry, General Laws, Chapter 164, Section 69H, provides that Mr. Verani, the member experienced in matters directly related to the electric industry, is entitled to a full vote and that Robert Pindyck the member experienced in matters directly related to the gas industry, is entitled to no vote.

In the Matter of the Massachusetts Electric Company et. al.
1 DOMSC 21 (October 18, 1976)

Docket: EFSC #76-24

Petition of the Massachusetts Electric Company, the New England Power Company, the Yankee Atomic Electric Company and the Manchester Electric Company for approval of a joint long-range forecast.

Background

The Massachusetts Electric Company, the New England Power Company, the Yankee Atomic Electric Company, and the Manchester Electric Company have filed a joint long-range forecast of electric power needs, including proposals of facilities intended to meet such needs, on May 3, 1976. One such proposed facility is a 345 kilovolt single-circuit electric transmission line from the Town of Medway to the Town of Ayer. That portion of the said line which would be within the service territory of the Massachusetts Electric Company would be built by the New England Power Company.

An informational hearing concerning the said Long-Range Forecast was held on August 26, 1976 in the Town of Marlborough. At this hearing both the New England Power Company and the Town of Harvard, a prospective intervenor, urged that consideration of the said transmission line be postponed.

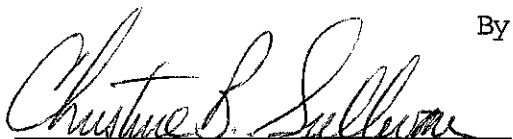
At an adjudicatory hearing concerning the joint forecast of the Massachusetts Electric Company, the New England Power Company, the Yankee Atomic Electric Company, and the Manchester Electric Company held on September 16, 1976, the New England Power Company and the Town of Harvard offered to stipulate that Council consideration of the line be deferred. Subsequent to the hearing the Attorney General, who has petitioned to intervene in the forecast proceeding, agreed to join in the stipulation.

This deferral requires a brief explanation. It could be argued that delaying consideration of this line beyond May 1, 1977 would contravene the 12 month statutory deadline for a Council decision on a long-range forecast. However, here the Council is deferring only the hearing and decision on a single transmission line included in the forecast. It is not delaying the decision on the forecast beyond the 12 month deadline. As provided for in the Council Regulations, the Council will retain jurisdiction concerning this line, and the final decision on the forecast will take the deferral into account, possibly as a stated condition.

Therefore, It Is Hereby Ordered That:

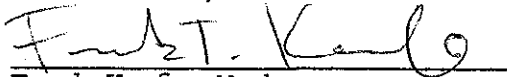
1. Council consideration of the proposed Medway to Ayer 345 kilovolt electric transmission line from Medway to Ayer and the need for it proposed by the New England Power Company be deferred beyond the May 1, 1977, statutory deadline for approval or disapproval.
2. The Company will submit to the Council no later than June 1, 1977, a report on the status of the proposed project.
3. If, after submission of this report and consultation with the Town of Harvard and any other possible intervenors, no further deferral is deemed appropriate by the Council, the deadline for intervention in proceedings concerning this line will be September 1, 1977.
4. If the Company proposed to build the line for completion prior to December 31, 1986, the Council will proceed to hold hearings concerning the proposed line after September 1, 1977.
5. The Company must notify the Council in writing within 5 days after any real estate transaction prior to September 1, 1977, concerning the proposed or alternative routes of the line, including, but not limited to the purchase or sale of options.

By Order of the Energy Facilities Siting Council:

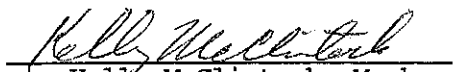

Christine B. Sullivan, Chairman


Evelyn Murphy, Member


Howard Smith, Member


Frank Keefe, Member


David Marks, Member


Kelly McClintock, Member

John R. Verani, Member*

*Because approval of this forecast is a matter related directly to the electric industry and not a matter related directly to the gas industry, General Laws, Chapter 164, Section 69H, provides that Mr. Verani, the member experienced in matters directly related to the electric industry, is entitled to a full vote and that Robert Pindyck, the member experienced in matters directly related to the gas industry, is entitled to no vote.

In the Matter of the Berkshire Gas Company
I DOMSC 24 (October 18, 1976)

Docket: EFSC #76-29

Petition of the Berkshire Gas Company for Approval of a Long Range Forecast.

APPEARANCE: Michael T. Gengler, Esq. of Boston, Massachusetts
for the Petitioner.

PARTICIPATING
PERSONS: Ellyn Weiss, Esq. of Boston, Massachusetts
Assistant Attorney General
for the Attorney General of the Commonwealth
Francis X. Bellotti, Esq.

Sam Lovejoy of Montague, Massachusetts, Pro se

The Massachusetts Energy Facilities Siting Council hereby approves in part subject to certain stated conditions the first long-range forecast submitted by the Berkshire Gas Company. This decision constitutes approval of the company's proposal to install a certain liquefied natural gas storage and vaporization facility in the Town of Greenfield.

In accordance with the requirements of General Laws, Chapter 164, section 69I the Berkshire Gas Company (hereinafter called Berkshire) filed a long-range forecast of gas requirements and plans to meet such requirements (hereinafter called the Forecast) with the Energy Facilities Siting Council (hereinafter called the Council) on May 18, 1976. The Forecast filed by Berkshire consists of two basic parts, including a projection of sendout and demand (hereinafter called the Projection) and a plan to obtain gas needed to meet the projections of sendout (hereinafter called the Supply Plan).

After due notice an informational hearing was held on June 10, 1976 in Greenfield in regard to the Forecast and an adjudicatory proceeding (hereinafter called the Proceeding) was commenced on June 29, 1976. At the conclusion of the first hearing session of the Proceeding Berkshire moved for a determination that the proposed liquefied natural gas facility (hereinafter called the LNG Facility) is exempt from the approval of the Forecast. Three briefs have been filed with the Council in regard to this motion. This Decision serves as the Council's ruling on the said motion as well as an approval in part of the Forecast.

Background

The Company

The Berkshire Gas Company distributes and sells gas at retail in 19 cities and towns in Berkshire, Franklin, and Hampshire counties and has approximately 24,100 firm gas customers. Berkshire purchases its natural gas requirements from Tennessee Gas Pipeline Company and has entered into a 5 year contract with Bay State Gas Company for the lease of a liquefied natural gas facility and the purchase of LNG. Berkshire Gas augments its natural gas supply with five propane air plants. During 1975 Berkshire's total gas sendout was 4,326,887 MMBTU and its peak daily winter sendout was 29,599 MMBTU.¹

The Projection

Berkshire states that the demand for gas exceeds its ability to send out gas. Berkshire predicts that both sendout and demand will increase as follows:

	<u>1975</u>	<u>1980</u>	<u>Average Annual Change</u>
Annual Sendout	4,326,887MMBTU	4,579,000MMBTU	+1.1%
Peak Daily Sendout	29,559	35,153	+3.5%
Annual Demand	5,228,519	5,467,696	+0.9%
Peak Daily Demand	30,470	35,466	+3.1%

1. The daily peak figure is for January 22, 1976, Berkshire, pursuant to Council regulations, has attributed to 1975 the peak daily sendout experienced during the winter of 1975-76.

It may be noted that Berkshire foresees a much faster growth in peak day sales than in annual sales. This is attributable to the assumption that sales to industrial firm off-peak customers under Rate #10 will be curtailed entirely by the end of the forecast period. Those customers purchase no gas during the winter. The net increase in sendout projected by Berkshire may be broken down as follows:

	<u>1975</u>	<u>1980</u>
Industrial Firm Off Peak Customers	523,234MMBTU	0 MMBTU
All Other Customers	<u>3,803,653</u>	<u>4,579,000</u>
Total	4,326,887	4,579,000

Those other customers do receive gas service during the winter. Many use gas for space heating, the major contributor to the temperature-sensitive peak daily sendout figure. The replacement of off-peak sales by year-round sales is the major reason peak sendout is forecast to grow faster than annual sendout.

The Supply Plan

Because the Greenfield division of the Company is forecast to show a deficiency in supply in 1978 and may not be able to meet 1977 sendout requirements, Berkshire proposes to construct the LNG Facility at Mill and Mead Streets in Greenfield next to the Green River. The site is zoned for industrial use, although it is adjacent to a residential neighborhood and has been owned for over 100 years by Berkshire. Berkshire presently operates a propane air facility on the site. The LNG Facility consists of a 44,600 gallon liquefied natural gas storage tank leased from Bay State Gas Company, 2 ambient air vaporizers, an odorizer, and a piping mechanism to vent normal boiloff. It will have a peak daily sendout of 675 MMBTU, a storage capacity of 3,702 MMBTU, and an in-service date of November 1, 1976. The LNG Facility is proposed to be modified by replacing the ambient air vaporizers with an indirect heated vaporizer in 1978 to increase

the peak daily sendout to 2,000 MMBTU. The tank would be installed on concrete footings and would be surrounded by a 15 foot earthen dike. LNG would be delivered by truck to the facility and the vaporized LNG would be sent directly into the company's distribution system.

Berkshire claims that the proposed 1976 installation is exempt from the Council's jurisdiction pursuant to Section 15 of Chapter 617 of the Acts of 1975, the Grandfather Clause.

Berkshire also states that it believes it will need another new facility by 1979, but that it currently has no plans for type or location.

Following is a comparison of resources and requirements, assuming installation of the LNG Facility:

	1976	1977	1978	1979	1980
Total Sendout (Available 000MMBTU)	4,489	4,467	4,409	4,299	4,180
Total Forecast Sendout Required (000MMBTU)	4,472	4,300	4,327	4,453	4,579
Excess or Deficiency	+17	+167	+82	-154	-399

The major reason for the prediction of decreasing quantities of available gas is the expectation that curtailments of pipeline supplies will grow yearly.

Authority to Issue A Partial Approval Subject to Stated Conditions

The question of the Council's authority to render something less than a full and final decision in this Proceeding is similar to the question addressed by the Council in In the Matter of MMWEC, 1 DOMSC 1, (August 6, 1976). Inherent in the language of General Laws, Chapter 164, Section 69J, which empowers the Council to "reject... in part the long-range forecast...or approve the long-range forecast subject to stated conditions" is the authority to approve a forecast in part and subject to conditions.

The circumstances in this Proceeding are similar to those in MMWEC which led to the conclusion that an expedited partial decision was appropriate.

Notwithstanding Berkshire's claim of exemption, the LNG Facility is within the Council's jurisdiction, yet expedited review is essential if Berkshire is to have it in place and operable by November 1, 1976. In future years such facilities will be proposed to the Council much further in advance.

Complete approval is not possible at this time because of certain questions presented by the Forecast which require further inquiry; they are discussed below in the decision. Since fewer elements of the Forecast are approved here than was the case in MMNEC, it is appropriate in this Proceeding to issue an approval in part subject to conditions instead of an approval subject to conditions.

It should be noted that in light of Berkshire's schedule for installation of the LNG Facility the Council was prepared to consider a decision in August. Berkshire was unable, however, to produce certain information requested at the June 29 hearing session as quickly as they hoped. Therefore, Council action has been delayed one and one half months.

Late Acceptance of a Petition to Participate

On July 22, 1976, the Attorney General of the Commonwealth petitioned the Council to participate in the proceeding by filing a brief. The brief was filed on July 30, 1976, arguing that the Council should deny the claim by Berkshire that the LNG Facility is exempt from Council jurisdiction.

At the hearing session held June 29, the participants and the presiding officer agreed that briefs should be filed no later than July 20. Berkshire's brief was filed on July 20. Sam Lovejoy was admitted as a participating person on June 29, and filed a brief on July 22.

The Attorney General did not participate in the June 29 session and submitted the brief ten days late. An objection might be made to acceptance of the Attorney General's brief.

It is largely within the Council's discretion to admit or not to admit intervenors and participating persons. It is also largely within the Council's

discretion to accept or not to accept late-filed pleadings and briefs.

In this case the Council has granted Berkshire's request that it expedite its consideration of the LNG Facility. Therefore, it is appropriate that the Council accord other interested persons similar special treatment. The Attorney General is admitted as a participating person and his brief is accepted. Similarly, Mr. Lovejoy's brief is accepted although filed after the deadline.

The Question of Exemption

Berkshire asserts that the LNG Facility is exempt from Council jurisdiction on the ground that construction was commenced prior to May 1, 1976. On the basis of the facts and argument presented in this Proceeding the Council finds that the Greenfield facility was not under construction prior to May 1, 1976 and therefore is not exempt from Council jurisdiction.

The Grandfather Clause of the Siting Act, found at Section 15 of Chapter 617 of the Acts of 1975, states:

"(t)he provisions of sections sixty-nine I and sixty-nine J of chapter one hundred and sixty-four of the General Laws shall not apply to facilities under construction prior to May first, nineteen hundred and seventy-six."

A definition of "construction" is provided in General Laws Chapter 164, Section 69G:

"As used in Section sixty-nine H to sixty-nine R, inclusive, the following words and terms shall have the following meanings:

* * * * *

" 'Construction', any placement, assembly, or installation of facilities or equipment, which in the case of an oil facility must be valued in excess of five million dollars, including contractual obligations to purchase such facilities or equipment, at the premises where such equipment will be used, including preparation work at such premises."

The Attorney General has argued that the definition of construction in Chapter 164, Section 69G does not apply to the Grandfather Clause, because the Grandfather Clause is found in an outside section and is not within Sections 69H through 69R. Berkshire has argued that it does apply. The Council need not

at this time, resolve this question of law and will, for the purpose of this decision only, accept Berkshire's contention and assume without so deciding that the definition of construction in Chapter 164, Section 69G does apply to the Grandfather Clause.

Berkshire has presented oral and written testimony and documentary evidence of actions taken prior to May 1, 1976 to support its claim that construction of the Greenfield facility was commenced before that date. Each matter asserted by Berkshire to support its claim is discussed herein.

1. Agreement for Lease of Equipment and Sale of LNG (Exhibit B-2)

On April 20, 1976 an agreement was executed between Berkshire and the Bay State Gas Company. It provides for the lease of a liquefied natural gas storage tank, vaporizers, a control station unit and related equipment for five years, with rental payments of \$25,000 per year to commence on November 1, 1976. The lease also provides for a gas supply for the facility through 1981 and for transportation of the gas to the site. On April 29, 1976 a supplemental contingency agreement (hereinafter called the Contingency Agreement) was executed between the two companies which provided that Berkshire would pay to Bay State \$1,118 per month for up to five months if the necessary regulatory approvals for use of the facility had not been obtained by October 31, 1976. It also provided that after payment of the agreed amount, and if approvals were not obtained by the end of March 1977, the lease agreement could be cancelled. Berkshire claims that the lease agreement is a contractual obligation to purchase facilities or equipment and thus one of the activities that constitutes "construction" as defined in Section 69G.

The Council is mindful of the fact that the General Court included the words "including contractual obligations to purchase such facilities or equipment" in the definition of construction in order to equate substantial financial commitments with the actual erection of structures. A gas company can commit itself

and its ratepayers to pay a sum of money just as easily with a lease agreement as with a contract to purchase. Therefore the Council determines that the logical interpretation of the legislative intent is that the term "contractual obligations to purchase such facilities or equipment" includes binding contractual obligations to lease equipment. It is appropriate for the Council to consider whether this lease creates a sufficient obligation to exempt the LNG Facility from the Council's jurisdiction.

At the outset the Council notes that the items provided to be leased by the parties constitute the bulk of the proposed facility. Only the footings and the dike are to be provided by Berkshire. However, it is a difficult question whether the lease agreement is a "contractual obligation to purchase such facilities or equipment" as the term construction is defined in Section 69 G. Berkshire argues on this point that the lease is a "contractual obligation to purchase an interest in equipment" and in this assertion is of course correct. The Attorney General points out, however, that the terms of exceptions to statutes should be narrowly construed to serve the broad public ends intended by the legislature in creating the regulatory scheme.

However, having decided to consider the provisions of the lease the Council finds that the lease fails to demonstrate by itself that the facility was under construction prior to May 1, 1976. The Council's determination is based upon the terms of the lease, which while containing certain obligations, imposed only insubstantial sanctions for its breach. The Council interprets the Grandfather Clause to require substantial or significant construction. And, assuming for purposes of this decision that contractual obligations to purchase facilities and equipment may be sufficient to exempt a facility, the Council applies a de minimis standard. Under that standard the lease by itself is not sufficient to exempt the LNG Facility. If the lease were combined with other de minimis

examples of construction, the cumulative effect might be sufficient. However, the lease must stand by itself, for the Council determines that no other actions by or contracts of Berkshire could be construed to be construction, whether de minimis or not.

The Council finds that, for purposes of determining whether a contractual obligation is substantial enough to constitute construction for purposes of the Siting Act, the best measure should be the cost to Berkshire if it had broken or renounced the lease without cause on April 30, 1976.

Berkshire presented evidence of the total obligation during the five years of the lease. No evidence was presented, however, as to the probable cost to Berkshire of a breach on April 30, 1976. The lease itself does not provide for liquidated damages for this type of breach.

The lease does provide for liquidated damages in another case--if Berkshire is unable to install the LNG Facility because of failure to obtain all necessary governmental approvals. The damages are \$1,118 per month for five months or until the commencement of the lease term, whichever occurs first, or a maximum obligation of \$5,590. In the absence of better evidence concerning damages, the Council assumes for purposes of this decision that as of April 30, 1976, Berkshire had through the lease committed itself irrevocably to pay at least \$5,590 to Bay State Gas Company. The Council believes this assumption reasonable, because if Berkshire had renounced the lease on April 30, 1976, Bay State Gas Company would have difficulty establishing that damages should be greater than those provided by the lease for a different breach later in time.

It is the conclusion of the Council that there is no "construction" where there is no substantial contractual obligation undertaken. Berkshire's witness testified that the LNG Facility would be worth \$300,000 to \$400,000 installed, yet we have determined that Berkshire is obligated to pay only \$5,590. The Council

finds that this \$5,590 amount, when considered as a portion of the total project cost and value, does not constitute a sufficient contractual financial commitment or loss of flexibility by Berkshire to justify a finding of exemption. In reaching this conclusion the Council has attempted to act in accordance with the philosophy underlying the Grandfather Clause--to avoid expense and unnecessary and unfair delay while at the same time effectuating the legislative intention to regulate such development.

If the Attorney General's argument were accepted and the Council concluded that no lease could under any circumstances constitute construction, leased facilities might not require Council approval in the future. Section 69I of the Siting Act prohibits construction of a facility unless approved by the Council. If a lease could not constitute construction, Council jurisdiction could be evaded entirely. An entity other than an electric company or gas company could build a facility and then rent it to a utility. Such a financing method is not uncommon in some industries. We do not believe that the General Court intended to give the Council authority over a nuclear plant proposed by an electric utility but to deny it authority over a nuclear plant to be built by a financial institution for lease to an electric utility.

2. Storage of 2 Ambient Air Vaporizers, Station Control Unit, Pipes, Valves, Fittings, and Regulators at the Site

Berkshire's second argument for exemption is based on evidence that on April 15, 1976 all of the equipment for the facility except the storage tank had been stored at the site. Berkshire claims that this constitutes "placement, assembly, or installation of facilities or equipment ... at the premises where such equipment will be used" and therefore amounts to "construction."

Berkshire concedes that there had been no "assembly" or "installation" as of May 1, 1976. "Placement" implies an element of physical commitment to the

site and something more than mere delivery. Here the equipment was delivered but no steps were taken to place the equipment where it would be in operation or to physically attach it to the site. Berkshire's witness testified that the equipment was being "stored at site." The question whether Berkshire could easily utilize the stored equipment elsewhere or could dispose of it otherwise without significant financial penalty is not raised here. The lease would control ownership and disposition of the equipment. Berkshire's actions prior to May 1 do not constitute "placement" as envisioned by the statute and therefore are not "construction."

3. Soil Tests (Exhibit B-4)

Berkshire submitted a purchase order, invoice and soil report all dated prior to May 1, 1976 as evidence of "preparation work" at the site. However, "preparation work" connotes physical preparation of the site for construction, which at the least would consist of physical alteration such as clearing or excavation. These soil tests were merely feasibility studies to aid Berkshire in planning a course of action and in no way limit the flexibility of Berkshire or physically commit it to a particular site. As the Attorney General points out, soil tests could be performed on numerous potential sites; it could not be claimed that all sites under preliminary investigation should therefore be grandfathered. The soil tests do not constitute "preparation work."

It might be asked why the Council is willing to depart from a strict, narrow and literal interpretation of the statute in one case and not another. The Council feels that "contractual obligations to purchase such facilities or equipment" may include a lease; yet the Council has concluded that "preparation work at such premises" means site preparation and does not include physical tests performed at a site to aid in planning or design. It might be argued that the Council should treat test borings as it did Berkshire's lease and determine

either that they are de minimis or that they constitute construction.

The Council concludes that some flexibility is appropriate in the interpretation of the phrase "contractual obligations to purchase", because the fecund imaginations of the financial community will always be able to develop new means of conveying property interests which means have not been explicitly foreseen by legislative bodies. On the other hand, site preparation means clearing land, building access roads and moving earth. No one is likely to develop a method of constructing energy facilities which does not require such activities. To treat test borings as site preparation would be to bend the definition on construction unnecessarily and impermissibly far.

4. Physical Surveys (Exhibit B-5)

The topographical surveys evidenced by a purchase order and bill are even less akin to "site preparation" than are test borings. These are preliminary studies, which fit logically within no element of the definition of construction.

5. Inspection of LNG Tank (Exhibit B-6)

Berkshire has submitted evidence that Gas, Incorporated, inspected the LNG Facility at a site in Cincinnati, Ohio, for the benefit of Berkshire. The inspection of the tank, completed before May 1, was also merely a preliminary study, did not occur at the site, and therefore is not "preparation work at such premises."

6. Engineering and Design (Exhibit B-7)

Berkshire has submitted as evidence contracts for engineering services and invoices indicating that partial payments have been made. It asserts that all design work (civil and mechanical engineering) with the exception of actual working drawings was completed by May 1, 1976. It appears from testimony by Berkshire's witnesses, however, that the exception is a major one. Prior to May 1, Berkshire had paid sums and incurred obligations for engineering and design

totaling about \$3,400, but a witness estimated that work valued at \$10,000 to \$15,000 remained to be performed.

Design and engineering serve planning and feasibility study functions. They do not commit the company to a course of action, do not have any physical effect on the site, and certainly do not constitute "preparation work at such premises."

7. Status of Other Regulatory Proceedings (Exhibits B-8 and B-9)

Berkshire submits evidence that proceedings before the Department of Public Utilities and the Greenfield Conservation Commission were commenced before May 1. While this may bear on the company's good faith in complying with all applicable regulatory statutes, it in no way establishes that any construction had begun prior to May 1. The definition of construction makes no reference to other regulatory proceedings and indeed these other proceedings serve separate and distinct functions from that of the present Council proceeding. Neither commencement nor completion of other regulatory proceedings constitutes construction.

The Other Application of the Definition of Construction

It may be argued that the Council is using an unnecessarily narrow interpretation of the definition of construction. However, this definition applies to Sections 69H through 69R. The Council must consider the effect of the definition on future Council determinations and not solely on the Grandfather Clause.

In Section 69I it is stated that a company shall not commence construction unless the facility is consistent with the most recently approved forecast; in other words no company may begin construction of a facility unless the Council has approved the facility. The Council would not want to prohibit companies from beginning preliminary planning or investigatory work as a result of an overly broad interpretation of the definition of construction in Section 69G. In fact such planning may be necessary in order to develop sufficient information

to propose a facility to the Council. Similarly it may be appropriate for a utility to commence proceedings before other agencies before receiving Council approval.

There is no state law requiring a utility to receive permission from any state or local agency or make its plans public before it purchases real estate. In practice, because they fear that prices might rise otherwise, utilities have frequently purchased interests in real property before making their plans public or seeking construction permits. We presume that utilities may wish to continue this practice in spite of the Siting Act. Acceptance of Berkshire's arguments concerning preliminary studies could lead to prohibition of practices considered necessary and prudent for prospective purchasers of real property. It would even be logical to conclude that if mere inspection of a gas tank in Ohio constitutes construction, mere inspection of real property in Massachusetts would constitute construction and therefore be prohibited until after Council approval is received.

Berkshire proposes that an expansive interpretation of the definition of construction be adopted in order that the LNG Facility may be exempted from Council jurisdiction. Such an interpretation would give Berkshire's sister utilities difficulty for years to come. Their ability to plan prudently and thoughtfully would be impaired. They would not be able to purchase real property prior to Council approval of a facility unless they did so without any preliminary design or site suitability studies. They might well be unable to present sufficient evidence to the Council concerning facilities to enable the Council to approve them.

The Philosophy of the Grandfather Clause

Berkshire claims that it should be granted an exemption from Council jurisdiction, because "the purpose of a grandfather clause is to avoid imposing the

burdens of a new regulatory scheme upon persons who have relied upon existing laws and regulatory systems, in the planning of items to be regulated by the new system, and who will be prejudiced if they are required to revise those plans..." However, where a statute is ambiguous it should be construed to effect the purpose that the statute as a whole was intended to serve. The Siting Act is new, remedial legislation which represents a fundamental change from previous regulatory schemes. By requiring forecast approval under Section 69I, the act enables the Council to oversee long range energy facility planning in a fashion that has never before been attempted or even possible by individual permitting agencies. The Attorney General has argued persuasively that "If the scope of that section is restricted by the exclusion of facilities now in the planning and preparation stage, the Commonwealth will effectively lose its ability to guide energy policy for a decade." The need for comprehensive energy planning by the Commonwealth outweighs the burdens of a new regulatory scheme imposed on the Company.

We feel it appropriate to note that while the requirement of forecast approval imposes a new burden upon utilities, the Siting Act taken as a whole may have the effect of improving and smoothing the process of licensing. The Council is an umbrella agency which has the power under certain conditions to overrule other state and local agencies and to issue orders in lieu of their required approval. We are not willing to concede that either the Siting Council or the Siting Act is a burden.

The Prediction of Gas Sendout and Demand

For purposes of this partial decision the Council will look solely at the first two years of the five forecast by Berkshire in order to determine whether the proposed LNG Facility is needed.

It is predicted that annual sendout will increase slightly in 1976 and decrease in 1977. The net effect is a compound annual growth rate of -0.3% (from 4,326,887 to 4,300,000 MMBTU). It is predicted that peak daily sendout will increase through 1977 at a compound annual growth rate of 4.5% (from 29,559 to 32,258 MMBTU). As is discussed above in the Decision, the major reason for the difference in growth rates is the prediction that sales to firm industrial off-peak customers will decline dramatically.

The Council is not entirely satisfied with the use of the 1975-76 winter peak day as a base from which to forecast future peak sales. When 1975 sales are compared with those for each of the previous five years, it appears that Berkshire in 1975 experienced anomalously low annual sales and high peak day sales. This is reflected by the fact that the load factor (the ratio of average daily sendout to peak daily sendout) for 1975 was 0.401, while the load factor for 1970-1974 ranged from 0.431 to 0.522 and averaged 0.489. Yet Berkshire predicts that the load factor will decline from the 1975 low point to 0.365 in 1977.

Fuller consideration whether the 1975 anomaly is indeed the beginning of a new trend is desirable but it is not essential for the purposes of this decision. Berkshire indicates that its existing facilities and entitlements will be sufficient to provide predicted peak daily sendout. Existing facilities and entitlements may not be enough, however, to supply Berkshire's predicted total annual sendout in 1976 and 1977. The primary reason is not forecast growth, but predicted curtailments of pipeline supplies.

Berkshire forecasts that demand for gas will exceed sendout through 1977--that there will be unfulfilled demand for gas. It is generally accepted that throughout the United States there is a shortage of natural gas as well as a substantial amount of unfulfilled demand.

The Council hereby determines that the predictions of sendout and demand by

Berkshire establish the need for at least as much new sendout as is proposed to be supplied by the LNG Facility.

The LNG Facility

In the case of a gas facility the establishment of need is necessary for Council approval, but not necessarily sufficient. The gas industry is accustomed to excess demand curtailments and restrictions upon new customers. Therefore, if the industry is competently managed, some unfulfilled demand must be acceptable, or perhaps optimal, in some circumstances.

In determining whether to approve a proposed facility, the Council must consider more than just the balance of supply and demand. A witness for Berkshire has testified that transmission line capacity may not be sufficient to supply all the gas needed by the Greenfield Division of Berkshire Gas Company. He further testified that in a recent year equipment failure cut off all pipeline supplies to the Greenfield area. There were and are propane-air facilities in Greenfield, but they could not be used to replace the lost pipeline supplies. A mixture of propane and air can be used to supplement supplies of natural gas up to a ratio of about two parts propane-air to three parts LNG, but the specific gravity of propane air is such that it cannot be used instead of natural gas in appliances adjusted for natural gas. Installation of the proposed LNG Facility would prevent a recurrence of curtailment of service in the Greenfield area should pipeline supplies be interrupted again. It is a fairly common practice for gas utilities to maintain enough peak-shaving capacity to meet demand if one pipeline is entirely lost. In such a case no more than 40 percent of the peak-shaving gas can be propane-air.

The Council determines that the proposed LNG Facility will provide a necessary energy supply.

The LNG Facility is proposed to be installed on land owned by Berkshire. It is bounded by the Green River, an industrial area, and a residential neighborhood. The site once contained a gas manufacturing plant; it now holds two 30,000 gallon propane tanks and a propane-air mixing facility. The LNG tank is proposed to be placed in a flood plain, but it would be surrounded by a dike higher than the highest historical flood crest.

The major environmental impacts will be related to aesthetics, noise, and safety.

Aesthetic effects would be minimal, because most of the LNG Facility would be screened by the dike.

It does not appear that the noise of the LNG vaporizer will present a significant problem. The vaporizer is intended to be used primarily during cold periods, when nearby homes are likely to have windows closed. In any event, noise levels are predicted to be low. This determination should not be construed to restrict the ability or power of any other agency to consider or to regulate noise impacts.

The most important generic environmental impact of LNG facilities is the potential hazard to life and property from the release of vapor or from fire. Whenever LNG is released to the environment it evaporates; the vapor cloud may travel beyond the dike and is very hazardous until it is sufficiently dispersed that the concentration of methane in the air is so low as to be non-flammable. Even if neither LNG nor vapor travels beyond the diked area, the heat from a fire within the dike can create substantial risks to life and property at some distance.

Both the Council and the Massachusetts Department of Public Utilities (hereinafter called the DPU) requested that Berkshire provide vapor cloud calculations.

Such calculations estimate the maximum distance that vapor will travel before reaching the lower limit of flammability and becoming harmless. The maximum distance may vary substantially under differing meteorological conditions.

The Council has requested that Berkshire provide heat flux calculations. Such calculations estimate the amount of heat which would impact upon a person or object a given distance and direction from a fire.

The Council has the authority to consider vapor cloud calculations and it is appropriate that it do so. The Council has the authority to consider vapor cloud travel, as it does any other safety matter, under its general environmental jurisdiction. It is appropriate for the Council to require and to consider vapor cloud calculations before reaching a final decision concerning an LNG facility. The results of such calculations may have a direct bearing upon the suitability of the specific facility at the specific site.

The Council's jurisdiction overlaps in fact with those of several other state agencies. In the case of LNG vapor cloud travel and heat flux, the DPU at least also has direct responsibility. The DPU administers an extensive safety code in regard to the construction and operation of LNG facilities. In order to minimize duplication of effort among state agencies in regard to LNG facilities, the Council will generally focus upon long-range planning and siting and will generally defer to the DPU on matters of engineering, construction and operation. In some cases where the Council has jurisdiction over a particular matter it will be appropriate, although not required, that the Council refuse to consider the matter and defer to another agency. If a matter has no necessary bearing upon site suitability the Council may defer to other agencies. An example would be an environmental problem which can be adequately mitigated by a range of commercially available equipment; it may be appropriate for the Council to defer to

an environmental agency for a decision at a later date as to which equipment, if any, is necessary to meet standards. On the other hand if there is doubt whether an environmental problem can be adequately mitigated even with the best commercially available equipment, the Council should consider the matter, because it may have a direct bearing upon the suitability of the proposed facility and site. The General Court has given the Council responsibility to make the initial determination whether the type of facility proposed and the site are acceptable.

Vapor cloud and heat flux calculations bear directly upon the question of the suitability of the site and facility. It is clearly within the responsibility of the Council to consider them.

The Council requested that vapor cloud calculations be provided by Berkshire. A one month delay in their preparation is the main reason the Council has not acted earlier. After staff review, it was determined that an additional hearing session would not be required to consider the calculations. They were requested at the June 29 hearing and are treated for purposes of this Proceeding as late-filed evidence.

The calculations were made on the assumptions that LNG would spill into the diked area as the result of a "design accident"² and that meteorological conditions would be those under which vapor would travel farther than it would

2. Berkshire's consultant stated that: "Since the Massachusetts Department of Public Utilities regulations on LNG facilities (DPU 11725-F) do not specifically refer to any vapor dispersion analysis, per se, the design accident was selected in accordance with the requirements of the National Fire Protection Association Code for Storage and Handling of Liquefied Natural Gas, NFPA 59A. In the recently adopted 1975 revision of this code, Section 2121 stipulates that:

"Provision shall be made to minimize the possibility of a flammable mixture of vapors from a 'design spill,' as defined in 2121(a), (b), (c), or (d), as appropriate, from reaching a property line which may be built upon an elevation above grade that would result in a distinct hazard.

95 percent of the time.³

Calculations based upon these assumptions and the original design of the facility resulted in the estimate that vapor would travel about 235 feet before becoming harmless. Since the top of the dike--the point from which vapor cloud travel should be measured--is proposed to be 69 feet from the property line at the nearest point and little more than 100 feet from a house, Berkshire's consultant recommended that the design be modified. Specifically, the consultant recommended the installation of an insulated concrete floor with thermal properties equal to or better than those of 35 pounds per cubic foot Dycon, a commercially available concrete using styrofoam aggregate.

The Council hereby determines that the LNG Facility will be adequately safe from the point of view of vapor cloud travel if the suggested concrete floor is installed. The consultant initially estimated that with the recommended concrete floor, the vapor cloud would travel about 60 feet before becoming harmless.

(a) For impounding areas serving LNG containers having bottom connections without internal valves, the 'design spill' is defined as flow through an assumed opening at the bottom of the initially full container equal to the area of the largest actual liquid piping connection made to the bottom of the container. The flow is assumed to continue until the differential head acting on the opening is zero.'

The largest piping connection to the proposed tank has a three inch diameter and the maximum depth when the tank is full is slightly less than ten feet."

3. The consultant explains that "from experience with dispersion of various types of pollutants in the atmosphere the effect of wind speed and atmospheric stability on dispersion has been characterized (by the) widely accepted Pasquill-Gifford categories.

From weather data collected at the Montague Power Station during the period 1 September 1973 to 31 August 1974 (elevation = 33 feet above grade), the weather is calm about 20 percent of the time. Of the remaining 80 percent, about 75 percent of the time the weather is more favorable for dispersion than a "neutral" or "D" category stability with a 10 mph wind speed. Only 5 percent of the time does a less favorable condition exist. Therefore, calculations in this schedule are based on "D" stability and a 10 mph wind. For categories "A"- "C" and for wind speeds greater than 10 mph, dispersion distances will be less than those estimated.

Subsequent recalculations done assuming higher pressure inside the tank indicated that travel of 70 to 80 feet would be more likely. The Council determines that this distance is acceptable. Both the design accident and the assumed meteorological conditions are unlikely to occur. If the accident and conditions both occurred and if the wind were right the hazardous cloud would extend beyond the property line by up to 11 feet at one point. It would not, however, reach any inhabited structure or any motor vehicle operating off the site.

Berkshire was requested informally by the Council staff to consider whether reorientation of the longer axis of the tank from generally east-west direction to a generally north-south direction would be practicable. It appears that such a measure would leave a greater distance between the top of the dike and the property line and would reduce the absolute distance of hazardous vapor cloud travel.⁴ Berkshire's response was that reorientation of the tank would create a greater hazard from heat flux. A broader front of flame would face the property line, and heat flux at the nearest point would be roughly 60 percent greater. Additional late filed evidence stated that for a fire within the diked area as currently designed, heat flux at the nearest point on the property line would be 3,600 to 4,000 BTU/hour-square foot. That heat level would injure a person lacking special protection within a matter of seconds. The distance necessary to retreat to safety is so small, however, that serious injury is unlikely. Reorientation of the tank could lead to heat flux level in excess of 6,000 BTU/hour-square foot at the property line. At such levels there is a much greater risk that a person would be seriously injured before retreating or would be unable to retreat. Reorientation of the tank might well substitute a greater hazard for a lesser one.

4. The distance from the property line to the top of the dike would have been increased by about 25 feet to 94 feet. The absolute distance would be lower, because the longer the dike over which the vapor spills, the shorter will be the distance from the dike at which it becomes harmless.

The Council hereby determines that a fire within the diked area as proposed by Berkshire would create an acceptable risk at and beyond the property line.

The method of operation of the LNG Facility has environmental impacts. At the informational hearing, local citizens voiced complaints about past operation of the propane-air facilities currently located on the site. Particularly noted were engine noise from diesel trucks unloading in the middle of the night, odor from gas, and poor maintenance of safety lighting.

Little evidence was presented concerning these matters at the adjudicatory hearing. David Miner, who raised a number of them at the informational hearing, stated his intention to seek admission in the adjudicatory proceeding as a party or participating person. He did not appear at the June 29 hearing session. There is, however, some evidence on the record that could serve as a basis for the Council to attach operating conditions to an approval of the LNG Facility.

None of the operational problems, however, bears directly upon the suitability of the LNG Facility or the site. All can be handled rather easily during construction and operation by the DPU or by local agencies. The Council determines that it is appropriate to defer to other agencies in regard to these operational problems. It is not necessary at this time for the Council to determine whether in approving a facility, such as the LNG Facility, it may impose operating conditions upon an exempt facility, such as the pre-existing propane-air facility. The Council herein instructs the Chairman to advise the DPU of the problems raised in the informational hearing.

One operational matter may well bear directly upon the suitability of a site for an LNG facility: the plans for transportation of LNG to and from the site. In some cases transportation can be regulated by other agencies to insure adequate safety levels; in such cases the Council will normally defer to such agencies. On the other hand there may be cases in which it is argued that

regulatory action could not reduce transportation risks to an acceptable level; in such cases the Council should consider transportation questions.

In this case Berkshire states that most LNG will be transported to the LNG Facility by truck from the Town of Ludlow. There are no stated plans for the transshipment of LNG from the LNG Facility. The Council hereby determines that regulation by other agencies will provide acceptable levels of public safety.

The Council also has responsibility to determine whether a proposed facility will provide energy at the lowest possible cost. In regard to a gas facility, the Council will be led into two lines of inquiry: it must consider the economics of the facility in comparison with similar alternatives and it must compare the facility with the alternative of no facility.

Considering the type of service desired--supplementary gas during the five coldest months for a small discrete service area--the choice of a small satellite LNG-vaporization facility is the best now available. Alternatives would be propane air and synthetic gas. A propane-air facility would provide supplementary gas at a cost about 50 percent higher (\$6 per thousand cubic feet as opposed to \$4). Additional propane air in the Greenfield area would probably lead to mixing problems because of propane air's specific gravity. A synthetic gas plant might be an alternative. Such plants, however, should be larger than Berkshire requires in order to take advantage of economies of scale. Even assuming economies of scale, synthetic gas plants may be more expensive to operate than LNG vaporization facilities.

Because the gas industry is not required to meet all demand for its product, and because any new gas facility will cause higher average costs to consumers, the Council must compare any proposal of a new gas facility with the alternative of constructing no new facility and accepting a greater shortfall of supply. In some cases there may be a choice between maintaining lower rates

to existing customers and providing service to prospective customers. In other cases there may be a choice between curtailing existing customers and raising their rates. If to curtail existing customers and to deny service to prospective customers were unacceptable alternatives under any circumstance, the gas industry would not have done so in the past.

In the case of the LNG Facility the adverse effect upon the rates of existing customers will be small, probably less than a 3 percent increase in the last and largest year of contract LNG purchases. These costs would be borne by all Berkshire customers, including those outside the Greenfield Division. The benefits could also be felt in the entire Berkshire service area, because the company can displace pipeline gas to which the Greenfield Division is entitled and take it for use in another division.

Against the added costs of the LNG Facility can be balanced the benefits of better supplies for existing and prospective customers. In addition there is the benefit of greater system reliability. A pipeline failure like that described above in this decision would mean less or no curtailment, if the LNG Facility were in operation. The Council determines that the LNG Facility will supply Berkshire's customers at the lowest possible cost.

The Council hereby decides that the LNG Facility will provide a necessary energy supply with a minimum impact on the environment at the lowest possible cost.

Deficiencies of the Forecast

The Forecast shows an imbalance between sendout available and sendout required in 1979 and 1980. As shown on Page 27 above, Berkshire forecasts a deficiency of gas available for sendout of 154 MMBTU in 1979 and of 399 of 1980. General Laws, Chapter 164, Section 69I requires that a forecast include a "forecast of ... gas needs" and a "description of actions planned to be taken by the company which will affect capacity to meet such needs."

The Council cannot approve a forecast which does not state how all the sendout required will be provided. If the company does not plan to supply all sendout stated to be required, the forecast is necessarily deficient either because the projection of sendout required is excessive or because the company's plans will not provide for a necessary energy supply. If the company has plans to supply all sendout stated to be required but does not reveal those plans in its forecast, the Council cannot make the determinations required by its enabling legislation. Similarly if the company lacks adequate plans to supply all sendout stated to be required, the Council cannot make the determinations necessary for approval.

If the Council were to approve forecasts with incomplete supply plans, it would also create the risk that the Council would again and again be forced to review proposed facilities with undue haste at the last minute. For example, in this Proceeding the Council must act quickly to avert some risk of gas shortage. Therefore, in this Proceeding the Council believes that it is appropriate to approve or disapprove the LNG Facility without as much review and deliberation as would be normally desirable. Earlier proposal of facilities, made necessary by the requirement of a complete supply plan, will allow better review of projections and proposals, while virtually eliminating the risks of costly delays and shortages.

The Council hereby determines that the failure of the Forecast to balance the projection of sendout required and the supply plan would be such a severe deficiency as to justify disapproval of the entire forecast under normal circumstances. However, because this is Berkshire's first forecast and because the Council has determined that expedited review of the LNG facility is appropriate, the Council will instead approve the forecast in part. Deficiencies of the last

two years of the forecast will be addressed in a subsequent hearing session.

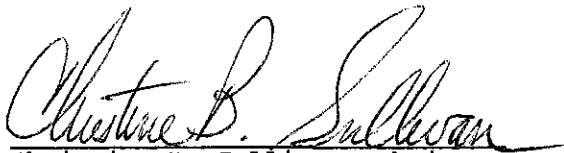
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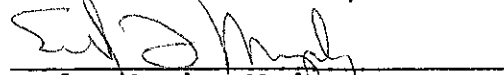
Approval is made subject to the condition that the floor of the diked area and the inside of the dike walls be coated with a layer of insulating concrete to a sufficient level to contain the maximum possible liquid volume of the tank. The concrete shall have thermal properties equal to or better than the product Dycon which is available from Koppers Company and which weighs 35 pounds per cubic foot. The concrete shall be at least two inches thick and shall be sealed against moisture.

Order

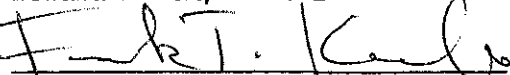
Now, therefore, it is ordered that the first long-range forecast of the Berkshire Gas Company is approved in part. The projections of sendout required and of demand for the years 1976 and 1977 are approved; the proposal to construct an LNG storage tank with ambient air vaporizers in the Town of Greenfield is approved. The Energy Facilities Siting Council reserves judgment concerning the projections of sendout required and of demand for the year 1978 through 1980 and concerning the proposal to install an indirect heated vaporizer in Greenfield in 1978. This order is subject to the stated condition that the floor and lower walls of the diked area be coated with an insulating concrete.

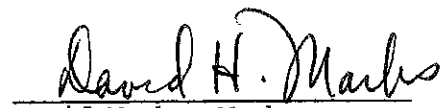
By Order of the Energy Facilities Siting Council

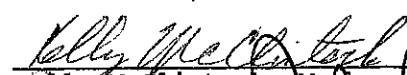

Christine B. Sullivan, Chairman


Evelyn Murphy, Member


Howard Smith, Member


Frank Keefe, Member


David Marks, Member


Kelly McClintock, Member


Robert Pindyck, Member*

*Because approval of this forecast is a matter related directly to the gas industry and not a matter related directly to the electric industry, General Laws, Chapter 164, Section 69H, provides that Mr. Pindyck, the member experienced in matters directly related to the gas industry, is entitled to a full vote and that John Verani, the member experienced in matters directly related to the electric industry, is entitled to no vote.

In the Matter of the Massachusetts
Municipal Wholesale Electric Company
1 DOMSC 52 (8 December 1976)

Docket: EFSC No. 76-1

Petition of the Massachusetts Municipal Wholesale Electric Company
and 28 municipal light departments.

APPEARANCE: Maurice J. Ferriter, Esq., Holyoke
for the Petitioner

The Massachusetts Municipal Wholesale Electric Company (MMWEC) has petitioned the Energy Facilities Siting Council pursuant to G.L. c. 164, ss. 69G-69J for approval of a 390 MW generating project with associated substation and 345 KV transmission facilities. The project is proposed for the Stony Brook Energy Center in Ludlow, Massachusetts and includes a 120 MW gas turbine peaking unit and a 270 MW combined cycle intermediate cycling unit. Construction would commence in 1977 with a completion date of 1982. Capital costs are estimated from \$190 million to \$278 million. The company has also petitioned for approval of its proposed purchase of 22 MW of capacity in Wyman Unit No. 4 and its proposed construction of several small generating units with capacities of less than 100 MW each.

MMWEC is a recently established public corporation which currently represents 28 of the 40 municipal utilities in the Commonwealth. Its purpose is to provide a vehicle for collective energy resource acquisition by the municipal utilities. If successful, MMWEC will, for the first time, allow these utilities to function as a unified system with anticipated efficiencies of central planning and management and collective purchase and construction of energy requirements and capacity. See generally chapter 775 of the Acts of 1975. At present,

the 28 MMWEC participants are on the threshold of transition from individual dependence upon wholesale power purchases from proprietary utility companies to collective interdependence as a unified, free standing utility system. The 390 MW Stony Brook project is MMWEC's first effort to construct generating capacity for its municipal participants.

