Decisions and Orders Massachusetts Energy Facilities Siting Council

Volume 6

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COMMONWEALTH OF MASSACHUSETTS
Energy Facilities Siting Council

In the Matter of the Petition of the Cambridge Electric Light, Canal Electric, and New Bedford Gas and Edison Light Companies for Approval of an Annual Supplement (1979-88) to the Long-Range Forecast of Electric Power Needs and Requirements	)	EFSC No. 79-4

DECISION and ORDER

The Energy Facilities Siting Council, for the reasons set out in its decision below, hereby REJECTS the Third Annual Supplement to the Long-Range Forecast of Electric Power Needs and Requirements for the NEGEA System[1], subject to certain conditions contained in the Council's ORDER at the conclusion of its decision.

I. HISTORY OF THE PROCEEDINGS

On April 2, 1979, the Cambridge Electric Light, Canal Electric, and New Bedford Gas and Edison Light Companies (NEGEA) filed its Third Annual Supplement

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1 The NEGEA Service Corporation operating companies include Cambridge Electric Light Company, New Bedford Gas and Edison Light Company and Canal Electric Company (hereafter referred to as the Companies). Effective March 1, 1981, the New Bedford Gas and Edison Light Company changed its name to Commonwealth Electric Company (CEC). The other operating companies have retained their names, but adopted the CEC logo.

to its Long-Range Forecast of Electric Power Needs and Requirements. Publication and posting of the notice of adjudicatory proceedings on this supplement was completed by July 16, 1979. The initial pre-hearing conference in this matter was then held at Council offices on August 10, 1979. The Attorney General (AG) was the only intervenor herein.

The period between that initial prehearing conference and the hearing date of November 17, 1980, was occupied by discovery proceedings as well as by attempts to accommodate the parties' (NEGEA and AG) involvement in ancillary proceedings at the Department of Public Utilities in D.P.U. 20055.[2] This was a joint proceeding on the petitions of several companies including NEGEA's New Bedford Gas and Edison Light Company for D.P.U. approval of their proposed purchase of shares of the Seabrook Nuclear Units I and II. Since several of the issues and much of the evidence adduced in D.P.U. 20055 were similar if not identical to those before the Council in this matter, such

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2 THis docket number is the one commonly used in referring to this joint D.P.U. proceeding. The other docket numbers are D.P.U. 19738, 19734, 20109, and 72.

accommodation seemed a practical and, in the long run, an efficient course of action.[3]

Although quite a bit of time passed between the initial prehearing conference and the hearing, the parties were able to save time during the EFSC proceeding by utilizing relevant material from the D.P.U. proceedings. At the hearing, a number of D.P.U. transcripts and exhibits were received into evidence by the EFSC hearing officer (TR. p. 4-6) and have been reviewed by the Council as part of its deliberation in this case.

As stated, the EFSC hearing in this matter took place on November 17, 1980. The D.P.U. materials introduced were complemented by the direct testimony and cross-examination of the panel of NEGEA witnessed (S. Robert Fox and Robert L. Fratto) as well as that of the Attorney General's witness (Susan Geller). Several other documents pertinent to Council considerations were also introduced and accepted as exhibits (Tr. for list). Finally, the parties' briefs were submitted on December 17, 1980.

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3 The EFSC hearing officer offered to consolidate this EFSC matter with the D.P.U. cases if it would be helpful and avoid duplication for the companies. The companies appreciated the offer, but did not accept it.

II. DEMAND ANALYSIS

NEGEA's 1979 forecast supplement represents the Companies' efforts over a number of years to comply with Council regulations and conditions regarding its methodology. The Companies' methodology has a long history of review before the Council, and this current proceeding must consider progress made in addressing prior concerns and conditions (see 1 DOMSC 221 (Aug. 6, 1976), 2 DOMSC 66 (Jan. 26, 1978), and 3 DOMSC 37 (Dec. 5, 1978)).

The NEGEA demand forecast, in this and past filings, is based on a methodology which utilizes the "survey - interview technique". All major forecast components projected are based on the result of extensive interviews conducted in each town and division[4] with major industrial and commercial customers and local government officials, bankers, and developers. Historical data on dwelling permits, energy sales and consumption patterns are also compiled and analyzed.

In its previous conditional approval of NEGEA's second supplement, the Council noted its concern with the reviewability of the Companies' methodology and attendant forecast, a concern which has also been raised in the present proceeding, and imposed a set of conditions which addressed necessary improvements in documentation, presentation, and preparation. The

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4 As used herein, the term division refers to the Cape and Vineyard, New Bedford, and Plymouth divisions within the New Bedford Gas and Edison Light Company, and Cambridge to the Cambridge Electric Light Company.

Council felt that the issue of reviewability would be addressed by the Companies'"... straight forward and continuing effort to revise and refine the interview technique,...(that the) surveys will continue to be developed in such a way that judgemental adjustments to this data will be clearly specified and justified." (3 DOMSC 37 at 40 (Dec. 5, 1978)). In approving the 1978 forecast,"...the Council for the present accept the survey-interview technique..." but required "... a more explicit documentation of all assumptions and data particularly those derived from the Companies' interview process... The concern of the Council in stating this requirement is the preparation and documentation of a methodology that is reviewable by the Council Staff and intervenors." (id. at 41).

It is critical to note that the Council's decision on the second supplement, as excerpted above, falls far short of unequivocably approving the NEGEA methodology. The Council accepted "for the present" the survey interview technique, and viewed the Companies' efforts to improve reviewability as fundamental and necessary to any determination of the forecast's reliability. The Council's decision on the Second Annual Supplement, as well as previous decisions, also noted the absence of explicit consideration and quantification of forecast components and assumptions such as price, space heating penetrations, conservation, appliance saturations and efficiences, and load management (see Council decisions op. cit. 1978 at 40-41, 1977 at 67, 1976 at 225).

Despite the Companies' contention that the interlude between the Council's order on the second supplement (Dec. 1978) and the filing of the third supplement (April, 1979) was brief and that the Third Supplement received only limited benefits by virtue of the Prior Order (see Ex. NEGEA-4, p. 3), it is still a fact that NEGEA has employed this same methodology and has been cautioned as to necessary improvements since the time of the initial Council filing and review in 1976. The Council must find that the present methodology employed by NEGEA does not reflect the many improvements and enhancements the Companies have long promised. Further, it must be noted that while the supplement itself was filed in April 1979, the documentation of said supplement's demand forecast and methodology was not filed until August 31, 1979, or some nine months after the Council's Order was issued (DPU Ex. NB-8).

During the hearing, the Companies presented testimony which described enhancements to the NEGEA methodology now being pursued, enhancements which have been developed since the Council's 1978 Order but are not incorporated in the present supplement (see Ex. NEGEA-4). It is the Companies' intention that these enhancements will contribute to the next Council filing (id at 3). The Council cannot adjudicate that which is not yet before it; however, the extent to which the enhancements testified to will modify the present methodology leads the Council to believe that the present methodology is being largely modified by the Companies; the modifications reaffirm the many concerns noted previously by the Council and Attorney General.

The Companies did attempt to address the conditions imposed

in the 1978 Order in the present supplement (see DPU Ex. NB-8, p.11). The fact that the Companies claim they were unable to thoroughly do so is evidence not of insufficient time, but of the inherent weaknesses of the present methodology.[5] The four conditions imposed in the 1978 Order related primarily to the manner in which the Companues should present, describe, summarize and document its data, assumptions, and judgement. That the Companies did not so present data not collected does not speak to the fulfillment of conditions, but rather to serious limitations of the methodology presented by NEGEA.

The Council finds that the demand forecast presented by NEGEA in its third supplement is based on seriously deficient statistical projection methods. The methodology has at its heart the survey-interview technique which, as it is designed and implemented, is inherently subjective and burdensome to review, and inappropriate to the nature and size of the Companies' service area and the rigor required to develop a long-range electric demand forecast. These findings are explained in detail below.

The NEGEA forecast is prepared separately for each of the four divisions and is described in the Direct Testimony of S. Robert Fox (DPU Ex. NB-8, pp.12-18). The methodology employed in each division is essentially the same. The methodology will be discussed separately below for the Residential, Commercial and Industrial sectors.

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5 The departure of Mr. Richard K. Byrne at a critical point during forecast preparation is noted by the Council.

A. Residential

The forecast of residential sales is the product of the projected number of customers and average use by customer type (with and without space heating, and off-peak water heating), and a projection of sales to other or seasonal customers. About 90 interviews were conducted in the 32 towns which comprise the Cape, Plymouth and New Bedford divisions (see Ex. NEGEA-1, Q/A 2 for copies of the notes taken by the interviewer). Data collected during these interviews and historical building permit data are the basis for the projections of number of new customers (see DPU Ex. NB-8, p.14). Projected new customers are then further disaggregated into customers with or without electric space and/or off-peak water heating, based on historical penetration data and information gathered from interviews (id, p.15). Average use for each customer type was projected based on post-oil embargo historical trends, new customer billing records, and judgements drawn from the interviews (id,). Other residential sales grow at the same rate as general customer sales. The historical data and calculations have been presented by the Companies, enabling replication of the computational steps (See Ex. NEGEA-1, Q/A 2). The remaining steps in the methodology, primarily the Companies' judgements or judgements drawn from interviews, pose the most troublesome issues with both the review and reliability of the forecast. These steps are those that transform the historical data into future projections; these steps are largely subjective. The interviews conducted in each of the towns from which judgements about the components of the residential sales forecast were drawn do not

necessarily support those judgements, because of the design and implementation of the interviews.

First, the interview process is neither systematic nor comprehensive. There is no pattern as to the number of types of interviewees in each town or division. For example, the only interview conducted in Marion was with an otherwise unidentified "Town Hall Employee". In Plympton, the only interview conducted was with the Secretary to the Board of Selectmen, while in Duxbury and Marshfield, about seven interviews were conducted with private builders, developers or business persons as well as building inspectors and town planners/engineers (see Ex. NEGEA-1, Q/A 2). The Companies' witness described the approach as one where "... individuals we felt would be able to give us the most information relative to the forecast that we were trying to put together" were interviewed and an attempt was made to "touch base with each town in the service area" (Tr., p. 86). These criteria, while important, do not ensure a comprehensive survey, that representative opinions will be forthcoming, nor that qualified individuals will be interviewed. While the office or position held by the interviewee certainly explains some of that individual's qualifications, it does not ensure that those qualifications are pertinent to the opinions and judgements solicited.[6] Further, in each town, different types of experts

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6 Despite this argument for qualification, it remains to be shown that a Town Hall Employee in Marion (or the many other unclear descriptions of interviewees present in the interview notes) are qualified.

were asked to make the same types of judgements, leading to a problem with comparability of results.

Secondly, the interviews were conducted in a free-form manner, using no standard questionnaire, format, or questions (Ex. NEGEA-1, Q/A 7c-d). A review of the interview notes shows a variance in the topics discussed from interview to interview. While this variance could be a function of unsystematic note-taking, the reliability of interview data is difficult to assess. Further, in the specific case of future dwelling unit projections, the Company testified that the interviewees were given no guidelines on which to base their projections (Tr. p. 88). The problem is that each individual may have based the projection on different assumptions about the determinants of growth (mortgage rates, inflation, employment opportunities).

Given the preceeding comments on the unsystematic nature of identifying and interviewing individuals, the Council has serious concerns with the quality and accuracy of the data collected. Additionally, the Companies were unable to summarize the results of the interviews statistically (as required by Condition 3 of the 1978 Order) and thus, failed to show the reviewers a basis for the interpretation and use of interview data, and a basis for judgements exercised. Again, NEGEA's inability to do so rests not with the short time that elapsed between the Council's Order and its filing of the supplement, but rather with the survey-interview technique as designed and implemented by NEGEA. The difficulty here is that is is not clear to the Council how the Companies made the judgements they made or whether anyone else would make the same judgements based on the interview notes

presented; the classification and interpretation of the interview data is subjective. The Companies' inability to improve the design and implementation of the survey-interview technique during the course of preparing four Council filings, so that the data it collects be reviewable, objective and quantifiable, is inexplicable.

As has been previously noted in each of the three past Council decisions, NEGEA has not yet developed bases other than judgement and trend analysis for its projections of average use and penetration rates. Average use for non-space or water heating customers was based on recent trends, and "adjusted downward on a judgemental basis (in order of 5% per year reduction in the increase) in the latter years of the forecast..." (DPU Ex. NB-8, p. 15).

In the absence of residential end-use data, NEGEA's ability to quantify the effects of conservation, price and appliance efficiency improvements is limited. However, some basis other than judgement and trends is long-overdue on these crucial aspects of the residential forecast.

NEGEA did support its assumptions of existing and new space heating average use with some empirical analysis (See Ex. NEGEA-1, Q/A 8; HO-1, Q/A 5; and DPU Ex. AG-199, Q/A 1-1). Despite the exercize of judgement in the analysis and use of results, the basis for the Companies' judgements is at least somewhat reviewable. In the case of new customer space heating use, a total sample of 24 new customer's bills were analyzed to derive estimates for each division. The samples were not representative, by the Companies' own admission, and were judgementally adjusted. In the case of

existing customers' space heating use, historic data on heating (fuel) degree days and average weather-sensitive use were compiled to derive a trend in the value of kwh per degree day for each division. The trend in reduction of this ratio over the past three years was examined; the ratio was then judgementally reduced, extrapolated, and coupled with a normal degree day estimate to yield an average use forecast.

As the preceeding discussion demonstrates, the NEGEA residential forecast methodolcgy and resultant projections have many fundamental weaknesses. Residential sales are the largest sector of NEGEA System Sales (35% in 1979) and are expected to remain dominant (38% of 1988 system sales). All aspects of the present methodology are severely deficient and require reevaluation particularly the reliance on interviews in the projection of customer number and type, and average use by type. The Companies should also reevaluate the extent to which their projections rely on judgements; while the Council recognizes that judgements will be exercized in the course of preparing any forecast, NEGEA must demonstrate that it is seeking to minimize its reliance on interviewee or company judgements as the sole basis for its projections.

The Companies' have testified as to some of the changes they expect to make in the present methodology (Ex. NEGEA-4, pp. 5-6). While the details of these changes are not before the Council in this proceeding, the Council will note that the changes planned are so fundamental that they suggest that the present methodology is being largely abandoned. The saturation surveys

the Companies have undertaken,[7] the standard questionnaire format developed, and the direct use of agency population projections would appear to be of assistance in improving the reviewability and objectivity of the Companies' residential sales forecast.

If interviews are to be used in future forecasts, they must be designed and implemented in accordance with the guidelines outlined in Condition 1. Further Conditions 1-4 of the Council's prior order still apply; to wit, any judgements applied in the course of the residential forecast must be supported by clearly presented statistical or enumerative summaries of interview results.

The extent of present and expected conservation must be explicitly addressed; the effects of price, increased appliance efficiencies, and changes in the socioeconomic variables which affect residential sales also should be explicitly addressed.

In its next filing, NEGEA should present to the Council how it expects to refine its residential methodology and data base, why it has selected these new methods, and when the modifications will be in place

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7 The Council would note, at this time, two concerns with the Companies' saturation survey. First, the questionnaire presented in Ex. NEGEA-1, Q/A 22, does not appear to have been administered to any Cambridge customers. Second, no questions appear which attempt to elicit whether the residence is a primary or secondary residence. If customers on Seasonal rates were not sampled, this is of concern, particularly since New Bedford is a summer peaking system. If only year-round customers were sampled, there is no assurance that some less than year round customers won't be included in the results, especially for the Cape & Plymouth divisions.

B. Commercial

The Commercial class forecast is also developed based largely on the results of interviews. For the Cape and Plymouth divisions, known load additions are added to existing customer use for the first six and five years respectively of the forecast; thereafter, Commercial sales grow at the corresponding projected residential rate. In the New Bedford division the short-term growth rate was developed based on Company judgement; after the fourth year New Bedford division sales grow at the projected residential rate (Ex. NEGEA-1, Q/A 41-42). The Cambridge Commercial forecast is based on known load additions for the first three years; past trends are extrapolated for the latter years (DPU Ex. NB-8, Schedule F-3, p. 39). In prior supplements, the Companies assumed a fixed relationship between Commercial and Residential sales throughout the forecast period. The approach was changed based on the Company's observation of a departure from this fixed relationship in "the past few years", possibly explained by increased conservation by Commercial customers (DPU Ex. NB-8, p. 16) and/or a shortage of Commercial construction money (EX. NEGEA-1, Q/A 41).