A. Development Of The Stony Brook Project

The Stony Brook project has been developed for MMWEC by R.W. Beck and Associates as part of a power supply study conducted in 1974. See Power Supply Study for Massachusetts Municipal Wholesale Electric Company. This study considered five alternative power supply plans for MMWEC for the period from 1978 thorough 1990. Each alternative considered purchases and construction of generating capacity which would lead in time to MMWEC ownership of its total requirements with consequent indpendence from wholesale power purchase reliance upon proprietary utility companies. See Power Supply Study, section VII. Beck concluded that any of the five alternatives would provide MMWEC participants with total power supply savings of approximately \$500 million relative to the cost of wholesale power purchases. See Power Supply Study at VII-7. It recommended an alternative identified as the MMWEC Power Supply Plan which includes the 390 MW Stony Brook project and a 300 MW fossil steam baseload unit in its initial phase. That plan, however, has the highest capital cost and smallest total savings (\$419 million) of the five alternatives studies by Beck. See Power Supply Study at VII-7.

In its power supply study, Beck presented the MMWEC Plan as the alternative with the lowest overall cost. See Power Supply Study

at VII-1. It made this presentation by including within the MMWEC Plan a relatively inexpensive hydro peaking unit identified as Dickey-Lincoln while, at the same time, excluding Dickey-Lincoln from the other alternative power supply plans. When Dickey-Lincoln is excluded from the MMWEC Plan to make it comparable to the other alternatives, Beck's own analysis demonstrates that the MMWEC Plan is the alternative with the highest overall cost.

It is not clear why Beck has recommended the MMWEC Plan alternative as the course to independence; no witness at the adjudicatory hearings attempted to further explain the recommendation. It may be inferred, however, that the MMWEC Plan is a preferred alternative because it includes fewer and less complex generating units during the early years of the power supply program than do other alternatives. Moreover, its capital costs are lower during the early years. These considerations may explain Beck's recommendation of the plan given MMWEC's status as a new corporation which is without experience in construction of generating capacity and which is without large financial resources. It is noted, however, that Beck did not formally study a power supply alternative which would have constructed a baseload fossil unit in place of combined cycle units during the initial phase of a long range MMWEC power supply plan. As the findings of this Decision indicate, infra, such an alternative may better serve the energy requirements of MMWEC and New England at lower cost to MMWEC participants than any of the alternatives considered by Beck.

B. Cost Effectiveness Of The Stony Brook Project

R.W. Beck has also undertaken a power supply cost study of the Stony Brook project in an effort to determine whether this initial part of the MMWEC Power Supply Plan will provide cost savings to the

MMWEC participants once it is operational. The study has concluded, in part, that the 390 MW Stony Brook project will significantly reduce the annual power supply costs of MMWEC participants relative to their costs for wholesale power purchases in the absence of Stony Brook. See Exhibit M-20, adjudicatory hearings.

At the request of the Siting Council, the Beck analysis was reviewed by Herman Chernoff, professor of applied mathematics at the Massachusetts Institute of Technology. In testimony at the adjudicatory hearings, Professor Chernoff stated that the Beck power supply cost analysis is not definitive; its mathematical model is inappropriate because it fails to account for the randomness with which forced outages occur. Consequently, in Chernoff's view, the Beck analysis presents an optimistic and not altogether realistic conclusion of the relative savings of the Stony Brook project.

Professor Chernoff also reviewed a power supply cost analysis which was prepared for the Siting Council by David Leinweber, a mathematician. This analysis considered the randomness of forced outages and concluded that the annual power supply costs of MMWEC participants would be somewhat less expensive through wholesale power purchases than with the Stony Brook project. In Chernoff's view, the Leinweber analysis presents a more realistic conclusion of power supply costs although it may somewhat overstate costs because its model assigns scheduled maintenance randomly and fails to account for the benefits of economy exchange available through the New England Power Pool (NEPOOL) in which MMWEC participates. See Exhibit M-17, Comparison of the Beck and Leinweber Computer Programs.

In view of the cost of the MMWEC Power Supply Plan and the contrasting results and criticisms of the Beck and Leinweber power supply

costs analyses, the Siting Council cannot find that the Stony Brook project will be less costly than wholesale power supply purchases by MMWEC participants. However, this is not to suggest that MMWEC is to refrain from constructing generating capacity. As was the case with Beck's long-range power supply study, it may be that the best short range generating capacity has not been considered by MMWEC.

C. The Gas Turbine Unit

The Stony Brook project includes two discrete units, a 120 MW gas turbine peaking unit and a 270 MW combined cycle intermediate unit. Throughout the Council's review of the project, there has been little question of the need for a gas turbine unit. This facility is consistent with the needs of MMWEC participants, and it is consistent with New England needs as a whole. Furthermore, both Beck and Leinweber conducted power supply cost analyses at the direction of the Council which found the gas turbine unit alone to be a less costly power supply alternative to the entire gas turbine-combined cycle project. These analyses also found the gas turbine to be less costly than wholesale power purchases. See Exhibit M-21, adjudicatory hearings.

From these complimentary analyses by Beck and Leinweber, the MMWEC participants may conclude that a gas turbine peaking unit is the most economical short range alternative. This Decision specifically approves construction of a gas turbine unit alone with associated substation and transmission facilities if the MMWEC participants choose that course as an alternative to the full Stony Brook project.

Should MMWEC determine to build a gas turbine unit alone, that will require greater design and capacity flexibility than would be necessary for a gas turbine unit which is part of the full 390 MW Stony

Brook project. Therefore, a gas turbine unit alone may range up to 200 MW (winter rating) in capacity.

D. The Combined Cycle Unit

The proposed 270 MW combined cycle intermediate unit is difficult to evaluate because its cost advantage and need are not at all apparent. As noted above, both the Beck and Leinweber power supply cost analyses have determined that annual power supply costs are lower with a gas turbine unit alone than with a gas turbine and combined cycle facility or with wholesale power purchases alone. While not definitive, the analyses suggest that a combined cycle unit is an expensive alternative.

The combined cycle unit has been proposed as a facility to serve a substantial part of the intermediate capacity needs of MMWEC participants from 1982. However, as a NEPOOL designated unit, it will be dispatched to serve New England load requirements rather than those of MMWEC participants alone. The consequence of NEPOOL dispatch and service to New England load requirements was not fully appreciated or considered by Beck in its power supply study. In short, Beck's study has recommended the combined cycle unit without consideration of the extent to which New England, including MMWEC, will have a need for this additional intermediate capacity. The Siting Council has attempted to determine that need by joining the New England Power Pool adjudicatory proceeding, EFSC No. 76-8, with the MMWEC proceeding. See G.L. c. 164, s. 69J which requires the Council to consider and determine the extent to which an individual utility company's proposed facilities use is consistent with the forecasts, facilities use, pooling and sharing arrangements of other companies in New England.

At the joint NEPOOL-MMWEC adjudicatory hearing, the director of NEPOOL's planning staff, James R. Smith testified that New England is

now and will be deficient in base load capacity for much of the decade of the 1980's. This deficiency may be exacerbated by slippage of the operational dates of planned nuclear baseload facilities. At the same time, there will be no deficiency of intermediate capacity within NEPOOL during the 1980's even in the absence of the combined cycle unit. It appears also from the Council's review of the NEPOOL forecast that there may be a deficiency of peaking capacity during the 1980's.

Given NEPOOL's forecast of baseload deficiency, the Council must question the prudence of MMWEC's plan to construct intermediate capacity at a time of baseload deficiency. Without development of substantial baseload capacity, the MMWEC participants cannot avoid the deficiencies which face all of New England. Without baseload capacity, the MMWEC participants may find the purchase of that capacity from proprietary companies to be increasingly difficult and expensive. Moreover, the deficiencies may require combined cycle units such as that proposed here to operate as baseload facilities at higher cost to consumers than would be the case for operation of units designed and constructed for baseload operation.

In short, the combined cycle unit represents duplication of a capacity which is available within NEPOOL. MMWEC objects that it may not be able to purchase intermediate capacity from NEPOOL but has not offered evidence to support that objection. Because of the baseload capacity deficiency within New England, however, it seems more likely that MMWEC may have difficulty in purchasing baseload capacity for its participants. This suggests that MMWEC should consider the need to develop its own substantial baseload capacity.

The Siting Council cannot ignore Professor Chernoff's evaluation of the Beck cost analysis model, the apparent cost advantage of the

approved 200 MW gas turbine unit alone, the excess intermediate capacity within New England, or the baseload capacity deficiency within New England. In view of these considerations, neither the cost advantage nor the need for the combined cycle unit has been presented adequately. Consequently, the company has not sustained its burden of demonstrating that this proposed facility will provide a necessary energy supply for the Commonwealth at lowest cost. G.L. c. 164, s. 69H.

A final determination of the combined cycle unit will be deferred without prejudice to the company and with leave to present further analysis for adjudicatory review. Prior to those proceedings, the company is directed to reconsider the MMWEC Power Supply Plan and the combined cycle component with its board of directors and with specific reference to the findings of this Decision. The company is directed also to conduct a comprehensive analysis of the cost advantage of the Stony Brook project relative to that of a baseload generating unit, a 200 MW gas turbine unit, and wholesale power supply purchase. Finally, the company is directed to conduct a full analysis of the need for a given generating facility in the context of the resources and requirements of the New England Power Pool as well as those of the MMWEC participants.

E. Transmission Lines

The Council's approval of generating capacity includes approval of associated substation and transmission facilities. This approval does not authorize a specific transmission line route because additional information is required for review and evaluation.

MMWEC has petitioned the Council for approval of a transmission line route identified as the northern route in contrast to a less desired southern route. The preferred northern route would involve construction

of a new transmission corridor through forested land and farm land. The southern route would follow an existing transmission right of way operated by Northeast Utilities.

MMWEC's environmental consultants claim that the southern route is less desirable because of population density in proximity to the route together with other less significant factors. That evaluation fails to balance this consideration against the impact that a northern route will have upon an area which is sparsely populated open space. There is a substantial public policy manifested in open space zoning by laws, land bank programs, and regional open space plans which calls for preservation of the limited private and public open spaces of the Commonwealth. There are also Federal Power Commission guidelines which prefer use of existing transmission corridors to construction of new corridors. The public policy and federal guidelines should be followed unless the southern transmission route is of prohibitive cost or human hazard.

The Siting Council reserves its approval of a transmission route pending a full engineering and cost analysis of the southern route. This analysis should be undertaken immediately by MMWEC for early review by the Council.

F. Motion To Amend Generating Facility Petition

On the last day of this adjudicatory proceeding, MMWEC moved to amend its Petition for approval of the Stony Brook project. That Motion sought approval of a gas turbine unit and a combined cycle unit up to a capacity of 575 MW.

The Motion to Amend was received at a time which was too late for adequate review and evaluation by the Council. Furthermore, none of the cost and need analysis considered in this proceeding was premised

upon a 575 MW project. Therefore, nothing has been presented to sustain this larger project. The Motion to Amend is denied.

G. Wyman Unit No. 4 And Small Generating Units

The Siting Council approves MMWEC's proposed purchase of 22 MW of capacity in Wyman Unit No. 4. MMWEC also proposes to construct several small generating units with capacities of less than 100 MW each. The Council does not have statutory authority to review these facilities. G.L. c. 164, s. 69G.

FINDINGS

The Energy Facilities Siting Council makes the following findings in addition to its earlier approval of the Demand Forecast and Supply Plan in part, see 1 DOMSC 1 (6 August 1976):

1. The Massachusetts Municipal Wholesale Electric Company is authorized to undertake immediate construction of a 200 MW (winter rating) gas turbine unit at the Stony Brook site in accordance with section C of this Decision. This approval includes authorization to construct associated substation and 345 KV transmission facilities. Transmission route siting is deferred in accordance with section E of this Decision. The company is to inform the Council of its specific construction cost estimate after it has executed necessary agreements for this project.

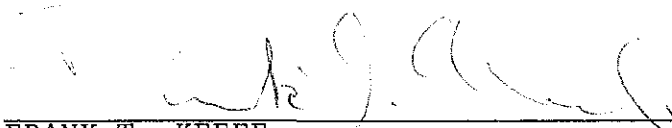
2. The Massachusetts Municipal Wholesale Electric Company is authorized to purchase 22 MW of capacity in Wyman Unit No. 4 in accordance with section G of this Decision.

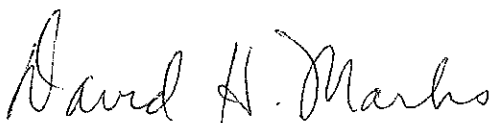
3. A final determination of the combined cycle unit is deferred in accordance with the findings and directives of sections A, B, D of this Decision.

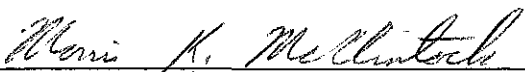
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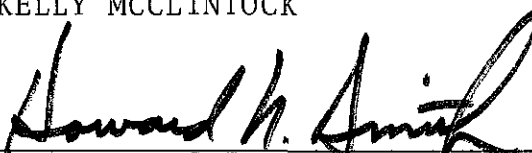

CHRISTINE B. SULLIVAN, Chairman


EVELYN F. MURPHY


FRANK T. KEEFE


DAVID MARKS


KELLY MCCLINTOCK


HOWARD N. SMITH


JOHN R. VERANI

In the Matter of Boston Edison Company
1 DOMSC 63 (December 8, 1976)

Docket EFSC #76-12

Motion For Approval of a Long Range Forecast in Part

Appearances: John J. Desmond, III, Esq. of Boston,
Massachusetts for the Petitioner

William S. Abbott, Esq. of Plymouth,
Massachusetts for the Plymouth County
Nuclear Information Committee, Inc.

Stanley U. Robinson, III of Wayland
Massachusetts, Pro se

The first Long-Range Forecast of the Boston Edison Company is hereby approved in part. The construction of two oil storage tanks and related equipment on the site of the Mystic Station generating plant in Everett is approved.

Background

On April 30, 1976, Boston Edison Company (hereinafter Edison) filed its first Long-Range Forecast (hereinafter the Forecast) with the Energy Facilities Siting Council (hereinafter the Council). Edison forecast that its total annual electrical output would increase from 11,222,000 megawatt hours (hereinafter MWH) in 1975 to 17,505,000 MWH in 1985, equivalent to a compound annual growth rate of 4.5%. The growth rate rate is 6.1% when sales for resale are excluded; Edison anticipates that such sales will actually decline as municipal light departments acquire more generating capacity. Peak demand is forecast to increase by comparable amounts.

The Forecast also states how Edison expects to provide the forecast output and to meet the forecast demand. No new generating units are proposed for Council approval. Certain units, including the Pilgrim 2 nuclear reactor, are asserted to be exempt from the requirement of Council approval. Several transmission lines and substations are proposed for Council approval; others are asserted to be exempt.

Edison also proposes for Council approval the addition of two 250,000 barrel oil tanks at the Mystic Station (hereinafter Mystic) in Everett. Mystic currently includes the following generating units:

<u>Unit</u>	<u>Winter Rating</u>	<u>Mode of Operation</u>	<u>Fuel</u>
Mystic 4	147 Mw	Cycling	#6 Oil
Mystic 5	147 Mw	Cycling	#6 Oil
Mystic 6	156 Mw	Cycling	#6 Oil
Mystic 7	591 Mw	Cycling	#6 Oil
Mystic J1	15 Mw	Peaking	#2 Oil

Units 1, 2, and 3 have been deactivated. There are no plans to add new units or to deactivate existing units before 1986. The total capacity of units capable of burning #6 (residual) oil is 1,041 Mw. Mystic is the largest generating station owned by Edison.

Mystic currently has two 43,000 barrel tanks for residual oil. Those tanks are supplied by pipeline from larger tanks owned by Exxon Company (hereinafter Exxon) in a nearby tank farm. Edison receives all its residual oil from Exxon under a contract with a termination date of June 30, 1978. Edison owns no docking facilities. The existing tanks are too small to receive full shipment from a tanker of the size which normally serve East Coast ports.

Edison proposes to construct two new 250,000 barrel tanks on its existing property to the north and east of the generating plants. In addition, there are proposed related piping and docking facilities. (The term "the Tanks" as used hereinafter shall refer to the two tanks and all related facilities.) Each tank would be 178 feet in diameter and 56 feet high; each would be surrounded by a steel dike capable of containing the maximum volume of the tank. Surrounding areas are committed to industrial uses generally related to the seaport facilities along the Mystic River. The plan calls for construction in and dredging of the Mystic River in connection with the docking facility. The project would be completed in early 1978.

Due notice was given of the Forecast proceeding; the proposal to construct the tanks was expressly mentioned in the notice. Informational hearings concerning the forecast were held in Arlington on August 19, 1976, in Westwood on August 23, 1976, and in Marlborough on August 26, 1976. Adjudicatory hearing sessions have been held in Boston on September 20, 1976, November 9, 1976, and November 23, 1976. One intervenor, Mr. Robinson, questioned Edison's witnesses concerning the Tanks; he subsequently chose not to amend his petition to intervene to seek to present arguments or evidence concerning the Tanks. The other intervenor, Mr. Abbott, has limited his involvement to matters unrelated to the Tanks. The presiding officer questioned the witnesses and required the presentation of additional evidence.

Council Jurisdiction

The Council has jurisdiction to approve or disapprove the Tanks for two reasons: they fit within the definition of "facility" and probably within the definition of "oil facility."

"Facility" is defined in part by General Laws, c. 164, s. 69G as:

(i) any bulk generating unit, including associated buildings and structures, designed for, or capable of operating at a gross capacity of one hundred megawatts or more;

(iii) any ancillary structure including fuel storage facilities which is an integrated part of the operation of any generating unit or transmission line which is a facility;

Rule 64.9(iii) excludes from Council jurisdiction, "modification in or replacement of equipment at or within a generating plant site which does not increase the gross capacity at such site by more than ten percent (10%)."

Because the Tanks will increase the storage capacity of the Mystic Station by 481%, the exclusion does not apply.

"Oil facility" is defined in part by s. 69G as:

(vi) any new unit, including associated buildings and structures designed for, or capable of, the refining, storage of more than five hundred thousand barrels or transshipment of oil or refined oil products.....

The definition of "oil facility" is effectively modified by the definition of "construction" in s. 69G and by s. 69I to include a \$5,000,000 threshold. The statutory language follows:

Section 69G, As used in section sixty-nine H to sixty-nine R, inclusive, the following words and terms shall have the following meanings:

"Construction", any placement, assembly, or installation of facilities or equipment, which in the case of an oil facility must be valued in excess of five million dollars.....

Section 69I

No oil company shall commence construction of an oil facility unless a notice of intention to construct such oil facility, filed in accordance with this section, has been approved by the council.....

The Council and Edison have agreed that the Tanks should be treated as a "facility." The procedures followed, however, are sufficient for an "oil facility" as well.

Economic Effects

Edison introduced testimony to the effect that construction of the Tanks would result in net savings to it. The total construction cost is estimated to be \$8,700,000. The annual cost of the facility, including capital costs, operation and maintenance, and inventory is estimated to be \$2,600,000.

Mr. Howard of Edison testified that a discount of approximately 37 cents per barrel is available to cargo buyers as opposed to pipeline buyers. He further stated that an additional 15 cents per barrel could be saved by purchasing high-pour oil, a product not available from Exxon by pipeline.¹ Mr. Howard estimated that the four major units at Mystic would require about 6,700,000 barrels per year. On the basis of those assumptions he concluded that the annual fuel cost savings attributable to the Tanks would be \$3,484,000. The testimony thus predicted a net saving of approximately \$900,000 per year.

The assumptions behind that prediction have borne up well under investigation. Edison was required to submit recent fuel cost data for 1% sulphur oil for three generating stations. Following are the average figures for oil purchased during the months of April through August 1976:

	Quantity (bbl's)	Cost	Average Price
Mystic	1,917,052	\$21,890,018	\$11.42/bbl
New Boston	2,712,411	\$29,967,623	\$11.05/bbl
Edgar	526,495	\$ 5,738,838	\$10.90/bbl

Oil was 37¢ cheaper at the New Boston Station in South Boston. New Boston, like Mystic is a captive pipeline customer of a single oil supplier. The only differences are that in the case of New Boston the supplier is White Fuel Corporation and the oil is high-pour.

Oil is 52¢ cheaper at the Edgar Station in Weymouth. The only difference in this case is that at Edgar Edison owns its own storage and buys by the tanker. The oil is low pour.

The savings in fuel costs estimated by Edison may well be conservative.

1. High-pour oil is so called because the pour point, the minimum temperature at which it flows freely, is relatively high. At normal ambient temperatures high-pour oil must be heated and insulated to prevent it from solidifying.

The net benefit predicted by Edison is also dependent upon the quantity of oil consumed. Edison's estimate of 6,700,000 barrels per year seems reasonable in light of additional information submitted by Edison which indicated that 2,038,000 barrels were actually burned from May through August 1976.² That amount is equivalent to annual consumption of 6,114,000 barrels. A report received after the hearing and not on the record of this proceeding indicates that for future years the Edison estimates of oil consumption at Mystic may even be low.³

Environmental Effects

The primary environmental impacts of the Tanks are the potential fire hazard and the effects of dredging and construction in the Mystic River.

The problem of the fire hazard was inquired into extensively at the hearing. The distances that the tanks are proposed to be from the property lines and from oil and liquefied natural gas tanks on nearby properties appear to be sufficient to insure against significant danger to the general public and to the other tanks. The greatest potential hazard would apparently be to one of the proposed tanks if the contents of the other were to catch fire. Plans introduced into evidence by Edison state that the distance between the two tanks would be at least 178 feet, the diameter of each. The shortest distance from a point inside the dike of one tank to the wall of the second tank would be 158 feet. The insulation necessary to enable the tanks to store high-pour oil will reduce the risk from any nearby fire by reducing the amount of heat gained by the contents of the tanks. The Council concludes that the plan for the Tanks is reasonably low in fire hazard.

2. This figure is not necessarily inconsistent with the reported purchase of 1,917,052 barrels of 1% sulphur oil during the five months from April through August. The purchase figure does not include some 477,000 barrels of 0.5% sulphur oil also purchased. Purchase figures also may not coincide exactly with burn figures because of inventory, management and bookkeeping practices.

3. The report was prepared for the purposes of another proceeding and is entitled "Operational Assessment of the Proposed 270 Megawatt Massachusetts Municipal Wholesale Electric Company (MMWEC) Combined-Cycle Power Plant." The report estimated under a variety of scenarios the hours of operation of and fuel consumption by all major fossil-fired generating plants in New England. In most cases considered for the two years studied, 1984 and 1987, it is predicted that the Mystic units will consume more than 6,700,000 barrels.

The Council did not consider in any detail the environmental impact of construction and dredging within the Mystic River. Pier construction and dredging appear to be commonplace in the Mystic River and other parts of Boston harbor. Such matters are regulated on the state level by the Department of Environmental Quality Engineering (hereinafter the DEQE). The Council's approval of the Tanks should not be construed as in any way preempting or lessening the authority of the DEQE.

The power of the Council to exercise discretion in determining whether to consider a particular issue in detail or to defer to other agencies has been discussed previously in In the Matter of the Berkshire Gas Company, 1 DOMSC, 24, 42-3. It is appropriate that the Council defer to the DEQE concerning the aforementioned matters.

The Council hereby determines that the Tanks will provide a necessary energy supply with a minimum impact on the environment at the lowest possible cost.

Conditions

If the design of or schedule for construction of the Tanks is proposed to be changed significantly, Edison must seek and receive approval of the Council before making such changes. The construction rights granted herein are granted solely to Edison and may not be transferred without prior approval by the Council; this condition shall apply only until the completion of construction. Edison shall notify the Council within 90 days after the conveyance of any interest, other than a security interest, in the Tanks.

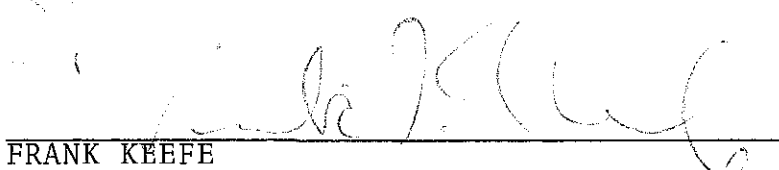
Order

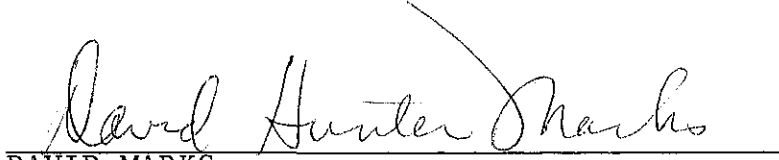
Now therefore it is ordered that the first long-range forecast of the Boston Edison Company is approved in part. The proposal to construct two 250,000 barrel tanks capable of storage of high-pour residual oil, and related pipelines and docking facilities, on the site of the Mystic Station generating plant, with completion scheduled in 1978, is hereby approved. The Council reserves judgment on all other matters raised by the said forecast.

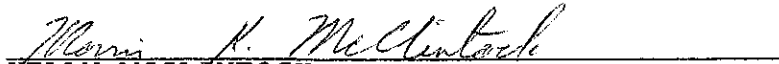
By Order Of The Energy Facilities Siting Council


CHRISTINE B. SULLIVAN, Chairman

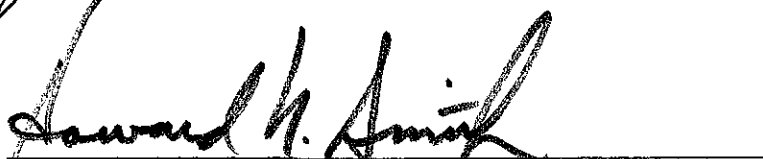

EVELYN MURPHY


FRANK KEEFE


DAVID MARKS


KELLY MCCLINTOCK


JOHN R. VERANI


HOWARD N. SMITH

In the Matter of New Bedford
Gas and Edison Light Company
1 DOMSC 70 (8 December 1976)

Docket: EFSC No. 76-4

Decision on Motion of New Bedford Gas and Edison Light Company for
Exemption of Horse Pond Tap - Manomet 115 KV Transmission Line and
Substation.

APPEARANCE: Michael T. Gengler, Esq.
May, Bilodeau, Dondis and Landergan
One State Street
Boston, MA 02109
for New Bedford Gas and Edison Light Company

The Energy Facilities Siting Council hereby exempts construction of the Horse Pond Tap - Manomet 115 KV transmission line and Manomet 115 KV substation from its jurisdiction under G.L. c. 164, s. 69G et seq. The Council finds and rules that the transmission line and substation were under construction prior to 1 May 1976, the effective date of the Council's substantive jurisdiction. See section 15 of chapter 617 of the Acts of 1975.

The transmission line and substation are being constructed by New Bedford Gas and Edison Light Company, a subsidiary of New England Gas and Electric Association. As part of its long range electric forecast, New Bedford has claimed that the transmission line and substation are exempt. An adjudicatory hearing was held on 14 October 1976 to consider this claim for exemption. See Common Exhibit 1, the Long Range Electric Forecast of New Bedford Gas and Edison Light Company et al., part 4.

At the adjudicatory hearing, New Bedford presented a single witness, James A. Hartsborn who is superintendent of its electric operations. In his prepared testimony and in response to questions from the hearings officer, Mr. Hartsborn described the 11.6 mile transmission line and substation, work and capital expenditures to date, and the proposed schedule for work on the ground to complete construction. See Company Exhibit 1.

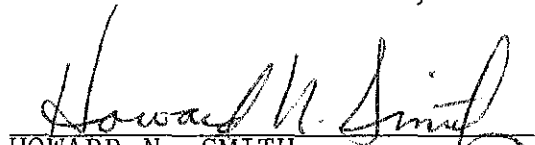
The transmission line will utilize 9.7 miles of existing right of way now occupied by a 23 KV line and 1.9 miles of new right of way. The substation will occupy part of a 7.1 acre site which has been acquired by New Bedford. Neither placement nor installation of the transmission line and substation has commenced. However, New Bedford expects to begin placement and installation in December of 1976.

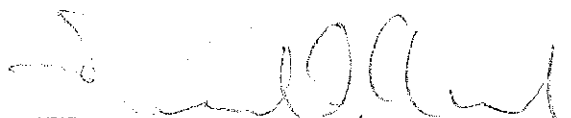
Right of way acquisition has been completed, substantial survey work and engineering have been conducted, and \$746,700 in materials acquisition have been spent. Work on ground, materials, engineering and overheads will require a further expenditure of approximately \$718,000 to complete construction. See Company Exhibit 1.

The Council finds and rules that the Horse Pond Tap - Manomet transmission line and Manomet substation are exempt from its jurisdiction. New Bedford Gas and Edison Light Company may proceed with this project.

By Order of the Energy Facilities Siting Council


CHRISTINE B. SULLIVAN, Chairman

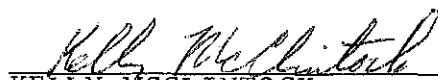

HOWARD N. SMITH


FRANK KEEFE


EVELYN MURPHY


JOHN R. VERANI

DAVID MARKS


KELLY MCCLINTOCK

In the Matter of Commonwealth Gas Company
1 DOMSC 72 (8 December 1976)

Docket: EFSC No. 76-5

Decision on Long Range Gas Forecast of Commonwealth Gas Company
(1976-1980)

APPEARANCE: Michael T. Gengler, Esq.
May, Bilodeau, Dondis and Landergan
One State Street
Boston, MA 02109
for Commonwealth Gas Company

The Energy Facilities Siting Council hereby approves the long range gas forecast of Commonwealth Gas Company for the period 1976 through 1980 pursuant to G.L. c. 164, s. 69G et seq. and subject to the limitations set forth herein.

Commonwealth Gas company is a subsidiary of New England Gas and Electric Association. The company is engaged in distribution and retail sale of gas to 140,000 customers in central and eastern Massachusetts. Its gas requirements are supplied primarily under contractual agreements with Algonquin Gas Transmission Company and Tennessee Gas Pipeline Company. It owns and operated five propane air facilities which are used to supplement pipeline supplies during peak use periods. During the latter part of the forecast period, Commonwealth expects to further supplement its pipeline and propane supplies by purchase of LNG from an Eascogas facility to be constructed in Maryland.

Commonwealth's long range gas forecast is limited to sendout and does not include a demand forecast because the company will not construct new facilities during the forecast period. Siting Council regulations do not require a demand forecast where new facilities are not to be constructed. See EFSC Rule 66.1.

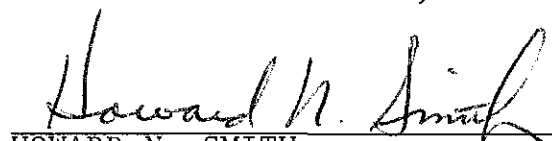
An adjudicatory hearing was held on 14 October 1976 to consider the long range forecast. At that hearing, Commonwealth presented a single witness, Richard K. Byrne, P.E. He directed the preparation and submission of the forecast. In his prepared testimony and in response to questions from the hearings officer, Mr. Byrne summarized the forecasting methodology and sendout forecast.

Because of the company's dependence upon pipeline supplies which are expected to decrease somewhat over the forecast period, Mr. Byrne testified that availability of these supplies is the primary determinant of total sendout. That sendout is expected to remain stable at 26,261,000 MMBTU from 1977 through 1980. Sendout for 1975 was 25,699,000 MMBTU and is expected to rise to 26,814,000 MMBTU during 1976. This indicates that the company will not be able to provide gas service to new customers or new classes of customers. See Common Exhibit 1, the Long Range Gas Forecast of Commonwealth Gas Company, parts 2, 6.

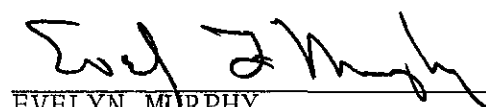
The Council accepts the company's assumption that pipeline supply will largely determine sendout. For so long as this supply remains within the volumes expected by the company, the forecast as presented is approved. The company is directed to inform the Council of any significant variation in anticipated availability of supplementary LNG supplies. In addition, the company is directed to explain the substance and impact of its conversation program on each customer class in its supplementary forecast for 1977. Finally, the company is directed to provide a comprehensive explanation and justification for its apparent inability to provide gas utility to new customers or new classes of customers in its supplementary forecast for 1977.

By Order of the Energy Facilities Siting Council


CHRISTINE B. SULLIVAN, Chairman


HOWARD N. SMITH


FRANK KEEFE


EVELYN MURPHY

ROBERT PINDYCK

DAVID MARKS


KELLY MCCLINTOCK

In the Matter of Hopkinton LNG Corporation
1 DOMSC 74 (8 December 1976)

Docket: EFSC No. 76-6

Decision on Long Range Gas Forecast of Hopkinton LNG Corporation (1976-1980)

APPEARANCE: Michael T. Gengler, Esq.
May, Bilodeau, Dondis and Landergan
One State Street
Boston, MA 02109
for Hopkinton LNG Corporation

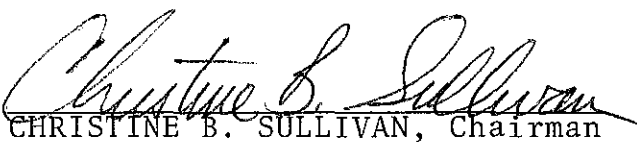
The Energy Facilities Siting Council hereby approves the long range gas forecast of Hopkinton LNG Corporation for the period 1976 through 1980 pursuant to G.L. c. 164, s. 69G et seq.

Hopkinton LNG Corporation is a subsidiary of New England Gas and Electric Association. The corporation is engaged in providing liquefaction, storage, and vaporization services for Commonwealth Gas Company and New Bedford Gas and Edison Light Company, both subsidiaries of New England Gas and Electric Association. It has no gas sendout and no demand requirements. Its facilities consist of three 290,000 barrel above ground insulated storage tanks with associated liquefaction and vaporization equipment located in Hopkinton and two above ground insulated storage tanks (58,000 and 87,000 barrel capacity) with associated vaporization equipment located in Acushnet.

An adjudicatory hearing was held on 14 October 1976 to consider the long range forecast. At that hearing, Hopkinton presented a single witness, Richard K. Byrne, P.E. who directed preparation and submission of the forecast. In his prepared testimony, Mr. Byrne summarized the forecast description of Hopkinton's operation, services, capacity, and equipment reliability. He stated that the corporation does not intend to construct new facilities during the forecast period and thus does not seek facilities approval from the Council.

The Council approves the forecast as presented.

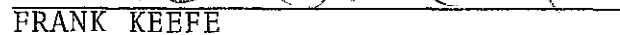
By Order of the Energy Facilities Siting Council

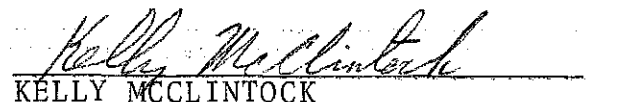

CHRISTINE B. SULLIVAN, Chairman


EVELYN MURPHY

DAVID MARKS


HOWARD N. SMITH


FRANK KEEFE


KELLY MCCLINTOCK

ROBERT PINDYCK

In the Matter of New Bedford
Gas and Edison Light Company
1 DOMSC 75 (8 December 1976)

Docket: EFSC No. 76-7

Decision of Long Range Gas Forecast of New Bedford Gas and Edison Light Company (1976-1980)

APPEARANCE: Michael T. Gengler, Esq.
May, Bilodeau, Dondis and Landergan
One State Street
Boston, MA 02109
for New Bedford Gas and Edison Light Company

The Energy Facilities Siting Council hereby approves the long range gas forecast of New Bedford Gas and Edison Light Company for the period 1976 through 1980 pursuant to G.L. c. 164, s. 69G et seq. and subject to the limitations set forth herein.

New Bedford Gas and Edison Light Company is a subsidiary of New England Gas and Electric Association. The company is engaged in distribution and retail sale of gas to 46,800 gas customers in southeastern Massachusetts. Its gas requirements are supplied primarily under contractual agreements with Algonquin Gas Transmission Company. It owns and operated two propane air facilities which are used to supplement pipeline supplies during peak use periods. During the latter part of the forecast period, New Bedford expects to further supplement its pipeline and propane supplies by purchase of LNG from Easogas.

New Bedford's long range gas forecast is limited to sendout and does not include a demand forecast because the company will not construct new facilities during the forecast period. Siting Council regulations do not require a demand forecast where new facilities are not to be constructed. See EFSC Rule 66.1.

An adjudicatory hearing was held on 14 October 1976 to consider the long range forecast. At that hearing, New Bedford presented a single witness, Richard K. Byrne, P.E. He directed the preparation and submission of the forecast. In his prepared testimony and in response to questions from the hearings officer, Mr. Byrne summarized the forecasting methodology and sendout forecast.

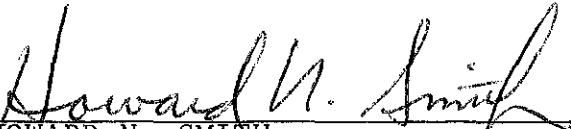
Because of the company's dependence upon pipeline supplies which are expected to decrease by 656,000 MMBTU annually by 1980, Mr. Byrne testified that availability of these supplies is the primary determinant of total sendout. That sendout is projected to increase from 5,817,000 MMBTU in 1976 to 6,121,000 MMBTU in 1980. However, sendout for each year of the forecast is projected to be less than 1975 sendout of 6,208,098 MMBTU. See Common Exhibit 1, the Long Range Gas Forecast of New Bedford Gas and Edison Light Company, parts 2, 6. The forecast sendout indicates that the company will not be able to provide gas service to new customers or new classes of customers after 1976.

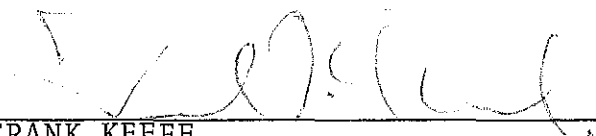
To supplant its decreasing pipeline supplies, New Bedford will be required to obtain increasing supplies of supplementary propane and LNG during the forecast period. During 1980, New Bedford must obtain 1,292,000 MMBTU in supplementary LNG. At present, the company has no agreement for this substantial supply requirement but expects to obtain sufficient LNG from an Easogas facility to be constructed in Maryland.

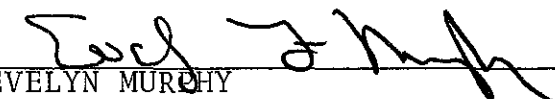
The Council accepts the company's assumption that pipeline supply will largely determine sendout. For so long as this supply remains within the volumes expected by the company, the forecast as presented is approved. The company is directed to inform the Council of any significant variation in pipeline supply or any significant variation in anticipated availability of supplementary LNG supplies. In addition, the company is directed to explain the substance and scope of its conservation program on each customer class in its supplementary forecast for 1977. Finally, the company is directed to provide a comprehensive explanation and justification for its apparent inability to provide gas utility service to new customers or to new classes of customers in its supplementary forecast for 1977.

By Order of the Energy Facilities Siting Council


CHRISTINE B. SULLIVAN, Chairman


HOWARD N. SMITH


FRANK KEEFE


EVELYN MURPHY

ROBERT PINDYCK

DAVID MARKS


KELLY MCCLINTOCK

In the Matter of Fall River Gas Company
1 DOMSC 77 (8 December 1976)

Docket: EFSC No. 76-20

Decision on Long Range Gas Forecast of Fall River Gas Company (1976-1980)

APPEARANCE: Michael T. Gengler, Esq.
Rich, May and Bilodeau
One State Street
Boston, MA 02109
for Fall River Gas Company

The Energy Facilities Siting Council hereby approves the long range gas forecast of Fall River Gas Company for the period 1976 through 1980 pursuant to G.L. c. 164, s. 69G et seq.

Fall River Gas Company is engaged in distribution and retail sale of gas to 38,000 customers in Fall River, Somerset, Swansea, and Westport. Its gas requirements are supplied primarily under contractual agreements with Algonquin Gas Transmission Company and Distragas. From 1977, it must supplement these supplies with increases volumes of propane gas and LNG which are expected to be available to the company.

Fall River's long range gas forecast is limited to sendout and does not include a demand forecast because the company will not construct new facilities during the forecast period. Siting Council regulations do not require a demand forecast where new facilities are not to be constructed. See EFSC Rule 66.1.

An adjudicatory hearing was held on 14 October 1976 to consider the long range forecast. At that hearing, Fall River presented a single witness, Donald K. Kelly who is the company's senior vice president and general superintendent. In his prepared testimony and in response to questions from the hearings officer, Mr. Kelly summarized the forecasting methodology and sendout forecast.

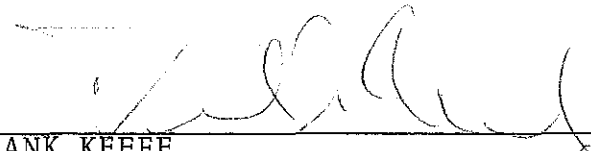
Mr. Kelly testified that future sendout was predicted by multiplying 1973 sendout in each rate class by the average per cent of increase or decrease in sendout within each class for the previous six years. This extrapolation from historical experience resulted in an average annual growth in sendout for all classes of approximately 2%. Before accepting the extrapolation, Mr. Kelly considered population, employment, and industrial growth projections for Fall River's service area. These projections do not indicate significant deviation from the historical experience. Mr. Kelly also noted that the company is engaged in a home insulation program and a continuing effort to make customers aware of the need for energy conservation. Finally, he stated that the company is providing gas utility service to new customers because of the availability of gas supplies to meet the 2% annual growth projection.

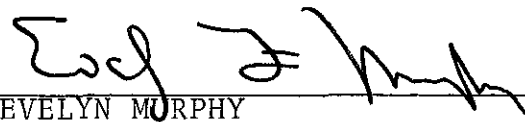
The Council accepts the company's historical extrapolation methodology and approves its forecast as presented.

By Order of the Energy Facilities Siting Council


CHRISTINE B. SULLIVAN, Chairman


HOWARD N. SMITH


FRANK KEEFE


EVELYN MURPHY

ROBERT PINDYCK

DAVID MARKS


KELLY MCCLINTOCK

In the Matter of the City of Holyoke,
Gas and Electric Department - Gas Division
1 DOMSC 79 (January 19, 1977)

Docket: EFSC No. 76-23

Petition of the City of Holyoke, Gas and Electric Department - Gas Division for Approval of a Long Range Forecast

APPEARANCES: Charles Haller, Superintendent, Gas Division
for the Petitioner

James Mackey, for the Petitioner

The Massachusetts Energy Facilities Siting Council hereby approves the first long-range forecast submitted by the City of Holyoke, Gas and Electric Department - Gas Division.

In accordance with the requirements of General Laws, Chapter 164, section 69I, Holyoke filed a long-range forecast of gas requirements and plans to meet such requirements with the Council on May 3, 1976. Notice of the adjudicatory hearing concerning the forecast was published in the Holyoke Transcript and Telegram and the Springfield Union and was mailed to individuals and organizations in the Holyoke region as ordered by the Council. An affidavit of notice was returned to the Council on August 24, 1976. The adjudicatory hearing was held at the Pine Point Library in Springfield, MA on August 31, 1976. Since Holyoke is proposing no new facilities an informational hearing was not held.

Background - The Company

Holyoke stores liquefied natural gas and propane and manufactures natural gas and propane-air for retail sales in the City of Holyoke. Agreements for the purchase of gas exist with the Tenneco Pipeline Company and the Lowell Gas Company. Holyoke operates

facilities at Mueller Road, which are used primarily for peak shaving during the winter, and at Gatehouse Road, which are used only for standby purposes. The company plans to install another LNG storage tank at the Mueller Road site in 1979, and claims that the tank is exempt from Council jurisdiction.

Question Of Exemption

Holyoke asserts that the LNG tank proposed to be installed at the Mueller Road site is exempt from Council jurisdiction because construction was commenced prior to May 1, 1976. On the basis of the facts set forth below, the Council finds that this LNG storage tank was under construction prior to May 1, 1976 and therefore is exempt from Council jurisdiction. (Section 15 of chapter 617 of the Acts of 1975).

At the Mueller Road location, Holyoke presently has three 67,000 gallon propane tanks. In 1974 there were two 55,000 gallon LNG tanks at the site, and the company determined that three more 55,000 gallon LNG tanks were needed. Two tanks were installed, and work was completed for the installation of the third tank. Due to financing problems, the tank itself was not purchased. It is now scheduled for an in-service date of December 1, 1979.

By November, 1975 the following work was completed for the third tank claimed to be exempt. The foundations were laid and the two piers for the tank were installed. These piers are concrete, support the tank at each end, and are set into the ground about 6 feet. They have dimensions of 6 feet by 2 feet and rise above the ground 3½ to 4 feet. The tank will be bolted to these piers. Piping was extended from existing tanks to the position of the third tank, and catwalks were also built over to the site of the third

tank. A dike was built around the third tank location that is part of a common dike designed to accomodate the capacity of all three tanks. Only the LNG tank itself is missing from the facility. The company estimated that the total cost of constructing the third tank would be \$300,000 and that the value to construction work completed by November, 1975 was \$50,000 or 17% of total cost.

Projection

Because no new facilities are proposed there is no demand portion of the forecast. Sendout is predicted to increase as follows:

	<u>1975</u>	<u>1980</u>	<u>Compound annual growth rate</u>
Annual sendout	1,843,386 000MMBTU	1,869,745	0.3%
Peak daily sendout	11,344	11,810	0.8%

In summary, sendout declined substantially in 1975, is expected to rise in 1976, another decline is expected in 1977 and 1978, and a slight increase will occur until 1980. Interruptible gas service is predicted to remain constant for the forecast period, however, sendout for interruptible service for department use is predicted to drop from 207,385 000MMBTU in 1975 to 13,259 000MMBTU in 1980. In addition, annual sendout by month decreases from over 150,000 MMBTU in the summer of 1970 to less than 100,000 MMBTU in the summer of 1975 and 1980. The reason is that as pipeline supplies were curtailed the Electric Division ended its use of gas to generate electricity in the summer months. In addition to the generating plant , Holyoke serves on an interruptible basis an industrial customer, a laundry, hospital, nursing home and shortly will serve another nursing home.

Peak daily sendout decreased in 1973 and 1974 and then increased in 1975. The annual load factor was over 62% from 1970-74, dropped to 44% in 1975, and is expected to remain close to 41% through 1980.

Holyoke used a zero growth methodology to prepare its forecast. The company expects to add new customers only as old customers drop off. Mr. Haller testified that the city of Holyoke is a mature urban area with little room remaining for expansion and growth. The population has declined since 1960, and new housing starts are largely urban renewal public housing units for people who are already residents of the city.

Supply Plan

"The forecast for the City of Holyoke Gas and Electric Department Gas Division, shows that the supply for the period 1976 through 1980 will meet requirements of the different classes of customers provided that gas from other sources becomes available." See Forecast, Section I, Summary. The gas from other sources will be supplemental LNG or propane. Holyoke faces a situation common to many gas companies in the northeast. The interstate pipeline supply of gas is being curtailed and an increasing share of gas must be supplied by supplemental fuels.

Holyoke presently obtains 100% of its priority one gas, residential and small commercial, from Tenneco Pipeline Company; however, priority two gas, commercial and industrial, is curtailed to 60% of contracted for volume. By the winter of 1980-81 it will be curtailed to about 1% of contracted for volume.