The Companies' approach to projecting Commercial sales has several weaknesses and inconsistencies. First, the choice of the particular method used in each division is not justified. While the departure from the historic fixed relationship between Residential and Commercial sales has been noted for each of the four divisions in the short-term, the year when the fixed relationship will return varies for each division, without basis as to the selection of a particular year of the difference in years

among divisions. Further, the observed departure from the historic fixed relationship in recent years raises the question of why the Companies assume this fixed relationship will resume once again in the future. While the Companies cite differential conservation responses on the part of Commercial vs. Residential customers as explicative of the recent disruption of the fixed relationship, the Companies offer no discussion as to why this differential response may change in the future. While the Companies cite the shortage of Commercial construction money as also explaining the change in the historic ratio, the Companies do not explain why tight money is implicitly assumed to have less impact on residential construction.

The known-load additions method raises several further concerns, which are related to generic concerns with the use of interviews. If the interview process is not comprehensive, not all load-additions will be made know and factored into the forecast. Further, the method ignores the possibility of attrition among existing customers.

Both the New Bedford short-term forecast and the Cambridge long-term forecast depend on the extrapolation of historic trends, modified by Company judgement. No specific theoretical or empirical basis has been provided for either the choice of base years or the modification of growth rates, beyond Company judgements and judgements drawn from the interviews.

The Council recognizes that the commercial sales are difficult to forecast, due to their diverse nature and the lack of detailed data. Nonetheless, the Council finds that the methods chosen by the Companies rely extensively on Company or interviewee judgements, and on historical trends which have no

theoretical basis and are empirically contradicted. Sales to commercial customers comprise 27% of 1978 NEGEA system sales; in 1988 their share is predicted to decline slightly to 25%, nevertheless remaining an important sector to forecast reliably.

The Council finds that NEGEA's methodology for projecting commercial sales needs to be fully reexamined before a reliable forecast of sales to this sector can be accepted. Regardless of the methodlolgy selected, the Companies must support their choice with a discussion of why the methodology was selected over the other possible approaches. NEGEA should present an analysis of the nature of commercial activity in its service area[8], the determinants of this activity and of commercial electricity use, and explain how its selected method is then appropriate to this sector.

If interviews are to be relied upon, they must meet the standards outline in Condition 1 of this Order, as well as conditions 1-4 of the prior order. If Commercial sales will be projected based on residential sales, a theoretical basis for this relationship must be provided. Further, any trend analysis incorporated therein must be accompanied by a discussion of the underlying causal factors represented by time, and why these relationships are expected to persist in the future.

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8 For example, commercial activity in the Cape and Plymouth districts might be expected to be influenced by tourism. The Companys' present methodology does not explicitly address this theory (see Ex. HO-1, Q/A 4).

C. Industrial

NEGEA's industrial forecast is developed based on the survey-interview technique. The Companies conducted interviews with management personnel of the largest industrial customers representing 80% of industrial sales (Ex. HO-1, Q/A 2). About 49 interviews were conducted for the purposes of third supplement preparation, representing about 13% of Cambridge and New Bedford's industrial customers (id.)[9]. The short-term forecast (1979-1984) is based on forecasts supplied by interviewees, modified by Company judgement (DPU Ex. AG-199, Q/A 1-2). That portion of industrial sales to customers not interviewed is assumed to grow at the same forecasted rate as the sales to customers interviewed (Ex. Ho-1, Q/A 3). The long-term forecast for New Bedford was developed based on Company judgement and the NEPOOL forecast of Massachusetts industrial growth rates (Ex. NEGEA-1, Q/A 54). For Cambridge, potential development at several major industrial sites was assessed in order to develop the long-run forecast (id, Q/A 53). Industrial sales in the Cape and Plymouth divisions, which represent 2.6% of total sales, were projected to continue as a small component of total growth, based on information from interviews on long-term industrial growth potential (id. Q/A 53).

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9 When asked for the number of industrial customers interviewed in a separate interrogatory, the Companies responded that "information gathered from 31 industrial interviews was utilized in the development of the Third Supplement industrial forecast". See NEGEA-1 Q/A 52.

Thus, the NEGEA forecast of industrial sales is primarily based on interviews, supplemented by judgement, trends and published documents on long-term industrial growth. Similar to the residential analysis (infra, pp.8-9), three elements of the use of interviews will be discussed: first, the selection of industrial customers for interviewing; second, the structure of the interview; and third, the interpretation and use of data derived from the interviews. The Council finds that each of these elements is unsystematic and rests on judgement.

First, NEGEA did not choose the industrial customers to be interviewed according to any selection criteria designed to ensure the comprehensiveness and representativeness of the resulting data. For example, while it is clear that the largest customers were well represented, most smaller customers were not, and different growth and electricity use patterns can be expected of large vs. small customers. Yet, growth rates developed from interviews with large customers were extrapolated to small customers, despite the non-representation of small customers in the interview group.

The second element of concern with the interviews is their structure, including the nature of the questions and the manner in which they were administered. NEGEA does not use a questionnaire when conducting the interviews, only a list of topics (Ex. NEGEA-1, Q/A 7). Notes taken during interviews do nct necessarily indicate the scope and

comprehensiveness of the interviews and resulting data[10]. Review of interview data was severely hampered by the lack of interview structure. The open-ended structure "was intended to enchance an open and informational dialogue so as to maximize the range of information acquireable" (id); the difficulty with this approach is that the potential for bias, lack of comparability, and non-comprehensiveness is increased.

The final element of concern with the design and implementation of the interview process is the Companies' interpretation and use of interview data. The use and interpretation of data is affected by the previously discussed aspects of selection of interviewees and structures of questions. For example, interview results were extrapolated to all customers, without assurance of representativeness as to size or type of industry. Interviewees provided forecasts were judgementally adjusted by NEGEA, as they were "viewed as being somewhat optimistic in the long-term" (DPU Ex.-199, Q/A 1-2). These adjustments lead the Council to suspect (as pointed out by the Attorney General in DPU Ex. AG-237, p.39) that NEGEA itself

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10 The industrial interview notes were not provided for the record, either in a "masked" nor original foarm (see Ex. HO-1, Q/A 1 and DPU Ex. AG-199, Q/A 1-2). Council and Attorney General Staff were permitted to review the masked notes at the Companies' offices. Given the unsystematic nature of the interviews and the notes, it was difficult to assess data reliability. As is addressed in the Conditions herein, NEGEA must make efforts to systematize and present interview results in a reviewable manner.

does not fully trust the reliability of its own method. Again, it is unclear to the Council how NEGEA made the specific judgements about industrial growth based on this unsystematic data, or that anyone else would make the same judgements based on these data.

A related issue is the possible staleness of the interview data. Due to the "ongoing nature" of NEGEA's interview process, it appears as though some of the judgements made in preparing the third supplement were based on data gathered during interviews conducted from as early as 1975 (See Ex. HO-1, Q/A 2). However, it is impossible to ascertain precisely how much and which third supplement projections were influenced by interviews conducted in 1975. Further, while the ongoing nature of NEGEA's interview process provides an excellent opportunity for the Companies to verify the accuracy of the interviewee forecasts, the Companies did not so verify the forecasts over time (See DPU Tr. 28, pp.21-22).

The remaining elements of the industrial forecast methodology are also troublesome. While NEGEA is no doubt prudent not to rely on individual customer-provided forecasts beyond the short-term, it is not clear that the Companies' judgements or the NEPOOL forecast[11] are any more reliable.

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[11] Use of the NEPOOL model forecast, or any other non-territory-specific forecast, requires that representativess to the service area be demonstrated. For example, the sales-mix of industries in Massachusetts as a whole, and attendant energy use patterns, has not been demonstrated to be representative of industries in the NEGEA system.

NEGEA should re-evaluate its approach to forecasting industrial sales, particularly its primary reliance on interviews and judgements. While the Companies' plans to utilize a standard questionnaire (Ex. NEGEA-3) will address some of the Council's concerns with the industrial forecast, the use of a standard questionnaire will not be a panacea. The use of interviews is further subject to Condition 1 herein, and Conditions 1-4 imposed in the second supplement Order (1978).

D. Summary: Demand Analysis

The Council finds that the methodology employed by NEGEA in its Third Supplement is unsystematic, subjective, and difficult to review. The resulting forecast, particularly late in the forecast period, is found to be unreliable. Further, the Council finds that the Companies' methodology is inappropriate for a system of its size and nature, and lacks the quantifiable detail that is critical to planning in today's environment.

The Council does not prescribe the use of a particular methodology, and has attempted to encourage the evolution of NEGEA's forecasting methods into an acceptable methodology through past reviews and conditions. However, at this juncture, the Council feels that stronger direction is needed in order that the NEGEA forecast be reliable. The Council is disappointed with the lack of any evolution or improvement shown with this methodology, and is concerned that any further efforts in its development may be misdirected. Therefore, the Companies are directed to implement substantive and extensive changes to the present methodology which reflect the Conditions below.

III. SUPPLY ANALYSIS

A. Introduction

The instant case involves, as part of the forecast supply plan, the petition of the third in a trilogy of medium-sized Massachusetts systems to solicit an increase in its entitlements to the Seabrook Nuclear Station currently under construction in New Hampshire.[12] Financial pressures resulting from contracting demand and the chronic weakening in the overall level of earnings that is endemic to most utilities were the primary impetuses for bringing these additional Seabrook shares to the power market for resale. NEGEA, which is heavily dependent on imported residual oil as its primary fuel, has sought nuclear baseload capacity to substitute for the much more costly oil-fired capacity. While the Companies anticipate modest demand growth over the ten-year planning period under consideration, the proposed acquisition could be justified solely on the basis of the economics of fuel substitution. Since the filing of NEGEA's Third Supplement in April, 1979, the price of imported oil has increased from approximately $15 per barrel to almost $40 per barrel.

B. The NEGEA System and Its Forecast of Needs

NEGEA plans its new capacity needs on the basis of the combined coincident peak load forecasts of the system's two

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12 This "trilogy" had their respective petitions adjudicated in a consclidated case before the Massachusetts Department of Public Utilities (D.P.U. 19738, 19743, 20055, 20109, and 72). The other systems are Eastern Utilities Associates ("EUA") and Fitchburg Gas and Electric Light Company.

distribution subsidiaries: The New Bedford Gas and Edison Light[13] and the Cambridge Electric Light Companies. The NEPOOL agreement accepts this arrangement (pp.2-3, Direct Testimony of S Robert Fox, NB-8). The two distribution subsidiaries together serve approximately 240,000 customers a total of over 3,000,000 MWh annually. The Companies have projected a coincident peak hourly demand of 660 MW for the current 1980-81 power year (See Schedule F-1, op. cit). In this proceeding New Bedford is seeking an additional 50 MW ownership share in the Seabrook Units 1 and 2.

With respect to the additional shares in the Seabrook units, the Council makes the same determination as it did with EUA (See In Re Eastern Utilities Associates System, 4 DOMSC _____, December 1, 1980) and Fitchburg (See In Re Fitchburg Gas and Electric Company, 4 DOMSC _____, January 20, 1981). In the EUA case, the Council found that the Seabrook shares are a necessary and expeditious means of reducing the system's dependency on expensive fuel oil. It is also clear that for whatever merit there may or may not be with NEGEA's load forecast and forecasting methodology, the purchase of an additional 50 MW in Seabrook need not be predicated on load growth only (pp. 28-20, NB-8).[14] Additionally, the Seabrook shares are the only viable source of baseload capacity available to NEGEA at this time (pp.8-9, NB-8).

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13 Since the commencement of these proceedings, New Bedford has since been renamed "Commonwealth Electric Company".

14 It must be noted that had NEGEA rerun its production cost simulations to include updated prices, the Seabrook shares would appear to be an even greater bargain.

The Council is not unaware of the fact that Seabrook's ultimate cost and in-service dates for each of the units are, as yet, moving targets. While the Council supports NEGEA's petition to increase its entitlement in non-oil-fired baseload capacity, it cannot guarantee that the Seabrook facility (or Pilgrim 2) will be timely completed nor can it guarantee that this facility's final cost will be as claimed in the record of this proceeding. The Attorney General's warnings and concern are here noted and appreciated.[15] Given these uncertainties and the Companies' stated position that it cannot meet its projected capability responsibility even with the timely addition of the new Seabrook shares, it is apparent to the Council that either the Companies' existing supply plan is grossly inadequate or NEGEA's forecast of needs is excessive. (Exh. NB-16, Schedule F1, Revised) The Council would be seriously abnegating its public responsibility if it in any way endorsed the Companies' logic.

NEGEA has indicated in the record an interest in pursuing the feasibility of a new coal-fired unit with a nominal size of 600 MW. Two candidate sites are under consideration: Canal (in Sandwich), and Somerset. (D.P.U. Tr. Vol. XXIV at p.138; AG-19. Response to Question 88). A target in-service date of 1992 has been tentatively chosen (D.P.U. Tr. Vol. XXV at p.14).

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15 Testimony of Paul L. Chernick, DPU 20055, pp.56-86.

The Council is very interested in this venture and requests that it be informed of the status of this component of its long-range supply plan as the Companies seek to resolve its need, site, and in-service date.

C. Alternative Energy Resources

NEGEA has indicated in the record of this case that it has not analyzed the potential role alternative electrical energy resources may play in its generation mix. (Exh. NEGEA-2, Response to Q. 88). These options include hydro, wind, wood, and refuse-fired systems. The Council adamantly disagrees with the Companies' assumption that these renewable resources are not worthy of the systems' active interest and development. Other systems operating in the Commonwealth (and throughout the country) have commenced ambitious renewables programs. NEGEA should do likewise.

D. Conservation Initiatives, Load Management and Public Policy

The Council is on record in support of cost effect load management and conservation efforts.[16] NEGEA, in response to EFSC Staff queries, had indicated that the companies are studying "load management opportunities" (Responses to Question A-1, EFSC Staff Supply Questions). The Council encourages NEGEA to expeditiously pursue load management technologies and conservation initiatives as an integral part of its future supply planning strategies. These

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16 See in Re Massachusetts Electric et al, 4 DOMSC _____, February 26, 1981.

unconventional times require unconventional energy sources. The Council urges the Companies to take the lead in their service territories in promoting a more economically and socially rational utilization of primary energy resources to help secure and maintain a healthy and prosperous economy. The existing stock of energy-consuming appliances, equipment, and structures owned by residential, commercial and industrial ratepayers were never acquired with the thought that the current fuel price mix would be what it is today. Ratepayers are confused by erratic jumps in prices and chronic oscillation between reported scarcities and surpluses of the major energy feedstocks. The Council takes official notice of the substance of New England Electric Systems' NEESPLAN and Northeast Utilities' Conservation Program for the 1980's as reputable models of positive industry action that addresses these trends in prices and costs. NEESPLAN, in particular, which took no direct public sector prodding to generate, is well suited to the needs of its service territory, public policy, and NEES stockholders. NEES' program is an on-going strategy subject to frequent adjustment and adaptation to economic realities and to ensuing practical experience. (And hence, NEESPLAN II). The System is attempting to give the program broad public exposure and to solicit customer involvement and support.

NU's conservation program includes major efforts toward promoting customer awareness and information tailored to each ratepaying class. Both systems are increasingly emphasizing the use of incentives to steer appropriate and more cost effective customer investment and consuming behavior. They now realize and appreciate the fact that customers really seek specific services and not raw energy (KWH) or demand (KW). The Council does not anticipate that the ratepayers of the NEGEA distribution subsidiaries will, collectively, be either hostile or indifferent to sincere, mutual efforts to promote more efficient and less costly utilization of energy.

IV. ORDER

The points discussed above are now incorporated in the following Council Order. The Companies are reminded that the Council Staff is prepared to assist with any questions which may arise as the Companies proceed to implement this Order.

Therefore it is now ORDERED that NEGEA's Third Annual Supplement to its Long-Range Forecast of Electric Needs and Requirements be, and hereby is, REJECTED. Approval of future Forecasts or Supplement will be contingent on the Companies' good faith efforts with respect to the Conditions that follow.

Demand Conditions

1. In the future Council filings any interview conducted for the purpose of gathering data for the forecast must meet the following standards:

   a. For each type of interview, a detailed statement of the purpose must be developed which identifies the types of data to be collected.

   b. Based on the stated purpose, selection criteria must be developed and applied in identifying interviewees. Efforts to ensure representativeness and comprehensiveness must be made.

   c. All interviewees shall be identified, including a description of the individual's specific area of expertise.

   d. A standard interview format shall be administered to each individual, using a written questionnnaire.

   e. Where forecasts are requested as part of the interview, a consistent set of questions about methodology and assumptions shall be asked of each interviewee.

   f. Results of the interviews shall be quantified and summarized.

   g. Confidentiality may be discussed with interviewees, but promised only when requested. The items to be kept confidential shall be specifically designated, and protective orders will be granted by the EFSC as appropriate.

2. NEGEA's reliance on the survey interview technique as the primary basis for its projections of demand will no longer be acceptable methodology before this Council. The methodology's absence of quantification of price, conservation, appliance efficiency improvements, changing economic conditions, load management other key determinants and energy policies will no longer be acceptable before this Council.

   a. The reliance on forecaster judgements and historic trends must be minimized; where these are reasonably employed (i.e., it is shown that no other method is feasible), the Companies must fully describe the assumptions underlying its judgements and trend analyses.

   b. Interview data cannot be used as a substitute for quantitative analysis; interview data alone cannot be used to project any forecast component. The Council does not prohibit the use of interviews in some manner in the NEGEA forecasting methodology; the value of these interviews in reinforcing the familarity of NEGEA with its service area is apparent. Should NEGEA attempt to combine interviewing effectively with other methodologies (other than judgement and mere trend analysis), the Council would not object-provided that the

interviews are conducted according to those certain standards enumerated in Condition 1 above. These standards, developed to address the many shortcomings of the current survey-interview technique, should, if carried out conscientiously, at least ensure that the interviews are comprehensive, systematic and subject to review.

3. The choice of methods employed in future NEGEA filings must be supported by a presentation of why the method was selected. This presentation should be based on an analysis of the resources and constraints to forecasting for NEGEA's service area, and an evaluation of alternative methods and why they are not feasible. This analysis should consider the availability, frequency, and level of detail of data on socioeconomic variables, weather, customer bills, conservation and other key determinants of electricity demand.

Supply Conditions

1. The Council directs NEGEA to appraise thoroughly the potential for direct control of major residential and commercial appliance loads for purposes of load factor improvement. This point should be specifically addressed

by NEGEA in its next filing. The fact that these demand management activities are being aggressively pursued by other Massachusetts utilities suggests to the Council that this strategy may also be of value to NEGEA and its ratepayers.

2. The Council also orders NEGEA to pursue actively and to support the promotion of renewable energy resources, cogeneration and conservation in Massachusetts. The next NEGEA filing should also explicitly address this requirement.

3. Finally, the Companies' anticipated cooperation with the Council's recent Administration Bulletin 81-1 is made a condition to this order. An excellent foundation to this response has already been established in the record of this case. NEGEA is requested to further respond to the Council concerns as set out in Administrative Bulletin 81-1 by:

(a) Updating its analysis of the economic and financial feasibility of converting to coal the Canal Unit No. 1, and

(b) Appraising the technical, economic and financial merits of alternative strategies (particularly a new , coal unit) to coal conversion at the Canal Station, and

(c) Detailing the effort necessary to maintain air quality and other environmental standards as a result of conversion and alternative coal-based strategies.

Robert T. Smart, Jr., Esq.
Hearing Officer

This decision was unanimously approved by those members present and voting at the Energy Facilities Siting Council meeting of May 7, 1981.

Joseph S. Fitzpatrick
Chairman

COMMONWEALTH OF MASSACHUSETTS
Energy Facilities Siting Council

In the Matter of the Petition of Commonwealth Electric Company (formerly New Bedford Gas and Edison Light Company) for Approval of An Occasional Supplement to Its 1979 Long-Range Forecast of Electric Power Needs and Requirements (Apr. 3, 1981)	)	EFSC No. 79-4B

DECISION

The Massachusetts Energy Facilities Siting Council (hereafter "Council") APPROVES the immediate construction by Commonwealth Electric Company of a second 115 kV transmission line on the existing Right of Way between Dennis and Orleans, subject to the conditions set out below. Commonwealth Electric Company (hereafter "the Company") may continue to use Tordon 101 to keep the entire Right of Way (hereafter "ROW") clear of undesirable highgrowing species, in accordance with the conditions spelled out in the ORDER below.

I. HISTORY OF THE PROCEEDINGS

The Company filed an Occasional Supplement on March 28, 1980, under Council Rule 65.3. In the Occasional Supplement, the Company described its construction proposal, and asked for Council approval. The Council, after requiring notification by publication, posting, and direct mailing to abutters, held

a local informational hearing at the Brewster Community Center on June 11, 1980. This hearing was well attended. The Hearing Officer explained that citizens had a right to petition for intervenor or participating person status for the adjudicatory hearing to be held in Boston.

Fifty-two persons, many of them abutters to the existing ROW, signed a single "Petition to Intervene", which had been drawn up and was filed on August 12, 1980 by Robert A. Bartlett, Esq. of Plymouth. An order allowing the intervention was issued on September 3, 1980.

After some discovery by the parties and the Staff had taken place, an unexpected event occurred which caused some delay in the proceedings. Attorney Bartlett withdrew, and an appearance on behalf of the Intervenors was filed by Kane and Bahouth, of Boston.

The Company filed a motion on January 7, 1981 to "sever the issue of the manner of long-term maintenance of a section of right-of-way from ... the other issues in this proceeding". This motion, which raised several complicated legal issues, was pressed vigorously by the Company, and opposed just as vigorously by the Intervenors. In a ruling issued January 15, 1981, the Hearing Officer severed the issue of the scope of Council jurisdiction over long-term maintenance of transmission line rights-of-way from the hearing in this proceeding. However, the Hearing Officer ruled that relevant evidence on costs and environmental impacts of the Company's proposed

line, including vegetation maintenance plans, would be admissible. This was not the end of this jurisdictional dispute. The Intervenors' motion to reconsider the January 15, 1981 ruling was denied on January 16, 1981; the Company's motions to limit the scope of the proceedings and to reconsider the severance were denied during the hearings on January 21, 1981 and January 27, 1981, respectively.

II. COUNCIL JURISDICTION

The parties have held, and apparently still hold, very different views as to the nature and scope of Council jurisdiction over transmission line siting and maintenance. These differing views were pressed by the parties during discovery, in connection with the Company's "motion to sever", in motions to exclude evidence, and finally, in the closing arguments and briefs. The Company has contended that the Council's enabling statute and regulations permit it to review construction of new transmission lines, but not future maintenance of the rights-of-way. The Company suggests the ROW maintenance is a matter left to the general supervisory authority of the Department of Public Utilities, and that regulation of herbicides has been left to the Pesticides Board. The Intervenors, by contrast, assert that the manner of maintenance of a right-of-way in connection with a plan to construct a new transmission line is an inseparable part of such a plan, and therefore, that

the Council must consider maintenance alternatives and impacts in applying its responsibility to "provide a necessary energy supply for the commonwealth with a minimum impact on the environment at the lowest possible cost", G.L. c. 164 §69H. Intervenors also assert that the Council must examine environmental impacts of the Company's maintenance plan in order to carry out its constitutional and statutory mandate to make sure that all feasible measures have been taken to avoid damage to the environment.

The jurisdictional issues raised by the parties deserve some comment. The Council does not intend, however, to state exactly how jurisdiction over maintenance of rights-of-way and herbicide use in connection therewith is divided between itself, the DPU, the Pesticides Board, EPA, the Department of Environmental Quality Engineering, and others; such a task might be more appropriate, in the right context, for the Attorney General or a reviewing court. The Council is not aware of any Attorney General or court opinions which spell out the scope of Council jurisdiction in this area. The Council is, therefore, guided by the express language and purpose of its statute and regulations.

The Council looks at three factors - adequacy of supply, cost, and environmental impact - in reviewing new facility proposals. G.L. c. 164 §§69H, 69J. It also examines those proposals for consistency with current health, environmental protection, and resource use and development policies of the state of Massachusetts.

The Council's Administrative Bulletin 78-2, made part of its regulations by Rule 64.8(3), requires that a company, before it may construct a new transmission line, describe its planned maintenance practices and provide information concerning surface waters and water courses, aquifers, springs and major wells, wetlands, private on-lot wells, and forest type and vegetation to be cleared. Evidence has been introduced by both parties on proposed and alternative maintenance practices, and on Cape Cod hydrology and location of wells. It is appropriate, given the mandates cited in the previous paragraph and given the kind of information-gathering contemplated by Administrative Bulletin 80-2, that the Council review the Company's maintenance plan as part of the transmission line proposal and decide whether it is better than alternative maintenance plans.

In this proceeding, the Company is proposing to construct a new transmission line in an existing right-of-way which already contains a transmission line. The proposal contemplates that an additional swath - approximately 15 feet wide at the northerly edge of the ROW - be cleared to ensure that no trees can interfere with the new lines. It also contemplates that the existing transmission line be taken out of service and repaired once the new line is installed. Consequently, the entire ROW surrounding the new line - not just the new 15 foot swath - will be maintained in the future. Accordingly, the Council is

reviewing, and is issuing an ORDER on, maintenance of both the presently cleared portion and the new 15 foot swath as part of this proceeding. (The Council notes, however, that it would not have jurisdiction over maintenance of the already cleared portion if the Company were not proposing this new transmission line. The Council, in its analysis is considering those additional costs and impacts associated with the 15 foot portion of the ROW.)

III. COURSE OF THE HEARING

The hearing ran thirteen days between January 21, 1981 and March 3, 1981. Thirty exhibits were introduced by the Company, twelve by the Intervenors. In addition, a large number of technical papers, calculations and summaries were received as "source documents" but not made part of the record.

The Company pre-filed much of its testimony through its Occasional Supplement and responses to information requests. Witnesses for the Company, in order of appearance, were the following:

Dennis Henzel. System Planning Representative for the Company, and a Registered Professional Engineer.

Lewis F. Wells. Pesticide Program Supervisor for the Massachusetts Pesticides Board; holds a masters Degree in Entomology. (Mr. Wells appeared under subpoena; said subpoena was issued by the Hearing Officer at the Company's request.)

Donald E. Cummings. Supervisor of the Asplundh Tree Expert Company, which has maintained the Company's rights of way in Massachusetts for several years.

Karl H. Deubert. Professor at the University of Massachusetts Cranberry Experiment Station; holds the degree of Doctor of Agriculture from Martin Luther University, Halle, Germany.

Kathleen E. Thrun. Analytical chemist at Arthur D. Little, Inc.; received an A.B. degree from Northeastern University in chemistry and has taken graduate courses at Northeastern and at Boston University Medical School.

Philip A. Morrow. Company's Senior Environmental Engineer; holds a Masters degree from Tufts University in the environmental area of civil engineering.

Robert M. Devlin. Professor of plant physiology at the University of Massachusetts; holds a PH. D. in plant physiology from the University of Maryland.

The Intervenors did not present evidence on direct examination concerning need for the transmission line nor on alternative routes. This was done through cross-examination. Their witnesses testified on technical issues relating to maintenance of the line through the use of herbicides. Witnesses for the Intervenors, in order of appearance, were the following:

Herbert E. Whitlock. Private citizen who has been President of the Association for the Preservation of Cape Cod; holds a Ph. D. from New York University in physical chemistry.

Scott Horsley. Director of the laboratory for the Barnstable County Health Department; holds a Bachelor of Science degree in biology and chemistry from South Eastern Massachusetts University, and is about to obtain a Master of Arts degree in marine affairs from the University of Rhode Island.

Andrew Canada. Assistant Professor of Pharmacology at the University of Massach etts; holds a Doctorate in Pharmacy from the Philadelphia College of Pharmacy and Science.

Walter Mulica. Employed as a senior hydrologist at the consulting firm IEP, Incorporated; holds a Master of Science degree in geology from the University of Wisconsin.

IV. ANALYSIS

Summary of Proposed Line

The Company proposes to construct a 115 kV transmission line on Cape Cod, between Dennis and Orleans, with an immediate in-service date (hereafter Proposed Line). The line would be constructed north of an existing 115 kV structure (hereafter Existing Line) within an existing 150-foot wide right-of-way. The proposal requires widening the cleared

portion of the existing ROW by about 15 feet. The Existing Line would then be repaired and would serve as a backup to the Proposed Line. If, in addition to the Proposed Line, a planned new line is constructed between Harwich and Orleans (hereafter Future Loop) the Existing Line would be removed (EX. NB-2, p. 7). The Proposed Line would extend from the Company's existing Dennis Tap in a generally easterly direction through the towns of Dennis and Brewster to the existing substation to Orleans.

Single wood poles will be used as primary support structures for the circuits; steel poles will be used at high stress points along the ROW where the line changes direction or encounters a long span. Each pole will support three phases from davit arms in a vertical configuration. Pole heights will vary from 80-100 feet above ground and structures will be spaced approximately 500 feet apart (EX. NB-3, Q/A 11). The section of line from Brewster to Orleans (4.8 miles) will be underbuilt with a 23 kV line. The remaining portion of line will be constructed with the capability of being underbuilt with a 23 kV line at a later date. The estimated cost of the project is approximately $2,185,000 (EX. NB-29, February 29, 1981).

The primary environmental impact of concern in this proceeding is the use of herbicides in maintaining ROW vegetation, in particular, the potential for contamination of groundwater and private wells. These impacts are discussed below in detail.

The Staff also considered the visual impacts of the new poles, which will be some 20 feet taller than the existing poles. The Company analyzed the visual impacts of the poles at the request of the Staff. The Staff's assessment of this analysis indicates that the higher poles would not be significantly more visible than the existing poles (EX. I-1, pp. 6-7).

Since the Proposed Line will be sited in an existing ROW, other environmental impacts associated with transmission line siting were reviewed and found not to be significant.

The analysis of the Company's proposal which follows will discuss the need for the Proposed Line, including an evaluation of alternatives. An analysis of the environmental impacts of the Proposed Line, in particular the Intervenors' concern with well contamination, will follow.

Need for the Proposed Line

The Company presents three arguments to support the need for the Proposed Line. Two of these arguments are related to the reliability of service to Lower Cape Cod[1] customers. One is the deteriorated condition of the Existing Line; the other is the lack of adequate back-up transmission capacity. The third concern is the costs of line losses. Each of these arguments will be analyzed below.

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1 The Lower Cape refers to the towns of Chatham, Brewster, Orleans, Eastham, Wellfleet, Truro, and Provincetown.

First, the Company has stated that the Proposed Line will increase the reliability of service to the Company's customers on Cape Cod. At present, if the 115 kV line fails or is taken out of service, an outage would result since there is no redundant transmission capability to serve customers on the Lower Cape. In the past, back-up to the Existing Line has been through a 23 kV distribution system between Harwich and Orleans; loads now exceed the capacity of this distribution system to back-up the Existing Line (EX. NB-6). At present this is the only transmission line in all of the Company's franchise area that cannot be taken out of service, at any time, without causing customer outages (Tr. Vol. I, p. 146).

The Company had planned to address this reliability problem by constructing a new 115 kV line in a new ROW from Harwich to Orleans (the Future Loop Line).[2] Originally scheduled for service in 1979-80, construction is now delayed until 1987 at the earliest because of unforseen difficulties encountered in securing title (EX. NB-2, p. 5). The Future Loop Line will increase the reliability of service to the Lower Cape; however, the delay in its construction has contributed to the Company's present need for the Proposed Line (Tr. Vol. I, p. 115).

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[2] The Future Loop Line is being pursued by the Company because it would not only back-up the Existing Line but would also provide redundancy to another existing 115 kV line between the Dennis Tap and Harwich. The Companies have stated that because of the delay in obtaining the right-of-way for the Future Loop Line, the Proposed Line will provide reliability in the short-term. Should the Loop Line be cancelled, then the Proposed Line is needed for long-term reliability.

The Council has evaluated the above reliability arguments presented by the Company. The Company's minimum demand was 13.7 MVA at the Orleans substation in 1980 (EX. NB-1, p. 5). The 23 kV distribution system has summer emergency short-term (12 hour) and long-term ratings of 15.3 and 13.3 MVA, respectively. Since even the short-term rating is now exceeded at minimum demand, if the existing 115 kV line were out of service, it would be necessary to shed individual customers to avoid an outage. The two largest customers are a nursing home and an elderly housing project (EX. NB-3, Q/A 6) and could not easily be shed. Moreover, there are no interruptible customers on this line who could be curtailed (Tr. Vol. IV, p. 122), so rolling blackouts and overloads are imminent. With the Proposed Line in service and the Existing Line repaired, the potential for loss of service on the Lower Cape would be mitigated.[3]

The Council agrees with the Company that its inability to deal with such a single contingency is an unacceptable risk for the Lower Cape and indicates a lack of system reliability. The Council finds that construction of the Proposed Line would significantly reduce that risk and improve system reliability.