Holyoke supplements its propane gas with propane and LNG from its Mueller Road facility which has a storage capacity for 220,000 gallons of LNG. When the third LNG tank is completed in 1979 its capacity will be 275,000 gallons. At this site there is also capacity for 201,000 gallons of propane. At Gatehouse Road the company maintains a standby plant (it has not operated regularly for peak shaving since 1969) with a capacity of 180,000 gallons of propane.

The propane facility has two vaporizers - one of which is used only as a back-up unit. Section IV of the forecast mentions that the company plans to install a second LNG vaporizer. Mr. Haller testified that this would probably be a direct fired vaporizer with a capacity of 300,000 - 400,000 cubic feet per hour which is smaller than the current vaporizer capacity of 500,000 cubic feet per hour. This will be used for back up purposes and will be installed in 1977 at a cost of approximately \$140,000. There was discussion at the hearing as to whether this vaporizer would constitute construction of facilities subject to Rule 67.7. It was agreed that when plans for the vaporizer are more definite the company will notify the Council and the Council will advise the company as to whether the vaporizer should be included in the first or subsequent supplements to the forecast.

Mr. Haller testified that there is sufficient peak shaving capacity to supply the company's entire load on a winter peak day should all pipeline supplies be cut off.

Another supply plan the company proposed is to enter into a contract with the Bay State Gas Company for 1976-1980 to provide

additional gas. This will be vaporized LNG supplied from Ludlow to Holyoke through an old pipeline connection with the Springfield Gas Company. Holyoke would be purchasing this gas at LNG prices, and the agreement will be in lieu of the plan mentioned in Section I of the forecast to deliver gas to other gas companies to be liquefied in the summer and then either trucked or piped back to Holyoke in the winter.

The company presently has a waiting list of about 20 residential and small commercial customers. If the contract with Bay State is finalized these potential customers will be given service. The company's policy toward large industrial and commercial customers is to serve them only on an interruptible basis.

The average cost per MMBTU of sendout is predicted to rise from \$1.95 in 1975 to \$2.98 in 1980. This increase is largely due to increases in the cost of LNG and propane which will become a greater percentage of total company sendout. Costs for natural gas, propane and operating expenses were increased 10% per year from 1976 through 1980. Capital costs remain reasonably constant.

Holyoke's supply plan shows a balance of resources and requirements for the years 1976 through 1980 for annual sendout and peak daily sendout.

Findings

The Council finds, for the Holyoke long-range forecast:

- 1) That all information relating to current activities, environmental impact, facilities agreements and energy policies is substantially accurate and complete; and
- 2) Projections of requirements and supply are based on

substantially accurate historical information and
reasonable statistical projection methods; and

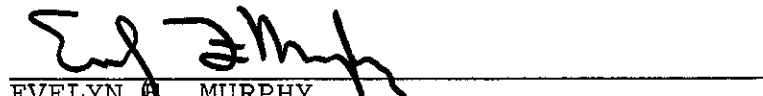
- 3) The forecast is consistent with other approved forecasts;
and
- 4) The forecast is consistent with the policy to provide
a necessary energy supply for the Commonwealth with a
minimum impact on the environment at the lowest possible
cost.

Order

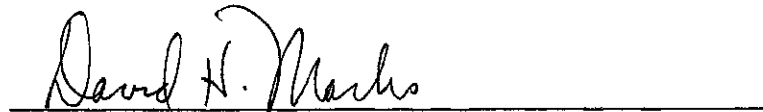
It is ordered that the forecast of the Holyoke Gas and Electric Department - Gas Division is approved. The LNG storage facility proposed to be in-service in 1979 is held to be exempt from Council jurisdiction. As soon as plans for the second LNG vaporizer to be installed at Mueller Road become more definite Holyoke will notify the Council.

By Order Of The Energy Facilities Siting Council

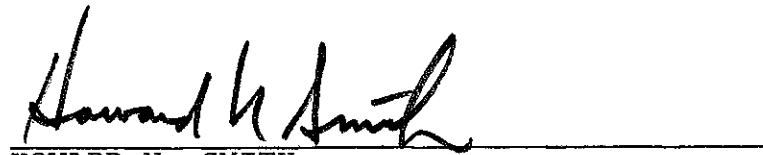

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In the Matter of the Fitchburg
Gas and Electric Light Company
1 DOMSC 87 (January 19, 1977)

Docket: EFSC No. 76-11

Petition of the Fitchburg Gas and Electric Light Company for
Approval of a Long Range Forecast

APPEARANCE: Richard L. Brickley, Jr., Esq.
of Boston, Massachusetts
for the Petitioner

The Massachusetts Energy Facilities Siting Council hereby approves the first long range forecast submitted by the Fitchburg Gas and Electric Light Company, subject to conditions set forth herein.

In accordance with the requirements of the Massachusetts Federal Laws, Chapter 164, section 69I, the Fitchburg Gas and Electric Light Company (hereinafter called Fitchburg or the Company) filed a long-range forecast with the Energy Facilities Siting Council (hereinafter called the Council) on April 30, 1976. The forecast consists of two separate parts, an electric forecast and a gas forecast, each of which in turn is divided into two basic parts. The first of these is a demand section, which projects future demand or sendout of electricity or gas, and the second is a supply section, which is a plan to obtain electricity or gas to meet the projections of need. Hereinafter, the complete document submitted on April 30, 1976 will be referred to as the Forecast; the portion of the Forecast dealing with electricity will be referred to as the Electric Forecast; the portion of the Forecast dealing with gas will be referred to as the Gas Forecast, and the smaller divisions will be referred to unambiguously, as in the Gas Supply Forecast.

An adjudicatory hearing was held in Boston on September 28, 1976, on the contents of the forecast. Prior to the hearing, certain revisions were made to the forecast via a letter from John A. Haven, Supervisor of Real Estate and Engineering Services for the Company, and dated September 21, 1976. This decision

covers the Forecast as amended by that letter.

The Electric Demand Forecast

Fitchburg is an investor-owned utility which distributes and sells electricity to about 21,000 customers in north central Massachusetts. The Company is a member of the New England Power Pool, and as such, generates and receives electricity on an economic dispatch basis. The Electric Demand Forecast predicts that demand will increase as follows:

	1975	1985	<u>Annual Compound Growth Rate</u>
Total Annual Sales (MWH)	315,800	533,900	5.39%
Summer Peak (MW)	55.8	80.3	3.7%
Winter Peak (MW)	57.8	84.3	3.85%

The Company estimates that demand for electricity in its service area will grow at an average annual rate of 5.4% per year through the forecast period. This compares with a growth rate of 2.2% per year in the period between 1970 and 1975. This past growth rate is understated in part, due to the occurrence of the "energy crisis"; demand grew at an average rate of 7.8% per year in the period 1970-73. The demand forecast can be disaggregated and further comparisons can be made:

	<u>1970-75</u>	<u>1975-85</u>
residential with electric heat	4.9%	6.9%
residential without electric heat	3.1%	5.1%
commercial	2.8%	6.4%
industrial	0.4%	5.4%
winter peak	1.5%	3.85%
summer peak	3.45%	3.7%

There is some reason to believe that the projections of the Company are somewhat optimistic. The Company has stated in the Forecast that the economy of its service area has been quite strongly affected by the recession and the energy crisis. The forecast for demand growth for New England as a whole is 5.7% per year on average through 1985.¹

¹ NEPOOL Forecast for New England 1976-1985, January 1, 1976, p.6

The Company's projection of 5.4% is not far behind this figure, yet the Company has admitted that even presuming that the local "economy returned to the pre-recession level, the peak loads and sendout would not return to the pre-embargo levels" ² due to a significant loss of commercial and industrial customers which have left the area. Two new sewage treatment plants, some new residential construction, mentioned in the forecast, and two new industrial parks mentioned in the adjudicatory hearing will partially offset load loss, but growth rates are not expected to return to earlier high rates.

Commercial and industrial demand represented 63% of the total system load in 1975. Thus the growth rate for total sales is quite strongly influenced by the growth rate of these two sectors. Growth from 1975 to 1976 was projected to be 12.2% for total sales, 34.2% for commercial sales, and 12.3% for industrial sales. However, testimony presented at the hearing indicates that these estimates are too optimistic, especially estimates of the first year of the forecast period. Demand for the first eight months of 1976 increased at most, only about 11% over that of the first eight months of 1975 for both commercial and industrial demand. Demand for residential use also grew less than expected, at about 1.36% instead of the projected increase of 6.92%. If all other demand classes were more accurately predicted, these revisions reduce the increase from 12.2% to 7% for the period 1975-76. Using these revisions, and assuming the rates of growth for future years are predicted accurately, the total sales forecast through 1985 is reduced to

²Electric Forecast, p.4

an average of 4.8% from the original 5.4% prediction. This seems a more reasonable demand projection, considering the Fitch-burg service area's depressed economy as explained by the company.

The basis for forecasting total energy requirements is not well explained. More important in system planning, however, is accurate prediction of peak loads. The Forecast and the transcript of the hearing together provide a good deal of information on the Company's methodology for predicting peak demand. First, the Company took into account certain loads to the system provided by new industrial and residential customers for the first two forecast years. For later years, peaks are expected to grow in a pattern similar to historic rates, though these growth rates are lower than the historic ones due to conservation and load management efforts. Load is allocated among consumer classes through the use of historic data on ratios of use between various classes and through the use of a study done for the Company on system growth and load flows.

While the data used by the Company to predict peak loads is not given in its Forecast, the methodology and the peak load projections both seem to be reasonable. The actual summer peak in 1976 was 56.59MW, for example, while the predicted peak was 56.2MW, a difference of only 0.7%.

The Council hereby determines that the Electric Demand Forecast is based upon historic and current operating data and information which are substantially accurate and complete and that the Forecast contains no projections inconsistent with other projections already approved by the Council. Upon revision of the Demand Forecast for total energy requirements which

take into account the slower upturn in the service-area economy, the Council will determine further that the Forecast is based on reasonable statistical projection methods. The Council hereby determines that the Electric Demand Forecast is approved, subject to the condition that the company revise its projections of demand to take into account a less optimistic growth rate.

The Electric Supply Forecast

Fitchburg is an intermediate-size electric company without need to build major new generating facility in the forecast period. The Company does intend to increase its generating capacity, by acquiring shares of 4 new base load and one new cycling unit currently planned by other NEPOOL members. This will increase the peak capacity of the company from its current ownership of 43.3MW to 92.6MW:

Existing capacity	43.3
Termination of sales agreement ³	28.5
Planned Units in other states ⁴	18.6
Proposed Facilities ⁵	2.2
Total Capacity Planned	<u>92.6</u>

In addition to capacity owned by the company, capacity purchases of 48.7 megawatts increases to 50.3 megawatts and then decreases throughout the forecast period to 1.5 megawatts in the Winter of 1985-86.

³

Fitchburg has a swap arrangement with the New England Power Company wherein the Company receives 7.2MW of cycling capacity in Salem Harbor No. 4 in exchange for 40MW of peaking capacity at Fitchburg Mo.7. This contract terminates on October 31, 1977.

⁴This consists of shares in the following plants:

<u>Plant</u>	<u>Date</u>	<u>Capacity</u>
Wyman#4	December 1978	1.09
Seabrook #1	June 1981	1.96
Millstone #3	May 1982	2.50
Charlestown #1	November 1984	13.00

⁵This consists of 2.24 MW of capacity in Pilgrim 2 Nuclear power plant, to commence in October, 1982

These exchanges and the company's expected peak demand can be combined to determine the reserve margin, or amount of excess capacity beyond that needed to meet the peak load. Some reserves desired in case of shortage which makes a generating station or line temporarily unavailable; the F.P.C. recommends between 15 and 20% reserve capacity, while NEPOOL estimates that it requires about 23% reserve on average to maintain it's goal of only 1 day in 10 years of insufficient generating capacity.⁶

Fitchburg, in contrast, expects a reserve margin between 47% and 82% until late 1981, after which their reserve is expected to range between 8 and 20%. These figures assume that Pilgrim 2, Seabrook 1, Millstone³, and Charlestown, all nuclear powered generating units, will commence operations as scheduled. However, Boston Edison has recently announced that Pilgrim 2 will be slipped 2 years; further, the recent Environmental Protection Agency revocation of Seabrook's discharge permit may impede the ability of Public Service Company of New Hampshire to complete that plant when scheduled. The delay of Pilgrim 2 above reduces Fitchburg's reserve margin as low as 5.6% between late 1983 and late 1984. (See table on the following page).

The drastic reduction in reserve capacity in late 1981 derives from the termination of an agreement with Boston Edison for 40 MW of power, 10 megawatts each from Pilgrim 1, Mystic 7 and New Boston 1 and 2 generating units. Similarly, a large increased reserve capacity from 53.7% to 81.2% is expected to occur in late 1977 due to the termination of the swap

⁶See testimony of James R. Smith, Massachusetts Municipal Wholesale Electric Company adjudicatory hearing, NFSC 76-1, on November 23, 1976.

	<u>Projection</u> <u>Capacity (MW)</u>	<u>Reserve %</u>	<u>Slippage</u> <u>Capacity (MW)</u>	<u>Reserve %</u>
Summer 1976	92	63.7		
Winter	93.6	47.6		
Summer 1977	93.6	53.7		
Winter	114.9	81.2		
Summer 1978	114.9	81.2		
Winter	116	77.6		
Summer 1979	116	77.6		
Winter	116	72.4		
Summer 1980	116	72.4		
Winter	116	67.4		
Summer 1981	116	67.4		
Winter	79.1	10.8	77.14 ⁷	8.04 ⁷
Summer 1982	79.1	10.8	77.14 ⁷	8.04 ⁷
Winter	83.8	12.9	81.6 ⁸	9.9 ⁸
Summer 1983	83.8	12.9	81.6 ⁸	9.9 ⁸
Winter	83.8	8.6	81.6 ⁸	5.6 ⁸
Summer 1984	83.8	8.6	81.6 ⁸	5.6 ⁸
Winter	95.7	19.2		
Summer 1985	95.7	19.2		
Winter	94.1	11.6		

⁷ These figures indicate the possible effects of Seabrook 1 being slipped one year. Slippage would only affect these four figures.

⁸ These figures indicate the effects of Pilgrim 2 being slipped two years. Slippage would only effect these eight figures.

agreement with the New England Power Company (see footnote 3). Testimony presented by the Company indicates that it expects both agreements to be renegotiated in similar terms. If both are renegotiated, the Company's reserve margin will fall no further than 29.9%, even with the 2 year slippage of Pilgrim 2. If both agreements are in fact renewed, then the Council will be correct in approving the Electric Supply Forecast as "providing a necessary power supply for the Commonwealth... at the lowest possible cost".⁹

The Company's testimony indicates that it believes it will be able to renew these contracts. Even if this is not possible, Fitchburg points out that "short or long term contracts are available from those participants that have excess operating capacity for those who may be short from time to time".¹⁰

Because of this risk of insufficient generating capacity, however, the Council shall treat the Electric Supply Forecast not as a proposal to buy 18.6 MW units in other states as well as 2.2 MW in a unit in Massachusetts for a total of 20.8 MW, but as a proposal to buy capacity in these other units for an amount over 20 MW, leaving open the possibility that this capacity should be revised upward. The Council has elsewhere treated a motion for approval of a purchase of capacity as a motion for approval of acquisition

⁹Siting Council Regulations, Chapter A Rule 2.3

¹⁰Electric Forecast, p.35

of a flexible amount of capacity." 11

The Council will not require the acquisition of this capacity, but urges the Company to make attempts to do so in the event that those previously mentioned contracts are not renegotiated. Extremely low reserve margins greatly increase the probability that the Company will have insufficient generating capacity to meet the needs of its customers. Fitchburg is a member of NEPOOL, and so has access to pool generation, thus insufficient capacity does not necessitate a loss of power. However, the pooling agreement provides for significantly higher energy charges per kilowatt hour whenever a member has insufficient capacity among its own generating equipment and capacity purchases. If the Company has too low a generating reserve, then, its' average cost for electricity will increase. The Council urges Fitchburg to consider the risk of a low reserve margin and insufficient capacity in light of potential nuclear slippages and its' possible inability to renew previous contracts in time to make prudent arrangements for generating capacity.

Fitchburg is not planning to build transmission facilities or substations which come under the jurisdiction of the Siting Council. The Company is planning to purchase a minority share in one generating station which may come under Council jurisdiction. The Siting Council is currently considering the claim of the lead company, Boston Edison, that the Pilgrim 2 nuclear power plant is exempt under the grandfather clause, section 15 of Chapter 617 of the Acts of 1975.

11 In the Matter of MMWEC, 1 DOMSC.1, (August 6, 1976) p.14

In the context of this proceeding, it is enough to consider whether the purchase of a share by the Company is appropriate, without prejudice to the case for or against exemption.¹²

The Council hereby determines that the Electric Supply Plan is approved.

The Gas Forecast

Fitchburg, like most other companies which sell retail gas, is in the position that supply, not demand, is the constraint which determines sendout. Pipeline gas is being curtailed by suppliers according to Federal Power Commission guidelines, and the use of propane is restricted by the Federal Energy Administration. New supply sources must come in the form of liquified natural gas (LNG), and the Company has procured enough of this to allow only about 2% sales growth per year in the forecast period.

	1975	1980	Average Annual Change
Annual Sendout (000 MBTU)	2,137,130	2,296,830	1.45%
Peak Daily Sendout (000 MBTU)	13,720	47,952	5.55%
Load Factor	.427	.350	N.A.

No projection of demand is included in the forecast, as no new facilities are planned; the Company is only required to provide a projection of sendout.

Under the F.P.C. guidelines, service is curtailed to certain customers on a priority basis. Customers using gas for certain purposes, receive gas only as it is available, while customers whose use is considered more important receive gas as they require it. These so-called interruptible customers are largely industrial customers and include those who use gas to generate electricity; these tend to

¹²

Further discussed in MMWEC, pp. 15-16

require energy at fairly regular intervals throughout the year. Customers who receive gas as needed tend to need gas on a seasonal basis, as for residential heating purposes. Thus the measure of fluctuation of demand, the load factor, has decreased drastically since the beginning of the curtailment program; Fitchburg's load factor has dropped from its high of 69.9% in the historic 5 year period to 35% for most of the forecast period.

A gas company must buy supplies to meet peak demand; however, when supply exceeds current demand, a company such as Fitchburg, which has no gas vaporization facilities, must lose it or sell it. Fitchburg is continuing to provide gas to its interruptible customers whenever possible; thus although the Company predicted that no sales would accrue to interruptible customers, approximately 100,000 million cubic feet were sold to those customers in the first 9 months of 1976.¹³

Customer categories which are of higher F.P.C. priorities are almost all predicted in the Forecast to increase substantially in 1976, presumably to make up for decreases in prior years, then to settle down to a steady annual growth rate close to 2% per year. The major exception to this is the category of Company uses, which will drastically decrease until 1977. The Company was once a major consumer of gas in order to generate electricity; this is now a curtailed use.

¹³ Transcript, p, 49

Expected growth may come through new customers or through growth in the use of existing customers. The Company accepts new customers if it has the supply to serve their expected needs and if it is likely to get an adequate return. Its policy is not to add more customers than the existing firm supply can provide for. However, the Company has testified that they prefer industrial users with their more even demands, and might accept a new industrial customer which needed a large gas supply in order to improve the economy of the service area, and then seek additional L.N.G. supply to provide for that need. At the same time, this type of situation could lead to further curtailments of the Company's pipeline supplies, if the new customer were in certain F.P.C. priority categories. While this policy may be somewhat deleterious to the cost of gas to the consumer, it is an understandable policy to take and is not inconsistent with the energy and employment policies of the Commonwealth.

The Council hereby determines that the Gas Forecast is based on substantially accurate and complete information, reasonable statistical projection methods, is not inconsistent with other approved forecasts, and that the Gas Supply Forecast is consistent with the various policies of the Commonwealth. The Fitchburg Gas Forecast is hereby approved in its entirety.

By Order Of The Energy Facilities Siting Council



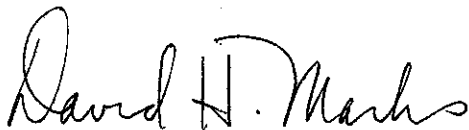
CHRISTINE B. SULLIVAN, CHAIRMAN



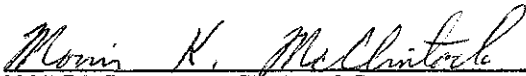
EVELYN F. MURPHY



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MORRIS K. MCCLINTOCK



HOWARD N. SMITH



JOHN R. VERANI



Docket: EFSC No. 76-1

Petition of the Massachusetts Municipal Wholesale Electric
Company and 28 Municipal Electric Utilities

APPEARANCE: Maurice J. Ferriter, Esq. of Holyoke for Petitioner

The Massachusetts Municipal Wholesale Electric Company (MMWEC) has petitioned the Energy Facilities Siting Council pursuant to G.L. c.164, ss69G et seq. for approval of a 390 MW generating project with associated substation and 345 KV transmission facilities. The project is proposed for the Stony Brook Energy Center in Ludlow, Massachusetts and includes a gas turbine peaking unit and a combined cycle intermediate unit. Construction would commence in 1977 with a completion date of 1982.

By decision dated 8 December 1976, the Siting Council approved the proposed gas turbine peaking unit and deferred a decision upon the combined cycle unit for further analysis and review. See Decision at 1 DOMSC 52. Thereafter, the company submitted additional analysis to the Council; and an adjudicatory hearing was held before four members of the Council on 17 January 1977.

A. Power Supply Plan

In its Decision of 8 December, the Siting Council expressed substantial concern that the MMWEC Power Supply Plan had committed the company to an initial program of intermediate and peaking capacity without having formally studied the cost advantage and need for a baseload fossil-fired generating unit as an alternative. This concern was magnified by the fact that none of the MMWEC witnesses offered an explanation for the company's decision to

ignore a baseload unit. See Decision at 1DOMSC 54.

At the most recent hearing, MMWEC witnesses explained that a baseload fossil unit was not formally studied because the New England Power Pool (NEPOOL) has committed itself to a policy of nuclear baseload generating capacity. As a NEPOOL participant of small size and limited independence, the company has followed this policy and has sought to obtain baseload requirements by purchase of ownership interests and life of unit contracts in planned nuclear units. The company now has commitments for sufficient nuclear capacity to satisfy its anticipated baseload requirements by the late 1980's. Therefore, it has no presently foreseeable need for other baseload capacity and consequently has no need to consider baseload fossil capacity through the mid 1980's.

While the wisdom of nuclear reliance is now being questioned in the public sector given escalating costs, slippage, radiological safety, security, fuel supply, fuel waste, and reliability problems, MMWEC cannot be faulted for following a policy which was formulated by the Congress and major utility companies long before it was incorporated as a public corporation. See generally Nuclear Power Plant Control, 62 Va. L. Rev. 738, 787(1976). . Unless and until nuclear reliance is modified or abandoned, MMWEC's nuclear option for baseload capacity should be accepted as reasonable.

B. Need for Intermediate Capacity

In the Decision of 8 December, the Council also expressed concern that MMWEC has proposed construction of an intermediate capacity, combined cycle unit for operation at a time of apparent excess intermediate capacity in the power pool. Company witnesses were not able to justify the combined cycle unit within this context. See Decision at 1 DOMSC 57.

Again, at the most recent hearing, MMWEC witnesses explained that the forecast of excess intermediate capacity may be more apparent than real from the perspective of a new utility which does not have its own generating

capacity. For example, in response to MMWEC's 16 December 1976 request of NEPOOL members for contract purchase of intermediate capacity in the period from 1981 through 1985, there has been no substantial, long term, unconditioned offering to the corporation." It would appear that NEPOOL members are retaining excess capacity for own use as a hedge against nuclear slippage and cancellation at least through 1985.

It is noted also that the forecast of excess intermediate capacity and deficient baseload capacity rests, to some extent, upon semantic distinctions. Thus, it appears that much of the NEPOOL forecast of excess intermediate capacity results from its designation of existing baseload fossil units as intermediate units on the assumption that these will be dispatched as intermediate units when planned nuclear baseload units are on line. These fossil units were built as base units, are currently operating as base units, and will continue to operate as base units if there is continuing nuclear slippage such as that recently experienced with the Boston Edison Company's Pilgrim 2 unit and Public Service Company of New Hampshire's Seabrook units. In short, the intermediate capacity excess will materialize only to the extent that nuclear baseload units are constructed and operated as planned. Nuclear slippage will, to greater or lesser extent, reduce excess capacity and will lead to greater use of MMWEC's proposed combined cycle unit as indicated by the Energy Resources Company dispatch study conducted for the Council.

MMWEC emphasizes that the uncertainties of nuclear construction weigh heavily in the corporation's judgment to construct its own intermediate capacity. The corporation is already largely dependent upon nuclear construction to serve its baseload needs. It would be similarly dependent upon that construction to free existing fossil generating units for its intermediate use were it to forego construction of the combined cycle unit. MMWEC characterizes this dependence as a "double nuclear risk" which it declines to accept. As a

new utility in the unique situation of having virtually no capacity of its own and having no firm capacity to rely upon in the event of substantial slippage, unlike major New England utility companies, MMWEC argues that it cannot afford the risk of the full nuclear reliance following from a decision to forego the combined cycle unit.

Admittedly, MMWEC has not undertaken a comprehensive analysis to quantify the double nuclear risk. However, the reluctance of NEPOOL members to commit intermediate capacity to MMWEC is indicative of the present uncertainties of nuclear construction. Certainly, the larger utilities appear to be maintaining existing units as a safeguard against slippage. In this circumstance, MMWEC's determination to construct its own intermediate capacity as security against slippage is reasonable.

C. Power Supply Cost

The December Council Decision also questioned the power supply cost study conducted for MMWEC by R.W. Beck and Associates. At the latest hearing, Beck presented a revision of its earlier cost study. That revision uses the same deterministic approach to system outages which was criticized in earlier hearings by Herman Chernoff, professor of applied mathematics at the Massachusetts Institute of Technology. See Decision at 1DOMSC 55. Predictably, the revised power supply cost study concludes that the full Stony Brook project is less costly than the gas turbine unit alone which was approved in the December Decision. Of course, modification of a single key assumption within the study reverses the conclusion. The assumption to be modified is that purchased energy costs for intermediate capacity in place of the Stony Brook combined cycle capacity will be sharply higher than in the past.

The Beck assumption of higher purchased energy costs is not consistent with other assumptions of its study which assume nuclear capacity in operation

as planned. If nuclear capacity is operable as planned, the consequent emergence of excess intermediate capacity in the New England Power Pool argues against the Beck assumption. Rejection of the assumption leads to the conclusion once again that the gas turbine unit alone is a less costly power supply alternative. At the same time, it must be recognized that had the Beck study posited the nuclear slippage which is MMWEC's first concern in building the combined cycle unit, the assumption of higher purchased energy costs would be valid. And in a nuclear slippage case, the combined cycle unit may well be less costly.

The Council finds that the combined cycle unit may provide a secure, less costly alternative to purchased power in a situation of substantial nuclear slippage. Should planned nuclear capacity become operational during the 1980's with limited slippage or cancellation, however, the Council finds that the combined cycle unit will not have demonstrated cost advantage or need. The inconsistent assumptions of the Beck cost study simply do not sustain the combined cycle unit in this latter circumstance. Nevertheless, the Council recognizes that rejection or deferral of the unit for a period of review of the extent of slippage may have the unwanted effect of seriously jeopardizing the MMWEC effort to establish a unified and independent municipal utility system in the Commonwealth. The corporation's existence will be threatened from the outset if it is required to assume the risk of substantial slippage or cancellation, a risk which established companies can more readily avoid by reliance upon their existing generating capacity. Therefore, the Council accepts nuclear construction slippage and cancellation risk as a reasonable justification for construction of the combined cycle unit.

D. Transmission Corridor Selection

The Decision of 8 December approved a 345 KV transmission line for interconnection of the Stony Brook project to the NEPOOL grid but deferred route selection of the line for additional review. See Decision at 1 DOMSC 59.

That deferral will continue while the Council considers the suitability of an existing Northeast Utilities transmission corridor for siting of the MMWEC line.

FINDINGS

1. This decision authorizes the Massachusetts Municipal Wholesale Electric Company to construct a combined cycle unit not to exceed 375 MW (winter rating) and a gas turbine unit not to exceed 200 MW (winter rating). Pursuant to G.L.c.164, s69J, the corporation's requirements are limited to combined cycle capacity not to exceed 300 MW (winter rating) and gas turbine capacity not to exceed 140 MW (winter rating). The remaining capacity in each unit may be offered to other New England utilities. The Council is to be notified of all affirmative responses to the offering of this latter capacity.

2. This decision also authorizes substation and transmission facilities necessary to interconnect the approved generating units. Selection of a transmission route is deferred.

3. This decision requires the corporation to submit a specific construction cost estimate for the Stony Brook project after specifications, plans, and construction contracts have been executed.

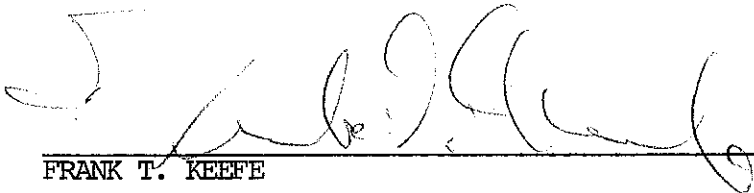
4. This decision reaffirms the Council's earlier approval of the corporation's purchase of 22MW of capacity in Wyman Unit No.4. See Decision at 1 DOMSC 61.

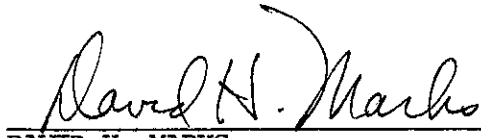
5. This decision determines that the generating facilities authorized herein are consistent with current health, environmental protection, and resource use and development policies as adopted by the Commonwealth and are consistent with the policies set forth in G.L. c. 164, § 69H.

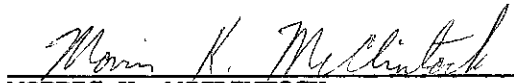
By Order Of The Energy Facilities Siting Council


CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY


FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. MCCLINTOCK


HOWARD N. SMITH


JOHN R. VERANI

Not Eligible to Vote in Electric Matters
ROBERT S. PINDYCK

In the Matter of
the Algonquin Gas Transmission Company
1 DOSMC 108 (16 February 1977)

Petition to Amend Regulations

APPEARANCE: Harold B. Dondis, Esq. and
Michael T. Gengler, Esq. of Boston
for the Petitioner

Thomas B. Arnold, Esq. of Boston
for the Sierra Club

The Algonquin Gas Transmission Company has filed a rulemaking petition which requests the Energy Facilities Siting Council to amend its regulations as these apply to interstate natural gas companies. The petition seeks a rule change which would exempt interstate natural gas company facilities from Siting Council jurisdiction under G.L. c.164, ss69G- 69Q. Such an exemption would foreclose Council review and approval of the siting of interstate gas storage, transport, liquefaction, and vaporization facilities and interstate gas pipelines and associated facilities. Under the proposed rule change, Algonquin would apparently file some sort of informational demand and supply forecast.

The Council has received extensive memorandums and reply memorandums from its staff, Algonquin, and the Sierra Club. A formal public hearing considered the petition on 2 June 1976. Concluding arguments were heard by the Council on 19 January 1977.

Algonquin argues that the natural gas act, 15 U.S.C. ss717 et seq. precludes any state review of Federal Power Commission certificated interstate gas facilities under the preemption rule, Article VI of the Constitution of the United States. It is clear, of course, that the act precludes state review of the need for interstate gas facilities; and, indeed, Council regulations recognize exclusive federal authority to determine need.

See EFSC Rule 66.1, 66.2. However, neither the act nor the preemption rule prohibits the several states from requiring reasonable information forecasts of need, resources, and requirements which may be useful to the Council's adjudicatory review of the forecasts of retail gas utility companies which are not subject to the natural gas act but which are supplied by the interstate gas facilities of Algonquin and others. See 15U.S.C. s 717q. Moreover, the act does not extend to environmental review of the siting of interstate gas facilities since that review at the federal level is carried out under the national environmental policy act, 42 U.S.C.ss4337 et seq. rather than under the natural gas act; and that review is exercised by concurrent jurisdiction with those states which have enacted environmental review legislation. Furthermore, case law under the natural gas act itself finds that at least some traditional state police power inquiry such as land use review and public safety is a legitimate state undertaking.

There is an indisputable local interest in controlling the environmental development of the community which is almost universally expressed in the power of local municipalities to enact zoning ordinances. It does not appear to have been the intention of Congress in enacting the Natural Gas Act to exempt gas suppliers from complying with such local zoning ordinances. New York State Natural Gas Corporation v. Town of Elma, 182 F. Supp. 1 (W.D.N.Y. 1950). See also Texas Eastern Transmission Corp. v. Wildlife Preserves, Inc., 48 N.J. 261 (1966); Transcontinental Gas Pipeline Corp. v. Borough of Milltown, 93F. Supp. 287 (1950); Transcontinental Gas Pipeline Corp. v. Hackensack Meadowland Development Corp., 464 F. 2d 1358 (3d Cir.1972).

In these circumstances, there is no legal justification for the Council to accede to Algonquin's argument that the federal preemption of the determination of need is to be interpreted also as a preemption of environmental review, land use, and public safety in the siting of facilities.

Algonquin argues that Council regulation of the siting of interstate gas facilities is a useless, duplicative burden in light of the comprehensive review given to these facilities by the Federal Power Commission. However, the

Commission is repeatedly criticized for its inadequate environmental review of facilities. See Greene County Planning Board v. Federal Power Commission, 455 F.2d 412 (2d Cir. 1972). It appears that the Commission's first concern for maintenance of the gas industry coupled with an exceedingly large caseload too frequently leads to pro forma environmental review. Given this situation, Council review of siting may provide the only real opportunity for adequate consideration of environmental, land use, and public safety concerns.

Finally, it is noted that the Siting Council enabling act was specifically amended in 1974 to include natural gas companies. The Council should not unilaterally reverse that legislative judgment because of Algonquin's reluctance to submit its activities to the same siting review which is required of all other utilities in the Commonwealth.

Therefore, the Energy Facilities Siting Council declines to accept the rulemaking petition of Algonquin. In making this ruling, the Council re-affirms its original determination that it is foreclosed by federal preemption from review of the need for interstate gas facilities. At the same time, the Council finds continuing jurisdiction to require interstate natural gas companies to file information forecasts of demand, resources, and requirements as set forth in its regulations. And the Council finds continuing jurisdiction to review environmental impact, land use, and public safety issues as these apply to the siting of interstate gas facilities certificated or to be certificated by the Federal Power Commission.

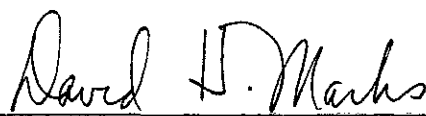
Algonquin and other interstate natural gas companies are advised to file required forecasts pursuant to Council regulations forthwith.

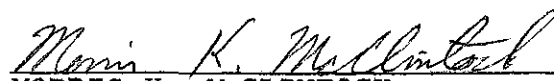
By Order Of The Energy Facilities Siting Council


CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY


FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. MCCLINTOCK


HOWARD N. SMITH


JOHN R. VERANI

In the Matter of the Boston Edison Company
1 DOMSC 112 (16 February 1977)

Docket: EFSC #76-12

Decision on Exemption of certain Transmission Line and Substation Facilities.

I. The Massachusetts Energy Facilities Siting Council hereby exempts from its jurisdiction the following transmission lines and substations and states below its findings and reasons for such exemptions.

1. 345 KV Woburn to Billerica transmission line designed #337 at p. 1V-11 of Boston Edison's Long Range Forecast.
This line was physically completed prior to May 1, 1976.

2. 345 KV Holbrook to Walpole line designated #316 in the company's Long Range Forecast.
Construction on this line was completed prior to May 1, 1976.

3. 345 KV line from Woburn to No. Cambridge designated #346 in the company's Long Range forecast.
Construction was completed on this line as of May 1, 1976.

4. 345 KV line from Plymouth - Jordan Road to Holbrook - Station #478.
Construction was completed on this line as of May 1, 1976.

5. 3-115 KV lines designated #110-510 and 110-511 in the company's long range forecast.

These are 3 segments of underground pipe-type cables in Boston. The company testified at the hearing that all the pipes had been laid in the ground and the pavement replaced prior to the winter of 1975-76 and that substantial sections of cables were pulled and energized prior to May 1, 1976. The company testified that purchasing and laying the pipe comprises half the cost of the job. The Council therefore finds that these lines were under construction as of May 1, 1976.

Seen as such, the project was definitely under construction as of May 1, 1976.

To reach such a conclusion, the Council need not decide at this point whether the definition of construction in section 69G of the statute applies to the Council's "Grandfather Clause", found at St. 1975, chapter 617. The reason is that under either the term construction in the grandfather clause or the more specific, and probably broader definition of construction in the statute itself, the work done and obligations incurred by Edison would qualify for exemption.

Support for the claim of exemption for the project came both from the testimony of Bruce Damrell, Superintendent of the Engineering and Construction Department of Boston Edison, and from financial data requested by the Council and supplied by Edison. In addition, on December 1, 1976, the hearings officer and members of the Siting Council staff took a view of certain portions of the project site.

From the testimony, submissions and the view, the Council finds that prior to May 1, 1976 the company had completed most of the site preparation and ground construction at the three substations (#211,320, and 533) required to accommodate the new 345 KV lines and rebuilt 115 KV lines. This work consisted of final grading, fencing, and construction of sub-surface ground and conduit systems. Two new transformers were on site and some bus construction had already been completed. As of May 1, 1976, the company had spent or irrevocably committed approximately \$2.9 million on the actual purchase of equipment and facilities on this part of the project. This amounts to about 23% of the total cost of the whole project, which the company estimates was \$12.8 million as of May 1, 1977.

The Council further finds that as of May 1, 1976, the company had completed most of the removal and street relocating of the 14 KV transmission lines and some of the work on relocating the 115 KV lines. Approximately \$352,000 had been actually spent or irrevocably committed to vendors for purchase of facilities for rebuilding the 115 KV line and approximately \$216,000 had been similarly spent or committed on the 345 KV line.

It appeared from the company's presentation that this project was an ongoing one, in which site preparation and construction had been continuing for many months if not years. It did not appear to be a project which had been substantially delayed or postponed for any reason. Many local construction permits were in the hands of the company prior to May 1, 1977. From the view taken by the hearings officer, it was apparent that on-site construction and delivery and fabrication of materials and equipment were continuing apace without delay or restraint.

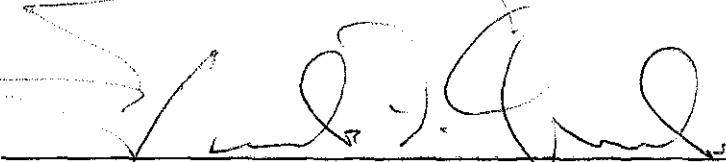
On the above findings the Council rules that the Woburn to Lexington transmission line project was under construction as of May 1, 1976, both since substantial on-the-ground site preparation had been completed and since substantial irrevocable contractual commitments had been made for the purchase of equipment and facilities by that date.

II. The Council defers consideration of the company's claim of exemption for the Plymouth to Manomet 2.5 mile underground transmission line until the time that the Council decides the question of the exemption of the Pilgrim II Nuclear Station. The Council agrees with the company that such line is not for the transmission of power to ultimate customers but rather is for the back-up power requirements of the Pilgrim II station and not as a separate transmission line independently subject to Council jurisdiction. However, if the Council does assume jurisdiction over Pilgrim II, it may consider the siting of this new line as part of its consideration of the whole Pilgrim II station.

By Order Of The Energy Facilities Siting Council


CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY


FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. MCCLINTOCK

HOWARD N. SMITH


JOHN R. VERANI

In the Matter of the Joint Long Range Forecast
of Gas Sendout of Boston Gas Company and
Massachusetts LNG, Inc.
1 DOMSC 117 16 February 1977)

Docket EFSC 76-25

Petition of the Boston Gas Company and Massachusetts LNG, Inc. for
Approval of a Joint Long Range Forecast

APPEARANCES: Margaret St.Clair, Esq., for
the Petitioners

The Energy Facilities Siting Council hereby approves the joint long rank forecast of gas sendout of Boston Gas Company and Massachusetts ING, Inc.

An adjudicatory hearing was held on the joint forecast on October 7, 1976. The companies presented 2 witnesses, Mr. John McKenna, Vice-President of Boston Gas and Massachusetts ING, and James H. Dodge, controller of Boston Gas. Both men were responsible for the development of the long-range forecast.

Boston Gas is the largest gas company in Massachusetts and serves approximately half a million customers in 73 cities and towns in the eastern part of the commonwealth. Massachusetts ING, Incorporated is a wholly owned subsidiary of Boston Gas. It is a service company of Boston gas and has no retail or wholesale customers of its own. It merely purchases and processes gas and feedstocks and delivers the products to Boston Gas for distribution to the ultimate customer. In 1975 total gas sendout was 62,089,929 MMBTU and peak daily winter sendout was 434,800 MMBTU. The vast majority of the company's customers are residential or small commercial users, and as such are in the top FPC priority groupings. This means that a large portion of the load (about 60%, by company estimates) is weather sensitive. The company plans sendout and requirements on a design year basis in order to have adequate reserves available for its customers, most of whom cannot switch to alternative fuels and cannot be interrupted. The company's design year has 6300 degree days and its design day has an average temperature of -8°F. The Council finds that planning on such a basis is reasonable. It also finds that the company's design day and design year parameters are reasonable, although it urges that the company re-assess such parameters in view of the recent extremely cold weather experienced

in Massachusetts and the rest of the country.

Because the companies proposed no new facilities, they filed only a forecast of gas sendout. In making the forecast, the company discussed at length the major problem faced by all gas companies - the uncertain supply of gas and feedstocks. The company made several significant assumptions about supply. First, the company assumed that the Federal Energy Administration's allocation of propane to them would not be reduced. Second, it was assumed that pipeline supplies would be further curtailed in the future. Third, sufficient supplemental gas and feedstocks will be available to enable the company to meet its design year and day requirements.

The Council finds that each of these assumptions is reasonable and that the resulting supply availability forecast by the company is accurate under the circumstances.

The company assumes that because of increased availability of supplemental gas it will be able to increase sendout by approximately 3% annually over the next five years, which is between one-third and one-fourth of the growth rate experienced during the 1960's and early 1970's. In order to control growth and keep from exceeding the 3% rate, the company has eliminated virtually all advertising and promotion and has cut its residential sales force by approximately one-half.

The Council finds that the company's assumptions as to increased supplemental gas are reasonable and that its forecast growth in sendout is also reasonable.

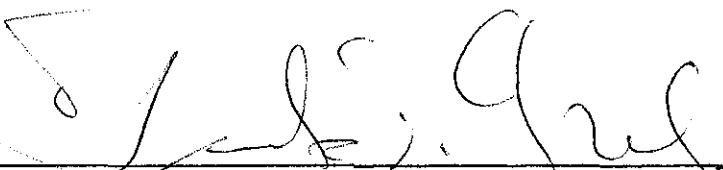
The Council hereby approves the forecast of gas sendout subject to the condition that the amount of gas available to the company remains within the levels predicted and expected by the company. The company is hereby instructed to inform the Council staff of any significant change in the

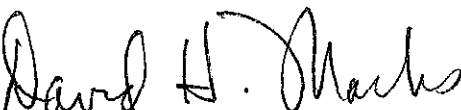
availability of either pipeline gas or supplemental gas within 30 days of the time the company first learns of such change.

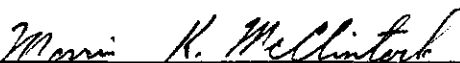
By Order Of The Energy Facilities Siting Council


CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY

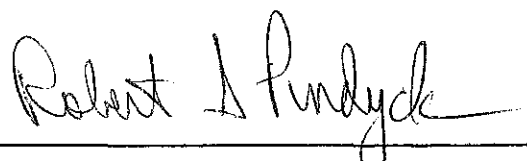

FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. MCCLINTOCK

HOWARD N. SMITH


JOHN R. VERANI


ROBERT L. PINDYCK

In the Matter of the Middleborough Gas Department
1 DOMSC 122 (16 February 1977)

Docket EFSC 76-18

Petition of the Middleborough Gas Department for Approval
of a Long-Range Forecast

APPEARANCES: Joseph R. Vlcek, Gas Superintendent, for
 the Petitioner

The Massachusetts Energy Facilities Siting Council hereby
approves in part the first long range forecast submitted by the
Middleborough Gas Department.

In accordance with the requirements of General Laws c.164
s.69I Middleborough filed a long range forecast of gas requirements
and plans to meet such requirements with the Council on May 3, 1976.
Notice of the adjudicatory hearing concerning the forecast was
published in the Middleborough Gazette and mailed to individuals
and organizations in the Middleborough region as ordered by
the Council. A notarized statement of compliance with the Council
order was received on October 12, 1976. The adjudicatory hearing
was held at One Ashburton Place, Boston, MA. on October 12, 1976.
Since Middleborough is proposing no new facilities, an information-
al hearing was not held.

Background - the company

The Middleborough Gas Department stores liquified natural
gas (LNG) and propane and manufactures natural gas and propane-
air for retail sales in the Town of Middleborough located in the
southeastern portion of the Commonwealth. Middleborough served

2085 customers in 1975 and expects to serve 2,224 by 1980. It has agreements for the purchase of natural gas and SNG with Algonquin Gas Transmission Company and the purchase of LNG from Lowell Gas Company. It operates LNG and propane storage and vaporization facilities at Vine Street. In addition, a hortensphere is maintained for storage of gas in gaseous form.

PROJECTION

Sendout is predicted to increase as follows:

	<u>1975-76</u>	(000 MMBTU) <u>1979-80</u>	<u>annual compound growth rate</u>
annual gas sendout	248,640	267,225	1.5%
peak daily winter sendout	1,829.6	2,100.0	2.8%

The company considers these rates reasonable given the depressed economic condition of Middleborough, the lack of foreseeable industrial and commercial growth, the high unemployment rate, and the low population growth rate in the region. Sendout in individual classes is expected to increase as follows.

Residential

Middleborough supplies gas to residential customers under a single rate, DPU# 60, which includes customers with and without gas heating. Currently 40% of the residential customers use gas for heating purposes. Residential sendout grew significantly in the historical years of the forecast due to an expansion of the company's distribution network by a connection with the Algonquin pipeline and substantial residential development in the service area. For future years, growth in annual sendout is expected to be approximately 2% per year (1.3% compounded), while peak winter sendout is expected to increase at a slightly

higher rate.

Commercial, Industrial, and Municipal

Gas is supplied to commercial, industrial, and municipal customers under DPU rates 61 and 62. In 1970 sendout increased 50.3% due to the addition of the Ocean Spray factory to the service area and the conversion of some schools from oil to natural gas. The company predicts little commercial and industrial growth in the forecast period so that sendout will increase 2% in 1976-77 and 1.5% per year from 1977 to 1980 (1.3% compounded). Sendout in the forecast period is not expected to equal the peak of 126,273,400 MMBTU achieved in 1972-73.

Company use, losses, gas unaccounted for and other gas

This class shows wide fluxuations during the forecast period although the compound growth rate is only 1.8%. In 1974-75 sendout jumped 173% and Mr. Vlcek testified that this was due to poor conservation efforts in town buildings. (He cited the example of town maintenance garage doors being left open all night for trucks arriving and leaving.) Conservation techniques were instituted and sendout was reduced substantially in 1975-76. Sendout for this class is not predicted to come anywhere near the 1974-75 45,921,400 MMBTU figure.

The load factor decreases from 37% in 1976-77 to 35% in 1979-80. This may be due to peak sales growing slightly faster than annual sendout. Most growth in the forecast period occurs in the residential class and there will probably be little or no new industrial growth that would add more constant load to the system.

The average cost per MMBTU of sendout is predicted to increase from \$1.956 in 1975 to \$3.057 in 1980. In 1978 there are no

At the present time the Department has no plans to expand its distribution network and will consider taking on new customers only if they are located on an existing line. The company currently conducts no marketing activities.

FINDINGS

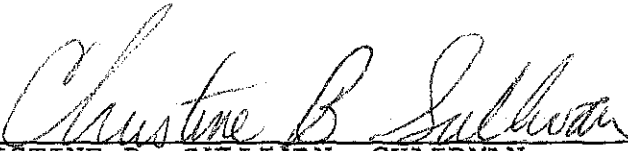
The Council finds that, for the Middleborough Gas Department Long-Range Forecast for 1976 and 1977:

- 1) all information relating to current activities, environmental impact, facilities agreements and energy policies is substantially accurate and complete; and
- 2) projections of supply and requirements are based on substantially accurate historical information and reasonable statistical projection methods; and
- 3) the forecast is consistent with others approved in Massachusetts; and
- 4) the forecast is consistent with the policies stated in s.69H to provide a necessary power supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost.

ORDER

It is ordered that the forecast of the Middleborough Gas Department is approved for the years 1976 and 1977. The Council reserves judgement concerning the years 1978-1980 until the company develops more definite supply plans to meet the required sendout for these years. These plans may appear in the first or subsequent supplements or supplement amendment as they are formalized.

By Order Of The Energy Facilities Siting Council



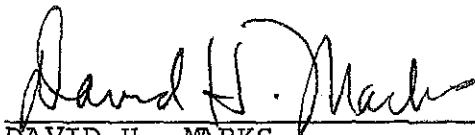
CHRISTINE B. SULLIVAN, CHAIRMAN



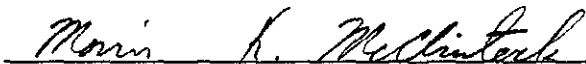
EVELYN F. MURPHY



FRANK T. KEEFE



DAVID H. MARKS

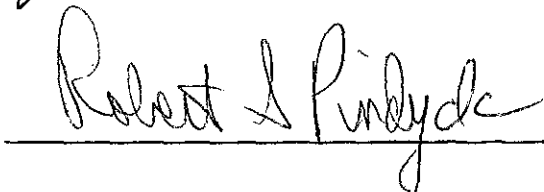


MORRIS K. MCCLINTOCK

HOWARD N. SMITH



JOHN R. VERANI



In the Matter of the City of Westfield
Gas and Electric Light Department - Gas Division
1 DOMSC 129 (10 March 1977)

Docket: EFSC No. 76-26

Petition of the City of Westfield Gas and Electric Light Department -
Gas Division for Approval of a Long Range Forecast

APPEARANCE: Albert J. Mobrice, Superintendent, Gas Division
for the Petitioner

The Energy Facilities Siting Council hereby approves the long-range forecast of the City of Westfield, Gas and Electric Light Department - Gas Division pursuant to General Laws Chapter 164, section 69G et. seq.

Westfield filed its long-range forecast with the Council on May 5, 1976. Legal notice of the filing was published in the Westfield News on August 24, 1976, as directed by the Council, and a public adjudicatory hearing concerning the forecast was held on August 31, 1976 at the Pine Point Library in Springfield, Massachusetts. No informational hearing was held because the company is proposing no new facilities.

The Gas Division is a municipal gas department that supplies gas to customers in southwestern Massachusetts. It has contracts with the Tenneco Gas Pipeline Company and Lowell Gas Company for the purchase of gas. To supplement pipeline supplies, Westfield operates a propane-air plant located at the gas works with a 90,000 gallon storage capacity, and a liquified natural gas satellite facility at Vine Street with a storage capacity of 110,000 gallons.

No facilities are proposed so there is no demand portion of

the forecast. In summary, sendout was predicted to increase in 1976 and no growth was expected from 1977 through 1980. However, subsequent to the initial filing the company has submitted the actual sendout figures for 1976, which indicate a lower growth rate than was predicted.

	<u>1970</u>	<u>1975</u>	<u>1976(actual)</u>	<u>1980</u>
Annual gas sendout	917,708	949,556	1,031,474	1,056,593
Peak daily winter sendout	6,695	6,337	6,678	7,466

The largest customer class is residential with gas heating. Albert J. Mobrice, Superintendent, testified that approximately 80% of the residents of Westfield use gas heat and that this class is expected to remain stable for the forecast period. Sendout was predicted to increase 11.4% but actually increased 13.7% with the peak increasing 4.1%. Commercial is the next largest class, and was predicted to increase 19.5% in 1976 however the actual figures show an increase of only .2% with the peak rising 7.6%. These increases indicate a return to pre-1973 energy crisis levels. Interruptible service, which is to the state college, will be curtailed after 1976 depending on the availability of surplus gas. The remaining classes, residential without heating, industrial, and municipal are not expected to increase after 1976. Company use, losses, and gas unaccounted for also shows no increase after 1976. The annual load factor drops from 41.1 in 1975 to 38.8 in 1977 and remains at that figure through 1980. Resources available equals sendout throughout the forecast period as agreements for gas supply indicate that adequate amounts will be available for the coming year.

Mr. Mobrice testified that the City of Westfield has a fairly stable population level with few new housing starts or new commercial establishments predicted. Although there are requests for gas service, Westfield's current policy is to accept new customers only for cooking or hot water heating and not for space heating. By monitoring permit applications the company is attempting to insure that unauthorized gas furnaces are not installed.

Because most of Westfield's heating load is residential priority one, the company is not subject to large gas curtailments by the pipeline supplier and therefore supplies a high percentage of gas to its customers from the pipeline relative to other gas companies in the Commonwealth. This means that the company is less dependent on supplemental LNG or propane compared to other companies and the cost of feedstock constitutes a low percentage of total costs. The cost of feedstock is predicted to rise only slightly whereas the largest cost increases will be in pipeline gas. The 1975 cost was \$1.96 per MMBTU of sendout and in 1980 is expected to be \$2.34 per MMBTU of sendout.

Mr. Mobrice testified that if all pipeline supplies were cut off, Westfield's LNG and propane peak shaving facilities could supply the entire city. The LNG plant is rated at 500,000 cubic feet per hour, the propane-air plant is rated at 50,000 cubic feet per hour, and the maximum load experienced to date has been 375,000 cubic feet per hour.

The only facility the company is considering installing is a standby vaporizer for the LNG plant which probably would not increase capacity but only serve a back up function.

Findings

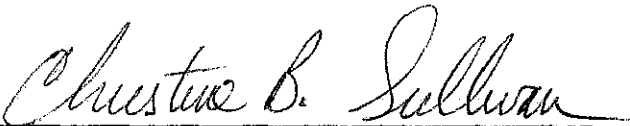
The Council finds that:

- 1) All information supplied by Westfield relating to current activities, environmental impact, facilities agreements and energy policies is substantially accurate and complete; and
- 2) Projections of supply are based on substantially accurate historical information and reasonable statistical projection methods; and
- 3) Westfield's forecast is consistent with others approved in Massachusetts; and
- 4) Westfield's forecast is consistent with the Council's policy to insure a necessary energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost.

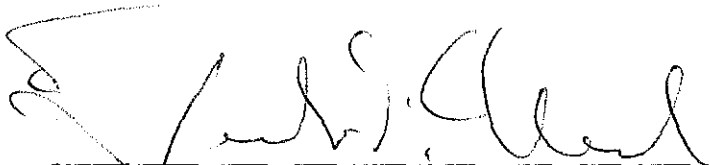
Order

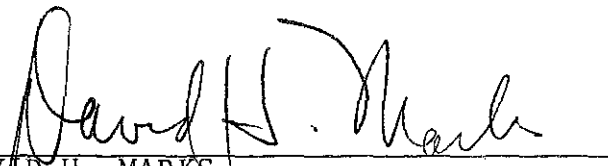
It is ordered that the first long-range forecast of the Westfield Gas and Electric Light Department - Gas Division is approved for 1977. The company is directed to notify the Council when plans to install a LNG vaporizer or any other additional facilities become sufficiently definite to determine whether it should be included in an annual or amended supplement.

By Order of the Energy Facilities Siting Council


CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY

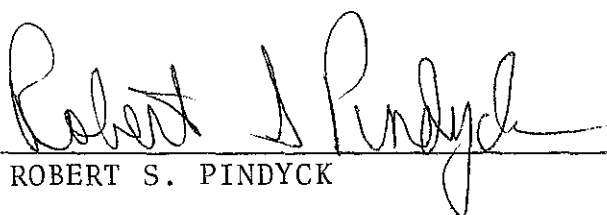

FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. MCCLINTOCK

HOWARD N. SMITH


JOHN R. VERANI


ROBERT S. PINDYCK

In the Matter of Boston Edison Company

1 DOMSC 134 (10 March 1977)

Docket: EF SC No. 7612

Final Decision on the question of whether the proposed
Pilgrim 2 nuclear plant is exempt from the jurisdiction of
the Siting Council

APPEARANCE: John Desmond III, Esq. on behalf of the
 Boston Edison Company
 Dale G. Stoodley, Esq. on behalf of the
 Boston Edison Company

INTERVENORS: William S. Abbott, Esq. representing the
 Plymouth County Nuclear Information Commission
 Stanley U. Robinson III, Pro se

BACKGROUND

Boston Edison Company (hereinafter the company) has filed a timely Long Range Forecast of Electric Power Needs and Requirements with the Massachusetts Energy Facilities Siting Council (hereinafter the Council) pursuant to M.G.L.c.164 §69I. In its forecast, the company listed Pilgrim Station #2, the nuclear generating plant it is planning to build in Plymouth (hereinafter the plant), as an exempt facility. The company's claim of exemption is based on the assertion that the plant was "under construction" as of May 1, 1976 within the meaning of Chapter 617 of the Acts of 1975, the so-called "grandfather clause" of the Council.

An adjudicatory proceeding was conducted before a hearing officer of the Council in this case and public hearings were held

on November 9, 1976, and January 6, 1977. At the first hearing, two applications for intervention were allowed over the objection of the company. The first was a private citizen and customer of the company, Stanley Robinson of Wayland, Mass. The second was the Plymouth County Nuclear Information Committee (PCNIC), an organization of over 500 citizens predominantly from Plymouth and the south shore Towns of Marchfield, Duxbury, Carver, and Kingston and the Cape. A number of the organization's members also reside within the company's service territory. Both intervenors actively participated in the proceedings and argued against the company's claim of exemption. The Company and Intervenor PCNIC have both submitted briefs on the issue to the Council.

The Grandfather Clause

The Grandfather Clause of the Siting Act, found at Section 15 of Chapter 617 of the Acts of 1975, states

"(t)he provisions of sections sixty-nine I and sixty-nine J of chapter one hundred and sixty-four of the general laws shall not apply to facilities under construction prior to May first, nineteen hundred and seventy-six."

A definition of "construction" is provided in General Laws Chapter 164, Section 69G:

"As used in Section sixty-nine H to sixty-nine R, inclusive, the following words and terms shall have the following meanings...

" 'Construction', any placement, assembly, or installation of facilities or equipment, which in the case of an oil facility must be valued in excess of five million dollars, including contractual obligations to purchase such facilities or equipment, at the premises where such equipment will be used, including preparation work at such premises."

The Council hereby decides that the legislature intended that this definition of construction apply to the Grandfather clause.

Placement, assembly, installation and site preparation work.

Boston Edison's chief witness, Russell Maroni, the Planning and Cost Control Manager of the company's Nuclear Projects Department, testified that as of May 1, 1976, the company had not yet obtained any of the major local, state and federal permits which are required by law before commencing construction on the site.*

As of early January 1977, the company had still not obtained any of these permits, but had received an indication of compliance of the state environmental impact report from Massachusetts Secretary of Environmental Affairs, Evelyn Murphy. (January 6, T-85). In addition, Mr. Maroni testified that no construction at the site had been commenced as of May 1, 1976 and would probably not be commenced prior to January 1978. (Nov.9, T-29)

*

See Transcript of November 9, 1976 hearing, p.72. (hereinafter references to the transcript will be preceded by the date of the hearing). These permits are a) a discharge permit from the Environmental Protection Agency; b) a permit from the U.S.Army Corps of Engineers; c) a construction permit from the Nuclear Regulatory Commission; d) a water quality certificate from the state of Massachusetts; e) an approval to alter wetlands from the Plymouth Town Conservation Commission; and f) a variance from the Town of Plymouth Zoning Board of Appeals.

The Council finds, based on these facts, that there was no "placement, assembly of installation of facilities or equipment on the plant site" and that there was not "preparation work" at the site sufficient to constitute construction within the meaning of §69G.

The question of contractual obligations

Whether there were "contractual obligations to purchase such facilities" is a much closer question and the one to which most of the evidence and testimony at the hearing was directed.

The company attempted to prove that it had incurred contractual obligations by introducing evidence of expenditures and commitments in five different categories. We will examine the evidence under each of these categories.

Expenditures under a contract with the Bechtel Power Corporation for Engineering, Procurement and Construction.

Boston Edison entered into a contract with the Bechtel Power Corporation (hereinafter Bechtel) on March 1, 1972 for the engineering, procurement and construction of the Pilgrim II plant (Exhibit BE-17). Under this contract Bechtel basically undertakes the management and control of the entire project, from design, engineering and coordination of licensing, through procurement and construction to start-up. The contract thus embraces a variety of services and responsibilities, only one component of which--procurement--actually involves the purchase of facilities and equipment.

The Bechtel contract raises a preliminary question of statutory construction - that is, whether the contract itself is

a contractual obligation to purchase equipment and facilities under §69G, simply because within the document one of the responsibilities is procurement. The answer to this question must be in the negative. It could not have been the legislative intent to allow a company to avoid Council review simply by signing a contract which happened to provide, inter alia, for the purchase of facilities and equipment. As the Council pointed out in the Berkshire Gas case, the legislature chose the word "contractual obligation" in order to equate substantial financial commitments with the actual erection of structures (1DOMSC 24,30). Using this reasoning, the Council finds that the Bechtel contract, by itself, does not constitute a contractual obligation to purchase facilities within the meaning of §69G.

What must be examined next is whether the payments and commitments made to Bechtel under this contract constituted the type of contractual obligations contemplated by the statute. Boston Edison's major witness, Mr. Maroni, testified that payments under the contract totalled \$32,813,000 as of May 1, 1976 and that an additional \$4,514,000 had been "committed" to Bechtel (see Exhibit BE-27). The witness further testified that the cost of cancelling the "commitments" made with Bechtel would be \$1,400,000 and that the total "cost exposure" of Edison under the contract was therefore \$34,213,000. The witness stated that the engineering-design work on the entire project was approximately 48% complete as of April 30, 1976. In answer to questions by the hearings officer and the intervenor, the witness testified that the amounts described above were only for

engineering and design services. (See Nov. 9, T-59, 60, 80, 103). Further information provided by Boston Edison also indicated that these amounts were for engineering services (see Exhibit BE-14, Item #1). Based on the above facts, the Council finds that the amounts listed above under the Bechtel contract did not constitute "contractual obligations for the purchase of facilities or equipment." Rather these expenditures were for pre-fabrication design and engineering work. As was stated in the Berkshire Gas decision (1 DOMSC 24,36), design and engineering serve planning and feasibility study functions. They do not irretrievably commit the company to a course of purchase of facilities or equipment or construction.

Payments and Commitments to Bechtel Vendors

The second category of expenditures which the company offered as evidence of contractual obligations was purchase orders with Bechtel vendors. Under its contract with Bechtel described above, Boston Edison designated Bechtel as its agent for the procurement of materials, equipment and supplies for the project. Pursuant to this contract authority Bechtel had issued 20 purchase orders to various vendors as of May 1, 1976. The purchase orders are listed in Table I of Mr. Maroni's testimony (Exhibit BE-6). Additional information regarding the purchase orders was elicited by the hearing officer and the intervenors, and was furnished by the company in Exhibits BE-14, BE-18 and BE-19. From the facts in these exhibits and from the testimony in the record, the Council makes the following findings regarding the purchase orders:

1. The first purchase order listed - which is designated C-022, cannot be considered a contractual obligation for the purchase of facilities or equipment since it was for Test Pit Exploration and Laboratory Testing. This comes within the area of planning and site study and surveying.

2. All the remaining 19 purchase orders appear to be for items which could be considered facilities or equipment. Of these, two were completed as of April 30, 1976 (these are designated A-88-AC and EE-001-AC in Table I of Exhibit BE-6) and one had fabrication about 50% complete as of that date (designated in Table K of Exhibit BE-6 as P-124-BC). The Council finds that these three purchase orders constituted contractual obligations for the purchase of facilities or equipment. The amount of such obligations and their effect on the question of exemption will be discussed below.

The company stated that on the other 16 purchase orders there had been no materials procurement or fabrication activities as of April 30, 1976. (see Exhibit BE-19). The company witness, Mr. Maroni, further testified that most of the purchase orders contained restraints or hold points whereby Bechtel, and consequently Boston Edison, reduces its potential cost exposure by preventing the vendor from proceeding past the design and engineering stage on a piece of equipment unless specifically authorized by Bechtel. Under such a scheme, the company's progress payments and cancellation exposure are "minimal until materials are purchased or until actual equipment fabrication commences." (Exhibit BE-6, p.4). Mr. Maroni

further testified that the cost of cancelling such purchase orders on May 1, 1976 would be limited to the approximate cost of engineering and design (see Jan. 6, T-24), and that the restraints mechanism had been used in the deferral of the project to limit the company's cost exposure. (Jan. 6, T-22). Furthermore, the company stated in answer to an information request that in May 1976 Bechtel established a new "hold" on all vendors to prevent them from proceeding to procure materials or initiate fabrication until released (see Enclosure 4 of Exhibit BE-28). The thrust of Mr. Maroni's testimony and the evidence in the exhibits is that the obligations incurred by the company up to May 1, 1976 on these purchase orders were for engineering and design. Although the witness later stated that design-engineering is inseparable from fabrication and that any distinction between the two is artificial (January 6, T-84,85), the existence of the restraints and the fact that Bechtel and the company used them to minimize cost exposure suggest the distinction is valid. Based on these facts the Council finds that the 16 Bechtel purchase orders for equipment, the work on which Mr. Maroni testified was limited to engineering and had not yet entered the materials acquisition or fabrication stage, were not contractual obligations for the purchase of facilities and equipment.

Contract with Combustion Engineering for Nuclear Steam Supply System

On February 11, 1972, the company signed a contract with Combustion Engineering Inc., of Windsor, Connecticut (hereinafter Combustion), to provide licensing assistance, design, procure and/or

fabricate, and deliver all components of the nuclear steam supply system (hereinafter NSSS contract) for the plant. (Exhibit BE-15). Applying the analysis performed above on the Bechtel contract, the Council finds that the contract alone, without supporting evidence of expenditures, commitments and cancellation exposure, would not constitute a contractual obligation within the meaning of the statute.

The company's chief witness testified that as of April 30, 1976, Combustion had completed approximately 30% of the actual work on the reactor vessel, 27% of the actual work on steam generator #1 and 23% of the actual work on steam generator #2. Photographs submitted by the company made it clear that Combustion had proceeded well along in the fabrication of these components and was well beyond the design and engineering stage in its work under this contract. (See photographs attached to Exhibit BE-6). Based on these facts, the council finds that the expenditures made obligations incurred under this contract by Combustion with regard to the fabrication of the reactor vessel and steam generators, were contractual obligations for the purchase of facilities and equipment pursuant to section 69G. The amount of such expenditures and obligations and their effect on the company's claim for exemption will be discussed below.

Combustion also issued 17 purchase orders to suppliers for equipment on which substantial fabrication had been completed as of May 1, 1976. Mr. Maroni later testified that eight of these purchase orders had not yet been released for fabrication. However, both Mr. Maroni and a witness from Combustion Engineering testified

that the Combustion purchase orders did not contain the type of restraints found in the Bechtel purchase orders and that in fact sub-vendors could begin to purchase materials even before release for fabrication. (see Jan.6, T-57, 59-62). Based on these facts, the Council finds that the Combustion purchase orders constituted contractual obligations for the purchase of facilities and equipment. The amounts of such obligations and their effect on the exemption question will be discussed below.

Contract for Steam Turbine Generator with General Electric Company

The company signed a contract with General Electric on August 12, 1975 to design, procure and/or fabricate and deliver one main turbine generator and two auxiliary reactor feed pump turbine drives. As of May 1, 1976, the company testified that even though the engineering and design was not completed, General Electric had begun material acquisition under this contract through sub-vendors. The Council therefore finds that the company's cost exposure under this contract constituted a contractual obligation to purchase facilities and equipment under Section 69G. The amount of this obligation and its effect on the company's claim of exemption will be discussed below.

Owner's Costs including AFUDC (Allowance for funds used during Construction)

Mr. Maroni testified that the company had expended \$57,817,000 in connection with the Pilgrim II project, and had "committed" another \$175 million. However, on cross examination, Mr. Maroni

testified that these amounts were essentially for services, including consultant services, Boston Edison personnel salary and Company overhead. None of it was directly for the purchase of facilities or equipment (see Nov.9, T-85; Jan.6,T-28,29,32,67-72). It appears that these expenditures and commitments are administrative planning and management costs of the type which normally accompany any project of the size and complexity of Pilgrim II. The Council therefore finds that they are not contractual obligations for the purchase of facilities and equipment within the meaning of section 69G.

Effect of the Contractual Obligations on the claim of Exemption

In the Berkshire Gas decision, the Council interpreted the grandfather clause to require substantial or significant construction and applied a de minimus standard in analyzing whether the contractual obligation in that case constituted construction (1DOMSC)24). There is good precedent for such an approach. Exceptions and exemptions to remedial laws are generally narrowly construed against the party asserting them, for the reason that when a Legislature enacts a broad piece of policy-setting remedial legislation such as the Interstate Commerce Act, the Natural Gas Act, or the Massachusetts Siting Act, the purpose of that legislation would be frustrated by the granting of numerous exceptions. See U.S. v. Pub. Utils. Comm., 354 U.S.295, 310 (1953); Interstate Natural Gas Co. v. F.P.C., 331 U.S. 682, 690-1, (1947); Goncz v. I.C.C., 48 F. Supp. 286, 288 (D.C. Mass. 1942); U.S.v. Allen Drug Corp., 357 F. 2d 713 (10th Cir., 1966); Opinion of the Justices, 254 Mass,

619, 620 (1926).

Whether Boston Edison's contractual obligations are so substantial as to constitute construction under the grandfather clause depends on several factors.

The first is a consideration of the value of the contractual obligations. In the Berkshire Gas decision (1DOMSC 24) the Council measured the value of the contractual obligations by quantifying the cost to the company of cancelling or renouncing the obligation as of May 1, 1976. Using this method, the Council finds that Boston Edison's contractual obligations were worth the following amounts as of May 1, 1976.

1. Bechtel vendors

The three purchase orders found to be contractual obligations come to \$23,563. This represents the amount paid by the company plus the cost cancellation of commitments as of May 1, 1976.

2. Under the contract with Combustion Engineering for the NSSS, the company expended \$8,544,000 and had a cancellation exposure of \$20,000,000 as of May 1, 1976, for a total of \$28,544,000.

3. Under the turbine generator contract with General Electric the amount of the contractual obligations incurred as of May 1, 1976 was \$6,160,000. (see Exhibit BE-29, response to #11).

The total amount of contractual obligation incurred by Boston Edison as of May 1, 1976 was thus \$34,727,563.

A second factor to consider in defining de minimus construction is the harm to the company were the Council to reject the claim of exemption. In this case, the only effect of asserting jurisdiction over Pilgrim II is that the company would have to include the plant in the supply portion of its long-range forecast. Any other harm would be speculative.

A third factor is the status of the project and the company's flexibility to change or modify it. The Pilgrim II project has been in the planning and design stages for many years. On the other hand, the record shows that no major permit for construction had yet been granted and no on-site construction will commence until at least 1978; that the whole project was deferred last fall two full years to a new in-service date of 1984; and that there are some unresolved siting problems involving seismic and water discharge issues (Nov.9, T-39,40,44-45) which have caused delays in the construction schedule (see Intervenor PCNIC's Exhibit 1).

A final factor which must be weighed in determining what constitutes de minimus construction is the broad public interest at stake in exempting a facility from Siting Council review. In

establishing the Siting Council the Legislature created for the first time a regulatory structure for co-ordinating and promoting a long range energy program for the entire Commonwealth. The new law represented a fundamental change from prior state regulation, where consideration of energy facilities was fragmented among many permitting agencies whose impact on long-range planning was indirect and potentially conflicting.

The importance of reviewing large new facilities like Pilgrim II is vital to the success of this program, and any claim of exemption from the statutory scheme must be closely scrutinized.

Conclusion

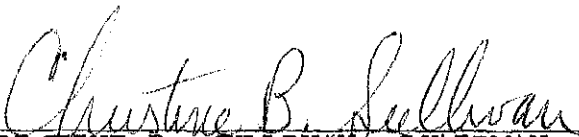
After weighing all of the above factors, the Council determines that Boston Edison had in this case incurred substantial contractual obligations sufficient to constitute construction as of May 1, 1976 and that therefore the proposed Pilgrim II plant is exempt from the requirements of M.G.L. c.164 §69I. This decision in no way represents an approval of the Pilgrim II plant and should not be read as such. The Council recognizes that there are strong public policy issues surrounding the Pilgrim II project.

The potential impact on consumers of the plant is enormous in that it promises to be the largest and most expensive electric generating station to date in Massachusetts.

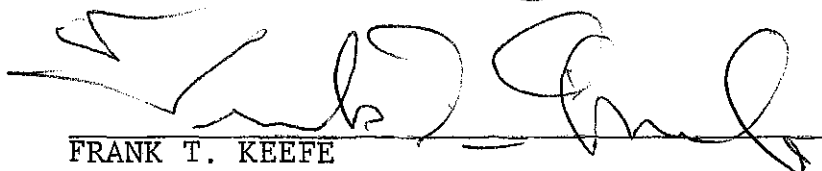
Moreover, the fact that Pilgrim II is a nuclear plant raises further questions. There is a continuing debate over the economics

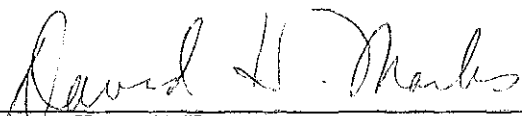
and reliability of nuclear power. Serious questions about reliability have been raised by such recent studies as the December 1976 report on Power Plant Performance by the New York-based Council on Economic Priorities. The Commonwealth itself has recognized the importance of broad public discussion and policy review of the economics and need for nuclear generating stations (see "The Economics of Nuclear Power: A New England Perspective", by the Massachusetts Energy Policy Office, December, 1975). While the Council recognizes the significance of these issues and the importance of proper review and discussion of them, it is bound to follow its statutory mandate . In this case the Siting Council has decided that this mandate requires that the plant be exempt from its jurisdiction.

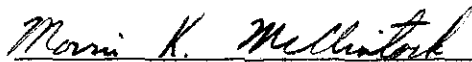
By Order Of The Energy Facilities Siting Council

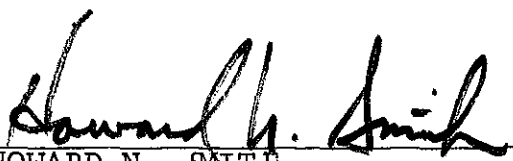

CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY


FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. MCCLINTOCK


HOWARD N. SMITH


JOHN R. VERANI

Docket: EFSC No. 76-19, 77-19

Petition for Approval of Long Range Forecast and Supplement

APPEARANCE: Norman Mason, Esq., Colonial Systems, Inc.,
for the Petitioner

The Cape Cod Gas Company has petitioned the Energy Facilities Siting Council for approval of its long range forecast, EFSC No. 76-19, and its first supplemental forecast, EFSC No. 77-19. The company has not proposed new facilities through 31 August 1982, the current forecast period; therefore, its peititon is limited to a forecast of gas sendout and an inventory of existing facilities and gas supply sources.

The company's service area extends from Wareham to Eastham and includes approximately 35,000 customers most of whom use gas service for residential and commercial heating. During the 1976 calendar year, Cape Cod Gas Company added 1,400 new services and anticipates approximately 1,250 new customers in each year through 31 August 1982. This forecast of customer growth is premised upon an economic forecast of population, family formation, and housing starts which was completed in March of 1976 for the Cape Cod regional planning and development agency. See Development Projections prepared by Phillip B. Herr and Associates (March 1976). It is consistent with the company's recent experience in adding new gas services.

The company's gas sendout forecast methodology assumes a so called normal heating year of 6769 degree days for each year of

forecast period. This normal heating year was derived as the average of historical experience for a ten year period prior to 1976. During the 1975- 1976 heating year ended 31 August, the company experienced 5971 degree days, some 12% less than in a normal heating year. During the 1976-1977 heating year, the company's gas sendout is approximately 10% higher than in a normal heating year.

The forecast methodology assumes also that a typical residential or commercial customer will use the same volume of gas in the future as in the recent past. Thus, forecasted sendout growth is premised upon that gas which is to be consumed by new customers, a compound growth rate of approximately 4%. Because of the assumption of normal heating years, this growth rate may vary to the extent that weather deviates from the norm. Additionally, this growth rate may moderate if typical customer usage is reduced over time in response to developing conservation policies, gas service prices, and the impact of energy efficient construction. See FEA, Energy Conservation in New Building Design, an Impact Assessment of ASHRAE Standard 90-75 (1976).

The Siting Council notes and applauds the company's recently established program which offers an insulation package to residential customers. The Council encourages the company to pursue this program together with other conservation efforts such as a program to retrofit furnaces and appliances with pilotless ignition.

The Cape Cod Gas Company receives primary supply from the Algonquin Gas Transmission Company and supplemental supply from the

Bay State Gas Company and from open market purchases of propane. The contract with Bay State expires in August 1977. Thereafter, the company expects to receive supplemental gas supply from Eascogas LNG, Inc.

The Eascogas project is not yet operational, and its operational date is uncertain. Therefore, the Siting Council does not consider Cape Cod Gas Company's agreement with Eascogas to be a firm source of supplementary supply. Consequently, the company's gas supply forecast cannot be approved for the period after 31 August 1978.

The Energy Facilities Siting Council approves the gas sendout forecast, and supplemental forecast of the Cape Cod Gas Company. The Council approves the gas supply forecast through 31 August 1978. The company is directed to inform the Council of the status of the Eascogas project in its supplemental forecast of 31 December 1977.

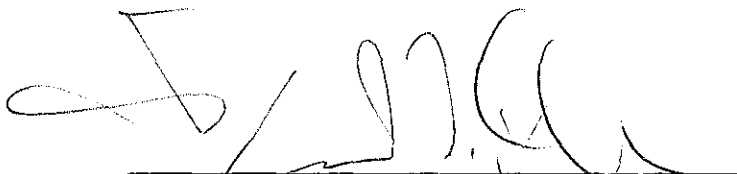
34
EDWARD J. DAILEY
Hearings Officer *ed*

17 March 1977

By Order of the Energy Facilities Siting Council


CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY


FRANK T. KEEFE

s/
DAVID H. MARKS


MORRIS K. MCCLINTOCK

(absent)
HOWARD N. SMITH

(not eligible to vote)
JOHN R. VERANI

In the Matter of the Massachusetts
Municipal Wholesale Electric Company
1 DOMSC 154 (27 April 1977)

Docket: EFSC No. 76-1

Petition for Approval of Transmission Facilities

APPEARANCE: Maurice J. Ferriter, Esq.
 of Holyoke, Massachusetts,
 for the Petitioner

By Tentative Decision dated 25 February 1977, a general site for high voltage transmission facilities was approved for the Massachusetts Municipal Wholesale Electric Company's Stony Brook generating facility. Thereafter, an Appendix to the Tentative Decision set forth conditions for design and construction and identified five areas within the general site which presented environmental siting issues. The company was advised to conduct further analysis of these areas.

The company has now completed its analysis and has proposed a specific transmission corridor which avoids siting within those areas identified in the Appendix. This corridor is set forth as Attachment A to this decision. It has been reviewed by the staff of the Energy Facilities Siting Council and has been determined to be well sited for acceptable and minimal environmental impact.

FINDINGS

This decision incorporates the findings and requirements of the Tentative Decision of 25 February 1977 and the Appendix to that Decision, both of which are included herein and attached. The

proposed transmission corridor set forth in Attachment A is approved pursuant to G.L. c. 164, s. 69J, subject to the following limitations:

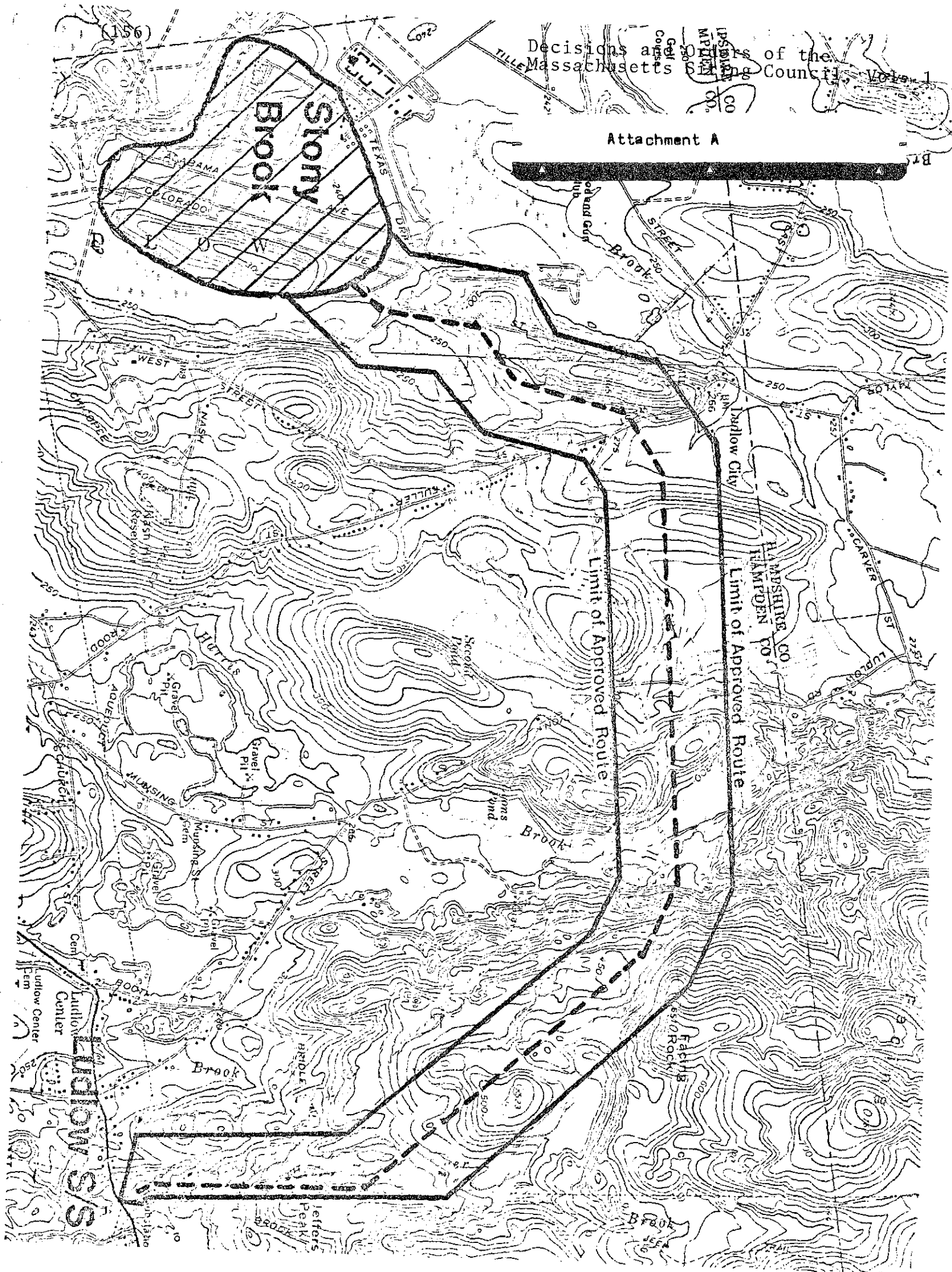
Long spanning and natural screening will be required at all private and public road corridors and in all areas where the corridor parallels a public or private road and is within 200 meters of that road.

Clear cutting is not permitted. Cutting will be permitted within a radius of 15 meters from transmission tower placements and as necessary to obtain access for construction and maintenance equipment. Tall trees which may be a hazard to transmission lines may be topped.

Herbicide and pesticide application and maintenance are not permitted.

34
EDWARD J. DAILEY
Hearings Officer
Dated: 19 April 1977

Attachment A



EFSC No. 76-1

TENTATIVE DECISION

Transmission Facilities

[This tentative decision is not a formal approval of transmission facilities and does not have the force of law. Formal approval, if any, must be given by the full Energy Facilities Siting Council pursuant to G.L. c.164, ss69G-69J].

The Massachusetts Municipal Wholesale Electric Company (MMWEC) has petitioned the Energy Facilities Siting Council pursuant to G.L.c.164, ss69C et. seq. for approval of a 390 MW generating project with associated substation and 345 KV transmission facilities. By Decision dated 1 February 1977, the Siting Council approved this project but deferred siting approval of a transmission corridor. 1 DOMSC 101.

The Council's staff has subsequently reviewed two alternative transmission corridor routes to the Ludlow substation which will interconnect the generating units to the New England Power Pool grid. The so-called southern route is an existing Northeast Utilities transmission corridor now occupied by transmission facilities of that company. This corridor is unsuited for MMWEC's 345 KV transmission line because its cleared width cannot accept both the MMWEC line and an anticipated Northeast Utilities line. Further right of way clearing to accommodate these lines would have an adverse impact on an area of substantial population density and would likely require relocation of several residential housing units. The proposed northern route would require clearing of a new right of way in an open space area of very low population density. While the

TENTATIVE DECISION
Transmission Facilities
EFSC No. 76-1
Page 2

Council is concerned about ever greater use of open space areas for transmission corridors, the northern route must be preferred because it will have less immediate human impact. Therefore, this route is approved.

Location of the northern transmission corridor beyond that 21.4 acre parcel described in a lease purchase agreement of 21 December 1976 between the Westover Metropolitan Development Corporation and MMWEC will be determined after staff review of the exact route proposed by the company. The transmission line will be sited to minimize the interconnect distance and impact upon existing land use. Siting will avoid visual intrusion, clear cutting, long views, and high elevation crossings. Sideline feathering, selective planting, and visual screening will be required. Herbicide maintenance will be prohibited.

34-
EDWARD J. DAILEY
Hearings Officer
25 February 1977

COMMONWEALTH OF MASSACHUSETTS
Energy Facilities Siting Council

EFSC No. 76-1

In the Matter of
the Massachusetts Municipal
Wholesale Electric CompanyAPPENDIX
to Tentative Decision on
Transmission Facilities

This Appendix sets forth five areas within the northern transmission corridor which will be subjected to further analysis and review prior to final determination of the exact transmission route. These areas are numerically identified on the attached USGS 7¹/₂ minute quadrangle excerpt.

Transmission tower design and placement within area 1 must avoid the wooded swamp area. Construction work and line maintenance within this area must avoid disturbance of the wooded swamp area.

Removal of existing structures must be avoided at the road crossing within area 2. Long spanning and natural screening will be required within a reasonable distance of the road crossing.

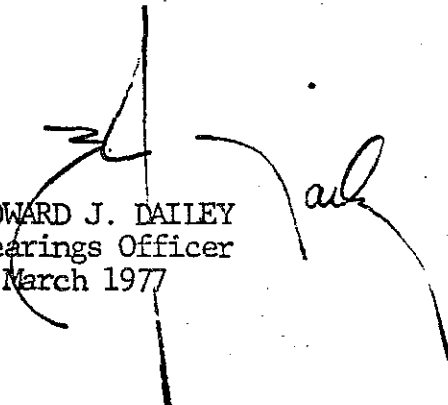
A more northerly route will be considered within area 3 to avoid construction over the hill. Impact on existing agricultural fields must be avoided within this area. Long spanning and natural screening will be required within a reasonable distance of the road crossing.

Tower design and placement within area 4 must avoid the stream crossing. Construction work and line maintenance within this area must avoid disturbance

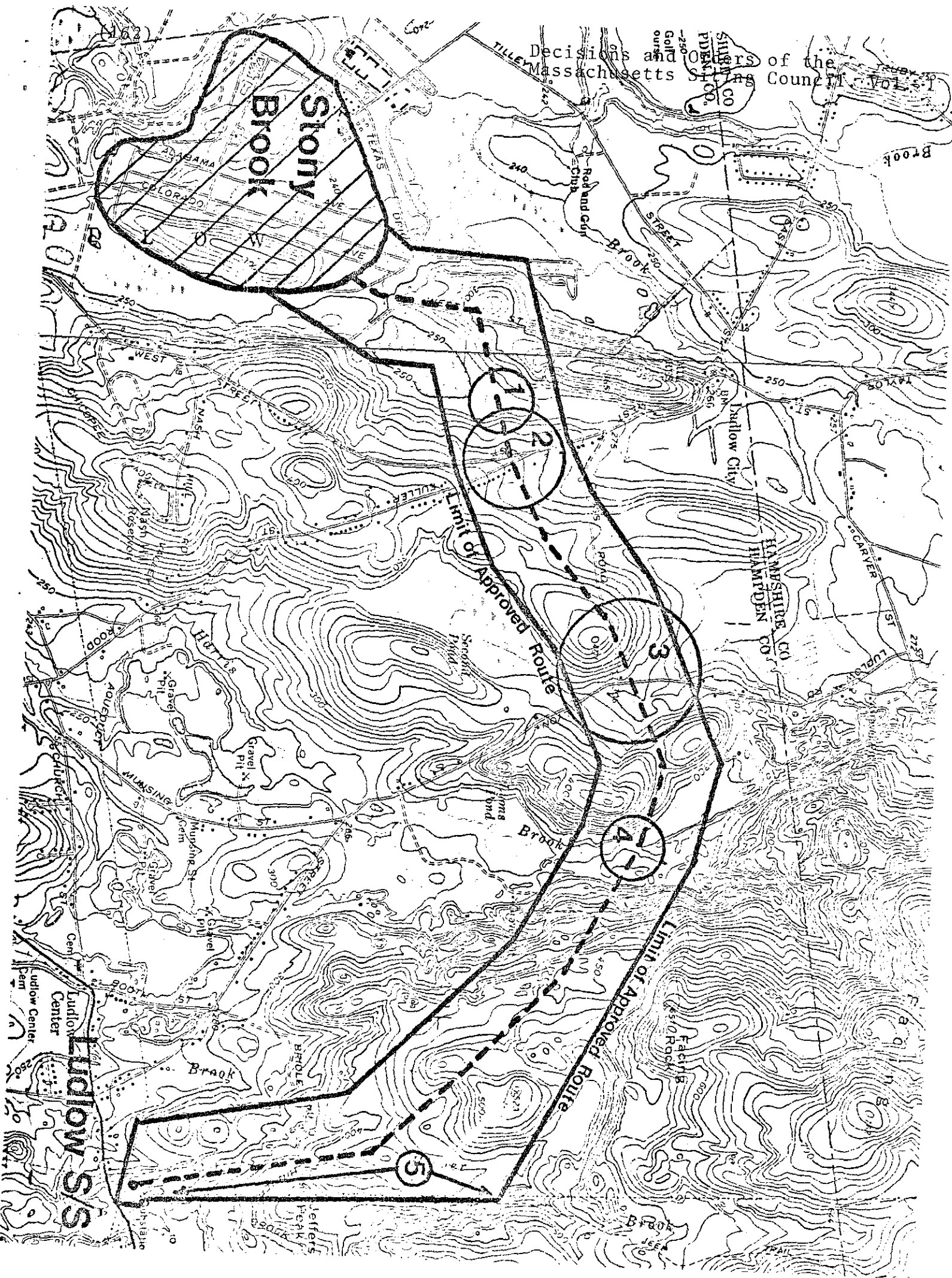
of the stream and wetlands.

Routing within or adjacent to the existing Northeast Utilities transmission corridor will be considered within area 5.

The Massachusetts Municipal Wholesale Electric Company will prepare a proposal for construction and maintenance of the approved 345 kv transmission line which will include assurances that clear cutting and herbicides will not be employed and a detailed program for sideline feathering, selective maintenance of trees and natural cover, and visual screening.



EDWARD J. DAILEY
Hearings Officer
9 March 1977



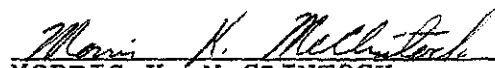
By Order Of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY


FRANK T. KEEFE

s/
DAVID H. MARKS


MORRIS K. McCLINTOCK

(absent)
HOWARD N. SMITH


JOHN R. VERANI

In the Matter of New England LNG Company, Inc.
1 DOMSC 164 (April 27, 1977)

Docket: EFSC No. 76-14

Petition for Approval of a Long-Range Forecast

APPEARANCES: Eldred L. Field, Field and Drury, for
New England LNG Company, Inc.

Raymond V. Picard, Picard and De Abreu, for
The Concerned Citizens of the South End, Inc.

FINAL DECISION

On April 30, 1976, New England LNG Co., Inc., filed with the Energy Facilities Siting Council its first long-range forecast, as required by the Energy Facilities Siting Act, G.L. c.164, §§69G - 69S. Most importantly, its forecast includes a claim that a storage facility in Fall River and not yet in operation is exempt from the requirement of approval by the Council. The forecast is hereby disapproved and that claim is expressly rejected.