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3 The Council would encourage the Company to develop a formal contingency plan to deal with an unplanned outage due to failure of the Existing Line, particularly if the Proposed Line is not in-service by this summer, when loads exceeding the 23 kV line's capacity will occur (See EX. NB-6, Q/A 3).

The second argument presented by the Company concerns impacts on reliability caused by the present age and condition of the Existing Line. The line is old and in need of repairs; extensive evidence on the condition of the line was presented to the Council (EX. NB-3, Q/A 1; EX. NB-1, pp. 2-4). At a minimum, the repairs would require a planned outage of several hours' duration in order to replace two damaged insulator strings (EX. NB-3, Q/A 2). Further, all damaged insulators should be repaired, some hardware and some poles should be replaced.[4] Even with repairs, the Company is concerned with the Existing Line's structural integrity to withstand high winds or winter ice storms.

The recent outage history of the Existing Line demonstrates that none of the outages can be attributed to problems with the condition of the line, except for a planned outage in 1976 to repair damaged insulators (EX. NB-1, p. 4). However, two insulator strings are known to have 50% or more of the insulators damaged; due to safety risks to maintenance crews, these insulator strings cannot be repaired without a planned outage (EX. NB-2, p. 5). Again, because of the lack of a back-up to the Existing Line and the need to take the line out of service to repair insulator strings, the

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4 There would be fewer pieces of hardware and poles replaced if the Existing Line were used as a back-up feed to the Lower Cape, whereas if it is the only feed, which it is now, then approximately 50 percent of the structures need replacing (Tr. Vol. I, p. 127).

Council agrees that the need for repairs contributes to the need for the Proposed Line.

Finally, the Company bases the need for the Proposed Line on reduced line losses and line maintenance costs. The Company testified that the Proposed Line, with new 795 kcmil ACSR conductors, would have saved line losses of 1,011,816 kwh in 1980 alone (EX. NB-3, Q/A 4). This translates to $50,591 at 4¢/kwh, an estimated average cost of electricity generated at Canal Station. In addition, a new line will be less expensive to operate and maintain than the Existing Line. Since the Company's reliability argument hinges on the repair of the Existing Line, some of these maintenance costs will be incurred with or without the Proposed Line, but future operation and maintenance costs will be minimized if the Proposed Line is built.

Alternatives to the Proposed Line were explored by Council Staff through technical sessions and discovery. An alternative site, specifically the Future Loop Line, is not a timely alternative to the Proposed Line (See p. 11, infra.). A temporary line would cost more than the Proposed Line (EX. NB-1, p. 14). Other alternatives explored were ones that would permit repair of the Existing Line, so as to provide some measure of reliability in the short-term.

One alternative would be to place a temporary generator in Orleans to allow repair and/or replacement of the Existing Line without necessitating an outage. This alternative is not practical because the required logistics, labor,

permitting, and rental and/or purchase costs are prohibitive. Further, the fuel costs alone for an appropriate size diesel generator are excessive (EX. NB-3, Q/A 8).

The Staff also considered the alternative of scheduling curtailments for large customers so that the 23 kV line could serve as temporary back-up while the Existing Line was out of service and was reparied. This alternative was found to be impractical because the Company has no interruptible customers nor large customers amenable to an outage (See p. 12, infra.).

None of these alternatives, even if the practical aspects of their implementation were resolved, address the most compelling aspect of the Company's arguments for the need for the line: that service to the Lower Cape is presently unreliable due to the lack of adequate back-up transmission capability. The Company's transmission system is designed to continue to supply load even with the loss of a single major component, such as the Existing Line. This first contingency loss criterion is not uncommon to the industry nor is it unfamiliar to the Council (See 3 DOMSC 98, In the Matter of the Middleboro Electric Light Department and 3 DOMSC 1, In the Matter of the Holyoke Electric Department). The Council finds that such a reliability criterion represents prudent planning and agrees that the Proposed Line is the best way the Company can assure a reliable supply of electricity to its Cape Cod customers.

Environmental Impacts

The Company's plans for maintenance of the Proposed Line's ROW were of concern to Intervenors in this proceeding. Their specific concern is groundwater contamination related to the use of herbicides (Tr. Vol. II, p. 90).

The Company's proposed transmission ROW vegetation management program begins with initial construction, when selected growth is cleared by hand cutting and machine chipping (See EX. NB-1, pp. 8-12). The ROW is then maintained by employing selective chemical treatment to those plant species which will exceed five feet in height.

Growth of vegetation within cleared transmission line corridors is constrained to allow for access to poles and lines by vehicles and to eliminate danger to the lines. The Company proposes to apply herbicides, through its contractor, the Asplundh Tree Expert Company, as a cost-effective solution to prevent reestablishment of the tall growing species of vegetation. The species which will interfere with the line are easily identified and are the only ones that will be treated with herbicides (EX. I-2, Q/A 37). Asplundh employees

spray trees that may be as large as 5 feet tall and sprouts of certain species as small as 6 inches (Tr. Vol. VIII, pp. 108 and 110). The Company will use selective clearing and feathering techniques on the ROW to leave as much natural vegetation as line clearance requirements will allow.

The herbicide Tordon 101 is applied selectively to individual trees on a regular basis, approximately every three years. The Company contends that such selective vegetation management (EX. NB-10) reveals and encourages the growth of low shrubs and grasses under the lines and taller shrubs and low growing trees along the edges of the ROW. The Company does not apply herbicides within 50 feet of any known private or public wells and the only work within 100 feet of wetlands consists of topping off trees which might pose a danger (EX. I-2, Q/A 14). The tree warden in each town is notified prior to herbicide application. The Company estimates that selective spraying would cost approximately $85/acre on Cape Cod. (Tr. Vol. III, p. 151).

The Company estimates that an alternative technique of hand cutting would cost five to ten times as much per acre as selective spraying (EX. NB-1, p. 12 and Tr. Vol. VIII, p. 150); further, hand cutting must be done more frequently to control fast growing sprouts, involves disruption of established plants by machinery, and can be hazardous to the persons operating the machines.

The Intervenors' concern with this proposed maintenance plan is that the herbicides,[5] particularly 2,4-D, will reach the groundwater and private wells located in or near the ROW, and that 2,4-D and its metabolites pose a human health hazard. Both the Intervenors and the Company presented evidence to Council Staff on the likely movement and degradation of 2,4-D, on the hydrogeology of the Cape, and, to a limited degree, on the chronic toxicity effects of 2,4-D. The analysis below briefly summarizes the evidence presented by the Intervenors and the Company, and traces the contended behavior of the herbicide in the ROW environment, beginning with application, through movement and degradation, to groundwater contamination and human health effects.

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5 Tordon 101 contains two synthetic organic chemicals (besides inert additives which reduce spray drift): 2,4-D (40%) and picloram (10%) (EX. NB-27).

The selective application method used by Asplundh Tree Expert Company on the existing right-of-way is illustrated in Exhibit NB-10. The application is short and produces a very fine spray, which is made heavy through an inert additive. The quantity of spraying solution applied to one tree depends on many factors, including the care of application, the pressure of the spray gun, the size of the spray gun nozzle, and the size of the target tree. The quantity testified to by Don Cummings, an employee of Asplundh, and Dr. Karl Deubert, (Tr. Vol. VII, p. 102; Tr. Vol. VII, p. 18) is approximately 240 milliliters per tree or sprout on the average. Tordon 101 is diluted with 99 parts water to one part concentrate before application. Approximately one and one-half gallons of Tordon 101 per acre is applied (EX. NB-1, p. 11).

The Company's expert witnesses testified that most of the spraying solution applied to a tree is absorbed into the plant. Some of the spraying solution drips off onto the ground and some will "drift" to a non-target area either during application or after the process of vaporization off the tree. Both the additives in Tordon 101 and the selective spraying method illustrated in Exhibit NB-10 help to limit drift; in addition, the chemical photodecomposes. The percent of applied spraying solution that drips off a tree onto the ground is up to 5 percent, according to testimony by Don Cummings (Tr. Vol. VIII, p. 137). Dr. Karl Deubert testified that as much as four percent on the average

(with possibly one percent more if a small tree, or a tree with little leaf surface to absorb the solution, is sprayed) may miss the target (Tr. Vol. VIII, p. 16).

The leaching of the herbicide into the ground depends on several circumstances, primarily the timing and quantity of rainfall. Asplundh Tree Expert Company plans to spray in the summertime and to avoid spraying on days when rain is expected. The chemicals stay on the ground until there is enough precipitation to dissolve them, and leach them into the ground. The testimony indicates that, on Cape Cod, approximately 43 inches of rainfall occurs each year with 16 inches available for groundwater recharge; the rest is evapo-transpired (EX. I-10, picture #35). Groundwater recharge, however, does not occur in the summertime (Tr. Vol. IV, p. 60).

Extensive testimony was presented on the nature of soils and groundwater on Cape Cod by Intervenor witnesses Whitlock, Horsley, and Mulica and Company witnesses Deubert and Morrow. The Intervenors contend that Cape Cod soils are low in organics, the presence of which are necessary to the degradation of 2,4-D. Generally, there is a layer of soil which varies in thickness, up to five feet, that is part of a zone of aeration that extends to the water table (Tr. Vol. V, p. 142).

The land surface changes irregularly on the existing ROW from areas of humus with grass to areas of bare gravel-sand, with trees and shrubs present throughout. Also peat and clay layers preventing downward movement of rainfall are distributed irregularly in both the topsoil layer and in the rest of the zone of aeration. Although the existing ROW is characterized by sandy soils, the topsoil layer does contain 1-4% organic material (Tr. Vol. V, p. 104). It should be noted that in order for the chemicals to be leached down to the water table, they would have to be carried through the topsoil and entire zone of aeration to the water table by rainfall.

Evidence was presented on the breakdown of 2,4-D by both parties. The variables which affect the breakdown of 2,4-D include factors such as time, temperature, humidity, sunlight, the medium (air, trees, soil, water), and the presence of organics and bacteria. The half-life of the compound (a measure of the time required for one-half of the substance to be degraded, detoxified, or lost) is determined by these variables. The Intervenors contend that due to the ROW environment, the herbicides will not be degraded nor detoxified before reaching the water table, and will be ingested by private well users, leading to adverse health effects. The Company contends that the herbicides will not reach the water table, and therefore, will not reach wells.

Evidence presented in this case shows that neither 2,4-D nor its metabolites have been subjected to rigorous evaluation regarding toxicity and health effects. Dr. Canada, the primary witness on toxicity of 2,4-D, testified that he had been involved in four to six consultations regarding multiple pesticides exposure. The effects of 2,4-D have not been isolated through these consultations. Acute exposures to 2,4-D are not an issue in this proceeding, because the concentrations to be applied are too low (Tr. Vol. 2, p. 133). When questioned on cross-examination about specific concentrations at which 2,4-D poses specific human health effects, Dr. Canada said "... that data does not exist." (Tr. Vol. V, p. 39). The EPA is commencing an effort to gather such data; it is requiring manufacturers of 2,4-D to conduct studies of chronic toxicity, the results of which are unlikely to be available for several years (Tr. Vol. V, p. 54).[6]

Analysis and Conclusions

The evaluation by the Council of the above summarized evidence on the behavior of 2,4-D on this ROW considered the method of herbicide use proposed along with the many factors

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6 There has recently been publicity regarding the use of 2,4-D for utility right-of-way maintenance. Several state agencies (Pesticides Board, Department of Public Health, and the Department of Environmental Quality Engineering) are meeting to discuss and formulate recommendations regarding the use of 2,4-D. The Council expects the Company to note any recommendations issued by these groups and to report to the Council any resulting changes in its proposed maintenance plan.

which affect the translocation of the herbicide to the water table. The Council finds that, given the quantity and concentration of herbicides the Company plans to apply, the safety practices it plans to follow, and the degradation characteristics of the chemical, it is highly unlikely that the herbicide will reach any private wells. It is the cumulative effect of the above factors that convinces the Council that the herbicide will be degraded prior to ingestion by private well users. Even in the unlikely event that some herbicide reaches private wells, the lack of data on adverse health effects of 2,4-D, and the fact that 2,4-D has been widely used in the United States for a long period of time, indicate that, in the concentrations proposed for use here, a risk is not posed sufficient to justify banning its use.

The Council finds that the amounts of the chemical reaching the ground will be adsorped by the organics present in ROW topsoil.[7] Even if the amount of herbicide reaching the ground were greater than the range of 2-5% and densely concentrated (See p. 19, infra.). the organics in the topsoil could retain all of the Tordon 101. The half-life of the chemical, under ROW conditions, is likely to be 9 days (Tr. Vol. X, p. 22); the chemical would fully degrade in 1 to 2 months (Tr. Vol. XI, p. 39). Further,

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7 The testimony of Dr. Karl Deubert, for the Company, presents a model of the likely adsorption of 2,4-D by Cape Cod topsoil, using conservative assumptions about the amount of the chemical reaching the ground and the presence of organics. (See Tr. Vol. VIII, pp. 12 to 13, for a full explication of this model.)

since groundwater recharge does not occur in the summer, even if the application of Tordon 101 were immediately followed by heavy rainfall, the chemical would be bound up in the topsoil.

Other "safety factors" built into the Company's plan further reinforce the above findings. Particularly, the Company has testified that it gives a 50 foot berth to all known wells when spraying; the Council applauds this additional safety factor and expects the Company to continue this practice. As the ORDER below sets out, the Company must provide the Intervenors and other interested persons the opportunity to identify the location of wells within the ROW or within 50 feet of planned spraying.

V. FINDINGS OF FACT

The Council, in support of its ORDER, below, makes the following findings of fact:

1. The proposed new 115 kV transmission line is needed to ensure a reliable supply of electricity to the Company's customers on Cape Cod. At present, there is no "back-up" to this line in the event of an unforseen outage; system reliability will be improved by constructing this line and repairing the existing line.

2. The route selected by the Company is the best alternative. Utilizing an existing right-of-way obviates the need to acquire easements, minimizes additional clearing to be done, thus keeping to a minimum aesthetic and environ-

mental impacts.

3. Maintenance of this ROW through the use of Tordon 101 in accordance with the Company plan will be less costly and more effective than any alternative maintenance plan suggested.

4. In accordance with G.L. c. 30 §61, the Council finds that the environmental impacts associated with the Company's plan, in particular with the selective application of Tordon 101 for vegetation maintenance, are minimal, and that the Company's plan, subject to conditions in the ORDER below, incorporates all measures reasonably necessary and feasible to minimize environmental impacts.

VI. ORDER

It is hereby ORDERED:

1. That the Company may proceed forthwith to commence installation of its new transmission line as proposed.
2. That the Company should continue to investigate the possibility of acquiring a right-of-way for a future Loop Line, and should report to the Council on its progress in its next annual filing.
3. That the Company may maintain the ROW in accordance with its plan as stated in these proceedings, EXCEPT THAT

a. The Company shall not spray herbicides within 50 feet of any known wetlands, public water supplies, private wells and surface water, whether they are in the ROW or not.

b. The Company shall meet with the Intervenors and abutters in a convenient public place before undertaking any spraying of herbicides, in order to identify private wells and other resources near which spraying should be avoided. Notice of such meeting and of the date spraying is proposed to be commenced shall be by publication once a week for two weeks in two newspapers of general circulation in the Dennis - Brewster - Orleans area, and by posting in the three town halls, said notice to be posted at least two weeks in advance of the meeting and remain in place until after the meeting. Further, notice by mail shall be provided, at a minimum, to the persons listed in the accompanying "List of Persons to Be Notified by Mail", to all abutters, and to all local and regional boards.

by Robert T. Smart Jr.

Robert T. Smart Jr., Esq.
EFSC Hearing Officer

This decision was unanimously approved by those members present and voting at the Energy Facilities Siting Council meeting of April 3, 1981.