Description of the Proceeding

New England LNG Co., Inc., (hereinafter "NELNG") filed a long-range forecast (hereinafter "the Forecast") with the Energy Facilities Siting Council (hereinafter "the Council") as is required of gas companies by G.L. c. 164, §69I. The Forecast includes a claim that a storage facility (hereinafter, the "Facility") to be built in Fall River with a storage capacity of 6,250,000 MMBTU (approximately equivalent to 1,800,000 barrels or 75,000,000 gallons) is exempt from the Council's jurisdiction. The facility is expected to be constructed by the Fall River Terminal Development Company (hereinafter "FRTD") for the use of NELNG.¹

Approval of the forecast would include approval of the claim that the Facility is exempt.

After due notice, a hearing was held in Fall River on September 17, 1976. Additional hearing sessions were conducted there on October 5 and 28, 1976. The hearings were conducted as

an adjudicatory proceeding by a member of the Council's staff serving as designee of the Chairman. Appearances were entered by NELNG and the Concerned Citizens of the South End, Inc. (hereinafter "the Concerned Citizens"). The Concerned Citizens disputed NELNG's claim of exemption and participated fully in all hearing sessions. The issues considered were expressly limited to matters raised by the Forecast; as a result no evidence concerning the merits of the Facility was considered. Eight members of the public made oral statements as participating persons - seven on September 17 and one on October 28. All opposed construction of the Facility, but none offered any substantial legal argument concerning the claim of exemption.

Both NELNG and the Concerned Citizens filed briefs after the close of the hearing. The presiding officer requested additional information from NELNG. That information was provided and neither party objected to its inclusion in the record. A tentative decision, recommending rejection of the Forecast and of the claim of exemption, was issued by the presiding officer on April 20, 1976.

Description of the Facility

NELNG plans to build first one tank and eventually two more on a 22-acre site bordering Mount Hope Bay in the South End of Fall River. The tanks would be double walled and insulated to allow for the cryogenic storage of liquefied natural gas, commonly known as LNG. Each tank would have a capacity of about 600,000 barrels

and would be almost 250 feet in diameter and more than 100 feet in height. The first tank would be built on the southern end of the site, north of Birch Street. The second and third tanks would be built to the north of the first and along an axis running roughly north to south. (This decision will from time to time distinguish among the tanks. The first tank will be referred to as "Tank 1" ; the others as "Tanks 2 and 3 ". Any reference to "the Facility" will be to all three tanks and to the ancillary structures next described.) The Facility would also include a large dike entirely surrounding whatever tanks would be in existence at the particular time. That portion of the dike nearest to Tank 1 would be constructed of concrete to the south and west (and to the north, at least until Tanks 2 and 3 are added). To the east the natural contour of the land, which rises as one goes east and away from the bay, would serve as a portion of the dike. In addition, there would be a control building, compressors and vaporizers outside the diked area. Facilities would be provided for tank trucks to load and unload LNG. The facility may or may not include a ship terminal and a pipeline interconnection with other gas companies.² Tank 1 may or may not be used for³ the storage of propane at some time.

Prior Proceedings

The proposal for the Facility has been in and out of agencies and courts since NELNG was formed in 1970. On January 14, 1971, the U.S. Federal Power Commission (hereinafter "the FPC") issued a certificate of public convenience and necessity designated CP 71-18 to NELNG. No facility was approved as a part of that

4

certificate.

NELNG applied to the Massachusetts Department of Public Utilities (hereinafter "the DPU") "for exemption from operation of the zoning ordinances of the City of Fall River for construction of liquefied natural gas and propane storage plant in said city." D.P.U. 17090, p.1, December 15, 1971, Exhibit N-6.⁵ The DPU granted the requested exemption on December 15, 1971. D.P.U. 17090, pp. 17-19. The DPU decision indicates that exemption of the Facility was opposed by individuals and groups, including the Concerned Citizens.

The DPU decision spawned three legal proceedings before the Supreme Judicial Court. In the first, Periera v. New England LNG Co., Inc., 301 N.E. 2d 441 (1973) 364 Mass. 109, opponents of the Facility had obtained from the Superior Court a decree that NELNG could not construct the Facility without first obtaining a license from the municipal authorities under G.L. c. 148 §13. That statute established the requirement of approval by a local licensing authority and the endorsement of the fire chief before certain hazardous substances may be stored. The Supreme Judicial Court stated that "the only legal question presented by this case is whether the defendant, having obtained the required approval of the Department [of Public Utilities] for the construction and operation of its proposed facility at the locus, must, in addition thereto, also obtain a license therefore from the municipal authorities under the provisions of G.L. c. 148, §13" (at 444). The Supreme Judicial Court reversed the Superior Court and determined that the zoning override exercised by the DPU served also to preempt local authority under G.L.c.148.

The second case was Save the Bay, Inc. v. Department of Public Utilities 322 N.E. 2d 742 (1975), Mass. Adv. Sh. (1975), 139. It constituted a broad appeal from the decision of the DPU on a variety of procedural and substantive grounds. The Supreme Judicial Court upheld the DPU decision.

The third case was New England LNG Co., Inc. v. City of Fall River, 331 N.E.2d 536 (1975), Mass. Adv. Sh. (1975), 2185. Shortly after the Pereira decision the City of Fall River adopted a general (not zoning) ordinance which effectively precluded any major LNG storage facility. NELNG sought a building permit, was denied and sought a writ of mandamus and declaratory relief. The Court granted both on June 27, 1975.

On March 16, 1976, the City of Fall River issued a building permit for the Facility as approved originally by the DPU.

In the meantime, what is popularly known as the Easco Gas proceeding or CP 73-88 was commenced before the FPC. It involves the construction of LNG terminals and storage facilities in Rhode Island and New York as well as long-term contracts for the importation of LNG from Algeria. NELNG is seeking permission, in a second and separate proceeding (CP 73-199), to act as a reseller, not importer, of that LNG. Apparently LNG or vaporized gas resold by NELNG in interstate commerce would pass solely through facilities other than the proposed Facility, at least until Tanks 2 and 3 are built and further authority is sought and obtained from the FPC.⁶ There is currently no approval extant in CP 73-88, CP73-119 or any other FPC proceeding for NELNG.

The Creation of the Energy Facilities Siting Council

St. 1973, c. 1232 established the Council, then called the Electric Power Facilities Siting Council, and gave it general approval authority over major electric facilities. c. 1232 took effect more than a year after its passage, specifically on December 31, 1974. It required that all electric companies file long-range forecasts with the Council on or before December 31, 1975. It further provided that any facility under construction prior to December 31, 1975, would be exempt from the requirement that it be included in an approved long-range forecast. This is the first version of the grandfather clause, which is at issue in this proceeding.⁷

G.L. c.164, ss. 69G-69S (hereinafter "the Siting Act") has been twice modified, by what are commonly known as the Gas Amendments and the Oil Amendments.

The Gas Amendments, St. 1974, c.852, changed the name of the agency to Energy Facilities Siting Council and extended its authority to facilities of and companies engaged in the natural gas industry. The amendments were enacted on August 14, 1974. The effective date of the Siting Act, the deadline for filing of long-range forecasts by electric (and gas) companies, the grandfather clause, the definition of "construction" and the portion of s. 69I quoted in note 7, except for the addition of "or gas company", were all unchanged by the Gas Amendments.

The Oil Amendments, St. 1975, c.617, were primarily responsible for bringing major oil facilities within the Council's jurisdiction.

Those amendments, which took effect on September 24, 1975, also modified the Siting Act in certain ways important for this proceeding. The deadline for filing long-range forecasts by electric and gas companies was delayed by four months until May 1, 1976, as was the determinative date for purposes of the grandfather clause. In addition the definition of "construction"⁸ was modified to accomodate oil facilities.

Legislative concern about LNG storage facilities and about the strong local opposition they encounter were major factors behind the Gas Amendments. Those amendments, along with the original act and the Oil Amendments were drafted by a special legislative commission. A number of filed bills were referred to that commission in 1974 including refiled versions of legislation adopted by the General Court but vetoed by the Governor in 1972 and 1973, which would have established an effective local veto⁹ over most proposed LNG facilities. The action which the commission recommended and the General Court took on that legislation in 1974 was to place LNG and other gas facilities under the Council's jurisdiction.

The Council is the agency of first and last resort for gas facilities. Construction may not be commenced without its approval, (s. 69I). No local or other state agency may issue a construction permit until the Council has approved a facility, (s. 69I). On the motion of an applicant and if certain statutory conditions are met, the Council may sit in review of the action of any local or other state agency and may issue a Certificate of

of Environmental Impact and Public Need in lieu of any permit normally issued by such agency, (s. 69K).

Past Grandfather Clause Decisions

Since the Siting Act created a comprehensive licensing regime, the General Court provided a grandfather clause (hereinafter the current version, as set forth in note 8 supra, shall be referred to as "the Grandfather Clause") in order that the creation of the Council would not impose undue burdens upon those already engaged in construction of facilities.

The definition of construction in s. 69G (see note 8 supra.) provides that three types of activities will constitute construction: first "any placement, assembly, or installation of facilities or equipment...at the premises where such equipment will be used", second "contractual obligations to purchase such facilities or equipment, and third "preparation work at such premises." Twice, prior to this proceeding the Council has considered whether the Grandfather Clause applies to a facility.

In Berkshire Gas Company, 1 DOMSC 24 (1976) the Council determined that a small LNG tank proposed to be constructed in the Town of Greenfield was not exempted by the Grandfather Clause. The Council determined that preliminary engineering,

design, and soil studies do not come within the definition of "construction". It further found that the only action which constituted construction was a particular contractual commitment, that cancellation of that contract on May 1, 1976, would have cost Berkshire Gas Company about \$5,000, and that a \$5,000 commitment for a facility valued at \$300,000 to \$400,000 was not sufficiently substantial to exempt the facility. Because the company petitioned in the alternative for exemption or approval and provided detailed information about the proposed design, the Council was able to approve the facility in the same decision.

In Boston Edison Company 1 DOMSC 134 (1977), the Council determined that a nuclear power plant proposed to be built in the Town of Plymouth was exempt under the Grandfather Clause. In that case the Council found that, pursuant to contractual commitments, Boston Edison Company had incurred as of May 1, 1976, the irrevocable obligation to pay approximately \$34,000,000 for the fabrication of major plant components. Other contractual commitments, equally irrevocable and even larger in value, were found by the Council not to constitute commitments to purchase facilities or equipment, but instead to be merely commitments to pay for engineering, design and environmental studies. As such, they did not constitute "construction". Even so, the Council determined that "construction" equal to \$34 million on a plant expected to cost \$1.3 billion was so substantial as to exempt it under the Grandfather Clause.

The Arguments in This Proceeding

NELNG has argued in its brief that the Facility is exempted from Council jurisdiction by the Grandfather Clause and by certain general principles of law.

More specifically, NELNG argued that for purposes of this proceeding the words added to the Grandfather Clause by the Oil Amendments should be ignored (See notes 7 and 8 supra.). It was argued that certain actions prior to May 1, 1976, constituted "preparation work" at the site. Both arguments are correct.

NELNG also argued that the movement of earth in the vicinity of the planned eastern portion of the dike constituted the "placement of facilities or equipment". It was argued that the hazardous nature of LNG requires so much advance planning for LNG storage facilities that the term "construction" should be interpreted more broadly, therefore rendering most zoning and mechanic's lien cases inapplicable. NELNG argued that a number of actions prior to May 1, 1976, constituted construction and that taken together they were so substantial as to require exemption under the Grandfather Clause. It was argued that the term "construction" should be interpreted more broadly for purposes of the Grandfather Clause than for other applications in the Siting Act. NELNG argued that in spite of the definition of "construction" in the Siting Act, the term should also be interpreted as it is commonly understood in the construction industry and that witnesses have testified that certain actions prior to May 1, 1976 should therefore be considered to be construction. It was argued that if the Facility were not exempt, the Siting Act would be applied

retroactively, and that to so apply it would be contrary to general legal principles because of the substantial amount of work done in good faith. Finally, NELNG argued that the Council should be estopped to assert jurisdiction because NELNG has relied in good faith upon other agency approvals and court decisions. Each of these arguments is rejected, at least in part.

The Concerned Citizens have argued in their brief that the Facility is not exempt from Council jurisdiction.

The Concerned Citizens argued that actions taken by NELNG prior to May 1, 1976 were so haphazard and based upon such inadequate planning that they could not constitute construction. It was argued that a contract between NELNG and Walsh Construction Company (hereinafter "Walsh") was not a true contractual commitment as of May 1, 1976. The Concerned Citizens argued that prior agency and court decisions in regard to the Facility have no bearing upon this proceeding. It was argued that no "preparation work" at the site occurred prior to May 1, 1976. The Concerned Citizens argued that the definition of "construction" in s.69G does not apply to the Grandfather Clause. It was argued that there is some significance for this proceeding in NELNG's possible failure to comply with the Wetlands Protection Act, G.L. c. 131, s.40, and the Flood Disaster Protection Act of 1973, 42 U.S.C.4101. Each of these arguments is rejected, at least in part.

The Concerned Citizens also argued that NELNG's rush to beat the May 1, 1976 deadline is of significance. It was argued that plant design, geological studies, and land acquisitions do not

come within the definition of "construction". The Concerned Citizens argued that no "placement" occurred prior to May 1, 1976. Finally, it was argued that application of the Siting Act in this proceeding would not be retroactive. These arguments are correct.

Analysis of the Evidence and Arguments

Important matters of evidence and legal arguments relating to them are analyzed hereinafter. For purposes of this analysis, Tank 1 and Tanks 2 and 3 are considered separately. This is done for two reasons. First, the evidence supporting exemptions for Tanks 2 and 3 is much weaker than for Tank 1. Second, it is inferred from the evidence that NELNG is attempting to keep its option open to build or not to build Tanks 2 and 3.

This conclusion is based upon the stated intention of NELNG to construct only Tank 1 at this time and the apparent intention to leave Tanks 2 and 3 and the ship terminal to an indefinite future date. It is also based upon maps and oral testimony which indicate that NELNG could construct Tank 1 without requiring the purchase of land now belonging to Hazel Realty Company, Inc., (hereinafter "Hazel"). Pursuant to a Purchase and Sale Agreement with Hazel and an Agreement to Cancel Lease with Hazel's tenant, Ken-Lac Chemical Company, Inc., (hereinafter "Ken-Lac"), NELNG would have to pay \$1.2 million for one parcel of less than an acre.¹⁰ The total of prices negotiated for the entire remainder of the 22-acre site is only \$616,500. Tanks 2 and 3 cannot be built without the Hazel plot. The cost of purchasing the Hazel plot and terminating the Ken-Lac lease would far exceed the value of all NELNG payments and commitments made

to date in connection with the Facility. NELNG would be only prudent to place Tank 1 so as not to require the purchase of the Hazel plot and to refrain from exercising its option until it has definitely decided to build Tanks 2 and 3. We assume that they wish to do so.

The Contract with Walsh Construction Company

On April 28, 1976, NELNG and Walsh entered into a cost-plus contract for the construction of Tank 1 (hereinafter "the Contract"). Although important elements of a completed contract were missing on May 1, 1976, we find that there was sufficient contractual commitment to satisfy the definition of "construction" so long as other elements of that definition are satisfied. The contract bound NELNG to pay for services actually performed by Walsh or its subcontractors prior to and subsequent to the signing. It also bound NELNG to pay an 8% Contractor's Fee on all expenses, subject to possible upward or downward adjustment of the fee upon completion of Tank 1. The Contract was not, however, sufficiently complete as of May 1, 1976, or as of October 28, 1976, to require NELNG to pay additional costs of \$259,740 for General Expenses or to pay a Contractor's Fee for any work not yet actually performed.¹¹ If NELNG had abrogated the Contract without cause on May 1, 1976, it would have been obligated to pay Walsh approxi-¹²mately \$77,364.

The contract was incomplete on both May 1, 1976, and October 28, 1976, in that Preload Engineering Company (hereinafter "Preload") had not endorsed the contract and that no subcontract had been signed by Walsh and Preload, as contemplated by Article 1, or included in the Contract as Schedule "H".

It was incomplete in that Schedule "C" (Contract Drawings) and Schedule "E" (Construction Schedule) were not included as provided by Article 1. It was incomplete in that neither had a Target Cost been submitted by Walsh as provided for by Article 6, nor had an approved Target Cost been included as Schedule "G". NELNG had not made the deposit of \$100,000 to the Revolving Fund as required by Article 9 nor the deposit of \$1,000,000 in escrow as required by Article 25. The deadline for those payments has been extended, apparently indefinitely.

NELNG was not on May 1, 1976, obligated to pay anything more than Walsh's actual costs plus an 8% Contractor's Fee. Article 6 gave NELNG the unrestricted right to terminate the Contract without further liability by failing to agree with Walsh's Target Cost when and if submitted. NELNG had, as of May 1, made no payments either to Walsh or to the various accounts described in the contract.

It may be arguable that Walsh and Preload could proceed against NELNG's wishes with design and engineering, running up a sizable bill before the Target Cost must be submitted and NELNG has a chance to terminate. NELNG has not, however, so argued. Preload's work is made "subject to execution of a satisfactory subcontract arrangement" by Article 1 (See note 11).

The term "satisfactory" in that Article appears to mean satisfactory to the parties to the Contract, including NELNG. In fact Walsh appears to be operating upon instructions from NELNG and to have done very little since May 1, 1976. We conclude that if NELNG had abrogated the Contract on that date, the Contract was so incomplete that Walsh could have recovered only its expenses plus an 8% fee.

Mr. Lemley, an employee of Walsh, testified that work done prior to May 1, 1976, had a value "someplace in excess of \$25,000" (T-46 Oct.5). He described the work as follows: "We did substantial amounts of planning for construction including consultation with various suppliers and vendors. We did construction engineering work with our own forces and various suppliers to us for furnishing materials to the project; did engineering and planning work with their forces; plans, bills and material, detailed construction procedures have been worked out and developed in conjunction with our contract", (T-43,Oct.5). Walsh performed no physical work at the site. Therefore its activities can be construed to be "construction" only if they constitute the purchase of facilities and equipment by NELNG. We conclude that they are not. We find that the activities of Walsh prior to May 1, 1976 were preliminary engineering and design work and not construction.

NELNG has hired a general contractor, Walsh, to provide it with an LNG tank, subject to later agreement on design, construction schedule, and other matters. Under a single contract Walsh will provide both engineering and design services and construction services. The latter bear upon the question of exemption. The Council faced a similar question in Berkshire Gas. In that proceeding the utility was, in effect, acting as general contractor and had contracted for engineering services. We determined that the design work performed under that contract was not construction. In this case the design work is performed by the same entity which will build the facility. The principles established in

Berkshire Gas should apply here as well. It is probable that none of the work prior to the completion of a preliminary design by Preload, the agreement upon a Contract Drawing and a Construction Schedule, and the agreement upon a Target Cost would constitute the purchase of facilities. In Boston Edison we found that major plant components had already been fabricated prior to May 1, 1976. In this proceeding, however, Mr. Dudley, testifying for NELNG in regard to certain soil tests which had not been completed as of September 17, 1976, stated that "in my opinion it is necessary to complete the analysis of the soil work which requires the subsurface borings before a proper foundation can be designed to permit the construction of that foundation," (T-55 Sept.17). Even the design was at a preliminary stage at the time of the first hearing in this proceeding.

To interpret such preliminary design and engineering work as construction would have undesirable consequences, as pointed out in Berkshire Gas, where we noted that s.69I provides that "no company may begin construction of a facility unless the Council has approved the facility. The Council would not want to prohibit companies from beginning preliminary planning or investigatory work as a result of an overly broad interpretation of the definition of construction in Section 69G. In fact such planning may be necessary in order to develop sufficient information to propose a facility to the Council" (at 36,37).

The NELNG brief suggests that we could interpret "construction" broadly for purposes of the Grandfather Clause and narrowly for purposes of s.69I. Such an interpretation would be untenable in

light of the General Court's use of the words "under construction" in the Grandfather Clause and the words "commence construction" in s.69I. NELNG's emphasis upon the word "commence" in its argument would be appropriate if s. 69I were at issue, but that word does not appear in the Grandfather Clause. If there is to be a distinction between the two uses of "construction", the word "commence" would require a broader interpretation in s.69I, rather than in the Grandfather Clause as NELNG urges.

The Concerned Citizens argue that the definition of construction does not apply to the Grandfather Clause at all. If they were correct, the Contract with Walsh would arguably be irrelevant. That issue has been extensively briefed in previous proceedings. In Boston Edison we determined that the definition does so apply.

It is argued in the NELNG brief that five witnesses testified "that all of the work accomplished and commitments entered into by the Petitioner Prior to May 1, 1976 constituted, in their opinion, and certainly in the nomenclature of the engineering and construction industry, part of the completed construction of the Facility. Their testimony was to the effect that all of this work was an integral part of the construction." (at 28). It is instructive to review testimony upon which this statement is based. Consider the answers of Mr. Lemley in regard to the work of Walsh and its subcontractors:

Q. Do you have an opinion as to whether or not the proposed final construction of [Tank 1] could be accomplished without the work performed by you, Preload and Geotechnical consultants?

A. Only if it had been --

Q. Do you have an opinion?

A. Yes.

Q. What is your opinion?

A. The work or similar work is necessary to be performed in order to accomplish the ultimate construction. The work we have done could be thrown away and duplicated, but that would be a redundancy in cost and effort.

Q. Do you have an opinion as to whether or not the work accomplished by your company and Geotechnical Consultants and Preload prior to May 1, 1976, is an integral part of the construction of the facility?

A. Yes.

Q. Is it?

A. It is.

(T-44, Oct. 5)

The first question and answer establish the basis for a sort of "but for" standard. Such a standard is completely irrelevant. For example, construction could not be accomplished but for the ownership of an interest in the site by NELNG and but for the qualification of Walsh to conduct business in the Commonwealth of Massachusetts. Yet neither the purchase of real property nor the payment of a fee to the Secretary of the Commonwealth constitutes construction.

The second question elicits an engineering opinion concerning whether certain activities constitute construction. However, the definition of construction is primarily a legal issue in this proceeding. And to the extent that it may be an issue of fact, five similar responses by five expert witnesses to five identical

questions do not bar us from considering other testimony by those same witnesses.

Walsh performed no work in regard to Tanks 2 and 3.

The Work of Preload Engineering Company

Preload is designated in the Contract as engineering subcontractor (See note 11, Article 1). Any compensation of Preload would be by Walsh. As a result, Walsh's 8% Contractor's Fee should be added to amounts due to Preload for purposes of determining NELNG's financial commitment.

Mr. Lagardis of Preload testified that work done by his company prior to May 1, 1976, had a value of \$28,300, and work after May 1, \$2,000. He described the work as follows: "We prepared the preliminary design, I should say, the basic design of the structure. That included calculations and drawings and specifications to a degree that would be necessary in order to begin work. This type of work usually is followed up by more detailed design, but it does constitute the very base for all work that is going to take place" (T-98, Oct.5). For the reasons stated above in regard to Walsh, we conclude that Preload's activities constitute preliminary engineering and design, not construction.

There is a basis in the record for the conclusion that neither Walsh nor NELNG has any contractual obligation to pay Preload.¹³ We will assume, however, for purposes of this decision that Walsh and ultimately NELNG either are absolutely liable to pay Preload for its services or will choose in sound business judgment to do so. Preload performed no work in regard to Tanks 2 and 3.

The Work of Geotechnical Consultants, Inc.

Geotechnical Consultants, Inc. (hereinafter "Geotechnical") was hired by NELNG to study subsurface soil conditions and to prepare a report necessary for the design of the foundations of Tank 1. Sometime before May 1, 1976, Geotechnical ceased working for NELNG and was engaged by Preload as a subcontractor, without any loss of continuity in its work.

When asked what work Geotechnical performed, Mr. Emerson of Geotechnical replied as follows: "Well, a site reconnaissance and evaluation of the geology of the general area. We accomplished approximately ten borings and twenty test pits over the site. The borings range in depth from near surface 15 to 20 feet to as deep as in excess of 100 feet." (T-56, Oct.5). Geotechnical is the only entity which performed work of any consequence on the project between May 1, 1976, and October 5, 1976. Two problems arose requiring more work than expected by Geotechnical. Surface water of unanticipated importance was encountered, and a void between layers of shale and granite was discovered at a depth of about 100 feet.

Mr. Emerson estimated the value of work performed through October 5, 1976 to be \$70,000, one third of which was incurred before May 1, 1976. For the work before May 1, 1976, NELNG is directly responsible for \$5,000 in fees. Preload is responsible for the rest. All responsibilities of Preload are assumed to be supplemented by the 8% Contractor's Fee by the time they get to NELNG.

We determine that the work done by Geotechnical prior to May 1, 1976, was not construction. This precise point was also

considered in Berkshire Gas. There it was noted that soil tests might well be performed on a number of potential sites for a single facility. Of all the things which a company should not be prohibited from doing by s.69I prior to Council approval, soil tests are perhaps the most logical and important.

Geotechnical performed no work in regard to Tanks 2 and 3.

Work by J.J. and V. Construction

Either NELNG or Walsh hired J.J. and V. Construction Corporation (hereinafter "JJV") to perform certain work at the site. We assume for purposes of analysis that JJV contracted directly with NELNG.

JJV performed the following jobs, and has rendered a bill for the following amounts:

August 18-19, 1975	Digging Test Pits	\$384.
April 12-22, 1976	Clearing Brush	\$2,048
April 28-30, 1976	Bulldozing	\$1,308
May 3-5, 1976	Bulldozing	\$1,536
	Total	\$5,276

The test pits were dug in connection with Geotechnical's work and were not construction. NELNG argues that JJV's work in April constituted both site preparation and the placement of facilities. The Concerned Citizens assert that it was not either. We herein expressly determine that the clearing of brush and cutting of trees constitutes construction unless no more cutting is done than is necessary to perform soil tests and environmental and other studies which are not within the definition of construction.

There was testimony that a bulldozer levelled an area to be occupied by a construction trailer, that it cut a construction access road, that it stripped several feet of dirt from part of the area which would be occupied by Tank 1, and that it segregated surface material unsuitable for use in construction of dikes. We conclude that these actions constituted site preparation .

NELNG argues that in pushing some dirt which was removed to make way for the construction trailer over a steep hillside, JJV made a "placement, assembly, or installation of facilities or equipment", because that hillside is planned to serve as part of the eastern dike for Tank 1. The issue is of no consequence at this point, since we have already determined that all operation by the bulldozer comes within the definition of construction. There is no benefit to being counted twice (or perhaps ¹⁴ three times if JJV had a contract). We conclude that the bulldozing did not constitute actual placement.

We conclude that the work by JJV which constitutes construction is not of itself so substantial either in value or in effect as to exempt Tank 1 from the Council's jurisdiction. In rendering such a conclusion we are mindful of the other use of the word "construction" in s. 69I - to prohibit certain activities prior to Council approval. In Berkshire Gas and Boston Edison no site preparation was involved, and our judgment was made after totalling the value of contractual obligations.

When there is site preparation, factors not easily quantifiable may be involved in addition to the dollar cost of the work.

The site for Tank 1 is an abandoned industrial area located between railroad tracks, the Fall River Gas Company plant, and other industrial properties. Work with chainsaws and bulldozers which we determined to be insubstantial there might be very substantial in some other location.

Further support for the standard requiring substantial work is provided in Goncz v. Interstate Commerce Commission et. al. 48F. Supp. 286 (D.C. Mass. 1942). In that case the court held that the grandfather clause of the Motor Carrier Act did not apply to the plaintiff, because although he had shown some trucking operations on certain non-radial routes, he had not shown substantial operations. "Substantial" was not used in the grandfather clause, but the court held that it was to be implied because exceptions to remedial statutes should be narrowly construed. In addition, the court left it up to the agency to define substantial.

JJV performed no work in regard to Tanks 2 and 3 .

Work by Gas Incorporated

Gas, Incorporated (hereinafter "Gas, Inc."), an affiliate of NELNG, has provided certain services in connection with Tank 1. The Contract provides for the designation of a Purchaser's Representative, selected by NELNG and accepted by Walsh, to help supervise design and construction. Gas, Inc. may be so designated; at the present time it is serving in the role de facto.

Gas, Inc. provided employees to supervise the bulldozing

by JJV and performed preliminary surveying work at the same time. In addition, Gas, Inc. has provided general supervision for Walsh, Preload, Geotechnical, and JJV and has been involved in preparation for agency proceedings. Mr. Anderson of Gas, Inc. testified that, although he knew of no transfers of funds, the services provided by Gas, Inc. had been worth \$12,000, that 90% had been rendered before May 1, 1976, and that the work performed during the last three days of April was worth about \$1,500.

We hereby determine that the only work which constitutes construction was the supervision of JJV and that half of the work valued at \$1,500 was for that purpose. The addition of this work to that done by JJV does not create a sufficient total to exempt Tank 1.

Gas, Inc. performed no work in regard to Tanks 2 and 3.

Real Estate Purchases

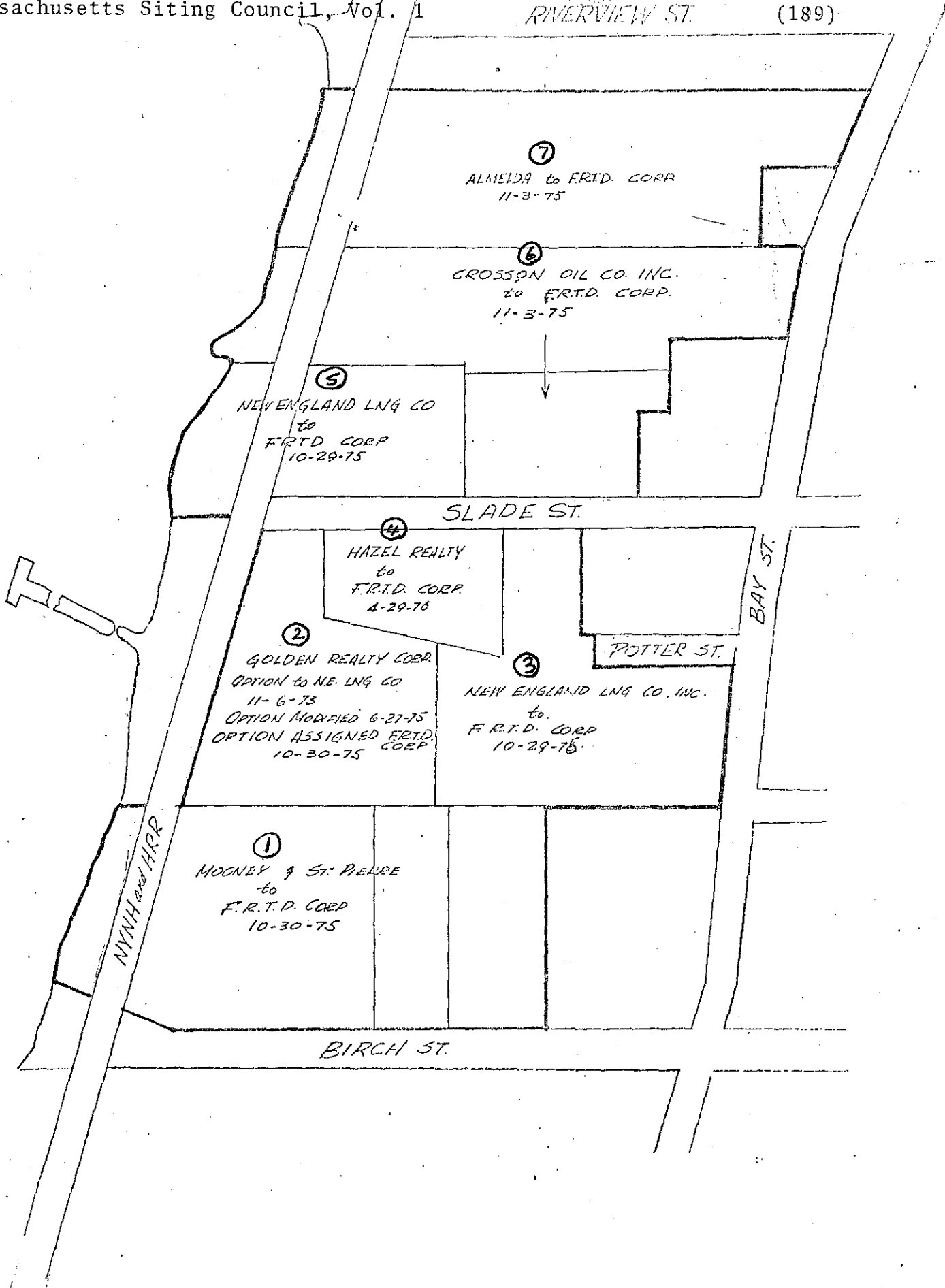
NELNG has obtained interests in seven parcels which, along with a public way, make up the entire site for the Facility. Because their locations and prices are of consequence here and later in this decision, a map and table are provided herein: (MAP 1 p. 25).

MAP 1

Decisions and Orders of the
Massachusetts Siting Council, Vol. 1

RIVERVIEW ST.

(189)



In every case in this table the purchaser or option holder is FRTD.

<u>Plot #</u>	<u>Seller/Owner</u>	<u>Transaction</u>	<u>Price</u>	<u>Payments as of Oct.28,7</u>
1	Mooney&St. Pierre	Sale	\$200,000	\$40,000
2	Golden Realty	Option	\$ 51,500	\$ 5,500
3	NELNG (South of Slade Street)	Sale	\$10,000	\$10,000
4	Hazel Ken-Lac	P&S Agreemnt. Lease Termin- ation	\$620,000 \$580,000	\$10,000 0
5	NELNG (North of Slade Street)	Sale	\$ 35,000	\$35,000
6	Crosson Oil	Sale	\$160,000	\$37,500
7	Almeida	Sale	\$166,000	\$42,795
	Totals		<u>\$1,816,600</u>	<u>\$180,795</u>

Plots 1,2 and 3 are necessary if Tank 1 is built. All the remaining plots will be required if Tanks 2 and 3 are built.

In addition to the above payments NELNG has paid legal fees of \$4,000 and a building permit fee of \$24,500.

We conclude that none of these costs constitutes construction. We do not believe that it would be prudent to use the current language of s.69I to prohibit acquisition of real property by utilities prior to approval of a facility by the Council or to provide a Grand-father Clause exemption argument forever for any real property owned by any utility prior to May 1, 1976.

Summary of Expenditures and Commitments

We conclude that some "construction", as defined in s. 69G, did occur prior to May 1, 1976. We further conclude that construction was not so substantial as to exempt either the Facility or Tank 1 standing alone from the Council's jurisdiction. The following tables summarize all expenditures and financial commitments

<u>Construction</u>	<u>Expenses Prior to May 1, 1976</u>	<u>Expenses Between May 1, 1976 and October 28, 1976</u>	<u>Estimated Total Project Cost</u>	
				15
Walsh Reimbursible	-	-	\$13,150,138	
Contractor's Fee(8%)	-	-	\$ 1,052,011	16
General Expenses	-17	-	\$ 220,779	
JJV	\$3,356	\$1,536	\$ 4,892	
Gas, Inc.	\$ 750	\$ 600	\$ 1,350	
<u>Construction Subtl.</u>	<u>\$4,106</u>	<u>\$2,136</u>	<u>\$14,429,170</u>	
<u>Engineering</u>				18
Walsh Reimbursible	\$25,000	\$5,000	\$1,320,613	
Geotechnical to be paid by Preload	\$18,333	\$46,667	\$ 245,000	19
Preload	\$28,300	\$ 2,000	\$ 755,000	20
Constrctor's Fee (8%)	5,731	\$ 4,293	\$ 185,649	
General Exp.	-	-	\$ 38,961	22
Geotechnical to be paid by NELNG	\$ 5,000	-	\$ 5,000	
JJV	\$ 384	-	\$ 384	
Gas, Inc.	\$10,050	\$ 600	\$ 10,650	
<u>Engineering Subtl.</u>	<u>\$92,798</u>	<u>\$58,560</u>	<u>\$2,651,257</u>	
<u>Miscellaneous</u>				
Land	\$55,500	-	\$261,500	
Building Permit	\$24,500	-	\$ 42,500	
Legal Fees	\$ 4,000	-	\$ 4,000	
<u>Miscellaneous Subtl</u>	<u>\$84,000</u>	<u>-</u>	<u>\$290,000</u>	
<u>Total of All Expenses</u>	<u>\$180,904</u>	<u>\$60,696</u>	<u>\$17,280,427</u>	

Table 2
Tank 2 and 3 Only

	<u>Expenses Prior to May 1, 1976</u>	<u>Expenses Between May 1, 1976 and October 28, 1976</u>	<u>Estimated Total Project Cost</u>	
Construction	-	-	\$28,858,340	23
Engineering	-	-	\$ 2,561,257	24
Miscellaneous 25	\$125,295	-	\$ 1,555,000	
<u>Total of All Expenses</u>	<u>\$125,295</u>	<u>-</u>	<u>\$32,974,597</u>	

by NELNG prior to and after May 1, 1976, and sets forth estimates of total project costs. There are separate tables for Tank 1 and Tanks 2 and 3. Expenditures and commitments are divided into three categories; construction as defined in s. 69G, engineering work not qualified as construction, and miscellaneous expenses.

The tables demonstrate that the value of construction performed before May 1, 1976 was \$4,106 out of a total construction cost of more than \$14 million for Tank 1 and that there was no construction at all of Tanks 2 and 3. Only 0.03% of the total construction of Tank 1 was performed before the crucial date. The value of construction here is less in absolute terms and much less in percentage terms than the amount we found to be de minimus in Berkshire.

The Alternative or Equitable Arguments

NELNG has made strong arguments in favor of exemption which are not based solely upon the language of the Siting Act. Those arguments are basically twofold: that NELNG's commitment to the project in time and money is so great that the right to proceed should be considered to have vested, and that the Council should be estopped to assert jurisdiction by NELNG's good-faith reliance upon decisions by other agencies and the Supreme Judicial Court.

It is not clear to what extent an administrative agency may consider equitable arguments which go beyond its express statutory mandate. We assume for purposes of this decision, without so deciding, that an agency is as free as a court of primary jurisdiction to consider equitable arguments.

NELNG's Commitment to the Project

NELNG argues that its commitment in time and money to the construction of the Facility is so great that the Council should find the Facility to be exempt regardless of its interpretation of the Grandfather Clause. NELNG relies in particular upon certain recent California cases concerning the applicability of the California Coastal Zone Conservation Act of 1972 to new construction projects.

The first case to consider that act was San Diego Coast Regional Commission for San Diego County v. See the Sea, Ltd., 9 Cal.3d 888, 109 Cal.Rptr.377(1973). That case arose when a regional commission asserted jurisdiction over a condominium development which had been begun prior to the February 1, 1973, the effective date of the law. The defendant had demolished a motel on the site, spent \$79,000 on construction and incurred finance charges. The decision offers no hint as to the total cost of the project. A majority of justices concluded that the project was exempt after finding "overwhelming evidence that defendant prior to [February 1, 1973] not only obtained a building permit but also engaged in substantial lawful work and incurred substantial liabilities" (109 Cal. Rptr. at 380). A vigorous dissent by three justices argued that the majority applied a standard not found in the grandfather clause of the Coastal Zone Act.

In a later case, also cited by NELNG, a lower court accepted the minority's characterization of the majority's action, while assuming that the majority was correct in so acting.

Sierra Club v. California Coastal Zone Conservation Commission, 58 Cal.App.3d 149, 129 Cal.Rptr.743(1976). Considering another Coastal Zone Act exemption issue, the Court of Appeal said that "there are two major exemptions from the permit requirement. The first exemption is the 'vested rights' exception, created by section 27404 [the act's grandfather clause]... The second, or 'See the Sea', exemption exists for developers who have obtained building permits and have in good faith commenced actual construction of the structures, performed substantial work, and incurred substantial liability." (58 Cal. App.3d at 156, 129 Cal. Rptr. at 798).

Accepting for purposes of this decision the See the Sea standard as so characterized, we can consider whether NELNG would qualify for exemption from the Siting Act completely apart from the Grandfather Clause. We conclude that it would not. One element of the See the Sea standard is satisfied; there is a building permit. The remaining elements are not; each is considered hereafter in turn.

Good faith as required by the standard is not present. NELNG waited until March 1976 to obtain a building permit, even though the Supreme Judicial Court had authorized its issuance in June 1975. There followed in a short period a flurry of activity for the purpose of avoiding the May 1, 1976, deadline in the Grandfather Clause. Chainsaws were first used on April 12, and a bulldozer on April 28. A construction trailer was placed on the site on April 28 or 29. A very incomplete Contract with Walsh was signed on April 28.

A Purchase and Sale Agreement with Hazel and an Agreement to Cancel Lease with Ken-Lac were signed on April 29; the result was a combined price for one small plot roughly 50 times higher per acre than the rest of the site. The price is probably attributable in part to NELNG's desire to avoid the deadline and to Hazel's and Ken-Lac's knowledge of that desire. Mr. Dudley testified that NELNG was aware of the May 1 deadline and was under pressure to consummate the deal. (T-104, Oct. 28). Town of Hillsborough v. Smith, 170 S.E. 2d. 904,910 (1969), a North Carolina case cited by NELNG, states that :

"'good faith'... is not present when the landowner, with knowledge that the adoption of a zoning ordinance is imminent and that, if adopted, it will forbid his proposed construction and use of the land, hastens, in a race with the town commissioners, to make expenditures or incur obligations before the town can take its contemplated action so as to avoid what would otherwise be the effect of the ordinance upon him. See Stowe v. Burke, supra."

Stowe v. Burke, 122 S.E. 2d 374 (1961), had found that expenditures of \$56,000 (2.1% of total contract costs) for foundation work during ten days between the issuance of a building permit and the rezoning of the property conferred no vested right. The court concluded, at p. 378:

"Thus it appears that when the permits were finally issued, defendant Burke was fully aware of a community of opposition to the project and of pending legislation which, if adopted, would prevent defendants from proceeding with the project. It also appears, however, that in spite of such notice, defendants moved forward with construction at an extraordinary pace in an attempt, as admitted by defendants' counsel in brief filed in Supreme Court, to establish a right to continue the project before the area in question could be rezoned.

"On these facts, it appears that the court below was

justified in concluding that defendants did not act in good faith in doing the work on the project and in incurring expenditures with respect thereto."

The next element of the See the Sea standard is that actual construction of structures be commenced. It is lacking in this case. Regardless of whether JJV's action in pushing dirt over a hillside while clearing a space for the construction trailer constituted the placement of the dike within the terms of the definition of construction in s.69G, it was "preparation" rather than "construction", as those terms are commonly understood. In Alexander v. Building Inspector of Provincetown, 350 Mass. 370, 374 (1966), the court established a distinction between construction and preparation, stating that "this had involved commitment of time, effort and money. But the work on the site involved no more than preparation for new construction by removal of standing buildings and leveling of consequent debris." In Murphy v .Manchester, 298 N.E. 2d 185 (Mass.Ct.App., 1973), levelling of the land and preliminary excavation work were held not to constitute construction.

Another element of the See the Sea is that substantial work has been performed. We conclude that it has not in this case. We have already divided all of NELNG's expenses into three categories: construction, engineering, and miscellaneous. Assuming that "work" includes all construction and engineering expenses, we find that NELNG spent or owes \$96,904 for work done before May 1, 1976. That is 0.6% of the estimated total cost of almost \$17 million for construction and engineering for Tank 1.

We find that the work on Tank 1 is not substantial. Nothing has been spent for work on Tank 2 and 3.

The final element in the See the Sea standard is that substantial liability be incurred. To determine total liability, we take into account the miscellaneous expenses, as well as those for construction and engineering. The building permit fee and legal fees are treated as liabilities. There is a question, however, whether all expenditures for land are liabilities. NELNG owns two of the seven parcels outright. The price in each case was so low that we cannot conclude that they are worth less than was²⁷ paid. . Three parcels have been purchased under similar arrangements; with a down payment of 20% and a purchase-money²⁸ mortgage for the remainder held by the seller as mortgagee. In each case NELNG owes the seller regular interest payments and the principal amount is due in a single payment on a date certain " or at such time as the Mortgagor hereunder physically initiates construction (excluding site work) of tankage or buildings." The question in determining the extent of liability is what NELNG would lose if it did not build the Facility. At worst, it would pay off the loans and be left holding property of no value. This is not realistic. The three parcels are major portions of two roughly square plots of more than ten acres each, north and south of Slade Street. The worst which would likely have happened had NELNG abandoned the project is that NELNG could have surrendered the parcels to the sellers, forfeiting all payments. In one of the²⁹ parcels under option and the Hazel property, NELNG could simply have surrendered its payments and walked away.

On January 14, 1971, NELNG obtained from the FPC a limited-term certificate authorizing the transportation and sale of LNG. New England LNG Company, Inc., 45 FPC 142 (1971). The FPC decision stated that "NELNG does not plan to construct or own any of the facilities involved in providing these services" (at 143). It was expressly ordered that "Applicant shall secure all necessary state and local authorizations governing the acts and services authorized herein" (at 145).

Having obtained authority from the FPC to transport and sell LNG, NELNG went to the DPU to seek to override the zoning ordinances of the City of Fall River in regard to the Facility. Apparently, NELNG never sought or obtained permission from the FPC to construct the Facility or to import LNG. Even so, the DPU decision referred to the FPC order and stated that "the petitioner proposes to import LNG into the United States and to acquire it in the United States, where available" (emphasis added).³⁰ This zoning override is the only governmental approval freely given for the Facility. The DPU did not have in 1971 nor does it have now general statutory authority to approve LNG storage facilities. No DPU license is required for construction of LNG facilities.

In reliance upon the FPC certificate and the DPU decision, NELNG has obtained three favorable court decisions and a building permit from the City of Fall River. The Supreme Judicial Court relied heavily upon the FPC certificate in upholding the DPU decision. In Pereira the court stated that NELNG "holds a certificate of public convenience and necessity issued to it

by the Federal Power Commission authorizing it to engage in the proposed LNG business." (364 Mass. at 111) Referring to Mezitt v. Department of Public Utilities, 354 Mass.692, (1968), the court stated that "in both the Mezitt case and the present case, the Federal Power Commission had issued a certificate of Public Convenience and Necessity for the proposed facilities for the storage and other handling of LNG before the Department acted thereon." (note 7, 364 Mass. at 120) This statement is directly contradicted by the terms of the FPC order and by testimony in the Council hearing. (T-pp.97-100, 108-115, Oct.28)

In Save the Bay, the Supreme Judicial Court relied similarly upon the FPC certificate. See Mass.Adv.sh. (1975) at 157, 158 note 12. Yet by the time of our hearing and perhaps even before the Pereira and Save the Bay decisions, NELNG's limited authority to transport and resell LNG has apparently been allowed to lapse.

The Siting Act in s. 69R provides for the first time a process whereby gas companies may seek eminent domain for a site for an LNG storage facility. It is of interest that rather than seek to take advantage of s. 69R, which requires that a facility be subjected to the Council's authority, NELNG chose to agree to very high prices for the Hazel parcel during its rush to break ground before the May 1, 1976, deadline.