Joseph S. Fitzpatrick
Chairman

List* of Persons to Be Notified By Mail

Frank E. Hanauer
124 Parker Avenue
Newton Highlands, MA 02161

Rosamond Gage
Run Hill Road
Brewster, MA 02631

William Barbour
1053 Long Pond Road
Brewster, MA 02631

Gregory P. Kelly
RR2 Cranberry Lane
Brewster, MA 02631

Edmund H. Ritchie
RR #2
44 Mayflower Circle
Brewster, MA 02631

Richard Lazarus
61 Dicks Way
Brewster, MA 02631

Roland M. Mayo
13 Longview Drive
Orleans, MA 02653

Marilyn Thibodeau
589 Airline Road
Brewster, MA 02631

Anita G. Stanley
618 Setucket Road
South Dennis, MA 02660

Lawrence Burns
87 Sturbridge Way
Brewster, MA 02631

Carolyn Constant
6 Cottage Lane
West Brewster, MA

Edwin L. Lyon
20 Greenview Drive
Box 1152
East Dennis, MA 02641

Michael Folcik
33 Sturbridge Way
Brewster, MA 02631

Mr. & Mrs. P. Boken
R-2 5 Longview Drive
Orleans, MA 02653

Martha R. Stevens
6 Longview Drive
Orleans, MA 02653

Judge John Crane
17 North Road
Nutley, New Jersey

Susan and Matthew Speight
Leland Road
Brewster, MA 02631

Jed and Paula Vallie
36 Mill Pond Road
Brewster, MA 02631

Barry and Nancy Souder
Run Hill Road
Brewster, MA 02631

Donald Stoddard
35 Cranberry Lane
Brewster, MA 02631

M/M Coakley
385 Red Top Road RD#1
Brewster, MA 02631

*This list was created after review of questionnaires submitted as Exhibits I-11 and I-12, and review of letters received from private citizens by the Hearing Officer. These individuals identified wells or water bodies close to or within the ROW, and in two instances specified the presence of bee-keeping and organic gardening businesses close to the ROW.

COMMONWEALTH OF MASSACHUSETTS
Energy Facilities Siting Council

Petition of the City of Westfield Gas And Electric Light Department for Approval of the Fourth Annual Supplement to its Long Range Gas Forecast 5 DOMSC (22 December, 1980)	)	EFSC No. 80-26

Tentative Decision and Order

The Energy Facilities Siting Council, for the reasons stated below, hereby APPROVES Westfield Gas & Electric Light Department's (Department) fourth Annual Supplement to its first Gas Company Long-Range Forecast subject to certain conditions contained in the Council's ORDER at the end of this decision.

It was recommended that no adjudicatory hearing need be held in this matter unless so requested by the Department or by an interested party as the Supplement contained no proposal for a new facility within Council jurisdiction. The Department was so advised and was asked to publish in local newspapers a notice of tentative approval and notice of the right to a public hearing if requested.

ANALYSIS

The Council finds that the conditions of approval set out in its 1979 Decision have been sufficiently met by the information supplied in the Department's Supplement, its reply to the EFSC Staff Information Request of October 27, 1980, and telephone conversations between the Department and the EFSC Staff. In last year's Decision, the Council expressed concern about the lack of any documentation (as required by EFSC Rule 66.5) in the Department's 1979 Supplement. The present Supplement is more throughly documented, but still needs

improvement. While the Council is aware that Westfield is a small company with limited resources and personnel available for preparation of a forecast, it nonetheless encourages the Department to continue to improve its documentation in future filings. For the next filing, the Council asks that the Department address a particular concerns.

The first concern is the Department did not complete its re-evaluation of its method for deriving the number of degree days in a design season, as required by Condition 3 of last year's Decision. While the Department has yet to complete its re-evaluation, it reports that it is presently conducting research to determine the most widely accepted method for estimating design degree days. The Council considers this research to be a good faith effort to meet condition 3 and thus accepts this effort for the time being as satisfaction of that condition. Given the Council's marked interest in this issue, it is essential that the Department now take the necessary time to complete its re-evaluation and to incorporate any consequent changes in its next filing. The Council reminds the Department that EFSC Staff is available to answer the Department's questions on this point and to assist Department personnel as best they can.

The Council's second concern goes to the Department's future supply situation. Although currently contracted - for volumes of gas from Tennessee and Bay State Gas Company appear sufficient to meet the Department's forecasted normal loads through October 31, 1983, the Department has not yet obtained the resources necessary to meet the normal firm load for the remaining 3 seasons of the forecast period (November 1, 1983 through March 31, 1985). The Department is presently

negotiating an increase in its contractual allotment for 1983-85 from one of its suppliers, Bay State Gas Company, similiar to a 1980-81 increase. The Department also looks forward to increasing its allotment from its other supplier, Tennessee, but gives no basis for its assumption that such an increase will, in fact, be available. Thus, although procurement of the anticipated increases would insure supplies which are adequate to meet projected normal firm load, at this time it is still uncertain whether these additional amounts will be obtainable. The Council can therefore, APPROVE the Department's supply forecast only through October 31, 1983 given the uncertainty of its supply beyond that point.

It should be noted that existing gas supply contracts are sufficient to serve existing customer requirements. It is the increased requirements caused by new loads forecasted by the Department which lead to the uncertainty of supply adequacy in the later years of the forecast period. Should the Department choose to add the forecasted new loads, there is a critical need for the Department to discuss its contigency plans in the event that firm additional volumes from Tennessee and Bay State Gas Company are not available.

In light of the ongoing re-evaluation of the design degree day standard the Council can not judge whether forecasted supplies are adequate to meet design weather requirements, and will reserve such judgement until the next filing when a more reliable methodology should be in use. However the Council notes that if the supply situation is uncertain for firm load under normal weather conditions, as has been shown above, it follows that the supply situation will be even more precarious under design weather conditions.

Finally, the Council recognizes a definitive need to incorporate

conservation and the effects thereof in any forecast of requirements. Conservation by gas consumers may be a significant "source" of gas for a company and for this reason the Department is urged to consider what effect, if any, conservation may have on its future load requirements. The Council notes that the Department has projected base use and heating use per customer to remain constant at the 1979-80 levels throughout the forecast period. These would be appropriate areas in which to incorporate the impacts of conservation measures. Factors to consider in the evaluation of customer conservation should include, but not be limited to, behavioral methods of conservation (e.g. reducing thermostat settings) and conservation methods requiring capital expenditures (e.g. efficient water heaters, furnaces and stoves, and insulation) as well as whether the use of these methods can be expected to increase or decrease over the forecast period. The Council would also ask the Department to document the bases for any of its judgements, assumptions, and conclusions which it may draw in regard to conservation and its effects.

In general, the Department is encouraged to continue to refine its projection methodology in all the customer classes so that past trends and future expectations in each customer class might be accounted for in projected customer use factors, rather than simply projecting a constant level of use equal to 1979-80 levels. This is not to disparage the Department's efforts to date; on the contrary, the Department's disaggregation of customer use factors by class and by weather and non-weather sensitive loads is admirable for a department of its size. Rather the Council wants to express encouragement to the Department to continue in its efforts in this direction.

ORDER

Given the foregoing considerations and comments, it is now ORDERED that the fourth Annual Gas Company Supplement submitted by Westfield Gas & Electric Light Department be APPROVED subject to the following conditions:

1. That the Department complete the re-evaluation of its method for deriving design degree days and incorporate the result of its re-evaluation in its next filing, making all appropriate changes over the forecast period.
2. That the Department discuss and document, in its next filing, its supply availability situation from November 1, 1983 through the end of the forecast period. In particular, the Department should document its contention that additional supplies will be available from Tennessee to meet projected requirements. In addition, the Department should report how its requirements would be met if the increase from Tennessee is not forthcoming.
3. That the Department, in its next filing, address the impacts of conservation in more detail, including, but not limited to, consideration of factors tending to influence conservation, how these factors are likely to affect the forecast of sendout requirements, and the bases for any judgements made and any conclusions drawn.
4. That in its next filing the Department supply the following data with respect to customer requests for conversion to gas heating:
   a) Does the Department evaluate the thermal integrity of the house before converting the customer's heating system? If so, how; if not, why not?

b) Does the Department have or recommend any insulation standards? If so, what are the standards; if not, why not?

c) Provide and document an estimate of what percentage of customers installing new gas heating units (new housing, conversions or replacements) install high efficiency burners as opposed to average efficiency burners.

Energy Facilities Siting Council

by Barbara Robinson

Barbara Robinson
Hearing Officer

Dated at Boston this 23rd day of December, 1980.

COMMONWEALTH OF MASSACHUSETTS
Energy Facilities Siting Council

Petition of the Blackstone Gas Company for Approval of the Fourth Annual Supplement to its Longe Range Gas Forecast 5 DOMSC (5 January, 1981)	)	EFSC No, 80-42

Decision and Order

The Energy Facilities Siting Council, hereby APPROVES Blackstone Gas Company's (hereafter "Blackstone" or the Company") fourth Annual Supplement to its first Gas Company Long-Range Forecast subject to certain conditions contained in the Council's ORDER at the end of this decision.

As in past years, it was suggested that no adjudicatory hearing need be held on the matter unless so required by the Company or by a party in interest as the Supplement contains no proposal for any new facilities within Council jurisdiction. The Company was so advised and was asked to publish in a local newspaper a notice of tentative approval and of the right to a public hearing if requested.

Analysis

The Council has completed its review of the Company's 1980 Supplement and finds as in previous years, that documentation was sparse and that peak load data was not supplied. Despite this limited initial presentation, the Council Staff was able to augment the Supplement through an Information

Request and subsequent telephone conversations. After reviewing the Supplement with the additional data gleaned by the Staff, the Council can see that the conditions attached to last year's Blackstone decision were met to the best of the Company's ability.

Therefore, in approving the 1980 Supplement, the Council notes that it does so with two reservations. The first of these concerns the lack of documentation. This is particularly significant due to the scant tabular filing requirements this Company must meet. While the Council has found Blackstone to be willing to supply information during verbal communications, a proper filing should already contain most of that data. Therefore, the Council urges the Company to carry this willingness over to its written documentation in future filings. For example, Company personnel maintain that 25 years of operating experience forms the basis for many of the judgements and assumptions underlying the figures in the filing. When telephoned and requested to elaborate on some elements of this experience, Company personnel were able to detail specific circumstances or occurrences which contributed to these judgements. This type of information allows the Council to understand and appreciate the Company's situation better. In future filings the Company's documentation verbally could be incorporated in writing in those filings. This simply requires the Company to substantiate its judgements detailing the specific experiences which led to its conclusions. The Council asks that the Company, in subsequent filings, submit a substantial and substantiated discussion of how its specific

knowledge of its service territory contributes to its conclusions regarding new load growth (additional customers) over the next 5 years as well as its confidence that it will be able to service these new customers.

The Company should also discuss the role of conservation in the service area, since conservation by gas consumers may be a significant "source" of gas for a company and, as such, have a direct bearing on the forecast of sendout requirements. Factors to consider here include, but are not limited to, behavioral methods of conservation (e.g. reducing thermostat settings) and conservation methods requiring capital expenditures (e.g. higher efficiency equipment, appliance and insulation) as well as whether customer use of these methods can be expected to increase or decrease. The Council again requests that the Company substantiate the reasons for its judgements and conclusions as to the effect of conservation in its service area.

The Council's second reservation concerns the lack of any consideration of peak load in the Supplement. Since gas companies are restricted by their supply contracts to maximum daily quantities of gas (MDQ), it is necessary to forecast what figures represent the maximum sendout requirements for a specific time period.[1] Since it appears that neither Blackstone nor Tenneco, its sole supplier, maintain any actual daily load

[1] An actual peak day load, as defined by the Council for forecasting purposes, is the maximum sendout occuring in a day over an historical period. This figure is then a factor used in forecasting future peak day loads for the forecast period.

information, the Council understands that the Company cannot supply peak load information in the manner usually required in gas supplements (Table G-5). Instead the Council asks that the Company submit a Tenneco Gas Statement Detail of Blackstone's daily estimated pipline "take" as determined by Tenneco for the 3 coldest months of the winter preceding the date of filing. This information will provide the Council with Tenneco's evaluation of Blackstone's maximum load requirements as well as give some indication of whether or not the MDQ is or may be exceeded. The Council believes that this data in lieu of peak load data, will be sufficient evidence of the adequacy of Blackstone's supply.

ORDER

Given the forgoing considerations and comments, it is now ORDERED that the fourth Annual Gas Company Supplement submitted by Blackstone Gas Company be APPROVED subject to the following conditions:

1. That the Company be exempt from filing peak day information on Table G-5.
2. That, along with supplying Tables G-5 and G-24 in subsequent filings, the Company improve its documentation by communicating clearly to the Council in writing in the filing its specific experiences which underlie any judgement or conclusions drawn and used in that filing.
3. That the Company include in future filings, a thorough discussion of conservation, including, but not limited to, consideration of various factors which might influence conservation, how these factors are likely to affect the forecast of sendout requirements, and the bases for

any conclusions drawn as to the effects of conservation.

4. That the Company submit, in each subsequent filing, its Tenneco Gas Statement Details for the months of December, January, and February which immediately precede the submission of the forecast or supplement. (e.g. next supplement, due July 1, 1981, will include the Gas Statement Details for December, 1980, January, February, 1981).

5. That, in its next filing, the Company describe the criteria it uses to define and plan for periods of extreme cold weather, i.e., periods longer than a day but shorter than a heating season. The Company should explain how it plans to meet sendout requirements during such a period of extreme weather during each of the forecast years, including a discussion of the underlying assumptions made about the availability and delivery of supplemental gas. Finally, the Company should discuss how its planning criteria performed in relation to actual 1980-81 winter weather.

Energy Facilities Siting Council

by Barbara Robinson

Barbara Robinson
Hearing Officer

Dated at Boston this 29th day of January, 1981.

Unanimously approved by Council members present and voting at Council meeting on January 20, 1981.

Joseph S. Fitzpatrick
Chairman

Petition of the Holyoke Gas & Electric Department for Approval of the Fourth Annual Supplement to its Long-Range Gas Forecast 5 DOMSC (December, 1980)	)	EFSC No. 80-23

Final Decision and Order

The Energy Facilities Siting Council, for the reasons stated below, hereby APPROVES Holyoke Gas and Electric Department's (hereafter Department) fourth Annual Supplement to its first Gas Company Long-range Forecast subject to certain conditions contained in the Council's ORDER at the end of this decision.

It was decided that no adjudicatory hearing need be held unless so requested by the Department or by a party in interest as the supplement proposes no new facility with in Council jurisdiction. The Department was so advised and was asked to publish in local newspapers a notice of tentative approval as well as notice of the right to a public hearing if requested.

Analysis

The Council concludes that the Department's fourth Annual Supplement adequately addresses the five conditions of approval set out in the 1979 decision. In this regard, the Department has substantially expanded and improved the documentation of its forecasting methodology resulting in a coherent and reviewable supplement. The Council compliments the Department's successful efforts in this area and anticipates that future efforts at improvement of the forecast will be as successful.

As to these efforts, there are 2 major areas of concern which the Council requests the Department to address in its next filing. The first of these relates to the Department's method of deriving the number of degree days expected to occur in a design season (design season degree day) and the number of degree days expected to occur in a design day (design day degree day). The purpose of the design standard in forecast methodology is to enable companies to plan to provide for the coldest conditions most likely to occur. In developing its design standard, the Department averages a series of colder than normal historical days rather than using the coldest historical period as its measure. More precisely, the Department derived design season degree day by averaging the sum of the degree days in seasons which were colder than normal over the past twenty-five years. The design day degree day was derived by taking a weighted average of the number of daily degree days above 60 for the past twenty-five years. These averaging techniques are lacking as planning tools as they do not appear to plan or account for the distinct possibility that conditions colder than the average will occur within the forecast period. Thus, the Council is concerned that the Department's present methodology may not promote adequate supply planning as its design standard fails to capture or account for a condition which historical data indicates may occur. Therefore, the Council requests the Department to explain and justify its use of such methodology in its next filing.

The Council's second concern is the Department's assumption that customer use factors (see tables G-1 and G-2) will remain constant at the 1979-80 levels throughout the forecast period. This seems to contradict the Department's statement that, in its opinion, customers

will continue to reduce their energy use due to increasing energy costs. Thus it appears that although the Department anticipates additional conservation, this conservation has not been accounted for in the forecast of customer use. Recognizing a critical need to incorporate conservation in any forecast of requirements, the Council would like to see this apparent contradiction clarified in the next filing.

The Council notes that conservation by gas consumers may be a significant "source" of gas for a company. In that regard it would be useful for the Department to study and address the whole issue of conservation in greater detail, as it bears directly on the forecast of sendout requirements. Factors to consider here should include, but not be limited to behavioral methods of conservation (e.g, reducing thermostat settings) and conservation methods requiring capital expenditures (e.g., higher efficiency equipment and appliances, home insulating) as well as whether the use of these methods can be expected to increase or decrease. The Council would also ask the Department to document the bases for any of its judgements, assumptions, and conclusions drawn in regard to conservation and its effects.

ORDER

Given the foregoing consideration and comments, it is now ORDERED that the fourth Annual Gas Company Supplement submitted by Holyoke Gas and Electric Department be APPROVED subject to the following conditions:

1. THAT, in its next filing the Department discuss the rationale for its methodology for deriving design season degree day and design day degree day standards.

2. THAT, in its next filing, the Department address the issue of conservation in more detail, including, but not limited to, consideration of various factors which might tend to influence conservation, how these factors are likely to affect the forecast of sendout requirements, and the bases for any conclusions drawn.

4. THAT, in its next filing, the Department discuss the following with respect to customer requests for conversion to gas heating:

   a) Does the Department evaluate the thermal integrity of the house before converting the customer's heating system? If so, how; if not, why not?

   b) Does the Department have or recommend any insulation standards? If so, what are the standards; if not; why not?

   c) Provide and document an estimate of what percent of customers installing new gas heating units (new housing, conversions or replacements) install high efficiency burners as opposed to average efficiency burners.

5. THAT, in its next filing, the Company describe the criteria it uses to define and plan for periods of extreme cold weather, i.e., periods longer than a day but shorter than a heating season. The Company should explain how it plans to meet sendout requirements during such a period of extreme weather during each of the forecast years, including a discussion of the underlying assumption made about the availability and delivery of supplemental gas. Finally, the Company should discuss how its planning criteria performed in relation to actual 1980-81 winter weather.

Holyoke

Energy Facilities Siting Council

by _____

Barbara Robinson
Hearing Officer

Dated at Boston this 29th day of January, 1981.

Unanimously approved by Council members present and voting at the Council meeting on January 20, 1981.

_____

Joseph S. Fitzpatrick
Chairman

COMMONWEALTH OF MASSACHUSETTS
Energy Facilities Siting Council

Petition of the Fall River Gas Company for Approval of the Fourth Annual Supplement to Its Long Range Gas Forecast	)	EFSC No. 80-20

Decision and Order

The Energy Facilities Siting Council hereby APPROVES Fall River Gas Company's (the Company) Fourth Annual Supplement to its First Long Range Gas Forecast subject to certain conditions contained in the Council's ORDER at the end of this decision.

Fall River filed the Fourth Supplement on September 30, 1980. A public adjudicatory hearing was held on March 26, 1981 at the Council offices, on the Supplement. Notice was published in the Herald News and the Standard-Times. The Department of the Attorney General petitioned to intervene and was granted intervention status. During the hearing the Company's witness was questioned by both the Attorney General and Council Staff. No facilities were proposed by the Company.

ANALYSIS

In response to the Conditions of the 1979 Decision, the Company filed a more reviewable forecast of requirements and resources in the Fourth Supplement. In particular, the mechanics (e.g. equations used) of deriving the forecast were described or illustrated clearly, and the projected factors used (e.g. use per customer) were reported. As discussed in more detail, below, the reviewability of this forecast, like last year's (See Condition 2, 1979 Decision),

falls short mainly because the bases for the projections have not been adequately addressed.

Customer Use Factors

Requirements for Residential Heat customers (Table G-1) were forecasted by assuming the customer use factors (i.e. base use per customer and heating use per customer per degree day) would remain constant at the historical 1979-80 levels. This means the Company has assumed that for the next five years each existing and new Residential Heating customer will continue to use gas at the rate at which it was used in 1979-80 in that class. In justification of projecting constant customer use factors, the Company testified that although these factors have shown a decline over the last five years, due to customer conservation measures, the Company feels that most of the conservation measures were taken between 1973 and 1979; and that the most recent two years have shown a leveling off of any additional conservation effects. More specifically, the Company testified that by 1980 the potential for temperature setbacks on water heating units had been exploited and that, although there still exists potential conservation effects from the use of more energy efficient appliances, these effects would not show up on a five year forecast due to the 20-30 year life of most major gas appliances. The Company has not provided any quantitative studies or analysis of its Residential customers to support these judgements. Because of the lack of such substantiation, the Council does not consider the Company's projection to be a reliable manner of incorporating conservation in its forecast.

Regarding the other customer classes, the Company forecasted sendout requirements by assuming the average use per customer

would remain constant at (Commercial - Table G-3A) or near (Residential without Heat - Table G-3B) the 1979-80 actual average use per customer level. Again the Council notes that an unsubstantiated judgement is not a reliable manner of incorporating conservation in a forecast.

Recognizing a critical need to incorporate conservation in any forecast of requirements, the Council directs the Company to attempt to get a better grasp on the potential effects of conservation in its service territory. The Council notes that conservation by gas consumers may be a significant "source" of gas for a company. In that regard it would be useful for the Company to study and address the whole issue of conservation in greater detail, as it bears directly on the forecast of sendout requirements. Factors to consider here should include, but not be limited to, behavioral methods of conservation (e.g., reducing thermostat settings) and conservation methods requiring capital expenditures (e.g., insulation, high efficiency equipment and appliances) as well as whether the use of these methods can be expected to increase or decrease. The Council would also ask the Comapny to document and quantify, wherever possible, the bases for its judgements, assumptions and conclusions drawn in regard to conservation and its effects.

Forecast of Normal Requirements

The Company prepares its forecast of normal requirements on a customer class level. The heating season and non-heating season loads in each year for each class are derived individually. This is accomplished by applying customer use factors for each class in each season to the number of customers expected in each class, and the expected degree days (DD) when appropriate. As

before, the customer use factors (i.e., base use per customer, heating use per customer per DD) are derived by assuming they remain constant at (Residential Heat, Commercial) or near (Residential without heat, Industrial) the 1979-80 actual use levels for each class. The Residential with Heat class is forecasted by differentiating between base use and weather sensitive use. The other classes had no such differentiation; the average use per customer was the factor used.

Besides the previously mentioned concern over the unsubstantiated projection of customer use factors, the Council's concern with this methodology is its utilization of an average use per customer projection to forecast Non-Residential Loads. The Company's methodology fails to differentiate between base and heating load and to account for a possible wide range of load sizes in the Industrial and Commercial classes that would not be adequately reflected in an average use per customer factor. This concern is in actuality mitigated by the fact that since the Company projects only very minor growth in those two classes over the forecast period, the use of an average load per customer is not as critical. The Council would advise the Company to re-evaluate this lack of differentiation if growth increases among Commercial and Industrial customers.

Forecast Design Requirements

The Company prepares its forecast of design requirements at the total Company level (Table G-5). It does this by assuming that design requirements will be 4% greater than normal requirements on a yearly basis. The yearly design require-

ments are then disaggregated into heating and non-heating season design requirements by allocating 65% to the heating season and 35% to the non-heating season. The Company's rationale for the 4% assumed increase from total Company yearly normal requirements to design requirements is in turn drawn from its assumptions about the effect of design weather conditions on its customer classes. That is, the Company assumes that the Residential with Heat class will account for 58% of the total Company load throughout the forecast period, and its design requirements will be 6% above normal on a yearly basis. The Company assumes the remaining classes, consisting of 42% of the total Company load, will have requirements 3% above normal during design weather conditions on a yearly basis. These assumptions mathematically translate into a 4% increase in total Company normal requirements for a design forecast at a yearly level.

The Council is concerned with the reviewability and appropriateness of this methodology for the following reasons. First, the reviewability is hindered by the fact that the Company offered no bases for the assumptions concerning the effect of design weather conditions on its customer classes, other than the rationale of "Company judgement". Although the Company defines a design non-heating season as 1500 DD and a design heating season as 5000 DD (Table G-DD) based on the coldest non-heating and heating season respectively in the past 10 years, it does not show how, if at all, these seasonal standards are reflected in its forecast of design requirements.

Second, the appropriateness of basing the design forecast on a yearly level rather than a seasonal level, given the Council's review of a comparison of seasonal requirements to resources is questionable. Rather than basing it on a yearly level and taking efforts to disaggregate into a seasonal level afterwards, it would seem more appropriate to start with a seasonal forecast.

Peak Day Forecast

The Company prepares its forecast of peak day requirements at the total Company level. Although the Company explained adequately its basis for the 1980-81 peak day load forecast, its forecast for the remaining 4 years is not reviewable. The basis for the peak day forecast for the last 4 years of the forecast period is described only as "company judgement". This is disturbing because, given the total Company level of forecasting rather than deriving the peak day load of each customer class separately, it is not cle how the Company accounts for shifting in customer loads (e.g., to a greater heating load proportion). The Company is directed to make a greater effort to quantify, substantiate, and document its judgments in future filings.

Further, The Company testified that its coldest day this past winter was 71.5 degree days; however, the Company defines its peak day at 70 degree days (Table G-DD). Given the actual occuranc of a day colder than the coldest day designed for, the Company is directed to review its choice of a peak day, and make appropriate changes in future forecasts.

New Customers

The Company testified that it is selective in taking on new customers, practically all of which are residential. The sufficiency of gas supply in the customer's area is ascertained before the request is approved by the Company. The Company testified that although it has a system in place where its large suppliers of heating systems will notify the the Company when putting in a new heating system, there are still many cases where the Company does not find out about the new load addition until after the installation is complete. The Company further testified that such unauthorized conversions are not yet a problem. The Company is encouraged to continue to improve its coordination strategy between gas equipment installers and inspectors and the Company and to report such improvements to the Council in subsequent forecasts.

LNG Supply

The Company illustrates on Table G-22 its expectation that the full volume of LNG contracted from Distrigas will be available in each of the next five years. The Company states that if Distrigas deliveries fall short of contract volumes, there will be adequate surplus LNG and propane which the Company could pick up on the open market. Given the Company's testimony that for the past two years it has received less than the full contract volume from Distrigas, it is likely that the more expensive open market purchases of LNG and propane will continue to be necessary. Because of this, the Council finds that the Company supply plan does not necessarily reflect the least cost strategy. Therefore, the Company is

directed to report in its next forecast, before the 1981-82 heating season, its efforts at developing alternatives, other than spot market purchases of LNG and propane, to Algerian LNG.

On the surface, the Company's forecast shows that the Company has adequate facility capability and supply contracts to meet its forecast loads over the next five years. Yet it must be noted that uncertainties exist, such as supplemental fuel availability, and customer requirements, which have been discussed in depth above. Despite serious concerns with Fall River's forecast, the Council has decided to issue an approval with conditions rather than an outright rejection. The reason for this decision is that the Company did make a good faith effort to, and in fact did, significantly improve upon last year's supplement. However, the Company is hereby put on notice that the Council expects substantial improvement in both the sendout methodology and supply planning, as outlined in this Decision, if the Company expects to avoid receiving a rejection next year.

ORDER

Given the foregoing consideration and comments, it is now ORDERED that the Fourth Annual Supplement submitted by Fall River Gas Company be APPROVED subject to the following conditions:

1. That, in its next filing, the Company document, and quantify, whereever possible, the bases for its judgements and conclusions drawn in regard

to conservation and its effects.

2. That, if significant growth occurs in Commercial and Industrial load, the Company re-evaluate its methodology of forecasting requirements in its next filing, particularly in regard to the utilization of an average use per customer factor as the principle determinant of requirements.

3. That, before the 1981-82 heating season, the Company re-evaluates its methodology of forecasting design season requirements, based on the concerns noted herein, and report to the Council as to any changes made.

4. That the Company review its definition of a peak day as 70 degree days and incorporate any changes in the next forecast.

5. That the Company document the Company judgements which are the bases for its forecast of peak day load.

6. That the Company report to the Council on its attempts to improve coordination strategy between gas equipment installers and inspectors and the Company, in order to lessen unauthorized conversions to gas.

7. That the Company report in its filing its efforts to develop alternatives, other than spot market purchases of LNG and propane, to

Algerian LNG.

8. That the company submit to the Council as part of the next filing which is due July 1 an analysis of the cost effectiveness of displacing insecure and expensive supplemental gas supplies during the heating season with conservation "supply" through the implementation of "zero interest loan programs", the submittal of which has been required by the Secretary of Energy Resources of the Commonwealth pursuant to letter dated April 24, 1981, and Chapter 465 of the Acts of 1980.

by Robert T. Smart Jr.

Robert T. Smart Jr., Esq.
EFSC Hearing Officer

This decision was unanimously approved by those members present and voting at the Energy Facilities Siting Council meeting of May 7, 1981.

Joseph S. Fitzpatrick
Chairman

COMMONWEALTH OF MASSACHUSETTS
Energy Facilities Siting Council

Petition of the Fitchburg Gas and Electric Light Company for Approval of the Fourth Annual Supplement to Its Long Range Gas Forecast	))))	EFSC No. 80-11A

DECISION and ORDER

The Energy Facilities Siting Council hereby APPROVES Fitchburg Gas and Electric Light Company's (the Company) Fourth Annual Supplement to its First Long Range Gas Forecase subject to certain conditions contained in the Council's ORDER at the end of this decision.

Fitchburg filed its Fourth Supplement on November 10, 1980. A public adjudicatory hearing on the Supplement was held on March 31, 1981 at the Council offices. Notice was published in the Fitchburg Centinnel, Gardner News and Boston Herald. The Department of the Attorney General petitioned to intervene and was granted intervention status. During the hearing the Company's witness was questioned by both the Attorney General and Council Staff.

The Company installed an LNG vaporization facility at its Westminster plant on Gardner Road (capacity 7.2 MMCF/day). The Company did not apply for Council approval before installing the facility, nor did it apply for Council exemption. The Council has therefore referred the matter to the Attorney General.

ANALYSIS

In response to the Order in the 1979 Decision, the Company filed in the present Supplement a more reviewable and complete forecast of requirements and resources. Certain necessary documentation in order for the forecast to be considered reviewable, such as base load and heating increment factors, and customer class breakdown percentages, was absent from the filing. The Company later provided this information when requested by Council Staff. In order for a forecast to be considered reviewable, assumptions, projections and methods must be sufficiently documented such that another person, given the same information, could duplicate the forecast. The Company is therefore directed to provide in subsequent filings all numerical factors which were used in deriving the forecast of seasonal sendout on Tables G-1 through G-5.

The Company's forecast of residential customer use factors (base, heating and average use per customer) shows these factors steadily increasing over the next five years (Tables G-1, G-2). As the Company has admitted in its testimony, the actual occurrence of such an increasing trend is unrealistic because of deregulation of gas, and increased conservation among customers. The Company testified that because of this, the methodology used to prepare the forecast is being reviewed. The Council finds that such unrealistic results drawn from the current forecast methodology do bring into serious question the reliability of the methodology. The Company is thereby directed to re-evaluate its forecast methodology, including its method of forecasting the number of customers in each class, load requirements for each

class and use per customer. The results of this re-evaluation should be described in the next filing and incorporated into the next forecast, before the 1981/82 heating season.

DESIGN STANDARD

The Council notes that the Company has defined a design year to have 10% more degree days than a normal year, all of which are allocated to the heating season. Because of the importance of defining reasonable and prudent design conditions the Company should state in its next filing the actual coldest non-heating and heating season in Fitchburg over the past 30 years and discuss how this compares to the Company's standard.

INTERRUPTIBLE LOAD

The Company sells a significant portion of its pipeline volumes from Tennessee in the non-heating seasons to industrial customers on an interruptible basis. The Company's primary interruptible market consists of two large papermills in Fitchburg. The Company testified that storage capacity and pipeline delivery during the heating season is not available for this gas and therefore the Company does not consider this gas to be available as a supply source for its firm customers. The Company further testified that because of the cost of energy and the market climate in Fitchburg, the industrial customers are hard pressed, and the Company is concerned about the potential loss of its interruptible market. To date the Company has no formal plans of how it will respond to this situation. Because of the potential cost impact of such a loss on existing customers the Council directs the Company

to report on its plans to deal with this potential event in its next forecast.

BOUNDARY GAS PROJECT

The Company is a member of the Boundary Gas Project, and as such has contracted to receive 1 MMCF/day of Canadian natural gas, transported by Tennessee Gas Pipeline Company. The Company plans to put the volumes contracted for the non-heating season into underground storage, to be withdrawn for use in the following heating season. To accomplish this, the Company has entered into a storage agreement with National Fuel Gas for 250 MMCF of storage and a firm transportation agreement for these volumes with Tennessee Gas Pipeline Company. This additional gas supply would increase the Company's current maximum daily and annual volume of natural gas from Tennessee by approximately 33%[1] and 13% respectively, when delivered at contract volumes.