The trail of agency and court actions can be summarized as follows: On January 14, 1971, the FPC gave NELNG authority to resell and transport LNG; no permission to import LNG or to construct facilities was given. On December 15, 1971, the DPU, relying in part upon the FPC approval, overrode the Fall River

zoning ordinances in order to allow NELNG to build the Facility. It is apparent from the DPU's decision that the assumption that NELNG would import LNG was given substantial weight. It does not appear, however, from our record that NELNG has ever sought from the FPC permission to import. The DPU decision also overrode the zoning ordinances insofar as they might govern the storage for resale of propane, even though propane is a refined petroleum product which comes under the DPU's jurisdiction only to the extent that it is used directly as a feedstock by retail gas utilities. The Supreme Judicial Court, on September 17, 1973, January 27, 1975, and June 27, 1975, has thrice upheld the DPU's action. At some time NELNG allowed the FPC approval to lapse. In 1973, NELNG filed a new application with the FPC for permission to resell but not import LNG; no action has been taken.

On March 16, 1976, the Fall River Public Works Department issued a building Permit, as required by NELNG v. Fall River, for facilities as approved by the DPU.

NELNG claims to have relied upon this chain of events in good faith to such an extent that the Council is estopped to assert jurisdiction. We can not agree. Instead it appears that NELNG has done a very good job of sidestepping agencies. There is nothing wrong with its having done so, but it should not be able to claim good-faith reliance.

One particular problem is that there apparently never has been FPC authority to import LNG or to construct facilities. Another problem is that NELNG now has no FPC authority at all. It is also the case that the DPU approved a facility for the

importation of gas, but that NELNG intends to use Tank 1 for the sole purpose of storing intrastate gas. Neither a pipeline nor a ship terminal, as provided for by the DPU order, is planned. The modes of operation of and the economic justification for the project as approved in 1971 by the DPU and as planned in 1976 by NELNG are so fundamentally different as to raise the question whether the facility approved by the DPU and Fall River has been changed so greatly as to render those approvals inapplicable. This is so, even though Tank 1 would physically be a subpart of the project as approved by the DPU.

NELNG's brief argues that since the Supreme Judicial Court ordered on June 27, 1975, that a building permit be issued, "the Petitioner received its absolute right to a permit three months before the Energy Facilities Siting Council went into effect on September 24, 1975" (at p.30). That date is the effective date of the Oil Amendments, as described above at p. 6 . NELNG fails to understand that the Siting Act took effect as to both electric and gas facilities on December 31, 1974.

None of the cases cited by NELNG as supporting its argument of estoppel is applicable here. In Gruber v. Mayor and Township Committee of the Township of Puritan, 186 A. 2d 489 (1962), it appears that township officials had not dealt fairly with the developers and had misled them. In Treemarco Corp. v. Garzio, 161 A. 2d 241 (1960), the revocation of a permit by the issuing agency was at issue.

In Patterson v. Central Coast Regional Coastal Zone Commission, 58 Cal.App.3d 833, 130 Cal.Rptr.169 (Court of Appeal, 1976), the

court heard an argument of estoppel, but reversed a lower court judgment in favor of the developer. The court set forth the theory of governmental estoppel, as follows: "Where an owner of property, in good faith reliance upon a governmental representation that construction is fully approved, has suffered substantial detriment by proceeding with development, the government is estopped from prohibiting the project by a subsequent change in law." (58Cal.App.3d at 844, 130 Cal. Rptr. at 175). Each of the elements of this Patterson standard will be considered in turn.

First, it is difficult to characterize NELNG's approach as "good faith reliance," for reasons discussed above. Second, there never was "a governmental representation that construction is fully approved", except from the city Public Works Department. The FPC never considered the facility. The DPU only considered whether the city should be overridden; it never had authority to give general approval, nor did it purport to do so. Each Supreme Judicial Court decision was on narrow grounds; none could be considered a full approval. Finally, a full approval by a city or town would not bind a state agency unless a statute specifically says so.

Third, the detriment suffered by NELNG is not substantial in light of the size of the project. Finally, there is not a "subsequent change on law." The Siting Act was passed, amended to include gas facilities, and in effect before two of the three court decisions, before the building permit was issued, and before any detriment at all was suffered.

The equitable arguments of NELNG are without substantial

merit.

Order

It is hereby ordered that the first long-range forecast of New England LNG Co., Inc., is disapproved without prejudice to the said company's right to propose the LNG storage facility for Council approval or to modify any other portion of the forecast at any time. If the company proposes the said facility, it should state with greater specificity the manner in which the facility is intended to be operated and the nature of the services which will be provided by the company. It is noted that the Council will have jurisdiction whether the facility is intended to store LNG or propane or both; the manner in which application must be made may, however, depend upon the intended use.

FOOTNOTES

1. NELNG is a wholly owned subsidiary of the Colonial Gas Energy System, as are Gas Incorporated, which is discussed elsewhere in this decision, and Lowell Gas and Cape Cod Gas, two retail gas companies. FRTD is owned jointly by NELNG and E.A. Wilson Company. Neither NELNG or FRTD has any employees at this time; both make use of the services of employees of Colonial or its other subsidiaries. It appears from the record that witnesses representing the Colonial System were not certain in every case how responsibility for the Facility would be divided between NELNG and FRTD. For purposes of this decision, there is no need to distinguish between the two entities, and the distinction will generally be ignored. Therefore, unless the context otherwise requires, an reference to NELNG should be read to mean "NELNG or FRTD or both".

2. The evidence appears to be in conflict on this question. The order of the Department of Public Utilities in D.P.U. 17090, dated December 15, 1971, and included in Exhibit N-6 in this proceeding, stated that a ship terminal would be built in connection with Tank 1 (See pp. 2-3) and that gas would be provided to Fall River Gas Company and to "the transmission pipeline" by pipeline (See p.9). However, Mr. Dudley of NELNG testified instead that there were no definite plans to build either a ship terminal or pipeline in connection with Tank 1 (Transcript, October 28, 1976, pp.117-8).

3. On this question the record is also ambiguous. The aforementioned order of the Department of Public Utilities (Exhibit N-6) mentions propane storage at several points. Propane is not, however, mentioned at any other point in the record. Propane cannot be mixed with LNG.

4. The Department of Public Utilities and the Supreme Judicial Court both referred to the FPC approval in subsequent proceedings. The FPC approval is discussed at p. 35, infra.

5. Such action by the DPU was sought pursuant to G.L. c. 40A, s. 10, which reads in entirety as follows:

"A building structure of land used or to be used by a public service corporation may be exempted from the operation of a zoning ordinance or by-law if, upon petition of the corporation, the department of public utilities shall, after public notice and hearing, decide that the present or proposed situation of the building, structure or land in question is reasonably necessary for the convenience or welfare of the public."

6. See Transcript, October 28, 1976, pp. 108-115.

7. The first grandfather clause read as follows:

"The provision of sections sixty-nine I and sixty-nine J of chapter one hundred and sixty-four of the General Laws shall not apply to facilities under con-

FOOTNOTES

struction prior to December thirty-first, nineteen hundred and seventy-five."

"Construction" was defined in G.L. c. 164, s. 69G, as follows:

"'Construction', any placement, assembly, or installation of facilities or equipment, including contractual obligations to purchase such facilities or equipment, at the premises where such equipment will be used, including preparation work at such premises."

Section 69I, referred to in the grandfather clause, read in relevant part as follows:

"Subsequent to the filing as provided for in this section by an electric company of its initial long-range forecast, and action thereon by the council as provided for in section sixty-nine J, such company shall not commence construction of a facility at a site unless the facility is consistent with the most recently approved long-range forecast or supplement thereto."

8. As a result in the Siting Act the grandfather clause and the definition of " construction" now appears as follows:

(a) St. 1975, c. 617, s. 15: "The provisions of sections sixty-nine I and sixty-nine J of chapter one hundred and sixty-four of the General Laws shall not apply to facilities under construction prior to May first, nineteen hundred and seventy-six."

(b) G.L. c. 164, s. 69G: " 'Construction', any placement, assembly, or installation of facilities or equipment, which in the case of an oil facility must be valued in excess of five million dollars, including contractual obligations to purchase such facilities or equipment, at the premises where such equipment will be used, including preparation work at such premises." (emphasis added)

The underlined language, added to the definition by the Oil Amendments, in no way modifies its effect upon gas facilities. It does establish an express substantiality test for oil facilities and at the same time, when read with the appropriate language of s. 69I, creates a minimum threshold for Council jurisdiction over oil facilities regardless of the grandfather clause.

9. See the Fourth Report of the Massachusetts Siting Commission. House No. 6297. The LNG bills are listed on pages 8 and 9 of the Report. HB 202, HB 4185, HB 4186.

10. See the more detailed discussion of real estate transactions at pp. 24.

FOOTNOTES

11. Relevant portions of the contract follow:

CONTRACT FOR THE DESIGN AND CONSTRUCTION
OF LNG STORAGE FOR NEW ENGLAND LNG CO., INC.
AND FALL RIVER TERMINAL DEVELOPMENT CORP.
FALL RIVER, MASSACHUSETTS

AGREEMENT, made as of the 28th day of April, 1976,
by and between the NEW ENGLAND LNG CO., INC., a Massachusetts
corporation and FALL RIVER TERMINAL DEVELOPMENT CORP., a
Massachusetts corporation, ("Purchaser"), and WALSH
CONSTRUCTION COMPANY, division of Guy F. Atkinson Company,
a Nevada corporation ("Contractor").

1. SCOPE

- (A) CONTRACTOR shall supply material and perform
services as outlined in Schedule "A" entitled
"Scope of Work." Those portions to be performed
by Contractor are shown as work included.
Purchaser shall provide, or cause to be provided,
the services, work and materials outlined in
Schedule "B", titled generally "Services, Work
and Materials Provided by Purchaser."

Contract Drawings are attached as Schedule "C"

General Conditions are attached as Schedule "D"

Construction Schedule is attached as Schedule "E"

This Contract covers one tank for storage of
liquefied natural gas, having a nominal capacity of
600,000 barrels (equivalent to approximately
2,082 MM ACF of natural gas) with foundation and
identified appurtenances in Schedules attached,
hereinafter called "the Work." Contractor shall
furnish a tank including related design and
engineering, tank foundation, labor, materials,
insurance, fabrication, construction, testing,
painting, supervision of construction, assistance
during purging and cooldown, all as detailed
herein. By mutual agreement between Purchaser
and Contractor, subject to execution of a satis-
factory subcontract arrangement with Preload, all
Contractor furnished design and engineering for the
Work shall be performed and furnished by Preload
Technology, Inc., a Pennsylvania Corporation,
hereinafter called "Preload" acting as a Sub-
contractor of the Contractor.

* * * *

6. TARGET COST

Certain conceptual design drawings and criteria for
specifications have previously been presented by Preload

FOOTNOTES

to Purchaser to assist Purchaser in obtaining approvals and/or permits from several governmental regulatory agencies. Based upon such conceptual information, Contractor has, in its Proposal dated February 17, 1976, annexed hereto as Schedule "F", submitted a Budget Estimate to a Target Cost. Upon completion by Preload of final designs, drawings and specifications, which shall become a part of the Contract, Contractor shall promptly submit a "Target Cost" for the approval of Purchaser. Upon written approval, such Target Cost shall be annexed hereto as Schedule "G".

Should the Owner and the Contractor fail to agree on such Target Cost within sixty (60) days of the date on which such Target Cost was submitted to Purchaser, either party may terminate this Contract in accordance with the provisions of General Condition IX, sub-paragraph A. However, in such event, the Contractor's Fee, provided for in sub-paragraph A(5), shall be limited to 8% of the actual cost incurred.

(Note: There was oral testimony that the reference to "the Owner" was erroneous and intended instead to be the Purchaser.)

7. COMPENSATION

In payment for all services to be rendered and all things to be furnished by Contractor hereunder, Purchaser shall pay the Contractor as follows:

- (A) Reimbursable - Cost of the Work. Purchaser shall reimburse Contractor for all costs actually incurred by Contractor in the performance of the Work, as provided in Article 8(A) hereof.
- (B) General Expenses. Purchaser shall pay to Contractor the lump sum of \$259,740 to cover the cost of Contractor's Main Office Overhead as provided in Article 9(B)(1) hereof, and a lump sum amount to be mutually agreed upon to cover the cost of the Subcontract Agreement with Preload, as provided in Article 9(B)(2) hereof.
- (C) Contractor's Fee. Purchaser shall pay to Contractor, as provided in Article 9(C) hereof, an amount which is equal to eight (8%) of the Final Total Cost of the Work, as defined in this Article.

* * * *

9. PAYMENT

- (A) Reimbursable Costs.

FOOTNOTES

of costs identified in Article 8.(A) of the Contract, incurred by the Contractor during the period of the Contract to date of termination and until Purchaser has accepted care, custody and control of the site.

- (2) All costs incurred by the Contractor in the cancellation of any purchase orders, sub-contracts or other commitments which were previously made by Contractor for the furtherance of the Work. Such costs shall include, but not be limited to, any negotiated cancellation charges and settlements for materials, labor, goods, equipment, partially or complete fabrications, or for services partially or totally performed. Purchaser may participate in the negotiation of any such cancellation charges.
- (3) All costs necessary to make safe the Work, to dismantle as may be necessary, and provide for the closing of, and moving off of the site, including relocation costs for site personnel.
- (4) All monthly payments of General Expenses which shall be due pursuant to Article 9.(B) of the Contract to the date of termination. In addition, Purchaser shall continue such monthly payments for three (3) months after the month in which the termination date occurs to cover main and branch office administration costs.
- (5) It is recognized that even though site construction may not have progressed substantially, nevertheless Contractor will have performed substantial planning and organization revisions in anticipation of project requirements. In the event that construction activities would have progressed substantially, fruition of portions of such planning and revisions would have occurred. To compensate Contractor for the disruption, inconvenience and realignment of its organization, in view of the unanticipated termination of Contractor's efforts, Purchaser shall pay Contractor a Contractor's Fee which shall be the greater of the following:
 - (a) \$259,740.00 lump sum payment, less the sum of any payments recieved by Contractor pursuant to Article 9.(B)(1) of the

FOOTNOTES

Contract

or

- (b) A sum which when added to the aggregate amount received by Contractor pursuant to Article 9(C) of the Contract, equals twelve (12%) percent of the Total Cost of the Work then performed, which shall include costs pursuant to subsections (1), (2) and (3) of this General Condition IX(A).

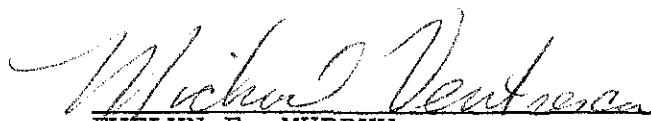
12. This includes costs incurred by subcontractors. All expenditures and obligations incurred by NELNG are summarized in tables on pp. 26&27.
13. Plans submitted in evidence (Exhibit N-12) were prepared by Preload in October 1975, the month when Preload first began to work for Walsh. Some plans bear the legend "Preliminary Bidding Drawing". Mr. Lagardis testified that Preload would have no expectation of being paid for its services if the Revolving Account were not established. Like Walsh, Preload has done almost no work since May 1, 1976. Walsh and Preload still had no signed contract on October 28, 1976. It might be concluded that most or all of the work by Preload before May 1, 1976, was not done under contract but was instead in the nature of the submittal of a business proposal.
14. The issue is, however, addressed as relevant at another point in this decision, p. 13 infra.
15. For the sole purpose of estimating total project costs for construction and engineering, it is assumed that 85% of the costs incurred by Walsh will be for construction and that 15% will be for engineering. The figure of \$13,150,138 is 85% of the Budget Estimate of \$15,470,750 found in the Contract.
16. The figure of \$220,779 is 85% of the General Expenses of \$259,740 payable to Walsh pursuant to the Contract.
17. This figure and several others in the table are taken from the analysis of the evidence, supra.
18. The figure of \$1,320,613 plus an estimated \$1,000,000 in engineering costs for Walsh's subcontractors represents 15% of the Budget Cost.
19. Mr. Emerson testified that Geotechnical's total bill would probably be \$250,000 and that \$5,000 is owed by NELNG.
20. Mr. Lagardis testified that Preload's total bill would come to about \$1 million, which is assumed to include payments to its subcontractor, Geotechnical.
21. The Contractor's fee is assumed to be applicable both to Walsh's direct expenditures and to Walsh's payments to subcontractors.

FOOTNOTES

22. The figure of \$38,961 is 15% of the General Expenses of \$259,740 payable to Walsh pursuant to the Contract.
23. The total construction costs for Tanks 2 and 3 are assumed to be twice the construction subtotal for Tank 1.
24. The total engineering costs for Tanks 2 and 3 are assumed to be equal to the engineering subtotal for Tank 1.
25. Only land costs are considered here.
26. See Table 1, supra.
27. They are parcels 3 and 5 in the listing and map on p. 25.
28. They are parcels 1, 6, and 7.
29. It is parcel 2.
30. D.P.U. 17090, p. 2 in Exhibit N-6.

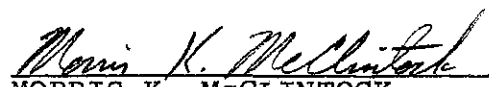
By Order Of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY (designee)


FRANK T. KEEFE

s/
DAVID H. MARKS


MORRIS K. McCLINTOCK

(absent)
HOWARD N. SMITH

JOHN R. VERANI (not eligible to vote)

In the Matter of
Proposed Amendments to Chapter F of the
Regulations of the Energy Facilities Siting Council
I DOMSC 214 (11 May 1977)

APPEARANCES: Ellyn Weiss, Esq., Assistant Attorney General
for the Department of the Attorney General

John J. Desmond, III, Esq. of Boston
for the Boston Edison Company

Maurice L. Zilber, Esq. of Boston
for the Northeast Utilities System

Patrick J. Kenny, Esq. of Westborough
for the New England Electric System

Michael T. Gengler, Esq. of Boston
for Algonquin SNG, Inc., the Berkshire
Gas Company, the New England Gas and
Electric Association, the Fall River
Gas Company

During this past fall, the Council directed its staff to clarify several aspects of the procedure for issuance of certificates of environmental impact and necessity, the so-called override procedure, pursuant to G.L. c. 164, ss 69K-69O and chapter F of the Siting Council regulations. In particular, the staff was directed to consult with the Attorney General's department and the Department of Environmental Quality Engineering pursuant to G.L. c. 164, s 69H and to propose rulemaking amendments which make clear that utility and oil companies are to exhaust administrative remedies before petitioning for certificates of environmental impact and necessity and that findings of fact of the agency below are to be accepted by the Council unless these are beyond the authority of that agency, unsupported by substantial evidence, arbitrary, or insufficient for adequate review.

Proposed Amendment

In February, a proposed amendment was presented to the Council. A public hearing pursuant to G.L. c. 30A, s. 2 was held on 11 April 1977. The Attorney General's department and several utility companies were represented at that hearing. The record has held open to 29 April to afford opportunity for comment. Attorneys for the Northeast Utilities System, New England Electric System, the Boston Edison Company, the New England Gas and Electric Association, the Berkshire Gas Company, Algonquin SNG, Inc., and the Fall River Gas Company have filed written comment upon the amendment. For the most part, these comments urge the Council to reject the amendment. The Attorney General's department, on the other hand, fully supported the proposed amendment. The Department of Environmental Quality Engineering also expressed support for the amendment.

The proposed amendment to chapter F would implement the Council's directive to the staff. The amendment to Rules 51.3, 52.1 requires exhaustion of administrative remedies except in those circumstances where an administrative agency below has unduly delayed its review of a proposed facility. This assures that those agencies with a most immediate concern and expertise will have an opportunity to review a proposal before it is brought before the Council. Thus, for example, the Department of Environmental Quality Engineering will review a local conservation commission decision before the Council must undertake such a review. Should DEQE be delayed for any reason, the utility or oil company may proceed directly to the Council for override of the local agency.

The amendment to Rule 53.1 prevents duplication of adjudicatory fact finding which has been conducted by the agency below. If that fact finding is found to be beyond the authority of the agency below, unsupported by substantial evidence, arbitrary, or insufficient for Council review, the Council may conduct further fact finding. Where fact finding below was other than adjudicatory, the Council will conduct adjudicatory fact finding as required for adequate review of the issues raised in the override petition.

The amendment also requires a petitioner to provide the Council with the record of the agency below. This provision is simply mechanical: it assures that the Council will have a full record of the actions taken prior to the filing of the petition for override.

Utility Company Objections

The several utility companies which have commented upon the proposed amendment have objected to the requirement for exhaustion of administrative remedies and to the Council's acceptance of adjudicatory findings of fact from agencies below. Simply stated, the objection to exhaustion raises the spectre of needless administrative delay. However, delay is a ground for avoiding the exhaustion requirement; thus, this objection is of no great moment. The objection to acceptance of fact finding raises a concern that the Council will ignore its obligation to conduct full adjudicatory review in override proceedings. This concern is overstated. The Council does not intend to avoid adjudicatory review; it wishes simply to avoid duplication of adjudicatory fact finding.

Findings

The amendment to chapter F of the Energy Facilities Siting Council rules will facilitate the process of petition for certificates of environmental impact and necessity. The Council will not be burdened by review of local agency decisions where administrative appeal to a competent state agency is available. Similarly, the Council will not be required to duplicate adequate adjudicatory fact finding which has been conducted by the agency below.

By Order Of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN

EVELYN F. MURPHY

FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. MCCLINTOCK

HOWARD N. SMITH


JOHN R. VERANI

AMENDMENT TO THE
REGULATIONS OF THE ENERGY FACILITIES SITING COUNCIL

A. Rule 51.3 is amended by adding the following:

"Final decision" means an action by a state or local agency which is subject to judicial review pursuant to G.L. c. 30A, s 14 or pursuant to any other general law or statute of the Commonwealth.

B. Rule 52.1 is amended by adding the following:

No petition asserting grounds specified in sections 52.2(1), (3), (4), (5), and (6) with respect to the action of a state or local agency shall be brought until a final decision has been rendered by the agency in question. No petition asserting such grounds with respect to an action of a local agency shall be brought until the petitioner has exhausted any appeal to a state agency provided by statute.

A petitioner complaining of the final decision of an agency shall prepare and provide a full record of such agency decision. Where adjudicatory proceedings have been conducted, the petitioner shall request that the agency issue findings of fact and conclusions of law and shall provide these to the council.

C. Rule 53.1 is amended by adding the following:

When adjudicatory findings of fact in the context of a final decision made by an agency within the statutory jurisdiction of said agency are challenged by an application, review by the Council of said findings shall be limited to the record presented before the agency; provided, however, that the Council may modify the agency findings of fact or substitute its own findings therefore if the Council determines that said agency findings are:

- a. in excess of the statutory authority or jurisdiction of the agency;
- b. unsupported by substantial evidence;
- c. arbitrary or capricious or an abuse of discretion; or
- d. not sufficient to permit adequate Council review of the application pursuant to the Council's obligation to insure a necessary energy supply at the lowest possible cost with a minimum impact on the environment.

Any party wishing to challenge agency findings of fact shall specify which of grounds a.-d., above, is relied upon and shall state the substance of his claim, including citations to the portions of the agency record he relies upon.

In such cases, the Council may take evidence itself or remand questions of fact to the agency for further proceedings, consistent with the time limits set forth in G.L. c. 164, ss. 69K-69O.

In reviewing facts found by an agency, the Council shall give due weight to the experience, technical competence and specialized knowledge of the agency. Nothing in this section is intended to limit the authority of the Council to decide questions of fact not raised or decided in the context of the final decision of the agency.

In the Matter of Cambridge Electric Light
Company, New Bedford Gas and Edison Light
Company, and Canal Electric Company
I DOMSC 221 (13 May 1977)

Docket: EFSC No. 76-4

Petition for Approval of Demand Forecasts

APPEARANCE: Michael T. Gengler, Esq. of Boston,
for the companies

The NEGEA Service Corporation has filed a Long Range Electric Forecast, 1976-1985 with the Energy Facilities Siting Council on behalf of the principal electric utility operating companies of the New England Gas and Electric Association, Cambridge Electric Light Company, New Bedford Gas and Edison Light Company, and Canal Electric Company. The operating companies have petitioned the Council for approval of the demand forecast segment of the Forecast. The companies do not propose new generating facilities subject to Council review in the supply forecast segment; therefore, Council approval of supply is not required. High voltage transmission and substation facilities have been reviewed separately.

The Cambridge Electric Light Company is a retail utility serving the City of Cambridge (and the Town of Belmont by sale of power for resale). The Cambridge Electric service area has a stable population of approximately 100,000 people; the company serves 40,000 customers at retail. In contrast, the New Bedford Gas and Edison Light Company serves a fluctuating and expanding service area in 40 communities in southeastern Massachusetts, Cape Cod, and the Vineyard. The New Bedford service area has a current

year round population of 405,000 people; its summer population may exceed 600,000 people. The Canal Electric Company owns 75% of the 1152MW base and intermediate capacity of the canal generating units located at the Sandwich entrance of the Cape Cod Canal. Canal Electric operates these units and sells all output to retail companies, including Cambridge Electric and New Bedford; it has no retail customers.

DEMAND FORECAST METHODOLOGY

NEGEA has undertaken an extensive effort to forecast demand within the Cambridge Electric and New Bedford service areas, and it has readily and articulately disclosed its methodology, assumptions, technique, and source of materials to the Council and its staff. Its presentation and explanation of material are excellent and obviously intended to facilitate the public review required by G.L. c. 164, §§ 69G et seq. The Siting Council commends this competence.

NEGEA employs an extensive survey technique within each community of the Cambridge Electric and New Bedford service areas. This involves interviews of elected and appointed officials, regional and state planning officials, company employees, builders, bankers, developers, and commercial and industrial representatives. These interviews elicit historical and current use patterns, prospective development plans, and future use judgments. These are tabulated in a subjective manner to develop an "average" or most likely scenario of the forecast period for the major energy use components, residential, commercial, and industrial. That part of the scenario which projects residential, commercial, and industrial growth has been correlated independently with population and development

projections of the Massachusetts Office of State Planning and Herr and Associates of Boston which were conducted for the Cape Cod regional development agency. The correlation approaches 1.0.

While NEGEA has comprehensively studied customer growth in the Cambridge Electric and New Bedford service area, it has not as fully studied appliance saturation and efficiency, electric heat penetration, conservation, and price elasticity. Admittedly, these variables are most difficult to study, evaluate, and project; yet, these are critical to long range forecasting of average customer use, particularly in the expanding communities of the large New Bedford service area. Both the Council staff and the company will be expected to study these factors in comprehensive fashion in subsequent forecast periods.

DEMAND FORECAST CONCLUSIONS

NEGEA projects low growth for its Cambridge Electric service area. Total energy consumption is projected at a compound annual growth rate of 3.2%, residential consumption is projected at a compound annual growth rate of 0.5%, commercial consumption is projected at a compound annual growth rate of 4.3%, and industrial consumption is projected at a compound growth rate of 2.9%. See Long Range Forecast, part 2. These growth rates are explained by the fact that the City of Cambridge is densely populated and largely developed; it has a relatively stable residential, commercial, and industrial base.

In marked contrast, higher growth is projected for the New Bedford service area. Total energy consumption is projected at a compound annual growth rate of 5.0%, residential without electric heat is projected at a compound annual growth rate of 2.99%,

residential with electric heat is projected at a compound annual growth rate of 11.8%, commercial consumption is projected at a compound growth rate of 4.3%. See Long Range Forecast, part 2. These growth rates are explained by continued expansion of the New Bedford service area communities, accelerating electric heat penetration, and growing average use.

While the Cambridge Electric forecast is limited by its stable service area base, the New Bedford forecast is a no-constraint projection. Of course, expanding population accounts for much of the New Bedford growth. However, a significant part of this growth is premised upon an assumption that new residential customers will use electric heat at a penetration rate which will increase by 5% annually over the forecast period. There is an assumption also that average residential customer use will continue to grow because of the low appliance saturation of existing and new homes at this time. These assumptions have not been tempered by quantitative assumptions concerning appliance efficiency, conservation, and price elasticity.

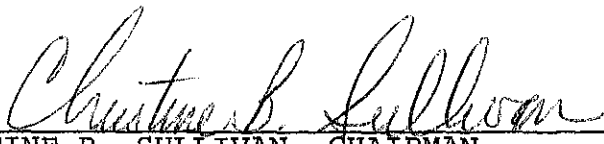
The no-constraint forecast for the New Bedford service area cannot be accepted without question. For example, the company's assumption of high electric heat penetration is not premised upon a discernible, post embargo trend. The impacts of long term adjustments to finite energy resources, ever more expensive energy cost, conservation, and efficiency have been considered qualitatively; yet practical analysis of these variables will require quantitative study as the demand forecast process is refined. We hypothesize that these factors will temper the rate of growth of average use as developing state and federal energy policies are implemented. See generally Energy Conservation Plan, Common-

wealth of Massachusetts (March 1977); HR 6831, the National Energy Act, 195 Energy Users Report (5 May 1977). Thus, while we accept the general assumptions of growing average customer use over the forecast period, we expect, also, that the rate of growth may be slowed.

FINDINGS

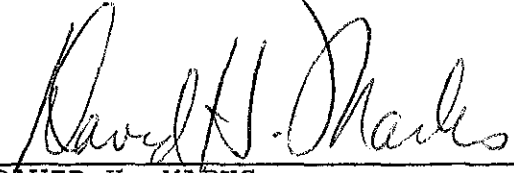
Pursuant to G.L. c. 164, §§ 69I, 69J, the Energy Facilities Siting Council approves the demand segment of Long Range Electric Forecast, 1976-1985 submitted for the Cambridge Electric Light Company, the New Bedford Gas and Edison Light Company and the Canal Electric Company. This approval is given with the expectation that subsequent forecast supplements will consider and study the extent to which electric heat penetration, saturation efficiency, conservation, and price will effect average use.

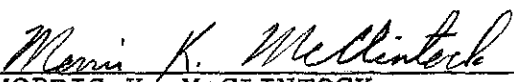
By Order Of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN

EVELYN F. MURPHY

FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. MCCLINTOCK

HOWARD N. SMITH


JOHN R. VERANI

In the Matter of Northeast Utilities System
1 DOMSC 227 (15 June 1977)

Docket: EFSC No. 76-17

Petition for Approval of Transmission Facilities

APPEARANCE: Maurice L. Zilber, Esq. of Boston
for the company

EXEMPT FACILITIES

As part of its initial petition to the Energy Facilities Siting Council, the Northeast Utilities System has claimed exemption of a number of transmission facilities. See Initial Petition of the Northeast Utilities System, Tables E-19, E-22. The company asserts that substation installation or equipment additions at Ludlow, Ashfield, Partridge, and Pleasant substations are exempt from Council review pursuant to EFSC Rules 61.6, 62.10, 64.9. The company asserts also that transmission line rebuilds, reconductoring, or construction from Fairmont to Holyoke at 115 KV and Doreen to Oswald Junction at 115 KV are exempt from Council review pursuant to EFSC Rules 61.6, 62.10, 64.9. The Council accepts these claims of exemption, and the company may continue with these projects.

PROPOSED FACILITIES

Northeast Utilities seeks Council review and approval of transmission, substation, and transformer facilities for a proposed Hampden Junction to Agawam substation 345 KV line and associated 115 KV line for South Agawam Junction to Agawam substation with a 450 MVA 345/115 KV autotransformer to be located at Agawam substation. Review and approval is sought also for a proposed Podick Junction to Podick substation 115 KV line with two 47 MVA 115/13.8 KV autotransformers to be located at Podick substation. See Initial Petition, Tables E-20, E-23.

1. Council Review

The need for and siting of high voltage transmission facilities are primary concerns of the Energy Facilities Siting Council. A substantial part of the current work program of the staff is directed to the development of comprehensive, sophisticated guidelines for evaluation of transmission facilities. The intent of the Council is to draw upon the experience and expertise of siting agencies in the states of Connecticut, New York, Ohio, and California; federal regulatory agencies; Massachusetts regulatory agencies; the major electric utilities within the New England Power Pool; and research and consulting firms such as the Advanced Systems Technology Division of the Westinghouse Electric Corporation.

The scope and substance of this high voltage transmission project, however, forecloses its development and application to those facilities which have been proposed for Council review during 1976 and 1977. Therefore, this early review of need and siting is necessarily limited.

2. Determination of Need

The need for high voltage transmission facilities is premised upon subjective engineering judgments of likely failures in the transmission network. See Exhibit N-8, testimony of L.E. Mentor at 8. These judgments are tempered by a company's fiscal ability to construct the facilities which are required to "back-up" or to provide reliability to the network in the event that the posited failures occur. While this subjective determination of need is not unreasonable where there is substantial engineering expertise and systematic application of that expertise, it is nevertheless limited. Engineering judgment may vary from one company to another; a determination of need in one company may not be recognized in another company. Consequently, the level of

reliability that is built into one transmission network may differ substantially from that of another company.

Without an objectively determined index, it is impossible for the electric utility companies or the Siting Council to evaluate the degree of reliability or the probability of failure that results from subjective determination of need. See Criteria for Design of Interconnected Power Systems (Northeast Power Coordinating Council 1967, 1975). Yet, the multi-million dollar cost of high voltage transmission facilities requires that this objective analysis be developed with some dispatch. Consumers simply cannot be asked to continue to pay for transmission networks which may be built to excessive levels of reliability or to levels which are beyond the society's ability to pay. Conversely, the society cannot be asked to accept the economic costs which result from sustained failure of transmission networks. Finally, we must realize that without objective evaluation of need, the public insistence upon lower utility cost may well lead to increasingly undesirable regulatory, rate making constraints upon transmission network construction.

Within the present limitations of high voltage transmission planning, Northeast Utilities employs a complex of engineering expertise, computer load flow modeling, NEPOOL guidelines for maintenance of the interconnected transmission grid, and local area supply guidelines. Company engineers posit hypothetical line, transformer, and generator failures which are judged to have a subjectively determined likelihood of occurrence and which are set forth in the NEPOOL and local area supply guidelines. These are applied to a load flow model which then determines system loading and identifies those parts of the transmission network which are incapable of sustaining load at a given percentage

of peak. Thereafter, alternative high voltage facilities are studied to determine the best engineered and least costly response to the computer identified outage.

The proposed transmission, substation, and autotransformer facilities now before the Council were developed in this manner. See Exhibit N-8, testimony of L.E. Mentor. See also Northeast Utilities Planning Guidelines - Local Area Supply Systems (24 November 1976).

This determination of need is accepted and approved by the Council for the present with the understanding and expectation that objective analysis of reliability and probability of failure will be pursued by the company and the Siting Council's staff.

3. Siting

The proposed Hampden Junction to Agawam substation, South Agawam Junction to Agawam substation, and Podick Junction to Podick substation lines, substation equipment, and autotransformers will generally use existing rights of way and substation land. Prior to the Council's development of siting guidelines, the company's environmental expertise will be relied upon with the understanding that clear cutting will be assiduously avoided and with the proviso that the chemical herbicide 245T will not be used in any fashion without Siting Council review and approval pending review by the United States Environmental Protection Agency pursuant to 40 CFR 162.

4. Cost

The proposed Hampden Junction to Agawam substation 345 KV line is approved at a cost of \$5,375,000, the proposed South Agawam Junction to Agawam substation 115 KV line is approved at a cost of \$307,000, the proposed Agawam substation 345 KV autotransformer and associated equipment are approved at a cost of \$2,995,000, all in

1977 dollars. The proposed Podick Junction to Podick substation 115 KV line is approved at a cost of \$391,000, the proposed Podick substation autotransformers and associated equipment are approved at a cost of \$2,000,000 all in 1977 dollars.

These costs, of course, are subject to reasonable change from a variety of factors including inflation of wage and material costs, construction problems encountered in the field, engineering design changes and other causes beyond the control of the company. In this context, the Council finds that the company's proposal will satisfy the need discussed above with the least impact on the environment and at the least cost based on information presently available.

The Council expects, in future proceedings involving facilities approvals that applicants will present to the Council cost estimates on a current dollar basis with sufficient underlying detail, commensurate with the stage of planning of such facility, to enable the Council to evaluate the reasonableness of such cost estimate and that of alternatives considered or proposed. Approval by the Council of a facility at the preliminary licensing stage should not be construed as a binding determination upon a rate-setting agency as to whether the ultimate costs incurred by the applicant for the facility are reasonable or are to be allowed for rate-setting purposes. The Council also recognizes that there may be circumstances where escalation of the cost of a facility could cause an applicant to delay or re-evaluate the need for construction. The Council will expect applicants to inform it of all such changes through Supplemental Forecasts and to inform the Council of the ultimate cost of each approved facility so that the Council may be aided through such experience in evaluating cost proposals.

5. Time of Construction

The proposed transmission, substation, and autotransformer facilities are premised upon forecasted load growth. Because of the relatively short time required for construction, these facilities should not be constructed until there is a reasonable expectation that forecasted load is materializing. In the case of the Hampden Junction to Agawam substation 345 KV line and the Agawam 345/115 KV autotransformer, construction is approved when necessary to meet a load of 909 MW on the Western Massachusetts Electric Company system. In the case of the Podick Junction to Podick substation 115 KV line and sutotransformers, construction is approved when necessary to relieve a firm substation load of 53 MVA at Amherst substation and 31 MVA at Podick substation.

FINDINGS

The Energy Facilities Siting Council approves the proposed Hampden Junction to Agawam substation 345 KV line, South Agawam to Agawam substation 115 KV line, Agawam 450 MVA 345/115 KV autotransformer, Podick Junction to Podick substation 115 KV line, Podick substation 47 MVA 115/13.8 KV autotransformers, and associated equipment pursuant to G.L. c. 164, s. 69J. This approval is subject to the siting, cost and time for construction limitations set forth above. Those facilities claimed to be exempted from the Council's review and approval are accepted as exempt facilities.

By Order of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN

s/

EVELYN F. MURPHY

s/

FRANK T. KEEFE

(absent)

DAVID H. MARKS

(absent)

MORRIS K. McCLINTOCK

(absent)

HOWARD N. SMITH

s/

JOHN R. VERANI

In the Matter of Northeast Utilities System
1 DOMSC 234 (15 June 1977)

Docket: EFSC No. 76-17

Petition for Approval of Demand Forecast, 1976-1985

APPEARANCE: Maurice L. Zilber, Esq. of Boston
for the company

The Northeast Utilities System has petitioned the Energy Facilities Siting Council for approval of the demand forecast which it has filed as part of its Initial Petition and Long Range Forecast of Electrical Loads and Power Facilities Requirements, 1976 through 1985. These are filed on behalf of its operating subsidiaries, the Connecticut Light and Power Company, the Hartford Electric Light Company, Western Massachusetts Electric Company, Holyoke Water Power Company, and Holyoke Power and Electric Company. The company has also petitioned for approval of high voltage transmission and substation facilities which have been reviewed and approved separately. The company has not proposed generating facilities for Council review at this time.

Northeast Utilities System is the largest public utility within the New England Power Pool. In the Commonwealth of Massachusetts, its subsidiary, Western Massachusetts Electric Company provides retail service to 59 communities in the four western counties of the state. Its retail service area includes a population of approximately 437,000 and includes the larger urban communities of Springfield, Pittsfield, Amherst, and Greenfield. Holyoke Water Power Company and Holyoke Power and Electric Company serve industrial customers in the City of Holyoke and the Town of South Hadley and serve at wholesale the Town of South Hadley and the City of Chicopee.

Demand Forecast Methodology

Northeast conducts planning and forecasting on a system basis;

it has not derived the demand forecasts of its Massachusetts companies separately. Its forecast methodology involves sophisticated and extensive use of mathematical models for residential and industrial projections. A cohort-survival approach is used to project service area population and number of residential customers and is based upon a newly developed population data base. An extensive data collection and organization effort has initiated a broad data base which will be utilized in succeeding years for comprehensive commercial class forecasting. A system peak forecast is premised upon projections of total electrical energy output requirements of each class and upon data which identifies class loads that are coincident with the system peak.

The Siting Council recognizes the competence of the Northeast forecast method and commends the company's commitment to development of an objective analysis of electric energy demand. Nevertheless, refinement of this approach should be pursued to document the .774 coefficient for relation of population to household and to develop empirical data and analysis of price impact upon consumption, load management impact upon consumption and peak, use of modified national production indices for industrial demand forecasting, and use of the Connecticut Energy Advisory Board methodology and projections for commercial demand forecasting.

Demand Forecast Conclusions

The Northeast Forecast is the third which has been issued by the company since the onset of the 1973 Arab oil embargo. For many years prior to 1973, the company commonly experienced annual consumption growth rates of 7-8%. By contrast, the forecast of 1 January 1975 projected a ten year compound growth rate of 5.7% while the present Forecast projects a compound growth rate of 4.9% from 1976 through 1985. This anticipates fundamental change in customer use of electric

energy and assumes that electric appliances and equipment will be significantly more efficient and used less over time. For example, average residential customer use is projected to increase at a compound growth rate of 1.8% with a highest annual increase of 2.5%. This is less than one half the compound growth of 4.1% from 1969 to 1974. Commercial class growth is projected to increase at a compound growth rate of 6.4% through 1985. This is little more than one half the compound growth rate experienced during the 1960's and early 1970's. Of course, the retarding impact of conservation and efficient use is contrasted with important growth factors such as population increases, electric use and heating penetration, near term industrial-commercial economic recovery.

FINDINGS

This forecast is distinguished by the sophistication, depth, and empirical basis of its analysis and the company's recognition that the emerging patterns of conservation and efficient use represent fundamental change. This objective analysis affords a superior method of observation, definition, quantification, and study of the range of variables which contribute to electric demand. Moreover, objective analysis alone provides a basis for realistic public review because its dependence upon subjective, unquantified variables and judgments is sharply limited. In short, Northeast Utilities method affords the Council and the public an opportunity to review facts rather than mere opinions.

The Energy Facilities Siting Council approves the demand forecast as submitted pursuant to G.L. c. 164, ss. 69I, 69J. This approval is given with the expectation that further refinement of methodology as indicated in the discussion of forecast method above will be pursued.

By Order of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN

s/

EVELYN F. MURPHY

s/

FRANK T. KEEFE

(absent)

DAVID H. MARKS

(absent)

MORRIS K. MCCLINTOCK

(absent)

HOWARD N. SMITH

s/

JOHN R. VERANI

In the Matter of Athol Gas Company
1DOMSC 238 (11 May 1977)

Docket: EFSC No. 76-38; 77-38

Petition for Approval of a Long Range Forecast (1976-1980)

APPEARANCE: Ralph Warren Sullivan, Esq,
for Athol Gas Company

The Massachusetts Energy Facilities Siting Council hereby approves the first long-range forecast submitted by Athol Gas Company for 1977.

Notice of the adjudicatory hearing concerning the forecast was published in the Athol News and the Gardner News and was mailed to individuals and organizations as ordered by the Council. An affidavit of notice was returned to the Council on September 1, 1976. The adjudicatory hearing was held at the Pine Point Library in Springfield, MA on August 31, 1976.

The Company

Athol is a small company whose customers have decreased from 787 in 1970 to 575 in 1975 and whose annual gas sendout has decreased from 29,465 MCF in 1970 to 15,172 in 1975. The company is involved in a small scale operation and in view of that fact, did not complete the majority of the forecast forms. One table was submitted on March 8, 1977.

The company has had a contract since 7/7/58 with the Home Gas Corporation of Athol for the purchase of propane. The contract is scheduled to terminate on 7/7/79 and then will continue in effect until terminated by either party after twelve months' notice. In the period February 1976 - February 1977, the company purchased

By Order Of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY


FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. MCCLINTOCK

(absent)
HOWARD N. SMITH


JOHN R. VERANI

In the Matter of the Groveland Electric Light Department

1 DOMSC 242 (11 May 1977)

EFSC No. 76-39

Petition for Approval of a Long-Range Forecast

APPEARANCE: Joseph L. Donahue, R.G. Vanderweil Engineers, Inc.,
for Groveland Electric Light Department

The Energy Facilities Siting Council hereby approves the first long-range forecast of the Groveland Electric Light Department.

An adjudicatory hearing concerning the forecast was held on November 22, 1976, in Room 2107 One Ashburton Place, Boston, MA. at 10:00 A.M. and notice of the hearing was published in the Lawrence Eagle and mailed to individuals and organizations as ordered by the Council.

Groveland is a small municipal electric department that purchases all its power under the R-10 tariff from the New England Power Company. The methodology used to project future power needs was to assume a 4% annual increase in both energy requirements and peak demand for all classes. This rate was broken down into a 2% increase in number of customers and a 2% increase in individual customer requirements.

The Council finds that, for total system energy requirements in the forecast period, the 4% growth rate is reasonable, although there may be variations from this figure for individual classes. Groveland served 1499 residential customers in 1975, 31 of whom used electric heating. This heating class grew 16.6% in 1975, but it is expected that this increase will drop off significantly as

it is now company policy to discourage electric heat because of its expense. The number of residential customers without electric heat grew less than 1% in each of the past 4 years, therefore the 2% projected increase in number is probably too high. However, total consumption in this class grew 3.9% in 1975 so the 4% figure appears accurate. The 4% commercial class growth rate is probably over-estimated because 1974 and 1975 showed decreases of 11.6% and 18.1% respectively. Mr. Donahue testified that the overall 4% growth rate for the forecast period reflects a balancing of two factors; over the past 5 years there has been essentially zero population growth in Groveland and only minor changes in the number of customers, but the first part of 1976 showed an increase in energy consumption of over 4%.

The department has tentative places to add one substation to its system sometime in the next 5 years.

Findings:

The Council finds that:

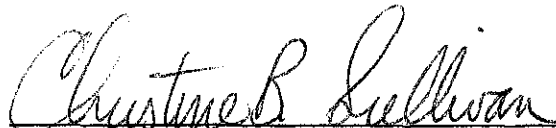
- 1) All information supplied by Groveland relating to current activities, environmental impact, facilities agreements and energy policies is substantially accurate and complete; and
- 2) projections of supply are based on substantially accurate historical information and reasonable statistical projection methods; and
- 3) Groveland's forecast is consistent with others approved in Massachusetts; and
- 4) Groveland's forecast is consistent with the Council's policy to insure a necessary energy supply for the Commonwealth with a

minimum impact on the environment at the lowest possible cost.

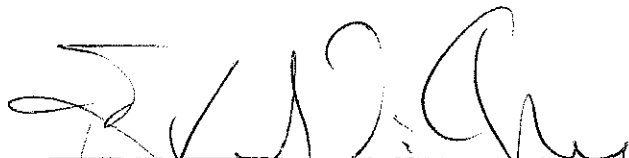
Order

It is ordered that the first long-range forecast of Groveland is approved subject to such changes as may appear in the first and subsequent supplements. The department is directed to notify the Council when plans to construct a substation become sufficiently definite to determine when it should be included in an annual or amended supplement.

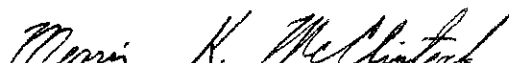
By Order Of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY


FRANK T. KEEFE

s/
DAVID H. MARKS


MORRIS K. McCLINTOCK

(absent)
HOWARD N. SMITH


JOHN R. VERANI

In the Matter of the Haverhill Gas Company
1 DOMSC 246 (11 May 1977)

Docket: EFSC #76-15 and 77-15

Petition for Approval of a Long-Range Forecast and Supplement

APPEARANCES: September 23, 1976: F. Kenneth Martin and George A. Miller
for the Haverhill Gas Company

February 17, 1977 : George A. Miller, for the
Haverhill Gas Company

The Massachusetts Energy Facilities Siting Council hereby approves the first long range Forecast and annual Supplement of the Haverhill Gas Company for the years 1976-1980 pursuant to G.L. c. 164, s. 69G et. seq.

In accordance with G.L. c. 164, s. 69I Haverhill filed the long range forecast on May 3, 1976 and the Supplement on December 31, 1976. A public adjudicatory hearing was held September 23, 1976 in the Lowell City Hall on the Forecast and February 17, 1977 at One Ashburton Place, Boston, on the Supplement. Notice was published in the Haverhill Gazette and Newbury Daily News and mailed to individuals as ordered by the Council. This decision covers both the Forecast and Supplement.

The Company

Haverhill Gas Company has been in business since 1853 and serves approximately 27,300 retail customers in northeastern Massachusetts. The company receives pipeline gas from the Tennessee Gas Transmission Company and maintains propane and LNG peak shaving facilities.

Overall System Summary

The Haverhill area is depressed economically and there is

expected to be little new commercial and residential growth. Consequently, the company predicts a small growth rate for the next 5 years.

	<u>1976(000 MMBTU)</u>	<u>1980(000 MMBTU)</u>	<u>Compound annual growth rate</u>
annual gas sendout	3,806,900	4,009,000	1.1%
peak daily winter sendout	26,722	30,000	2.3%

The concentration of heating customers is increasing and this means that the peak is growing slightly faster than annual sendout and therefore the load factor is decreasing. However, Mr. Miller testified that the peak will not increase much beyond its present level without a significant rise in total system load. It is the policy of the company to protect existing residential customers and not to add new customers that might jeopardize existing service. Haverhill is proposing no new facilities in the forecast period.

Methodology

The company divides its load into 2 basic categories: base load and heating load. The forecasting measure is the "equivalent unit" which is the load that, if continuously operated, would use 100 cubic feet per hour. It is predicted that 300 equivalent units will be added to the system for each year of the forecast. The company forecasts for 6900 effective degree days per year.

Individual Classes

Residential Gas Heat

Sendout in this class is expected to grow at a compound rate of 1.6%. 1976 showed a 6.9% increase because the 1975 winter was relatively warm, and Mr. Miller testified that the 1977 predictions will probably be low due to the severe cold in January and the first part of February.

Residential Non-heat

This class is expected to decline at a 1% annual compound rate. The shift of some customers to gas heat and the urban renewal demolition of apartment buildings using gas accounts for this decrease.

Commercial and Industrial

This class will grow at a compound rate of 2.7%. A large (25%) increase in 1975 was due to a one time wholesale sale to Lawrence Gas Company. In preparation for possible further curtailments under a conservation plan the company has determined that there are 12 commercial and industrial customers (FPC priority 2: using 50 MCF or more on a peak day) that might have to be shut off.

Company Use, Losses and Gas Unaccounted for

This class makes up about 6.7% of total company sendout and from 1977 on is expected to remain constant due to an active line rehabilitation program. The wide fluxuations in sendout during the historical years of the forecast are attributable to interruptible sales made when excess gas was available in the summer. No future interruptible sales are anticipated.

Average Cost of Gas

The average cost of gas is predicted to rise from \$2.97 per MMBTU in 1976 to \$3.21 per MMBTU in 1978, because LNG will constitute a greater percentage of sendout. In addition the company expects to use significantly more propane in the forecast years. Mr. Miller testified that a key factor in limiting demand will be rising cost, particularly as the cost of gas approaches the cost of oil.

Resources and Requirements

The Forecast and Supplement show that sendout available exactly equals sendout required for the forecast years. Although this seems to leave no reserve margin, there is actually greater reserve than table G-22 indicates. LNG and propane supplies were recorded on the basis of what was on hand on December 31, not on the basis of full tanks. Underground storage gas was recorded for what is expected to be used not the maximum that could be used. In 1976, 211,000 MMBTU from underground storage is listed but the contract allows for 280,000 MMBTU. Mr. Miller testified that the company's peak shaving facilities would supply the entire service area in the event that the Tennessee pipeline was shut off. In 1981 maximum peaking required is predicted to be 30,400,000 MMBTU per day and presently peaking capacity is 32,000,000 MMBTU per day (8,000,000 - propane; 24,000,000 - LNG). Also in 1981 only 13,100,000 MMBTU of the 34,400,000 MMBTU peaking requirement is expected to come from the peak shaving facilities while the rest will be supplied under the Tennessee pipeline contract.

Agreements for Gas Supply

Haverhill has a contract with Tennessee Gas Pipeline Company for natural gas until 1988 and an off peak storage contract until July 23, 1977. The storage contract has been extended to 1980 and the volume of gas available under it has been increased from 280,000 MMBTU to 350,000 MMBTU per year. Haverhill has a contract to purchase LNG from Distrigas until 1991.

The company has no contracts for the purchase of propane, but makes spot purchases when needed. These contracts indicate a sufficient supply of gas through 1980.

Conservation

Haverhill Gas is actively engaged in conservation measures through radio and newspaper ads, bill stuffers, and consultation with major commercial customers. Mr. Miller noted that a million Btu are being saved on a daily basis due to conservation techniques. The Council commends the company for these policies.

Findings

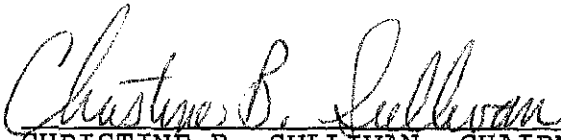
The Council finds, for the Haverhill Long Range Forecast and Supplement:

- 1) That all information relating to current activities, environmental impact, facilities agreements and energy policies is substantially accurate and complete; and
- 2) Projections of requirements and supply are based on substantially accurate historical information and reasonable statistical projection methods; and
- 3) The forecast is consistent with other approved forecast; and
- 4) The forecast is consistent with the policy to provide a necessary energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost.

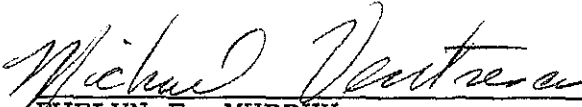
Order

The Forecast and Supplement of the Haverhill Gas Company are approved through 1980.

By Order Of The Energy Facilities Siting Council:



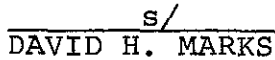
CHRISTINE B. SULLIVAN, CHAIRMAN



EVELYN F. MURPHY



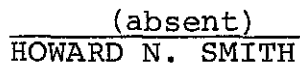
FRANK T. KEEFE



DAVID H. MARKS



MORRIS K. MCCLINTOCK



HOWARD N. SMITH



JOHN R. VERANI

In the Matter of Lowell Gas Company
1 DOMSC 252 (11 May 1977)

Docket: EFSC No. 76-16; 77-16

Petition for Approval of a Long Range Forecast and Annual Supplement

APPEARANCES: September 23, 1976; Laurence Mason, Esq.,
for Lowell Gas Company

March 4, 1977 ; Donald L. Goodick, Systems
Engineer, Lowell Gas Company

The Massachusetts Energy Facilities Siting Council hereby approves the first long range forecast and annual supplement of the Lowell Gas Company through 1977, pursuant to G.L. c. 164, s. 69G et. seq.

Lowell filed the forecast on April 30, 1976 and the supplement on December 31, 1976. A public adjudicatory hearing on the forecast was held September 23, 1976 in Lowell and a hearing on the supplement was held March 4, 1977 at One Ashburton Place, Boston. Notice of both hearings was published in the Lowell Sun and the Billerica Minuteman as ordered by the Council.

The Company

Lowell Gas Company serves Lowell and several towns including Billerica, Tewksbury, Westford, Dracut, Tyngsboro, Dunstable, Pepperell, Chelmsford, Wilmington, and North Reading. The franchise area has a population of approximately 265,000 and the company has about 45,000 priority 1 customers and 300 priority 2 customers. Lowell takes gas from the Tennessee Gas Pipeline Company and maintains storage and vaporization facilities for LNG and propane.

Methodology

Lowell has one of the highest concentrations of gas heating customers in the state due to an aggressive sales policy immediately after interstate pipeline gas became available in 1951. The company predicts that 1500 new family units will be added to the system each year and that 64-70% of these will use gas as a major source of energy. Therefore about 1000 new residential customers are expected each year and each customer is predicted to use 120 MCF per year. Using these figures the company has forecasted for the next 5 years. Lowell uses a 6130 degree-day year and a peak day of 62 degree-days. The company makes "subjective" and unexplained evaluation of a general improvement in the economy, the effect of conservation, and the continuity of state and federal policies.

Overall System Summary

	<u>1976(000 MMBTU)</u>	<u>1981(000 MMBTU)</u>	<u>Compound annual growth rate</u>
annual sendout	11,715.4	12,291.9	1%
peak daily winter sendout	83.4	94.2	2.5%

Individual Classes

Central Heat - compound growth rate: 3.2%

The growth rate in the supplement was reduced slightly from what was predicted in the forecast, and the warm 1975 winter accounts for the relatively large percentage increase in 1976.

Space Heat - compound growth rate: -1%

Sendout is declining in this class because existing customers are converting to central heat.

General Domestic Service (residential without heating)
- compound growth rate: 2.5%

The company saw no significance in the slight sendout decline in this class.

General Commercial and Industrial (non heating)
- compound growth rate: -1.5%

This class does not have a favorable rate, and therefore customers are switching to Optional Commercial and Industrial.
Optional Commercial and Industrial - compound growth rate: 3.1%

This is an all inclusive, all requirements class and is considered by the company to be a base load category. The major commercial and industrial customers are in this class.

Optional Commercial Building Heating Service
- compound growth rate: 1.4%

Firm Contracts - compound growth rate: -.5%

This class consists of 23 priority 2 customers who has entered into multi-year contracts for gas. There is a decline in sendout because some of these purchasers have been able to negotiate cheaper long term contracts for oil.

Interruptible

Interruptible sales ended in 1973 because underground storage of excess summer gas was cheaper than liquefaction and storage of LNG.

Wholesale LNG Sales

These sales will end in 1978 when the company's contracts with Holyoke and Westfield terminate. After that the company expects to use all LNG in its own system and will probably not enter into new contracts with smaller gas companies.

Average Cost per MMBTU

The average cost is predicted in the supplement to rise faster than expected in the forecast and will go from \$3.10/MMBTU to \$4.49/MMBTU in 1981.

Resources and Requirements

In 1977 an 18% excess of sendout available over sendout required is predicted and by 1981 the excess drops to 14%. Gas from the Eascogas project is included in the sendout available figures beginning with 240,000 MMBTU in 1977 and going up to 2,6000,000 MMBTU in 1980, but Mr. Goodick testified that this project is too tentative to depend on. However, if the Eascogas volumes are excluded from sendout available there is still excess gas available until 1980, when Lowell would lack sufficient supply if none of the proposed Eascogas was available. Lowell maintains sufficient peak shaving capacity to supply its entire service area if there was a failure in the Tennessee pipeline. Mr. Goodick noted at the hearing on March 4 that the Tennessee Gas proposal to build an interstate pipeline south from New Brunswick, Canada may provide another source of supply beginning in 1981.

Agreements for Gas Supply

Lowell has a contract with Tennessee Gas until 1988, an agreement to purchase LNG from Boston Gas from May-September 1977, and agreements with National Fuel Gas Supply Corp., Texas Eastern Transmission Corp. and Tennessee Gas for underground storage and transportation of propane and natural gas through 1977. In addition Lowell has a propane contract with Gas, Inc. Because the LNG and storage agreements terminate in 1977 the Council will not consider the LNG and storage volumes predicted to be available after 1977 firm supply, and

therefore approves the forecast and supplement only through 1977.

Proposed Facilities

Lowell proposes that a LNG satellite facility may be needed sometime prior to 1981 in either Billerica, Pepperell or Dracut. The facility will be used to reinforce distribution pressure and will not increase annual sendout. No sites have been chosen and the need for the facility is still under consideration. Mr. Goodick testified that the company will attempt to give the Council 2 years notice from the time it is determined that the facility is necessary to expected in-service date.

Findings

The Council finds, for the Lowell Long Range Forecast and Supplement

- 1) That all information relating to current activities, environmental impact, facilities agreements and energy policies is substantially accurate and complete; and
- 2) Projections of requirements and supply are based on substantially accurate historical information and reasonable statistical projection methods; and
- 3) The forecast is consistent with other approved forecasts; and
- 4) The forecast is consistent with the policy to provide a necessary energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost.

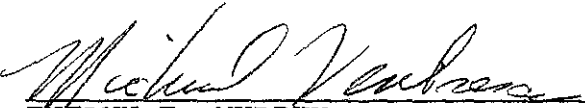
Order

It is ordered that the first long-range forecast and annual supplement of Lowell Gas Company are approved through 1977, because existing agreements for LNG and underground storage show firm supply only through 1977. The company is directed to notify the Council as soon as plans for a tentative LNG satellite facility become sufficiently definite for the company to submit a concrete proposal. Finally, the company is directed to notify the Council as to the status, expected volumes,

and dates of delivery of gas that is part of the Eascogas or
Tennessee Gas Pipeline Co. New Brunswick, Canada projects.

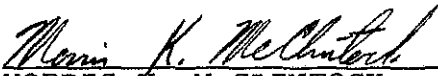
By Order Of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY


FRANK T. KEEFE

s/
DAVID H. MARKS


MORRIS K. MCCLINTOCK

(absent)
HOWARD N. SMITH


JOHN R. VERANI

In the Matter of Bay State Gas Company
1 DOMSC 259 (April 27, 1977)

Petition for Approval of a Long Range Forecast and Annual Supplement

EFSC No. 76-13; 77-13

APPEARANCES: Richard L. Brickley, Jr.
Brickley, Sears, and Cole
75 Federal Street
Boston, Ma.

Ronald P. Danielson, Supervising Engineer, Bay State Gas Company

The Massachusetts Energy Facilities Siting Council hereby approves the first long range forecast and annual supplement of the Bay State Gas Company through December 31, 1977, pursuant to G.L. c. 164 ss.69G-S.

Bay State filed its forecast with the Council on May 1, 1976 and its supplement on December 31, 1976. A public adjudicatory hearing concerning the forecast was held October 19, 1976 at One Ashburton Place, Boston, and an adjudicatory hearing concerning the supplement was held February 24, 1977 at One Ashburton Place, Boston. Notice of both hearings was published in the Attleboro Sun Chronicle, the Brockton Daily Enterprise, the Lawrence Eagle-Tribune, and the Springfield Union.

The Company

Bay State Gas Company is comprised of three divisions; Brockton, Lawrence, and Springfield. The combined service area of the company covers approximately 1,274 square miles, and gas is furnished to a total of 184,456 customers in 56 communities with an estimated population of 1,050,000. Bay State receives pipeline gas from the Tennessee Gas Pipeline Co. and Algonquin Gas Transmission Co. Propane and LNG vaporization and storage

facilities are maintained as is an LNG liquefaction plant. Agreements to sell gas exist with Massachusetts and out of state gas companies.

System Summary

	<u>1976(000MMBtu)</u>	<u>1981(000MMBtu)</u>	<u>compound annual growth rate</u>
annual gas sendout	30,486	34,333	2.4%
peak daily winter sendout	245.2	287.6	3.2%

Bay State's sendout is limited by the availability of pipeline and supplemental gas. The company expects to have sufficient gas available to allow for a 3 to 3½% per year growth rate for all classes within F.P.C. priorities 1 and 2. No new customers in priorities below 2 are planned to be added. No facilities are planned at this time.

Gas Supply

Bay State predicts that sendout available will exactly equal sendout required for the forecast years. However Mr. Danielson testified that there is actually a greater reserve margin than appears on Table G-22, Resources and Requirements. Sendout volumes for the peak shaving facilities are what the company would expect to use in a normal year and are not the maximum sendout capacity of the plants. In addition, existing contracts for propane supply contain options for additional volumes which are not included in available supply on Table G-22. Peak daily sendout shows an excess of sendout available over sendout required for each forecast year.

On this table (G-23) peaking facilities were listed at or near their maximum sendout capacity. Mr. Danielson testified that peak shaving facilities could supply the service area of the company in the event of a pipeline failure on all but peak winter days.

Bay State has agreements for pipeline gas supply with Tennessee and Algonquin and for LNG with Distrigas of Massachusetts. There are letters of understanding concerning the Eascogas project. There are five agreements for propane supply. Agreements exist to sell gas to the Berkshire Gas Company, Cape Cod Gas Company, Fitchburg Gas and Electric Company, Haverhill Gas Company, Holyoke Gas and Electric Company, and out of state gas companies. The two pipeline contracts are long term. At present the LNG agreements extend only to December 31, 1977. The company is negotiating a long term contract with Distrigas that will supply 2,610,000MMBtu in 1978. In addition the company is expecting to receive 155,000 MMBtu from the Eascogas project beginning in the last quarter of 1977 and escalating to 5,475,000 MMBtu in 1981. However, this project is still in the tentative stages and cannot be considered concrete supply. While these volumes are a small percentage of total company sendout, the Council finds that predicted supply beyond 1977 is not firm and at this time approves the forecast and supplement through December 31, 1977.

Finally, the Council commends Bay State for its investigation into gas conservation measures such as those proposed in the Federal Energy Administration's so-called "Rosenberg Report."

Findings

The Council finds, for the Bay State forecast and supplement:

- 1) That all information relating to current activities, environmental

impact, facilities agreements and energy policies is substantially accurate and complete; and

2) Projections of requirements and supply are based on substantially accurate historical information and reasonable statistical projection methods; and

3) The forecast is consistent with other approved forecasts; and

4) The forecast is consistent with the policy to provide a necessary energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost.

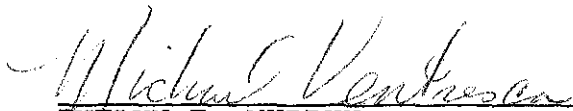
Order

The first long range forecast and annual supplement are approved through December 31, 1977.

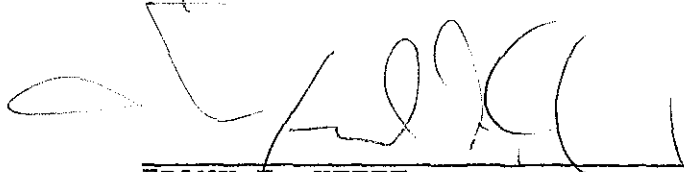
By Order Of The Energy Facilities Siting Council :



CHRISTINE B. SULLIVAN, CHAIRMAN



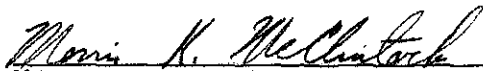
EVELYN F. MURPHY



FRANK T. KEEFE

s/

DAVID H. MARKS



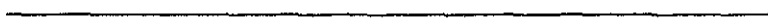
MORRIS K. MCCLINTOCK

(absent)

HOWARD N. SMITH

(not eligible to vote)

JOHN R. VERANI



In the Matter of the Town of Wakefield
Municipal Light Department
1 DOMSC 264 (April 27, 1977)

Docket: EFSC No. 76-2

Petition for Approval of a Long Range Gas Forecast (1976-1980)

APPEARANCE: Michael Adams, Plant Engineer,
for the Petitioner

The Massachusetts Energy Facilities Siting Council hereby approves the long range gas forecast of the Town of Wakefield Municipal Light Department for the period 1976 through August 31, 1978 pursuant to G.L. c. 164, §. 69G et.seq.

In accordance with the requirement of General Laws, Chapter 164, section 69I, Wakefield filed a long-range forecast of gas requirements and plans to meet such requirements with the Council on April 27, 1976. Notice of the adjudicatory hearing concerning the forecast was published in the Wakefield Daily Item and was mailed to individuals and groups in Wakefield as ordered by the Council. An affidavit of notice was returned to the Council on September 28, 1976. The adjudicatory hearing was held at One Ashburton Place, Boston, MA. on October 12, 1976. The Wakefield Municipal Light Department is proposing no new facilities, therefore the forecast deals only with sendout.

Background

The Company

Wakefield Municipal Light Department operates a low pressure natural gas distribution system consisting of 81.5 miles of gas main servicing 4534 customers. On September 1, 1973 the

Department entered into a 10 year contract with Boston Gas Company to purchase all requirements. Gas quantities for the first contract year are 2.016 MMBTU/day and 305 MMBTU/year. Each following year the maximum amount that can be taken is no more than the previous year's taking plus 5% of the base quantities. The company will renegotiate the contract by August 31, 1978 and expects that the base quantities and 5% will remain the same.

The Wakefield Municipal Light Department receives gas from Boston Gas Company at 3 take stations. At these stations, gas is metered and the pressure is reduced from medium to low pressure.

Methodology

According to the introduction to the forecast, information for the historical period of the forecast came from the annual report to the Department of Public Utilities, for the years 1970-1975. The future portion reflects a 1-2% increase each year, which is what the company is expecting and planning for. The company, in some instances employed two sendout figures, the lesser applying to mild weather and the higher to severe weather. The figures for peak January and August days were obtained from the typical annual load factor and the total estimated company sendout. All figures except peak winter day and supply resources are reported by calendar year.

Adjudicatory Hearing

An adjudicatory hearing was held on 12 October 1976 to consider the long range forecast. At the hearing, the petitioner's sole witness was Michael Adams, a plant engineer with the Wakefield Municipal Light Department.

Mr. Adams testified in response to questions that the department owns no facilities other than the distribution pipeline network and

that Boston Gas Company is their sole wholesale supplier.

In explaining the use of two possible future annual sendout figures for residential heating customers, Mr. Adams said that they represented mild and severe cases. These figures were obtained by taking typical load factors and applying them to the future with an estimated one or two percent growth rate. The difference in the two figures was arrived at by assuming a mild winter load factor of 50% and a severe winter factor of 30%.

Mr. Adams testified that the majority of the company's load is residential with relatively small sales for industrial and commercial purposes.

The peak daily winter sendout figures from Total Company Sendout, Table G-9, were questioned. Mr. Adams replied that although he couldn't give exact proportions, the major contribution to the peak daily sendout is the company's residential customers. The peak daily figures were estimated because two of the take stations, only one of which is metered by Wakefield, are interconnected. The range of peak daily sendouts for a severe winter as compared to a mild winter fluctuate almost 100%. Mr. Adams attributed this fluctuation, over the past five years, to the weather and explained that the figures were arrived at by taking the actual data from the take station for which the company does have data and applying that percentage or ratio to the other stations.

The Company forecasts an annual 10% cost of gas increase through 1980.

The issue of Company supply was called into question and Mr. Adams testified that the contract with Boston Gas Company provides that the base figure is to be adjusted on the basis of the previous year's take, so theoretically, if the company's take went down more than

5%, their contractual entitlements might actually go down. Correspondingly, the company forecasted their total sendout availability would increase by 5% each year. This assumes that the company's usage will keep increasing. In the event of a severe winter, the company forecasts inadequate contracted for sendout in 1977 to meet their forecasted requirements. However, Mr. Adams explained that if the company takes above their contracted for sendout they would pay a penalty to Boston Gas. Wakefield feels that this arrangement with Boston Gas is adequate to supply all of its customers.

In regard to new customers, the Company's policy is to look at proposed customers on an individual basis, with preference being given to home heating over any industrial uses. The Company also looks at piping availability and pressure in the area. Service has been given to most who have requested it, with refusals being based upon low pressure in the neighborhood, inadequate mains in terms of size or the residential over commercial preference.

The Company's service area, with the exception of some proposed single and multi-unit residences, was characterized as being pretty well saturated as far as available land for construction is concerned.

Findings

The Council finds that:

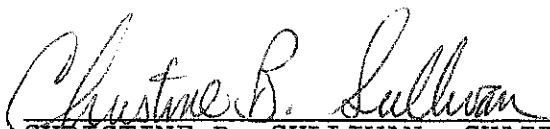
- 1) All information supplied by Wakefield relating to current activities, environmental impact, facilities agreements and energy policies is substantially accurate and complete; and
- 2) Projections of supply are based on substantially accurate historical information and reasonable statistical projection methods; and

- 3) Wakefield's forecast is consistent with others approved in Massachusetts; and
- 4) Wakefield's forecast is consistent with the Council's policy to insure a necessary energy supply for the Commonwealth with minimum impact on the environment at the lowest possible cost.

Order

The forecast does not show a firm supply of gas beyond August 31, 1978, the date for renegotiation of the contract with Boston Gas Company. Therefore, the forecast is approved only to that date.

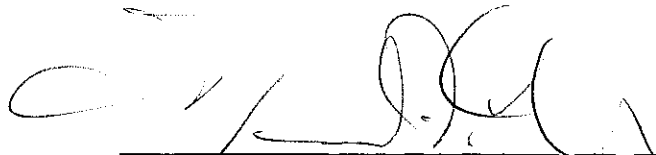
By Order Of The Energy Facilities Siting Council:



CHRISTINE B. SULLIVAN, CHAIRMAN



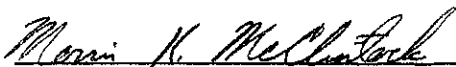
EVELYN F. MURPHY



FRANK T. KEEFE

s/

DAVID H. MARKS



MORRIS K. McCLINTOCK

(absent)

HOWARD N. SMITH

(not eligible to vote)

JOHN R. VERANI

In the Matter of Rowley Municipal Lighting Plant
1 DOMSC 270 (11 May 1977)

Docket: EFSC No. 76-47

Petition for Approval of a Long-Range Forecast

Rowley Municipal Lighting Plant filed its first long-range forecast on February 18, 1977 pursuant to M.G.L. c. 164, s. 69I. Legal notice of this decision and of the right of any person to request a formal adjudicatory hearing on the forecast will be published by the company in the Newburyport News and the Salem News. Any comments or views on this decision or the forecast may be submitted in writing to the Council.

The following growth rates are predicted for the forecast period:

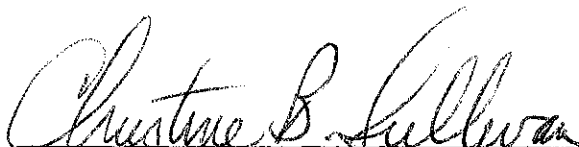
	<u>compound annual growth rate</u>
residential without electric heat	3.9%
commercial	3.0%
total system	3.8%

Given the generally depressed economic conditions in the Rowley service area the Council determines that these growth rates are based on reasonable projection methods and will provide a necessary power supply to the Town of Rowley. Rowley has a purchase of capacity agreement with the Town of Ipswich for 7,000 KW that is annually renewable.

Order

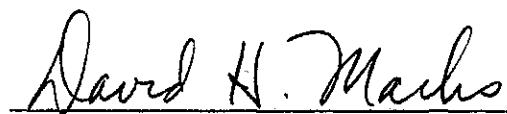
The first long-range forecast of the Town of Rowley is approved subject to changes that may appear in the first and subsequent supplements to be filed with the Council.

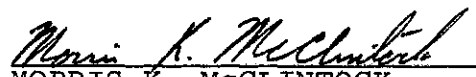
By Order of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY

FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. MCCLINTOCK

HOWARD N. SMITH

JOHN R. VERANI

In the Matter of Merrimac Municipal Light Department
1 DOMSC 272 (May 11, 1977)

Docket: EFSC No. 76-46

Petition for Approval of a Long-Range Forecast

Merrimac Municipal Light Department filed its first long-range forecast on December 15, 1976 pursuant to M.G.L. c. 164, s. 69I. Notice of the forecast filing, the tentative decision, and the right of any person to request a hearing concerning the decision was published in the Haverhill Gazette and Newburyport News.

Merrimac predicts a 2.4% growth in total energy requirements and a 3.0% growth in winter peak demand. Most growth is expected to occur in the residential classes, and therefore the peak will grow slightly faster than total requirements. Individual classes are expected to grow as follows:

residential with electric heat	4.0%
residential without electric heat	3.0%
commercial	0.0%

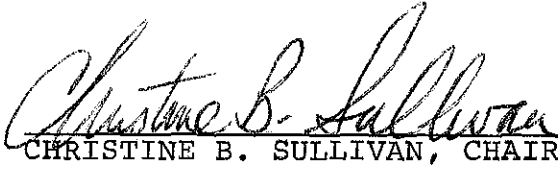
For both residential classes the annual use per customer is predicted to increase 2% per year, and for residential without electric heat the number of customers will increase 1% per year and the number of customers with electric heat will increase 2% per year. Merrimac expects very little population growth or commercial development in its service area and therefore has made conservative growth estimates. The Council finds these projections to be reasonable and sufficient to provide Merrimac customers with a necessary power supply.

The Council waives the requirements concerning load profiles because Merrimac does not have recorded profile data.

Order

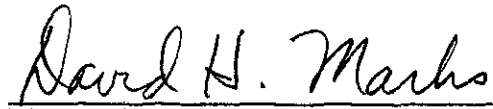
The Council approves the first long range forecast of the Merrimac Municipal Light Department.

By Order of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY

FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. McCLINTOCK

HOWARD N. SMITH

JOHN R. VERANI

In the Matter of Russell Municipal Light Department

1 DOMSC 275(May 11, 1977)
Docket EFSC 76-31

Petition for Approval of a Long-Range Forecast

Russell Municipal Light Department filed its first long-range forecast on May 19, 1976 pursuant to M.G.L. c. 164 s. 69I. Notice of a public adjudicatory hearing held in Springfield on August 31, 1976 was published in the Westfield News and the Wallace Penny Saver and mailed to individuals and organizations as ordered by the Council. A letter certifying compliance with the Council notice requirements was returned on November 1, 1976.

Russell filed only two tables, Agreements for Electric Service and Total System Load. Given the small size of the company, the Council considers these tables satisfactory compliance with the forecast requirements.

Russell purchases all its power from the Western Massachusetts Electric Company and predicts electricity consumption to grow at the following rates over the next ten years.

	<u>Compound Annual Growth Rate</u>
total output (MWH)	2.8%
winter peak (MW)	1.7%
Summer peak (MW)	1.7%

The Council finds these conservative growth projections to be reasonable and sufficient to provide Russell customers with a necessary power supply.

Order

The forecast of the Russell Municipal Light Department is approved, subject to changes that may appear in the first and subsequent supplements.

By Order of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY

FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. McCLINTOCK

HOWARD N. SMITH

JOHN R. VERANI

IN THE MATTER OF CHESTER MUNICIPAL ELECTRIC LIGHT DEPARTMENT

1-DOMSC-278 (MAY 11, 1977)

Docket EFSC No. 76-30

Petition for Approval of a Long-Range Forecast

Chester Municipal Light Department filed its first long-range forecast on May 1, 1976 pursuant to M.G.L. c 164 S. 69I. Notice of a public adjudicatory hearing in Springfield on August 31, 1976 was published in The Westfield News and Wallace Penny Saver and mailed to individuals and organizations as ordered by the Council. An affidavit of notice was returned to the Council by the company on September 1, 1976.

Chester filed an abbreviated long range forecast, in fact only two tables, Total System Load and Agreements for Electric Service. However, given the small size of the company the Council considers this satisfactory compliance with the forecast requirement.

Chester predicted its growth rates for the next ten years as follows:

	<u>Compound annual growth rate</u>
Total output (MWH)	2.2%
Winter peak (MW)	.9%
Summer peak (MW)	1.3%

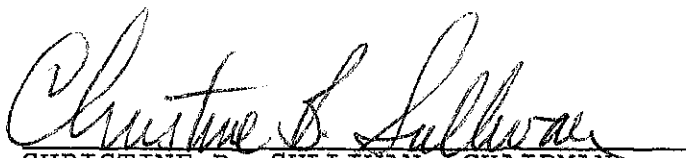
These projections reflect a conservative prediction of demand in the Chester service area, and the Council finds them to be reasonable and sufficient to provide Chester customers with a necessary

power supply. Chester purchases all its power from the Western Massachusetts Electric Company.

ORDER

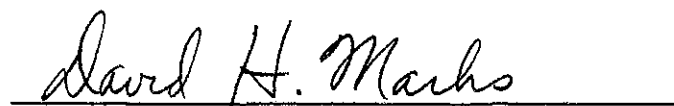
The forecast of the Chester Municipal Light Department is approved subject to changes that may appear in the first and subsequent supplements.

By Order of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY

FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. MCCLINTOCK

HOWARD N. SMITH

JOHN R. VERANI

In the Matter of Braintree Electric
Light Department
1 DOMSC 281 (June 15, 1977)

Docket: EFSC No. 76-32

Petition for Approval of a Long-Range Forecast

In accordance with M.G.L. c. 164, s. 69I the Braintree Electric Light Department filed its long-range forecast on May 19, 1976. A public adjudicatory hearing concerning the forecast was held October 18, 1976 at One Ashburton Place, Boston, MA. Notice of the forecast filing and hearing was published in the Braintree Observer and Sunday Forum and mailed to individuals and organizations as ordered by the Council.

Braintree does not explain the methodology or assumptions employed in predicting electricity demand for the forecast period. However, the following growth rates are employed:

	<u>compound annual growth rate</u>
residential with electric heat (MWH)	3.6%
residential without electric heat	2.0
commercial	5.4
industrial	5.4
total output	4.4
summer peak (MW)	4.6

The total energy output growth rate is somewhat distorted, because beginning in 1977 sales for resale increase from 0 to 315,109 Mwh which causes an increase of 124.5% in total output requirements. This is due to the new Potter Station #2 combined cycle plant which officially came on line April 1, 1977 with a

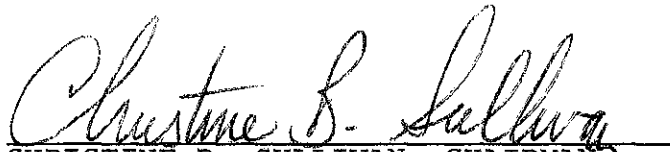
winter rating of 95 MW and a summer rating of 78 MW. Currently capacity is being sold to NEPOOL, but when the plant is fully operational excess capacity will be sold to Boston Edison Company in gradually declining amounts as Braintree's load increases and requires more of the Potter #2 power. The Council finds that the residential rates are reasonable projections. Given the expected addition of several large commercial customers the Council finds the commercial and industrial rate of 5.4%, although perhaps overestimated, to be reasonable.

Beginning in the summer of 1977 the Comparison of Resources and Requirements (Table E-17) shows a reserve percentage of between 23-32% in the summer and 40-44% in the winter. This discrepancy is due to the difference in the summer and winter ratings of the Potter #2 plant. The Council determines that Braintree's supply plan is sufficient to provide its customers with a necessary power supply.

Order

The long range forecast of the Braintree Electric Light Department is hereby approved.

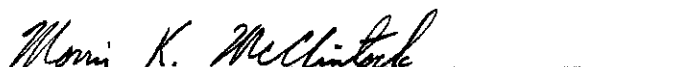
By Order of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY

FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. McCLINTOCK

HOWARD N. SMITH

JOHN R. VERANI

In the Matter of Concord Municipal Light Plant
1 DOMSC 284 (June 15, 1977)

Docket: EFSC No. 76-45

Petition for Approval of a Long Range Forecast

In accordance with M.G.L. c. 164, s. 69I Concord Municipal Light Plant filed its long range forecast on February 17, 1977. Notice of the filing of the forecast, the issuance of the tentative decision, and the right of any person to request an adjudicatory hearing or submit comments on the forecast was published in the Concord Journal and the Patriot.

The methodology used by Concord was to apply a least squares linear regression trend line analysis to historical data. In addition the department took into account conservation efforts by customers due in part to several recent rate increases. This results in a minimal increase in average use per residential customer. Overall, Concord has predicted conservative growth rates.

Individual class growth is as follows:

	<u>compound annual growth rate</u>
residential with electric water heating(MWH)	2.5%
residential without electric heating	2.9
commercial	1.9
industrial	2.6
total energy output	2.4
summer peak	3.1

The Council finds these rates to be based on reasonable statistical projection methods and sufficient to provide Concord

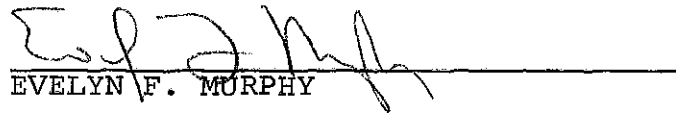
customers with a necessary power supply. At present all power is purchased from the Boston Edison Company, although the Department is considering installing peaking generation at some future date. The Council commends the department for its investigation and study of load management techniques such as time of day metering, peak load pricing, and rate provisions for supplementary solar heating. The Council encourages consideration of Town Meeting energy conservation articles.

Order

The first long range forecast of the Concord Municipal Light Plant is hereby approved.

By Order of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY

FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. MCCLINTOCK

HOWARD N. SMITH

JOHN R. VERANI

In the Matter of Fitchburg Gas and Electric Light Company
1 DOMSC 287 (11 May 1977)

EFSC No. 77-11

Petition for approval of the first annual Supplement to the Long-Range Forecast, gas: 1977-81 electric: 1977-88

APPEARANCES: Richard L. Brickley, Jr., Brickley, Sears, and Cole,
for the Petitioner

The Massachusetts Energy Facilities Siting Council hereby approves the first annual Supplement of the Fitchburg Gas and Electric Light Company subject to certain conditions, pursuant to M.G.L. c.164 ss69G-Q. A proposed LNG tank in Westminster is exempt from Council jurisdiction.

Fitchburg filed its first combined electric and gas Supplement on December 30, 1976 in accordance with M.G.L. c.164s.69I. A public adjudicatory hearing concerning the gas and electric portions of the Supplement was held January 24, 1977 at One Ashburton Place. Mr. R. Bruce Garlick and Mr. F. William St. Cyr testified for the company. Notice of the hearing was published in the Gardner News and the Sentinel - Enterprise.

Fitchburg Gas and Electric Light Company is an investor owned utility serving 20,992 electric and 12,800 gas meters in north central Massachusetts. It owns electric generating facilities in Fitchburg and has gas storage and vaporization facilities in Westminster and Lunenburg.

CLAIM OF CONFIDENTIALITY

The company requested confidential treatment of industrial electrical load data provided by SIC code to avoid jeopardizing the competitive positions of the industries involved. At the request of the hearing officer Fitchburg contacted the industries and no objection to non-confidential treatment of the data was raised. Therefore, the industrial class data will be included as public information with the rest of the Supplement.

ELECTRIC SUPPLEMENT

The Supplement predicts that demand will increase as follows:

	<u>1976</u>	<u>1986</u>	<u>compound annual growth rate</u>
total annual sales (MWH)	343,500	533,200	4.5%
summer peak (MW)	56.6	84.3	4.0%
winter peak (MW)	61.3 (actual)	88.5	3.7%

Individual classes are predicted to grow at the following rates:

	<u>1976</u>	<u>1986</u>	<u>compound annual growth rate</u>
residential with electric heat (MWH)	9,200	17,300	6.5%
residential without electric heat (MWH)	87,800	138,800	4.7%
commercial (MWH)	42,199 (actual)	57,300	3.1%
industrial (MWH)	164,500 (actual)	270,000	5.1%

These growth rates indicate a reduction from the rates predicted in the Forecast and compliance with the order in the Forecast decision (In the Matter of Fitchburg Gas and Electric Light Company, 1 DOMSC 87 January 19, 1977) to revise downward the growth rates.

The company has given the following reasons for the drop in load growth. The economic up-turn in the service areas did not develop at the rates predicted in the Forecast. Fitchburg's load is industrially intense (approximately 50% of total load), and the slower economic recovery shows up more readily in this class. Two new industrial parks have not been developed as fast as was expected, and commercial class growth was reduced from 34% to 15% based on actual data received for 1976. Fitchburg predicts that price elasticity, conservation efforts by customers, and load management policies to be implemented will contribute to reduced growth rates, although the company failed to quantify these effects. Higher growth rates are predicted for 1987 and 1988. The load factor increases slightly from 1976-1986 (see also load duration curves, p89 Supplement), due to increased use of load management techniques such as time of day metering.

Fitchburg plans to purchase shares in three proposed Massachusetts Nuclear plants, Montague 1 and 2 and Pilgrim 2 and seven out of state units, Wyman 4, Seabrook 1, Seabrook, 2, Millstone 3, Charlestown 1, Charlestown 2 and Sears Island 1. In addition the company has agreements for the purchase of capacity with Boston Edison, New England Power Company, Maine Electric Power Co., Inc. and the Green Mountain Power Company. Until the winters of 1981 Fitchburg shows a reserve margin of between 25.7% and 67.4%. The reserve margins in the forecast were higher and because of this excess capacity Fitchburg entered into sale of capacity contracts with Reading Municipal Light Department for 10 MW until 1980 and the Public Service Co. of New Hampshire for 15 MW until 1979.

Even with these sales the margin is above that recommended by the F.P.C. (15-20%) and that recommended by NEPOOL (23%). However, when a purchase agreement for 40 MW with Boston Edison ends in 1981 the reserve margin drops to 10.8% and stays at approximately this level until the winter of 1984 when Charlestown 1 comes on line. The company indicates in the Supplement that it is now seeking additional baseload capacity for this period, which may include continuation of the Boston Edison agreement.

Fitchburg plans to purchase the Flagg Pond substation and other facilities from the New England Power Co. This will add six industrial customers and will significantly increase Fitchburg's industrial load. The company is directed to supply this new load data in the second Supplement.

ORDER

The Council finds that the supplement is based on reasonable statistical projection methods, that all information provided is substantially accurate and complete, and that the supply plan will provide a necessary power supply to Fitchburg customers. The electric portion of the supplement is approved subject to the following conditions:

- 1) The company will provide in the next supplement information as to the status of any capacity agreement or attempts to purchase additional baseload capacity for use beginning in 1981.
- 2) The company will provide in the next supplement data on the increased industrial load brought about by the purchase of the Flagg Pond substation.

- 3) As far as possible the company will quantify and provide in the next supplement information as to the amount of load growth reduction produced by conservation and load management. In addition the company should indicate what load management techniques will be used and when they will be put into operation.

GAS SUPPLEMENT

QUESTION OF EXEMPTION

Fitchburg claims that a proposed LNG tank is exempt from Council jurisdiction because it was under construction prior to May 1, 1976 and therefore is exempt by the provisions of the Siting Act's grandfather clause, St. 1975, c. 617; s. 15,

"The provisions of G9I and G9J of chapter one hundred and sixty four of the General Laws shall not apply to facilities under construction prior to May first, nineteen hundred and seventy-six."

The definition of construction on 69G has been determined to apply to the grandfather clause (In the Matter of Boston Edison Company 1 DOMSC 134, March 10, 1977) and reads as follows:

"Construction", any placement, assembly, or installation of facilities or equipment, which in the case of an oil facility must be valued in excess of five million dollars, including contractual obligations to purchase such facilities or equipment, at the premises where such equipment will be used, including preparation work at such premises."

The proposed tank is an addition to an LNG facility for which work was begun in 1973 pursuant to DPU order 17571, dated June 20, 1973. The facility is located on the south side of Route 2-A in Westminister and consists of LNG storage and vaporization facilities. The site was chosen, designed, and constructed to accomodate four 55,000 gal. LNG tanks with a total capacity of 220,000 gallons. At present there is one tank on the site, and the company plans to add a second horizontal, above ground, 55,000 gal. tank to be in service in 1978. Third and fourth tanks are planned to be added sometime in the future. There is one vaporizer with a capacity of 7.2 million cubic feet per day, and the proposed tank would increase only the storage capacity of the plant, not the sendout capacity. A second vaporizer to increase the facility's sendout to 14.4 million cubic feet per day would be added when the third or fourth tanks were installed.

The company needs the additional tank to meet its 1978-79 winter peak day sendout of 17,225 MMBTU. The existing tank would have to be refilled by truck on such a peak day and this could be difficult or impossible during severe winter conditions. The proposed tank will provide the necessary storage for a peak day and also provide back up in the event that the propane plant in Luenberg is forced out of service.

The company testified that prior to May 1, 1976 the following work had been done toward the installation of the proposed (second) tank. The site had been cleared, graded, and fenced, and a roadway and lighting had been installed. Piping for the entire facility had been installed. Branch connections for the proposed tank and second

vaporizer were installed. The odorant, safety, and security systems were installed to accommodate the four tank capacity of the plant. The control building was designed and constructed for the entire facility. Drainage facilities were constructed for the entire four tank plant. Piers remain to be constructed for the proposed tank and the dike around the existing tank will have to be extended to encompass the second tank.

The company submitted the following exhibits and evidence:

FG-1 - DPU order 17571

FG-2 - Gardner, Mass. Quadrangle, USGS map

FG-3 - Topographic and Development Plan

By letter the company indicated that \$380,450 of the \$900,000 total spent on the plant was to provide for expansion of the plant beyond the first tank. Color photographs of the site were also submitted.

Based on this evidence the Council finds that the proposed tank was under construction prior to May 1, 1976 and therefore is exempt from Council jurisdiction. However, this is a decision on the second tank only, and the Council reserves judgement as to whether tank three and four will be exempt. The third and fourth tanks may be proposed at a time so far in the future that considering them exempt would be construing the grandfather clause too broadly. The purpose of the grandfather clause is to avoid undue burden on a utility caused by the imposition of a new regulatory scheme; however, this burden must be balanced against the benefits to the public provided by the new scheme. The regulatory climate concerning LNG may change such that the public interest and safety would not be best served by a blanket

exemption of tanks three and four. This question will be addressed when the third and fourth tanks are proposed to the Council.

SUPPLEMENT

Fitchburg receives natural gas from the Tennessee Gas Pipeline Company and maintains propane and LNG peak saving facilities in Luenberg and Westminster respectively. The volume of gas available is the primary constraint on sendout, and the company will attempt to match its load to available firm supply. While the company prefers steady industrial, non-heating load, new customers will probably be in F.P.C. priorities 1 and 2. The company is predicting approximately a 2% growth rate over the next five years.

	<u>1976 (000MMBTU)</u>	<u>1981 (000MMBTU)</u>	<u>annual compound growth rate</u>
annual gas sendout	2,210,604	2,342,766	1.2%
peak daily winter sendout	16,498	18,311	2.1%

Individual classes will grow at the following rates:

	<u>1976</u>	<u>1981</u>	<u>annual compound growth rate</u>
residential with gas heating	920,220	1,040,763	2.5%
residential without gas heating	575,408	650,907	2.5%
commercial and industrial	437,808	497,593	2.5%

Given the pipeline gas curtailments and the shortage and expense of supplemental LNG and propane, the Council determines that these growth projections are reasonable.