Table G-22 of the Supplement shows the relationship of this Boundary project to expected sendout requirements in the Company's planning. By the end of the forecast period, (November 1984) when the full contract volumes are expected to be available, gas from the Project is expected to account for approximately 21% of the normal load requirements for the heating season. These projections indicate that the Company plans to rely significantly on a new gas source, the existence of which is not yet certain. The Boundary Gas Project is subject to FERC approval, and is presently

1 Includes expectation of firm delivery of non-heating season volumes in the heating season.

still in the early stages of the adjudication process. Ultimate approval, and timing and availability of this supply source is, therefore, not presently guaranteed. This situation leads the Council to conclude that the Company's supply forecast is uncertain as it relates to the Boundary Gas Project. Therefore, in its next filing, the Company should address in detail the level of risk involved in relying on the Boundary Gas Project as a supply source, the level of confidence the Company has in its approval and delivery, and the Company's contingency plans should the project be delayed or disapproved. Furthermore, the Company is directed to detail how it will make up for the 90 MMCF and 2.5 MMCF the Company assumed would be available for the heating season and peak day respectively of 1981-82, the season in which the Company projected its first deliveries from the project, but later testified would not begin until the following non-heating season (March 1982).

UNCERTAINTY IN SUPPLY PLANS

The Company testified that it does not at the present time consider the unreliability of its agreement for best efforts delivery of underground storage gas from Consolidated Gas Corporation via Tennessee Gas Pipeline to be a substantial problem because the volumes involved are not a significant part of the total daily sendout. The Council agrees with this yet notes the Company is vulnerable to an extended period of cold weather to the extent that the delivery of other supplemental fuels such a LNG and propane are uncertain. The Company testified that because of physical constraints on its propane and LNG plant the Company is limited in

its use of supplemental fuels. The Council finds that this physical limitation makes the Company's customers unacceptably vulnerable to a gas shortage. This is made worse by the forecasted addition of more residential heating load, which further narrows the margin between peak day resources and requirements.

Although the Company has firmed up its supply situation since the last Supplement by entering into five year contracts for propane, there are considerable uncertainties in the current forecast, both in the forecast of customer requirements and supply availability, which have been discussed in depth above. The Council finds that there remains an unacceptable level of uncertainty in the Company's supply planning, and that the Company is taking an overly optimistic approach to matching projected supply and demand, in light of the expressed supply uncertainties. Because of this high degree of vulnerability, the Council directs the Company to explain in detail how and to what extent the foregoing supply uncertainties are addressed in contigency plans of the Company. Contingency planning is not viewed by the Council as merely an academic exercise, but rather as a necessary and integral part of the Company's supply planning.

Despite serious concerns with Fitchburg's forecast, the Council has decided to issue an approval with conditions rather than an outright rejection. The reason for this decision is that the Company did make a good faith effort to, and in fact did, significantly improve upon last year's

supplement. However, the Company is hereby put on notice that the Council expects substantial improvement in both the sendout methodology and supply planning, as outlined in this Decision, if the Company expects to avoid receiving a rejection next year.

ORDER

Given the foregoing consideration and comments, it is now ORDERED that the Fourth Annual Supplement submitted by Fitchburg Gas and Electric Light Company be APPROVED subject to the following conditions:

1. That, in subsequent filings, all numerical factors which were used in deriving the forecast of seasonal sendout on Tables G-1 to G-5 be described.
2. That, the Company re-evaluate its metholology for forecasting requirements, including its method of forecasting the number of customers in each class, load requirements for each class and customer use factors.
3. That, in the next filing, the Company discuss how its design standard compares to the coldest non-heating season and heating season in the past 30 years.
4. That, in its filing, the Company address in detail the status of the Boundary Gas Project, the level of risk involved in relying on the Project as a supply source for new load additions, the level of confidence the Company has in its

approval and timely delivery, and the Company's contingency plans in the event the project is delayed or disapproved.

5. That, before August 1, 1981, the Company report to the Council how it will supply the seasonal and peak day volumes originally assumed to be available from the Boundary Gas Project in the heating season of 1981-82.

6. That, in its next filing, the Company describe the likelihood and effects of a loss of a significant portion of its current Interruptible market, and report on its plans to address such an event.

7. That, in its next filing, the Company describe the extent of its contigency planning, and if and how such planning protects against the above mentioned supply uncertainties.

8. That the Company submit to the Council as part of the next filing which is due July 1 an analysis of the cost effectiveness of displacing insecure and expensive supplemental gas supplies during the heating season with conservation "supply" through the implementation of "zero interest loan programs", the submittal of which has been required by the Secretary of Energy Resources of the Commonwealth pursuant to letter dated April 24, 1981, and Chapter 465 of the Acts of 1980.

by Robert T. Smart Jr.

Robert T. Smart Jr., Esq.
EFSC Hearing Officer

This decision was unanimously approved by those members present and voting at the Energy Facilities Siting Council meeting of May 7, 1981.

Joseph S. Fitzpatrick
Chairman

COMMONWEALTH OF MASSACHUSETTS
Energy Facilities Siting Council

In the Matter of the Petition of the North Attleborough Gas Company for Approval of the Fourth Annual Supplement to its Long Range Gas Forecast (June 22, 1981)	)	EFSC No. 80-22

DECISION and ORDER

I. INTRODUCTION

The Massachusetts Energy Facilities Siting Council, for reasons set out in its decision below, hereby summarily REJECTS the fourth Annual Supplement to the Long Range Gas Forecast filed by the North Attleborough Gas Company (Company). This summary rejection is issued as the Company has filed an annual supplement so lacking in needed data that the Council finds that said supplement cannot be accepted for review.

A Tentative Decision in this matter was first issued on March 28, 1981, after a "desk review". The Company requested a hearing on the Tentative Decision, which hearing was held at the Council Offices on May 28, 1981. The Company was represented by Jay L. Underhill, its President and Treasurer. Mr. Underhill did not supplement the Company's filing; rather, he spoke about the burdensome character of the Council's requirements and stated that he could not meet the conditions in the Tentative Decision without hiring an outside consultant. He did not quarrel with the rejection of the forecast.

In its decision on the third supplement filed by this Company, the Council expressed concern about the sufficiency of the data provided therein. See 4 DOMSC 189 (September 9, 1980). Although the Company has worked with the Council St aff to some degree in an effort to upgrade the level of information in the annual filing, the Council still finds itself with the same concern about the present filing. The Council is mindful of the small size of this company and will again, as if did last year, make an appropriate accomodati on in North Attleborough's filing requirements. In its Order set out below, the Council will describe exactly what will be expected of this Company in future filings.

II. ANALYSIS

Last year, the Company's third supplement contained a forecast of requirements but no historical data or documentation. In its current filing, the Company provides historical data and supply information[1] but no forecast of requirements or documentation. Thus, whereas the filing may be said to have improved in one area (i.e., absence of forecast data) and again contains no documentation. This is unacceptable.

In its decision on the third supplement, the Council approved that filing but imposed certain conditions to be met in this current filing. The Council also advised that

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1 The Company provided customer class sendout data (Tables G-1 through G-4) for the historical period 1975-1980; total Company sendout (Table G-5) for the historical period; peak day sendout data for the historical period (Table G-5); and a summation of availavle facilities and resources (Table G-14, Table G-24).

the Company consult with EFSC Staff as to possible exemptions from detailed filing requirements (a concession to the size of the Company). The Company did meet, at least minimally, some of the conditions regarding historical data reporting, but delayed any request for exemptions until it filed the current supplement. At that time, the Company seemingly assumed that an exemption would be granted from filing a forecast of requirements. This assumption is entirely unwarranted for two reasons. First, a supplement which contains no forecast of requirements for future years is obviously of little use to the Council which must ascertain whether a company's gas supply is sufficient to meet those requirements. Second, this is not a matter where Company size requires accomodation. Blackstone Gas Company, the smallest gas company in Massachusetts, and all other gas companies submit forecasts of requirements. In fact, North Attleborough has reported such data in past filings and is expected to continue such reporting in future filings. Not to do so omits essential data from the filing which renders that filing unreviewable and subject to summary rejection, as is the case here.

The Council remains concerned about the complete lack of documentation in the North Attleborough supplement. The absence of any discussion of the effects of significant determinants (see EFSC Rule 66.5(b)) such as the price of gas, the price of alternative fuels; conservation, government policies, supply availability and characteristics of North Attleborough service territory on the Company's sendout is

a serious deficiency in the Company's present filing as it has been in past filings.

The Company has argued that it needs to hire an outside consultant in order to compoete and file its annual supplement. The Council believes that this work can be done in-house, as it is by other small gas companies in Massachusetts. However, the decision as to whether to hire a consultant is properly left to the Company.

The Council also realizes that the Company's operating experience over the past years will nececessarily from the basis for many of the judgements and assumptions used in any forecast. In fact, the Council notes that a discussion of the specific occurrences which contribute to such judgements allows the Council to understand and appreciate the Company's situation better and should be part of the documentation required. Thus, the Council expects that the Company will, in all subsequent filings, include therein a substantial and substantiated discussion of how its specific knowledge of its service territory contributes to its conclusion regarding load growth or lack thereof over the forecast period.

The Company should also discuss the role of conervation in the service area, since conservation by gas consumers may prove to be a significant "source" of supply and, as such, have a direct bearing on the forecast of sendout requirements. Factors to consider here include, but are not limited to, behavioral methods of conservation (i.e., reducing thermostat settings) and conservation methods requiring

capital expenditures (i.e., higher efficiency equipment and appliances and insulation) as well as whether customer use of these methods can be expected to increase or decrease. Further the Council expects the Company to discuss its policy towards new customers, including conversions to gas heat, and the effect of this policy on requirements.

In sum, what the Company must do in its filing is to assure the Council, through an adequate level of data and documentation, that the Company has sufficient capability to meet firm customer needs on both an annual and peak day level. To this end, there follows in the Order below a precise delineation of what information is required from this Company in future filings. The Council Staff is prepared to answer any questions the Company might have about this Decision and Order.

III. ORDER

Upon consideration of the reasons stated above, it is now ORDERED that the North Attleborough Gas Company's currently filed Annual Supplement to its Long Range Gas Forecast be, and hereby is, REJECTED. The Company is further ORDERED to incorporate the conditions set out below in its next forecast filing due on September 1, 1981. The Council is amenable and indeed encourages a responsive early filing of this forecast. The Council urges the Company to discuss these conditions with EFSC Staff so that the potential for misunderstandings is lessened. In future filings, the Company shall provide an adequate level of data and documentation for Council review in accordance with the

above decision and the following conditions:

1. The Company is exempt from seasonal reporting. Instead, it shall report data on a yearly basis, the year being defined as September 1 through August 31.
2. The Company shall detail, in narrative fashion with appropriate and available quantitive documentation, how it plans to meet colder than average weather conditions which may occur over the forecast period on a daily, weekly, and monthly basis.
3. The Company will file Tables G-1, G-2, G-3A, G-3B, G-4A, 4B, 4C. On these tables, the number of customers and annual sendout for each class for each year of the historical period (1976-77 through 1980-81) and a forecast of the estimated number of customers and annual sendout for each class for each year of the forecast period (1981-82 through 1985-86) will be reported.
4. The Company will file Table G-5. On this table, the Company will report a summation of historical and forecast annual sendouts for the firm customer classes (Tables G-1, G-2, G-3A, G-3B and G-4C). The maximum daily sendout encountered in each year of the historical period and a forecast of maximum daily sendout in each year of the forecast period will also be reported on this table.
5. The Company will discuss and document its service territory characteristics and the manner by which expected annual and maximum daily load requirements for the forecast period were estimated.

6. The Company will provide the following with respect to gas conversions:

   a. The annual number of historical and expected conversions by class (residential and commercial);

   b. recommendations regarding insulation standards and appliance efficiency offered to customers requesting conversion.

7. The Company will file Tables G-14, G-15, G-16, G-17, G-21, G-24, G-23 to the best of its abilities, and file any weather data it depends on in its forecast; consultation with EFSC is advisable.

8. The Company is exempt from filing Table G-22. In lieu of this filing requirement, the Company will discuss and document its ability to meet forecasted annual requirements with expected supplies over the forecast period and its ratiionale and confidence therein, along with any uncertainties and problems.

by Robert T. Smart Jr.

Robert T. Smart Jr., Esq.
EFSC Hearing Officer

This decision was unanimously approved by those members present and voting at the Energy Facilities Siting Council meeting of June 22, 1981.

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Joseph S. Fitzpatrick
Chairman

COMMONWEALTH OF MASSACHUSETTS
Energy Facilities Siting Council

Petition of the Bay State Gas Company for Approval of the Fourth Annual Supplement to Its Long Range Gas Forecast (June 22, 1981)	)	EFSC No. 80-13

DECISION AND ORDER

The Energy Facilities Siting Council hereby APPROVES Bay State Gas Company's (the Company) Fourth Annual Supplement to its First Long Range Gas Forecast. The Council also APPROVES the Company's proposal to install additional air compression capability at its Northampton and Lawrence facilities. Both of these Council approvals are subject to cert ain conditions contained in the Council's ORDER at the end of this decision.

I. Background and History of the Proceedings

Bay State Gas Company filed its Fourth Supplement on November 15, 1980, pursuant to G.L. cc. 164, sec. 69I. To augment its existing propane-air capacity prior to the 1981-82 winter season, the Company proposes to install additional air compressors at its existing facilities in Northampton and in Lawrence. Each proposed facility and the Council's review thereof are discussed in more detail later in this decision.

On December 19, 1980, the hearing officer directed the Company to publish notice of Council adjudicatory proceedings on the Fourth Supplement as well as on the Company's con-

struction proposals. A pre-hearing conference was held at Council offices on January 29, 1981. At this conference, Bay State was directed to schedule local public hearings as required by EFSC Rule 62.7; notice for these hearings was given pursuant to the hearing officer's instructions.

The first local public hearing was held at the Northampton High School in Northampton on Thursday, March 5 at 7 pm and concerned the air compressor proposed for the Bay State Gas Northampton site. No one other than Company and EFSC Staff personnel was in attendance. A transcript of this hearing is included in the record.

The second public hearing was held in Lawrence Public Library in Lawrence on Wednesday, March 11, 1981 at 7 pm and focused on the air compressor proposed for the Lawrence site. A presentation of the air compressor proposal was made by Thomas Sacco, Bay State Manager of Gas Supply Planning, and was transcribed for the record herein.

There were no intervenors in this matter. After discovery, an adjudicatory hearing on the Supplement and the proposed air compressors was held on May 11, 1981. At this hearing, the information compiled in the discovery period was entered into the record and further questions were answered by Bay State Gas personnel.

II. Technical Analysis and Discussion

First it should be noted that the clarity and completeness of the submitted Supplement and the cooperation of the

Company personnel significantly facilitated the review of the supplement and proposed facilities.

The Company developed its forecast of requirements by assuming a 3% annual net growth in load requirements in both the non-heating and heating seasons for each of its firm customer classes in each of the five years of the forecast period. The Company testified that a growth rate of 3% was chosen by management as a rate the Company can attain through the use of existing facilities without the addition of substantial distribution capability or supply. The Company considers this 3% growth rate an optimistic forecast and testified that strong marketing techniques will be necessary to to achieve it. In past years, the growth rate has fallen short of marketing goals.

The Company testified that it is promoting the conversion of oil to gas heat, and is actively promoting commercial and industrial use of gas. One example of its marketing techniques is its promotion of rental conversion burners. The Company promotes municipal conversions to gas by speaking to local towns about the advantages and economics of gas over other energy forms.

The Company testified that no major facility expansion[1] is required to achieve this 3% growth; it plans to use its existing facilities more fully. In addition, the Company testified that no additional marketing expense will be needed to meet the 3% goal.

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1 The installation of proposed air compressors, discussed later, is not considered to be major facility expansion.

The 3% growth rate is based on the assumption that both the total company base load and heating load will grow 3% each year. The Company testified that it monitors its base load and heating load at least twice a year. This is done by analyzing the most recent 12 months data of degree days (DD) and sendout to determine the Company's most recent annualized base and heating load. This analysis tells the Company how close it is to meeting its goal of 3% net growth each year.

Although it is commendable and prudent that the Company analyze the progress of base and heating load growth every six months, the question remains as to whether the Company can adjust it marketing and supply planning quickly enough to keep on target. The Company has evidenced limited knowledge of changing customer use requirements. Therefore, the Council asks if it is feasible to assume that the necessary adjustments can be made. The Company should have an understanding of the potential magnitude of adjustments necessary to keep on target. It should then be able to show that these adjustments are feasible given the Company's service territory characteristics. To do those things, the Company needs a better handle on future customer requirements in its service territory than it has demonstrated. The Council expressed a similar concern in condition 2 of the decision on EFSC 79-13. The Company states it has complied with the Council's directive with regard to a study of customer use. The Company apparently considers its six month monitoring and adjustment program a sufficient alternative

to an in-depth study of future customer use. However, the Council finds that such an alternative is lacking precisely because a determination of the feasibility of necessary adjustments cannot be made without a study of furute customers use. Therefore the Company is directed to perform a study of future customer use in order to develop a long-term forecast as a framework for analyzing the magnitude and feasibility of potential adjustments to its marketing and supply proceedures. It may be helpful for the Company to meet with Staff economists to discuss this.