Comparison of Resources and Requirements (Tables G-22+G-23) shows excess sendout available over sendout required for both annual and peak daily sendout for each year of the forecast. Agreements for gas supply exist with Tennessee Gas Pipeline Company until 1988. A storage contract that ends this summer is expected to be renewed at increased volumes. There is an LNG purchase agreement with Bay State Gas Co. until 1981. The Council finds that Fitchburg's supply plan will provide a necessary energy supply for its gas customers and approves the gas supplement.

ORDER

The first annual gas Supplement of the Fitchburg Gas and Electric Light Company is approved. A proposed LNG storage tank in Westminister is exempt from Council jurisdiction. The company is directed to notify the Council when installation of the proposed LNG tank begins and to include the third and fourth tanks in the first appropriate Supplement or Long-Range Forecast.

By Order of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN


EVELYN F. MURPHY

FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. MCCLINTOCK

HOWARD N. SMITH

JOHN R. VERANI

In the Matter of Ware Gas Company
1 DOMSC 297 (July 20, 1977)

Docket: EFSC No. 76-44 and 77-44

Petition for Approval of a Long Range Forecast and Supplement

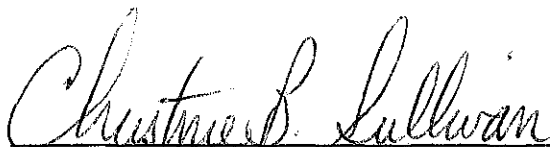
Ware Gas Company filed several of the forecast tables on March 14, 1977. The Council will treat the filing as both the forecast and supplement. Notice of the filing of the forecast and supplement, the issuance of the tentative decision, and the right of any person to request a hearing on the forecast or comment on the tentative decision was published in the Ware River News.

Ware Gas Company is a small retail gas company whose sendout has been declining over the past 5 years, although a slight increase in sendout occurred in 1976. The overall compound annual growth rate for the past 6 years has been -15%. Ware's system is entirely propane-air and there are no plans to expand any facilities. Because only historical data was provided to the Council and given the uncertain natural gas and propane supply in the Commonwealth, the Council cannot determine that Ware has a firm supply for all the forecast years. Therefore the Council approves the combined forecast and supplement only through 1977 and requests that the next supplement include information about the company's future supply of and need for propane.

Order

The combined forecast and supplement of the Ware Gas Company is approved through 1977.

By Order of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN

EVELYN F. MURPHY

FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. McCLINTOCK

S/

HOWARD N. SMITH

JOHN R. VERANI

In the Matter of Blackstone Gas Company
1 DOMSC 299 (July 20, 1977)

Docket: EFSC No. 76-42 and 77-42

Petition for Approval of a Long Range Forecast and Supplement

Blackstone Gas Company filed its long range forecast on April 13, 1977. Because the filing was nearly a year after the forecast was due and 1976 data was included in the material submitted, the Council will treat the filing as both the long range forecast and annual supplement.

Blackstone submitted only historical data on gas sendout and then predicted sendout would increase or decrease at the historical rates. This results in the following projections:

	<u>compound annual growth rate</u>
residential with gas heating (MCF)	2.1%
residential without gas heating	.4%
business	-2.0%
total sendout	1.8%

Blackstone receives all its gas from Tenneco, Inc. under a long term contract extending to 1987 allowing for a maximum of 505 MCF per day. However, this volume is subject to curtailment. Blackstone has no peak shaving facilities.

The Council finds that the growth rates predicted are reasonable projections. Because insufficient data is provided on Blackstone's future firm supply of gas and because the gas supply situation for all of Massachusetts is uncertain for the next several winters, the Council will approve the forecast and supplement only through 1977. The Council will reconsider the company's supply plan when the second supplement is filed on December 31, 1977.

(300)

Decisions and Orders of the
Massachusetts Siting Council, Vol. 1

Order

The first long range forecast and supplement of the
Blackstone Gas Company is approved through 1977.

By Order of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN

EVELYN F. MURPHY

FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. MCCLINTOCK

s/

HOWARD N. SMITH

JOHN R. VERANI

In the Matter of Wellesley Municipal Lighting Plant
1 DOMSC 302 (July 20, 1977)

Docket: EFSC No. 76-40

Petition for Approval of a Long Range Forecast

APPEARANCE: John A. McBurney, Superintendent,
Municipal Lighting Plant

In accordance with M.G.L. c. 164, s. 69I Wellesley Municipal Lighting Plant filed its long range forecast on August 26, 1976. A public adjudicatory hearing concerning the forecast was held on October 18, 1976 at One Ashburton Place, Boston, MA. Notice of the hearing was published in the Wellesley Townsman and mailed to individuals and organizations as ordered by the Council.

The forecast is based on the subjective knowledge of the Superintendent of the town's electricity consumption patterns. The town is almost completely built up residentially, and only a change in zoning would create additional development. Future load increases probably will come from older houses adding appliances and thereby increasing electricity use. Two major customers, Wellesley College and Babson College, are considering switching to self-generation of power which would moderate load growth. Individual classes are expected to grow at the following rates:

	<u>compound annual growth rate</u>
residential (with or without electric heat) MWH	2.0%
commercial	2.0%
municipal	2.0%
primary (Wellesley College, Babson College, Wellesley Office Park, DPW)	1.4%
total energy output	1.8%
winter peak (MW)	2.4%

The Council finds these rates to be conservative, and, given the lack of expected development, reasonable projections.

Wellesley is an all requirements customer of Boston Edison Company and the rate at which power is purchased is currently the subject of litigation. There are only tentative plans for a new 115 KV transmission line from either Natick, Newton, or Needham to Wellesley to be in service in 1980 or 1981. The Council finds that the Lighting Plant will provide a necessary power supply to its customers.

Order

The long range forecast of the Wellesley Municipal Lighting Plant is approved and Wellesley is directed to notify the Council if plans for a new 115 KV transmission line become more definite.

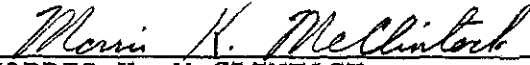
By Order of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN

EVELYN F. MURPHY

FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. MCCLINTOCK

s/

HOWARD N. SMITH

JOHN R. VERANI

In the Matter of the Norwood Municipal Light Department
1 DOMSC 305 (July 20, 1977)

Docket: No. EFSC 76-41

Petition for Approval of a Long Range Forecast

APPEARANCES: William K. Kates, Superintendent, Norwood Light Department
Malcolm MacDonald, Assistant Superintendent, Norwood
Light Department
James Collins, Engineer, Norwood Light Department

Pursuant to M.G.L. c. 164, s. 69I Norwood Municipal Light Department filed its long range forecast on August 26, 1976. A public adjudicatory hearing concerning the forecast was held on October 18, 1976 at One Ashburton Place, Boston, MA. Notice of the hearing was published in the Norwood Times and mailed to individuals and organizations as ordered by the Council.

The methodology used by the department was to apply a least squares analysis to historical data. Subjective assumptions about conservation and appliance saturation were taken into account, so that more conservative growth rates were predicted than the least squares projections would have suggested. Individual classes are expected to grow as follows:

	<u>compound annual growth rate</u>
residential with electric heat (MWH)	3.8%
residential without electric heat	2.2%
commercial	1.2%
industrial	3.2%
total energy output	2.6%
summer peak (MW)	2.6%

The Council finds these rates to be reasonable statistical projections.

Norwood purchases all its power from Boston Edison Company and its supply plan is sufficient to provide Norwood customers with a necessary power supply. The Council encourages conservation efforts such as employing strict insulation standards for electrically heated homes.

Order

The Energy Facilities Siting Council approves the long range forecast of the Norwood Municipal Light Department.

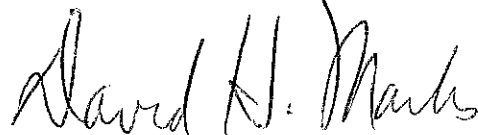
By Order of The Energy Facilities Siting Council:



CHRISTINE B. SULLIVAN, CHAIRMAN

EVELYN F. MURPHY

FRANK T. KEEFE



DAVID H. MARKS



MORRIS K. McCLINTOCK

S/

HOWARD N. SMITH

JOHN R. VERANI

In the Matter of the Massachusetts Municipal
Wholesale Electric Company
1 DOMSC 308 (20 July 1977)

Docket: EFSC No. 77-1

Petition for Approval of Supplemental Long Range Forecast

APPEARANCE: Maurice J. Ferriter, Esq.
of Holyoke for the company

The Massachusetts Municipal Wholesale Electric Company (MMWEC) has petitioned the Energy Facilities Siting Council pursuant to G.L. c. 164, ss. 69G et seq. for approval of a supplemental electric demand and supply forecast for the period from 1977 through 1988. The company's initial demand and supply forecast for the period 1976 through 1985 has been reviewed previously. See decisions at 1DOMSC 1, 1DOMSC 52, 1DOMSC 101, 1DOMSC 154.

Supplemental Demand Forecast

The company has filed a supplemental demand forecast for 29 municipal utility systems in the Commonwealth. Its forecast methodology is the same as that employed in the initial forecast. 1DOMSC 1. Total energy consumption is expected to grow at a compound annual growth rate of 5.4%, approximately the same rate as that of the initial filing. Peak demand is expected to grow at a compound annual growth rate of 5%, significantly lower than the 5.4% rate of the initial filing.

In reporting demand forecast components, MMWEC has not disaggregated the industrial classification by two digit SIC code as required by EFSC 63.7. Without this disaggregation, the Council cannot readily review the industrial classification; nor can it compare the MMWEC industrial forecast with those of other major

utility companies. The company is directed to comply with Rule 63.7 in subsequent demand forecast filings.

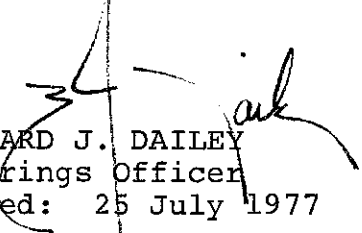
Supplemental Supply Plan

The company has filed a supplemental supply plan which has been revised through June 1977. Approval is sought for ownership of additional baseload capacity from that reviewed in the initial forecast, contract purchase of 50 MW of hydro peaking capacity from the Power Authority of New York, and construction of 180 MW of combined cycle intermediate capacity. See Supplement Tables V-1, VII-1. Proposed baseload ownership in Seabrook, New Hampshire units 1, 2 in the amount of 105 MW and Millstone, Connecticut unit 3 in the amount of 70.7 MW is approved. Because the Charlestown, Rhode Island and Montague, Massachusetts baseload facilities are subject to ongoing licensing review by federal and state agencies, the Council will defer consideration of these units pending completion of the regulatory reviews. Contract purchase of 50 MW of hydro capacity is also approved.

In the case of the 180 MW combined cycle unit, the Council will take no action because the company has indicated that this unit is not proposed for licensing approval at this time. However, the company is advised that an oil or gas fired generating unit is not consistent with the developing national fuels policy. Furthermore, additional intermediate generating capacity of the type provided by combined cycle units is not required within the New England Power Pool for the reasons stated in the Council's decision of 8 December 1976, 1 DOMSC 52. The Council's approval of MMWEC's first combined cycle unit was exceptional as stated in the decision of 1 February 1977. 1 DOMSC 101. Further approval of combined cycle capacity is unlikely.

FINDINGS

The Energy Facilities Siting Council approves the supplemental electric demand and supply forecast subject to the conditions and limitations set forth herein and pursuant to G.L. c. 164, §§ 69I, 69J. The supplemental forecast as approved is consistent with current health, environmental protection, and resource use and development policies adopted by the Commonwealth and is consistent with the policies set forth in G.L. c. 164, § 69H.


EDWARD J. DAILEY
Hearings Officer
Dated: 25 July 1977

By Order Of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN

absent

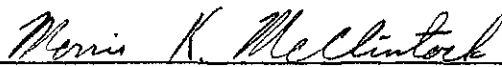
EVELYN F. MURPHY

absent

FRANK T. KEEFE



DAVID H. MARKS



MORRIS K. MCCLINTOCK

HOWARD N. SMITH



JOHN R. VERANI

Docket: EFSC No. 76-33

Petition for approval of the supply segment of a long-range forecast

APPEARANCE: Maurice L. Zilber, for the Petitioner

In its initial Long Range Forecast in the above case, Brockton Edison Company proposes the construction of two transmission lines, from Bridgewater to Easton and from Bridgewater to Marlboro and a new substation in Easton to be served by the former line. The Siting Council hereby approves the construction of these facilities subject to the conditions decided below.

The Bridgewater to Easton line and associated substation

This project as proposed is a single circuit 115 KV transmission line approximately 7 miles in length from the company's existing Bridgewater substation to the site of a new substation in Easton. The line would be built on existing structures which currently hold one 345 KV line. The right of way also contains one other 345 KV line.

A. Need for the line and substation

The company justifies the need for the line and substation on the ground that it cannot serve the growing load in its Easton service area with its existing facilities. Easton is presently served primarily by the Belmont Street substation and associated street feeder lines. The Easton load is not backed up substantially by any other facility.

While the Siting Council does not have jurisdiction over transmission lines under 69 KV in size, it may inquire into a company's distribution network and examine lines of smaller size if the company's justification for a covered line is insufficient capacity in local facilities. Since in this case the company is proposing the 115 KV line and substation to supply a growing local load area now supplied by non-jurisdictional facilities, the Council may examine and evaluate the company's local distribution policy and network in order to properly assess the need for the new facility and the company's choice of alternatives.

Company officials testified at the adjudicatory hearing that for the purpose of planning additional distribution to growing load areas the company defines an overload on an existing substation as being either 35 megawatts or the capacity of the substation, whichever is smaller. The reason 35 megawatts is chosen is because that is the capacity of the company's mobile transformer, which would be required to serve the substation load in the event of an outage at peak. The peak loading on the Belmont substation in 1976 was 36.18 megawatts and in 1977 was expected to be 38.39 megawatts. Because of the power factor, the actual load in MVA's - the relevant number for transformer capacity - is higher. For both years the acceptable loading under the company standard is exceeded. The company estimates that the load on the Belmont substation will increase at the average annual rate of 6.17% which is consistent with its load forecast generally. At such a rate the highest cooling rating of the substation - 41.7 MVA - would be exceeded in just a few years.

Based on these facts, the Council determines that the company is

justified in deciding that its Easton service area required an additional source of supply.

The company proposes the alternative of a new substation in the Easton area with a 115 KV feeder because presently the Easton load is too remote from the Belmont street substation. The company concludes that a load is too remote and in need of a closer supply if it is served by 13.8 KV street lines and is more than 2.3 miles from the distributing substation. In the case of the company's Easton load, the major portion of the load is well beyond 2.3 miles from the Belmont substation and even further from the other substations which supply smaller fractions of the load. The new Easton substation and 115 KV feeder alternative was thus chosen in order to bring power closer to the under-served load center. The Council finds that this is a reasonable and justifiable alternative to meet the company's Easton load problem.

B. Site of the line and substation

The company proposes to place the 115 KV feeder line on an existing right-of-way presently occupied by two 345 KV lines. This right-of-way runs through Easton and offers several appropriate locations for a substation to serve the Easton load. Any alternative site would require building on a new right-of-way. In view of the strong public policy in favor of siting new transmission line along existing rights-of-way, the Council approves the route proposed by the company.

The company testified that it chose the proposed substation site because it is the most convenient and economical one from which to run feeder lines at street voltage to serve the Easton load. From the testimony regarding the other potential sites, it appears that

the company's contention is correct and the Council therefore approves the site proposed by the company.

At the hearing, the hearings officer elicited testimony from the company that a substation facility similar to the one proposed at Easton had been built at Scituate and had caused noise problems with abutters. The problems were finally resolved by the company's installing noise shielding around the transformer. The company testified that any problem with noise at the new Easton substation could probably be rectified either by installing a baffle or by purchasing a quieter transformer. The Council thus conditions its approval of the Easton substation on the company's taking the necessary precautions to limit noise levels at the substation boundary to no more than 10 dB above the background (as measured at 3 a.m.), which is the present DEQE standard for noise emissions, or to whatever DEQE standard is in force at the time the equipment is ordered.

C. Cost of the line and substation

The company testified that the preliminary estimated cost of the line in 1977 dollars is \$276,000 and the cost of the substation in 1977 dollars is \$750,000. Information received from the company indicated that these cost figures, recently revised, were developed from unit costs derived from the company's recent construction experience or the experience of neighboring utilities for similar facilities, adjusted for known topographical and other differences. Such costs, of course, are subject to reasonable change from a variety of factors including inflation of wage and material costs, construction problems encountered in the field, engineering design changes and other causes beyond the control of the company. In this context, the Council finds that the company's proposal will satisfy the need dis-

cussed above the least impact on the environment and at the least cost based on information presently available.

The Council expects, in future proceedings involving facilities approvals that Applicants will present to the Council cost estimates on a current dollar basis with sufficient underlying detail, commensurate with the stage of planning of such facility, to enable the Council to evaluate the reasonableness of such cost estimate and that of alternatives considered or proposed by the Applicant. Approval by the Council of a facility at the preliminary licensing stage should not be construed as a binding determination upon a rate-setting agency as to whether the ultimate costs incurred by the applicant for the facility are reasonable or are to be allowed for rate-setting purposes. The Council also recognizes that there may be circumstances whereby escalation of the cost of a facility could cause an applicant to delay or re-evaluate the need for construction. The Council will expect applicants to inform it of all such changes through Supplemental Forecasts and to inform the Council of the ultimate cost of each approved facility so that the Council may be aided through such experience in evaluating cost proposals.

The Bridgewater to Middleboro 115 KV Transmission Line

This proposed line would run 4.37 miles from the Bridgewater Substation to the end of Montaup Electric Company's ownership near Middleborough at a point near Titicut Street in Bridgewater. The line would be built on existing structures which hold one 345 KV line. There is another 345 KV transmission line on this right-of-way.

A. Need for the line

The company justifies the line on the theory that back-up supply is needed for three substations presently served by a single 115 KV

line. That line, designated M-1, is tapped off the company's main Somerset feeder in West Bridgewater and presently serves the East Bridgewater, Mill Street and Wareham Street substations. The latter substation is in Middleboro and belongs to the Middleborough Gas and Electric Department which is a municipal wholesale customer of Montaup Electric Company, the power production company of Eastern Utilities Associates. The three substations presently supplied by line M-1 serve a peak load of approximately 50 MW which the company expects to increase to over 65 MW by 1978. This expected load growth may be high due to the effect of conservation efforts and policies, but it is probably fair to assume that by the time the proposed line is scheduled for use, the load will be well over 50 MW. The company has established a distribution policy which requires them to build a back-up supply line to any load area which exceeds 50 MW.

The company estimates that 50 MW of load represents approximately 20 to 25,000 customers. Based on judgement and experience, the company determines that when this number of customers is potentially affected it should provide a back-up supply. At this point in time, probability of failure analysis plays very little part in the company's planning process.

The Council has not yet developed standards for fully evaluating the need for new transmission facilities. In the absence of such standards, the Council must use its own judgement on a case-by-case basis in reviewing proposals. In addition, in this particular case, because the company wished an expedited hearing on these proposals, the Council has been unable to examine in greater depth the company's policy of backing up load above 50 MW. However, based on the review that has occurred, and the testimony of experienced company officials,

the Council finds 1) that the company policy is reasonable in this instance; 2) that there is a need for back-up supply to the particular load area; and 3) that the company's alternative of this proposed line is reasonable.

B. Site of line

This line is proposed for an existing right-of-way which already contains transmission lines. An alternative route would probably require a new right-of-way. For the policy reasons described above, the Council approves the proposed route.

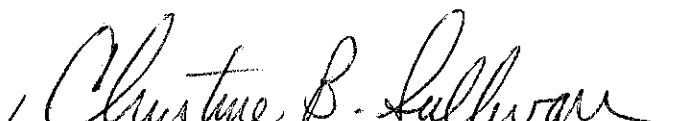
C. Cost of the line

The Company testified that the cost of this line in 1977 dollars is approximately \$174,200. The basis for this estimate was the same as discussed previously in this order with respect to the other line and substation. Subject to the same principles discussed above, the Council finds the proposed facility to meet the demonstrated need with the least impact on the environment and at the least cost based on information presently available.

Conclusion

The Council finds that subject to the above conditions, the proposed Bridgewater to Easton 115 KV transmission line, Easton substation, and Bridgewater to Marlboro 115 KV transmission line are consistent with current health, environmental protection, and resources use and development policies of the Commonwealth. The Council hereby approves such facilities subject to the stated conditions and so much of the supply segment of the long range forecast as pertains thereto.

By Order of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN

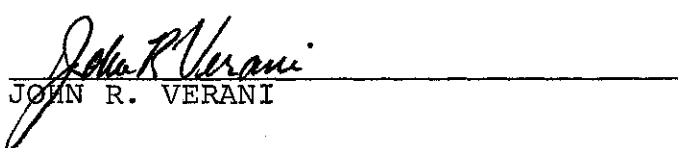

EVELYN F. MURPHY


FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. MCCLINTOCK


HOWARD N. SMITH


JOHN R. VERANI



In the Matter of Eastern Utilities Associates
I DOMSC 320 (15 June 1977)

Docket: EFSC No. 77-33

Petition for approval of a long-range forecast

APPEARANCE: Maurice L. Zilber, for the Petitioner

The Massachusetts Energy Facilities Siting Council hereby approves, subject to the conditions and reservations cited below, the First Long-Range Forecast of Electric Power Needs and Requirements of the Eastern Utilities Associates (EUA), and its associated Massachusetts companies, Brockton Edison Company, Fall River Electric Light Company, and Montaup Electric Company.

The EUA system, which includes the above subsidiary companies and the Blackstone Valley Electric Company, supplies electric energy to an area of 538 square miles in Rhode Island and Southeastern Massachusetts with a recorded population of 624,000. The Montaup Electric Company is a generation and transmission company which supplies bulk power to the other EUA subsidiaries. Brockton Edison Company supplies retail power to a service area whose population is approximately 283,000. The Fall River Electric Light Company supplies retail power in that city and the overall population of its service area is approximately 140,000.

The Forecast

EUA and its subsidiaries filed a timely Long Range Forecast of Electric Power Needs and Requirements, 1976-1985 pursuant to Massachusetts General Laws Chapter 164 Section 69I, as amended, and the Siting Council regulations.

Three adjudicatory hearing sessions were held on the forecast and two proposed transmission lines, at which time the company presented

documentary evidence and the testimony of three witnesses in support of its initial petition for approval. On February 17, 1977, the hearings officer rendered a tentative decision approving the two transmission lines with associated substation.

Pursuant to Council regulations, the EUA forecast contains a forecast of annual sales and of peak load for the system and each of the Massachusetts subsidiaries.

The forecast is derived from an energy-based model divided into 6 parts: residential, commercial, industrial, street lighting and miscellaneous, sales for resale, and losses and internal use. The residential energy forecast is developed using projections of the number of customers and the average use per customer. The commercial energy forecast is derived from the residential by applying an historical ratio which the company believes will hold into the future. Historical data and interviews with industrial customers were used to develop the industrial energy forecast.

The demand forecast was made by applying projected load factors to the energy requirements of each retail subsidiary and to Montaup for a system total.

The company used the following significant assumptions in developing its long-range forecast:

1. population in the service area will increase.
2. family size will diminish.
3. oil will become scarce and less of a factor in the energy market.
4. new uses for electricity will be developed.
5. increased use of appliances will cancel out any

savings due to increased appliance efficiency.

6. off-peak-storage will come into general use.
7. off-peak-pricing will be established.
8. EUA will continue to function as the principal supplier of electricity to its customers.

The company makes two other significant assumptions regarding determinants of future demand required to be discussed by the Council. These are:

1. the income of consumers in the service area is assumed to increase at least enough to compensate for cost-of-living increases.
2. EUA does not know of any state or federal energy policies or even if they exist.

Applying the above assumptions to its forecasting model, the company forecasts an average compound annual growth rate of 5.3% in total system energy requirements, and a 4.8% annual average compound growth in system peak.

To meet this growth, the company plans to add generation capacity over the forecast period in increments of less than 100 MW. (See Forecast, Exhibit E-1, page iv-16, Tables E-13, E-14, and E-15). EUA has plans to add peaking capability of its own in Massachusetts in 1983 and 1985, either by gas turbines, energy storage or re-activation of Somerset 1 and 2 units.

The company also intends to purchase shares in proposed base-load nuclear plants in Connecticut, Massachusetts, Rhode Island and New Hampshire and in the proposed intermediate oil-fired facility in Yarmouth, Maine. These additions in capacity will give the EUA system an average winter reserve margin of 34% and an average summer reserve margin of 40% over the forecast period.

Findings, Orders, and Conclusion

Based on the record in its entirety and on the above observations, the Council makes the following findings and orders:

For the purposes of this forecast only and in the absence of additional information, Council finds that all of the assumptions made by the company and listed above are reasonable. The Council does, however, have serious reservations about the company's assumptions regarding state and federal energy policy and conservation by its consumers. The Council takes notice that the Commonwealth of Massachusetts is preparing to adopt and implement a far-reaching, energy conservation plan and that the federal government already has passed energy conservation measures, including one which mandates increased appliance efficiency (see P.L.94-163, "Energy Policy and Conservation Act", 42 U.S.C. 6201). The Council recognizes further that there is likely to be a substantial increase in conservation activity at the federal level.

In view of these conservation initiatives, the Council orders the company, as a condition of the approval of this forecast, to undertake a detailed study of the possible impact on electricity use by its customers of the new state conservation plan (available from the Massachusetts Energy Policy Office), and the federal Energy Policy and Conservation Act, as well as any other conservation law in effect at the time of the study. In conducting the study, the company should, among other things, attempt to contact appliance

manufacturers to determine what their plans are with regard to increased appliance efficiency. The company should submit this study as part of its 31 December 1977 supplement. The Council will review the results of the study in the course of its hearings on that supplement.

2. The Council finds that all the information relating to current activities, environmental impact, facilities agreements and energy policies as adopted by the Commonwealth, with the reservation noted above, is substantially accurate and complete.

3. The Council finds that the projections of the demand for electric power and of the capacities for existing and proposed facilities are based on substantially accurate historical information and reasonable statistical projection methods.

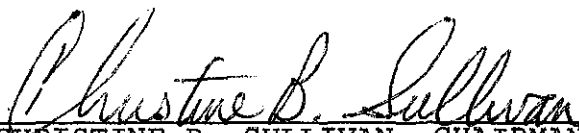
4. The Council finds that projections relating to service area, facility use and pooling or sharing arrangements are consistent with the forecasts of other companies. However, the Council notes in this regard that the company's projected reserve margins are far in excess of the 23% reserve margin which the New England Power Pool recommends is adequate to maintain a loss of load probability in generation of no more than one day in ten years. The Council questions whether such a large reserve margin is needed or economical for the consumers in EUA's service area. However, since the Council has not yet examined the issue of reserve margins, it will not at this time reject or

modify the company's forecast on the basis of high reserve margins. The Council reserves the right to re-open this question and intends to take a closer look at the company's reserve margins when it reviews EUA's forecast supplement later this year.

5. The Council has already made findings and a tentative decision has been issued on the two transmission lines proposed by the company.

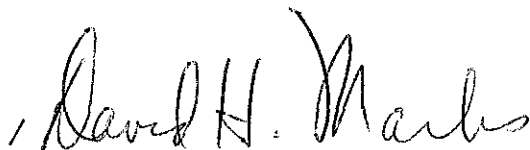
Based on the above findings and subject to the above conditions, the Council approves the company's long-range forecast.

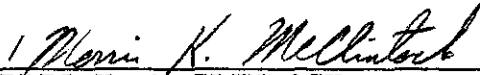
By Order of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN

/_____
EVELYN F. MURPHY

/_____
FRANK T. KEEFE


DAVID H. MARKS


MORRIS K. MCCLINTOCK

/_____
HOWARD N. SMITH


JOHN R. VERANI

/_____

In the Matter of The New Bedford Gas
and Edison Light Company
1 DOMSC 327 (20 July 1977)

Docket: EFSC No. 76-4

Petition for Approval of Transmission Facility

APPEARANCE: Michael T. Gengler, Esq. of Boston

The New Bedford Gas and Edison Light Company has petitioned the Energy Facilities Siting Council for approval of a proposed 115 KV overhead transmission facility to be constructed from the Bourne to Barnstable switching stations. An existing right of way will be used; however, additional clearing will be required in the area from Shoot-flying Hill Road in Barnstable to the Barnstable switching station. See company exhibits 3, 5, 6.

Determination of Need

The need for the proposed facility is premised upon subjective engineering judgments of likely failures in the 115 KV transmission network of the Cape and Vineyard division of the New Bedford Gas and Edison Light Company. See company exhibits 4, 8, 9, 10. The planning process is similar to that described in the Council's Decision In the Matter of Northeast Utilities System, EFSC No. 76-17, 1 DOMSC 227. It is, however, subject to the same limitation in that the level of transmission reliability and the probability of failure have not been quantified. On the basis of our Northeast Decision, this determination

of need is accepted and approved for this facility with the understanding and expectation that objective analysis of reliability and probability of failure for future proposals will be pursued by the company and the Siting Council's staff.¹

Siting

Construction and maintenance of the Bourne to Barnstable 115 KV transmission facility will require a sensitivity to the fragile land cover on the Cape and to the visual impact of a wide transmission corridor in an area where scenic value is important to the local economy.

The wide transmission corridor cannot be avoided because the limited land area of Cape Cod forecloses acquisition of additional right of way. Nevertheless, adverse visual, erosion, and vegetative impact can be avoided without significant cost by allowing natural growth to be fully reestablished in those open areas of the corridor which are not required for transmission towers, conductor clearance, and utility maintenance vehicle roads. See Attachment 1, a copy of company exhibit 6, which generally marks the areas to be revegetated. This revegetation will have an immediate and obvious benefit because it will reduce the apparent size and visual impact of the corridor. More importantly, perhaps, vegetation will prevent erosion and degradation of the fragile dune like surface of the land. Lastly, the natural growth may serve to retard unauthorized access to towers and conductors.

-
- Notwithstanding the limitations of present analysis,
1. the Council notes with approval that NEGEA has presented a most thorough analysis of need, cost, alternatives, siting, and selected environmental impact. The company's comprehensive, straight forward approach demonstrates a commitment to an effective public review process which should be followed by other utility companies.

Revegetation of the open areas should not adversely affect the company's ability to maintain transmission facilities within the corridor because natural growth will not reach a size or density which would bar maintenance vehicle access after the proposed facility is constructed and during the period prior to 1992 when the open areas may be used for additional transmission facilities. Should vegetation present an access problem, the company's maintenance plan may include selective clearing.

The Bourne to Barnstable corridor includes a highly visible segment of multiple transmission towers and conductors along a 1000 meter segment southeasterly from Route 6. The visual impact is highly adverse because of the scenic value of this area of Barnstable. The company has attempted selective planting in this area without notable success. Again, the fragile nature of the dune like surface has retarded revegetation. Strict measures should be taken during construction to avoid further disturbance of this area by heavy equipment. Tree cutting will be limited to selective cutting and topping. The maintenance program must foster revegetation and should restrict herbicide/pesticide application.

The company is directed to submit a maintenance program summary which will incorporate the requirements of this decision for revegetation of open spaces and for maintenance of the Route 6 segment.²

-
2. The company is advised of the Siting Council's prohibition against use of the herbicide 245T pending review by the United States Environmental Protection Agency pursuant to 40 CFR 162.

Cost

Prior to selecting the proposed facility, the company studied the cost of five alternatives for construction during the period from 1981 through 1993. The Bourne to Barnstable 115 KV facility coupled with a tentative 1992 Canal to Barnstable 345 KV facility is the least expensive based upon a present worth calculation. See company exhibit 12. This substantial cost study of alternatives clearly justifies the selection of the proposed facility at an approved cost of \$2,537,000 in 1977 dollars.

These costs, of course, are subject to reasonable change from a variety of factors including inflation of wage and material costs, construction problems encountered in the field, engineering design changes and other causes beyond the control of the company. In this context, the Council finds that the company's proposal will satisfy the need discussed above with the least impact on the environment and at the least cost based on information presently available.

Approval by the Council of a facility at the preliminary licensing stage should not be construed as a binding determination upon a rate-setting agency as to whether the ultimate costs incurred by the applicant for the facility are reasonable or are to be allowed for rate-setting purposes. The Council also recognizes that there may be circumstances where escalation of the cost of a facility could cause an applicant to delay or re-evaluate the need for construction. The Council will expect applicants to inform it of all such changes through Supplemental Forecasts and to inform the Council of the ultimate cost of each approved facility so that the Council may be aided through such experience in evaluating cost proposals.

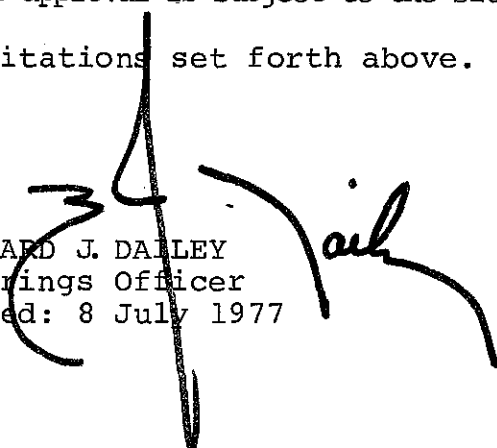
Time of Construction

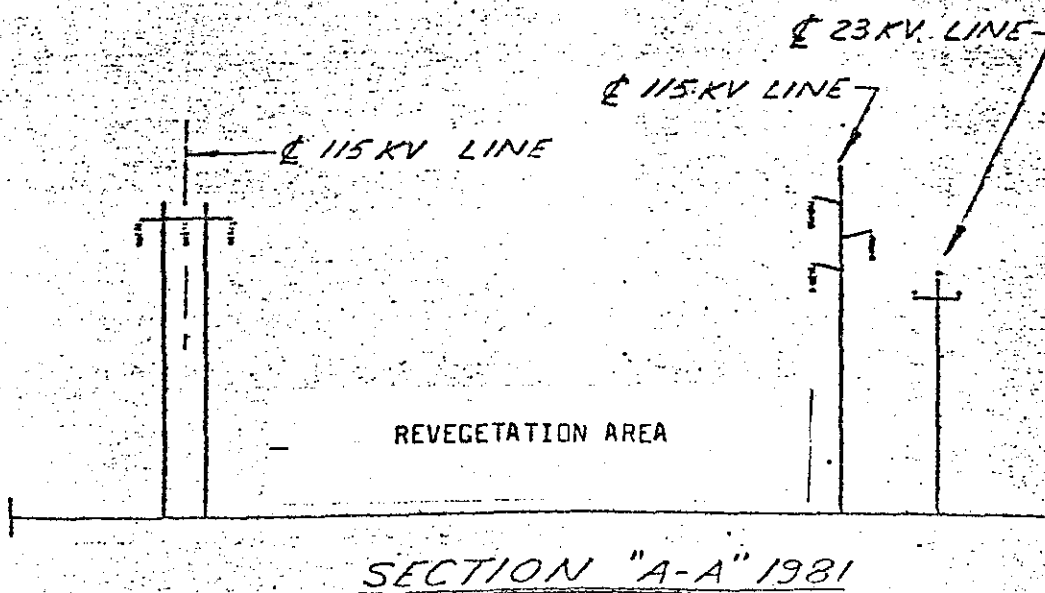
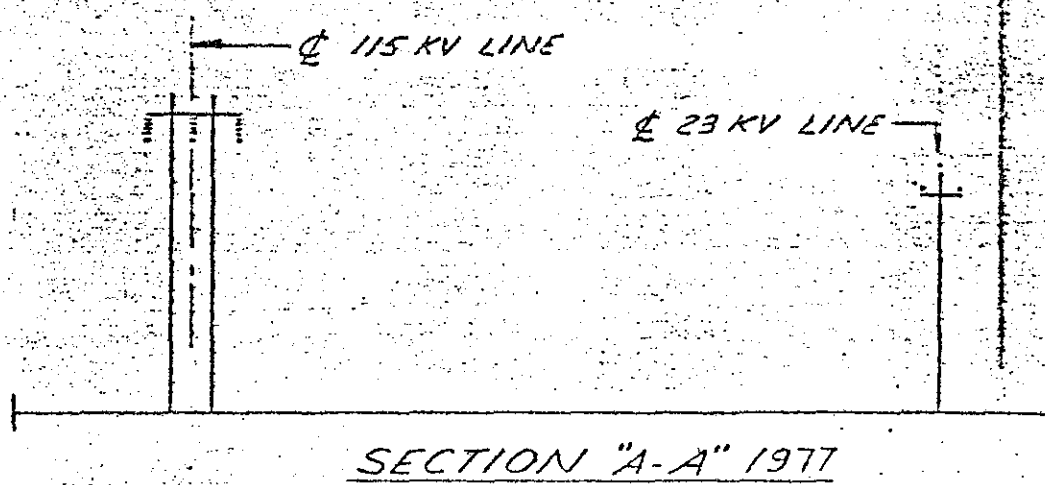
The proposed facility is premised upon forecasts load growth. Because of the relatively short time required for construction, it should not be constructed until there is reasonable expectation that forecasted peak of 263 MVA is materializing on the Cape and Vineyard division system.

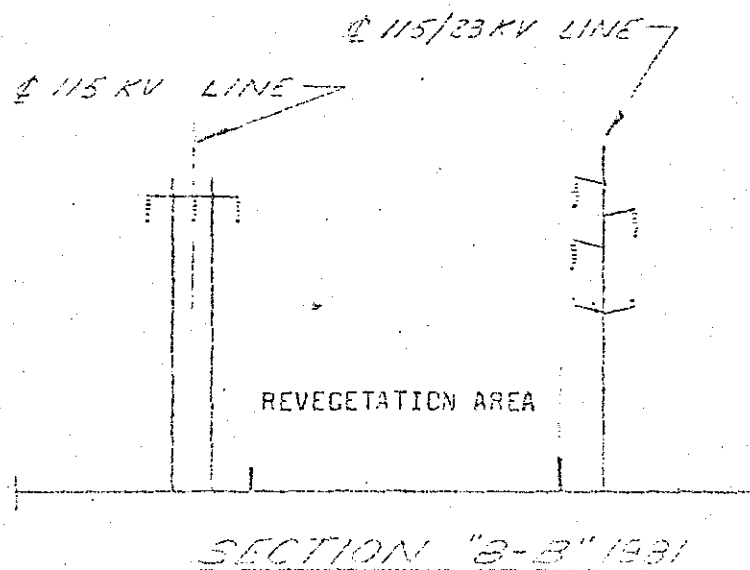
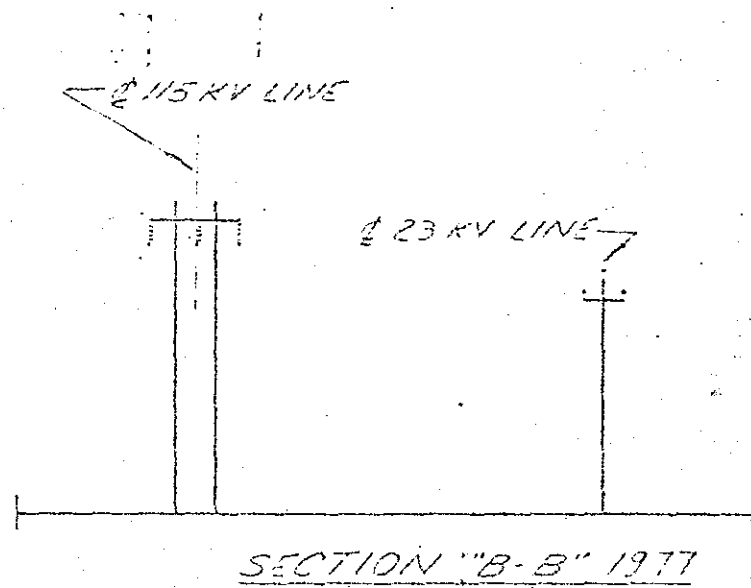
FINDINGS

The Energy Facilities Siting Council approves the Bourne to Barnstable 115 KV transmission facility pursuant to G.L. c. 164, s. 69J. This approval is subject to the siting, maintenance, cost, and time for construction limitations set forth above.

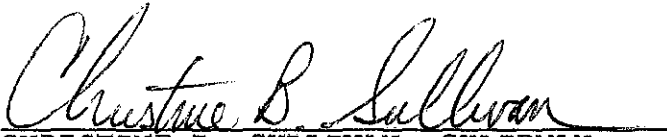
EDWARD J. DAILEY
Hearings Officer
Dated: 8 July 1977







By Order of The Energy Facilities Siting Council:


CHRISTINE B. SULLIVAN, CHAIRMAN

s/

EVELYN F. MURPHY

FRANK T. KEEFE

s/

DAVID H. MARKS

s/

MORRIS K. McCLINTOCK

HOWARD N. SMITH

s/

JOHN R. VERANI

EFSC No. 76-29A

INTERIM ORDER
on Motion to Dismiss

APPEARANCES: Michael T. Gengler, Esq. of Boston for the Berkshire
Gas Company

John L. Talvacchia, Esq. of Boston for the Department
of Public Utilities and the Public Utilities Commission

Anton T. Moerke, of Boston for the Attorney General

Sam Lovejoy of Montague, pro se

The Berkshire Gas Company has filed a petition and application for a certificate of environmental impact and public need pursuant to G.L. c. 164, §§ 69K et seq. The petition and application seek approval for construction, operation, and maintenance of a 1062 barrel LNG storage and vaporization facility in Greenfield, Massachusetts. The proposed facility was approved and licensed by the Energy Facilities Siting Council pursuant to G.L. c. 164, § 69I in its decision of 18 October 1976. 1 DOMSC 24. Subsequently, the Massachusetts Department of Public Utilities declined to issue a zoning exemption under G.L. c. 40A, § 3 as amended by chapter 808 of the Acts of 1975 and an authorization for construction, operation, and maintenance of the proposed facility under G.L. c. 164, § 105A. See DPU Order 18649 (29 December 1976).

The Department of Public Utilities and the Public Utilities Commission have filed a Motion to Dismiss the petition and application of the Berkshire Gas Company for lack of jurisdiction and for failure to state a claim upon which relief can be granted. Memorandums of law have been filed, and a hearing was held on 26 July 1977. The Motion to Dismiss is denied.

Jurisdiction

The Department and Commission argue that judicial review pursuant to G.L. c. 25, § 5 is the exclusive remedy available to the Berkshire Gas Company. The Department and Commission assert also that the certificate procedure of G.L. c. 164, §§ 69K et seq. cannot be applied to override decisions and orders of DPU as a matter of legislative intent. I agree that G.L. c. 25, § 5 provides an exclusive judicial remedy for review of decisions and orders of the

Department and Commission. However, the existence of an exclusive judicial remedy does not foreclose an alternative administrative procedure to override DPU. See, for example, G.L. c. 6A, § 36 which provides an administrative review alternative to judicial review of decisions and orders of the Massachusetts Rate Setting Commission. I cannot agree therefore that the administrative remedy available through the Siting Council is barred by the judicial remedy available through G.L. c. 25, § 5. Nor can I agree that a legislative intent bars the administrative remedy.

Notwithstanding the explicit, broad and discretionary authorization of G.L. c. 164, § 69K that the Siting Council may issue an overriding certificate of environmental impact and public need in place of disapprovals, conditions or denials of any state or local agency, the Department and Commission argue a legislative intent to exclude DPU. Yet, they have not cited a legislative statement or document to sustain this assertion. My review of the reports of the special legislative commission which drafted and proposed the enabling legislation for the Siting Council discloses no suggestion or implication that DPU is to be excluded. See the third and fourth reports of the special commission, House Doc. 6190 (1973), House Doc. 6297 (1974). In short, the position taken by DPU is one which asks the Siting Council to create an exclusion where none exists.

Certainly, the Siting Council will act prudently and conservatively in exercising its override authority. The Council will balance the competing factors of need, reasonable cost, and acceptable environmental impact. It will demand safeguard of human and physical environment as required by Article XLIX of the Constitution. It will

give substantial weight to the concerns, findings, public purposes, and demonstrated expertise of government agencies. The Siting Council cannot, however, exclude any agency from administrative review without direction from the General Court.

Failure to State a Claim

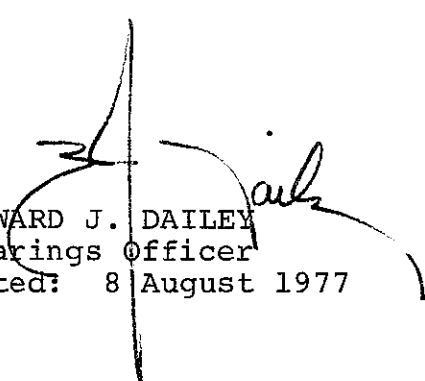
The Department and Commission have argued that the Berkshire Gas Company has failed to state a claim because neither its petition nor its application sets forth grounds for relief under EFSC Rule 52.2. In response, the company asserts that it is not bound by Rule 52.2 because it does not reflect a 1976 amendment to G.L. c. 164, § 69K which has broadened the basis of override jurisdiction. It suggests that a de novo jurisdiction may be exercised without a claim of error against DPU and for no reason other than that the company disagrees with the agency's finding and decision.

The special legislative commission specifically stated that the override process is an appeal procedure of limited scope. See House Doc. 6190 at 22. The 1976 amendment did not change this appellate purpose; it did not create de novo jurisdiction in the first instance. Therefore, a claim of error is required under G.L. c. 164, § 69K and its implementing Rule 52.2. I recognize that a finding of error authorizes the Council to exercise its override authority as an omnibus agency which separately and independently determines need, cost, and environmental impact. However, this de novo review must follow the claim and finding of error. To proceed otherwise would be to ignore the appellate purpose of G.L. c. 164, § 69K and might encourage a circumstance wherein regulatory review outside the Siting Council can be undercut by resort to override certificate.

In this case, I will accept the Berkshire Gas Company's petition and application as sufficient to comply with G.L. c. 164, § 69K and Rule 52.2. The company has clearly claimed error against DPU for its refusal to recognize the asserted design safety of the LNG facility. This claim satisfies subparagraphs 1, 5 of Rule 52.2. I have earlier authorized the company to argue the merits of its petition under Rules 52.2, 52.4 as part of its case in support of the application for a certificate. See letter of 11 April 1977.

ORDER

The Motion to Dismiss of the Department of Public Utilities and the Public Utilities Commission is denied. The Department and Commission may intervene on the merits of this case by filing pursuant to Rule 15.2 on or before 15 August 1977. Intervention will be without prejudice to the jurisdictional arguments.



EDWARD J. DAILEY
Hearings Officer
Dated: 8 August 1977