The Company indicates that it will have an ample supply of gas. With its assumption of a 3% net growth rate, the Company has made plans to have available supply for its needs in both a normal and colder than normal season for the next 5 years at least. In its supply forecast, the Company has made four conservation assumptions which may have the effect of under-forecasting supply availability. First, the Company is not currently being curtailed by either of its major suppliers, Algonquin Gas Transmission Company (AGT) or Tennessee Gas Transmission Company (TGT). While the Company has utilized both a short-term and long-term forecast of supplies provided it by the pipeline companies; it has chosen to use the more conservation long-term forecast for the last four years of the forecast period. Second, the Company does not include Boundary Gas as a part of its supply picture, although if the Project is approved it will be a significant additional source for the Company.

Third, although the Company does expect that its storage gas, delivered on a best efforts basis, will be available sometime within the five month heating season, it has testified that it does not depend on these supplies for any specific short-term interval within the heating season. Fourth, the Company has been conservative in its estimate of heating season requirements during a design year by assuming that all the additional degree days that occur will fall in the heating season rather than being spread throughout the years.

It appears from the record that, barring unforeseen circumstances, the Company will have adequate gas supply for its customers over the forecast period. In fact, given the judgements made by the Company, combined with its lack of information regarding future customer requirements, it is conceivable that the Company will have a "surplus" of gas. While certainly this increases the reliability of gas supply to Bay State's customers, it should also be noted that such a supply "surplus" could have an undesired financial effect on the Company's existing customers. Because of this possibility, the Company is directed to discuss in its next filing what economic burden, if any, Bay State customers will assume if indeed the Company has underestimated future supply and overestimated customer requirements.

The Council does note some concerns with the Company's forecast, other than the aforementioned lack of customer use data. The Company projected that 80% of the annual contractual volumes of LNG from Distrigas of Massachusetts Corpora-

tion (Distrigas) would be available and delivered to Bay State in each of the years of the forecast period, amounting to 2,088,000 MMBTU or 1820 MMCF of natural gas. The Company testified that this projection was based on the previous two years of deliveries from Distrigas. The Comapny testified that last year it received 66% of its contracted volumes and the previous years it received 90%. Although the Council notes that Distrigas only represents about 6% of Bay State's total supply, the Council is concerned with this forecast for two reasons. First, to average two years of historical data, without considering future events, in order to arrive at a forecast number is not necessarily reliable, especially in the case of a supply source which has in the past been shown to be very vulnerable to political and economic changes. Second, Distrigas itself has submitted a form (Form 16) to the Federal Energy Regulatory Commission (FERC) which does not present as optimistic a picture as Bay State. Distrigas forecasts that in the next year, 1981-82, it will only deliver 1482 MMCF or 1,700,000 MMBTU, which is 338 MMCF less than Bat State forecasts. Because of these above mentioned concerns, the Company is directed to base its next forecast of supply from Distrigas on a more comprehensive picture of the Algerian situation and likely occurences, including the most recent information available from Distrigas.[2]

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2 It should be noted that after the hearing the Company submitted further information regarding the Distrigas forecast of LNG availability. The Company stated that Distrigas based its projection of supply for the 1981-82 year on the volume it recevied during the previous year, 1980-81, which amounted to 65% of the contract volumes. Bay State feels that 65% is an overly conservative forecast, because the current level of deliveries is at or above 1-0% of contract, no shortfalls ar anticipated and deliveries in 1979-80 were almost 90% of contract. (See Thomas Sacco's letter to Fred Nemergut, May 26, 1981).

The Company states it has enough flexibility through the timing of deliveries of its pipeline gas, its interruption sales, and its liquefaction capabilities to cover an event in which supplies of imported LNG from DOMAC are interrupted. Becuase the Company does not define the magnitude nor length of such an interruption nor quantify its flexibility in supply adjustments it is not clear from this testimony how much insurance the Company has against such a supply interruption. The Council is interested in receiving from the Company more hard data to aid such an analysis.

A second concern of the Council relates to the Company's use of annualized customer use factors, specifically the use of annualized data to derive the base load and heating increment used for forecasting and planning purposes. The concern here is that such annualized data may not reliably or accurately reflect differences that occur on different days of the month and week. This is illustrated by what happend this last winter when the annualized base load and heating load factors used by the Company did not reliably reflect the actual load on the coldest day. The Company testified that although historically it has had no problem with using this technique to forecast peak load, this winter's unusualness has caused it to look at a different method of forecasting peak say sendouts. The Council agrees that this is prudent and expects a discussion of the Company's analysis in the next forecast. In general, the Council must note its concern that such a larte Company uses a simplistice methodology in

forecasting, i.e., using annualizing base and heating load factors to forecast both heating season and non-heating season loads.

III. Proposed Air Compressors

Bay State Gas has proposed to add an air compressor with an air capacity of 73 MMCF per hour at the Company's propane air facility in Northampton, Massachusetts, and an air compressor with an air capacity of 95 MMCF per hour at the propane air facility in Lawrence. Both compressors will be located adjacent to existing air compressors. The addition of the two compressors will add 5866 MMBTU per day to the existing propane air plant in Northampton and 9240 MMBTU per day to the propane-air capacity at Lawrence. These represent 50 and 18 percent increases, respectively, in peak day supply ofr each of these areas. The estimated total cost of purchasing and installing the Northampton facility is $180,500, and the Lawrence facility is $215,500. The record is clear that because of recent growth the Company needs these facilities to provide an adequate level of reserve capacity in the Lawrence and Northampton areas. The planned load increases in each of these areas only serve to emphasize this need. The record also shows that the additional supply capability provided by increasing a single component (air compression) of each of the existing propane-air plants in Northampton and Lawrence is a cost-effective, environmentally sound and prudent solution to the diminishing reserve margin caused by growth.

An approval of these air compressors permits and thus

implicitly gives Council sanction to the Company's expansion of its gas heating market in these areas. Although such a growth necessarily raises questions concerning the price impact on existing customers due to the increased use of greater quantities of relatively more expensive supplementals to serve heating needs, the Council is of the opinion that the 3% planned growth rate of the company in these areas is not excessive, and is justified by the relatively optimistic gas supply situation of Bay State Gas Company, the decrease in energy costs to the former oil customers who are switching to gas, and the stated promotion of conservation by the Company. Thus, the Council finds that the proposed additional air compressors are needed to ensure an adequate supply of energy for the Commonwealth at the lowest possible cost and the least possible environmental impact. The Council approves construction of the air compressors with an in-service date of October, 1981.

ORDER

Given the foregoing considerations and comments, it is ORDERED that the Fourth Annual Supplement submitted by the Bay State Gas Company and the two proposed facilities be APPROVED subject to the following conditions:

1. That, in subsequent filings, the Company provides the conversion factors in order to convert to an MMCF basis at an BTU content of 1000 BTU per cubic foot at 14.73 PSIA dry all gas data presently given in MMBTU's.
2. That the Company perform a study of future customer re-

quirements in order to develop a long-term forecast as a framework within which potential periodic adjustments to its marketing and supply procedures can be made in order to meet the goal of 3% net growth per year. It may be helpful for the Company personnel to meet with Staff economists to discuss such a study.

3. That the Company base its next forecast of supply from Distrigas on a comprehensive picture of the Algerian situation and likely occurences, including the most recent information and forecast available from Distrigas.

4. That, before its next filing, the Company complete an analysis concerning the use of annulized factors to forecast a peak day load, and describe the method of analysis and its results in the forecast. If the Company does not change its methodlogy so as to use seasonal and daily factors rather than annualized factors, it should at least discuss how seasonal and daily characteristics are accounted for in the use of the same annualized base load and heating load factor for both the non-heating and heating seasons.

5. That, in its next filing, the Company discuss the economic effects on its existing customers of a possible underestimation of future gas supply and overestimation of future customer requirements resulting in "surplus gas". This discussion will

be more useful if the Company quantifies different possible scenarios.

6. That the Company submit to the Council as part of the next filing, due September 22, 1981, an analysis of the cost effectiveness of displacing insecure and expensive supplemental gas supplies during the heating season with conservation "supply" through the implementation of "zero interest loan programs", the submittal of which has been required by the Secretary of Energy Resources of the Commonwealth pursuant to a letter dated April 21, 1981, and Chapter 465 of the Acts of 1980.

by Robert T. Smart Jr.

Robert T. Smart Jr., Esq.
EFSC Hearing Officer

This decision was unanimously approved by those members present and voting at the Energy Facilities Siting Council meeting of June 22, 1981.

-5-

Joseph S. Fitzpatrick
Chairman

COMMONWEALTH OF MASSACHUSETTS
Energy Facilities Siting Council

Petition of the Berkshire Gas Company For Approval of the Fourth Annual Supplement to its Long-Range Gas Forecast (22 July, 1981)	EFSC 80-29

DECISION AND ORDER

The Energy Facilities Siting Council hereby APPROVES the Berkshire Gas Company's (the Company) fourth Annual Supplement to its first Long-Range Gas Forecast. The Council also APPROVES the Company's proposals, contained in an Amendment to the aforementioned Annual Supplement, to construct the following facilities: a gas main in the city of Northampton, propane storage facilities in the town of Stockbridge, propane storage facilities and railroad unloading facilities in the city of North Adams. These approvals are subject to the terms and conditions contained in the Council's ORDER at the end of this decision.

I. BACKGROUND AND HISTORY OF THE PROCEEDINGS

The Berkshire Gas Company is a Massachusetts Corporation and is engaged in the business of distribution and sale at retail of gas in nineteen (19) communities in Berkshire, Franklin and Hampshire Counties, Massachusetts, and has approximately 24,700 gas customers.

In accordance with General Law 164 sec. 69I, Berkshire filed the fourth Supplement to their Long Range Forecast of Gas Requirements on November 3, 1980. A public adjudicatory hearing regarding the Supplement was held on March 27, 1981 at Council offices.

Public notice of the hearing was published in the Berkshire Eagle and the Greenfield Recorder, in a timely fashion.

The Department of the Attorney General petitioned to intervene and was granted intervention status. During the hearing the Company's witness was questioned by the Attorney General and the Council Staff.

The Supplement contained no proposals for new facilities of any kind. Subsequently, on May 7, 1981, the Company proposed an amendment to the Supplement. The amendment included proposals to construct and operate a new 8" gas main in Northampton, propane storage facilities in Stockbridge and North Adams, and a railroad unloading facility in North Adams. Public hearings regarding these proposed facilities were held in Stockbridge on June 9, 1981, in North Adams on June 10, 1981 and in Northampton on June 11, 1981. Public notice of these hearings was posted and published in a timely fashion.

On June 25, 1981 the Company and the Council Staff discussed the proposed facilities in an informal technical review session. The Company answered numerous questions and provided detailed information regarding the need for the proposed facilities, their cost and their environmental impact. On July 1, 1981 the Council received the Company's formal amendment to their Forecast Supplement. On July 7, 1981 a public hearing was held in which the information requested at the technical session was entered into the record and the Company answered further questions regarding the Forecast Supplement and the proposed facilities. There were no intervenors in this pro-

ceeding.

II. THE FORECAST

A. Analysis of Forecast Documentation

The Council finds that the conditions of approval set out in its 1979 Decision have been adequately met by the Company through information supplied in the Company's Supplement, and through testimony presented at the hearing. The Council does, however, recognize certain areas of concern regarding the present forecast.

In the 1979 Decision, the Council expressed concern about the reliability of the Company's methodology for forecasting normal and design season sendout as well as peak day sendout. It is apparent that the Company has made significant improvement in its forecasting methodology. The Council commends such efforts and encourages further improvements. However, the documentation of the improved method was too brief. To this end, the Council directs the Company to include in its next filing a discussion of historical trends as well as a discussion of the assumptions and bases underlying the projected customer use factors.

In last year's Decision, the Council also expressed particular concern about the lack of adequate documentation (as required by EFSC Rule 66.5) in the Company's 1979 Supplement. The present Supplement was more thoroughly documentated but fell short of adequate reviewability. A forecast can not be reviewed if it can not be duplicated by another knowledgable person given the same information. Reviewability, therefore,

requires a certain level of documentation and/or explanation not present in the Company's 1980 Supplement, although additional documentation later provided in response to Staff inquiries enabled the review to be completed. The Council, therefore, directs the Company to include in subsequent filings an illustration of how forecasts of normal, design, and peak day sendouts on Tables G-1 through G-5 were calculated, and a listing of all projected customer use factors (e.g. base use per customer, average use per customer and heating use per custer per degree day) used in developing the forecast. It is the Council's belief that inclusion of this information will not only strengthen the Company's forecast, but expedite its review.

Berkshire testified that it is a member of MASS SAVE and as such will participate in MASS SAVE's audit programs (Tr. Vol. I, 29). The Company also testified to other ways in which it promotes conservation in its service territory. Energy conservation continues to be a major concern for everyone. The Council recognizes a critical need to incorporate conservation and the effects thereof in any forecast of requirements, as conservation by gas consumers may be a significant "source" of gas for a company, the Council therefore, compliments the Company's efforts to incorporate conservation effects in its forecast, principally in the Residential Heating class (Table G-1), and encourages the Company to continue its efforts to promote conservation among its customers as well as to report the results of such efforts in future filings. In reporting such results, the Company should

explain its judgements concerning conservation in each of the customer classes. Factors to consider in the evaluation of customer conservation should include, but not be limited to, behavioral methods of conservation (e.g. reducing thermostat settings) and conservation methods requireing cpaital expenditures (e.g. efficient water heaters, furnaces and appliances, and insulation) as well as whether the significance of these methods can be expected to increase or decrease over the forecast period.

The Council notes that the Company included some residential sales in the Commercial Class (Table G-3A). Therefore, the Council directs the Comapany to include in the narrative of the next filing the residential share of load on Table G-3A, and the reason for combining some residential with commercial loads.

B. Deliverability of Supplies

The Company has achieved substantial improvement in the reliability of its supplies through recently approved agreements for firm transportation of natural gas stored in facilities in Pennsylvania and New York. Firm supply of 1.27 MMCF/day (maximum day delivery) of stored natural gas is available for the 1981-82 heating season. Firm supply of an additional 2.36 MMCF/day (maximum day delivery) has been contracted for, and will be available for the 1982-83 heating season. Supply of 1.27 MMCF/day (maximum day delivery) will remain on a best efforts basis for transportation through the Tennessee pipeline. These supplies are discussed in more detail in the sec-

tion of this decision pertaining to the proposed gas main.

The Council also notes that the Company is a member of the Boundary Gas Project, and as such has contracted to receive 2 MMCF/day of Canadian natural gas, transported by Tennessee Gas Pipeline. This additional gas supply will increase the Company's current maximum daily and annual volume of natural gas from Tennessee by approximately 10% and 15% respectively, when delivered at contract volumes. But the Company does not expect the full contract volumes to be available immediately. Rather the Company expects 25% of the heating season contractural volumes of this gas to be available by the 1982-83 heating season, increasing to 100% by the 1984-85 heating season. The Company also expects 50% of the non-heating season contractural volumes to be available by the 1983 non-heating season, increasing to 100% in the 1984 heating season.

Table G-22 of the Supplement indicates the relationship of this Canadian gas to projected sendout requirements in the Company's planning. In the first year of delivery, Canadian gas from the Boundary Gas Project accounts for 11% and 3% of the normal firm load requirements for the non-heating season and heating season respectively. By the end of the forecast period, when the full contract volumes are expected to be available, these figures increase to 22% and 10% respectively. These projections indicate that the Company plans to rely significantly on a new gas source, the existence of which is not yet certain. The Boundary Gas Project is subject to FERC

approval, and is presently still in the beginning stages of the adjudication process. Ultimate approval, timing, and availability of this supply source is, therefore, not presently guaranteed. This situation leads the Council to conclude that the Company's supply forecast is consequently uncertain as it relates to the Boundary Gas Project, but in so concluding adds that this level of uncertainty is not necessarily cause for immediate concern. The percentage of normal firm load expected to be met by the Canadian volumes is significant, but Table G-22 shows that the possible loss of the forecasted Canadian supplies to firm customers could be covered by reducing Interruptible Sales and Sales for Resale. Although the Company apparently has this short-term "cushion" of available supply, the uncertainty of projected Canadian gas deliveries is still of concern to the Council. The Company's expected load growth and its forecasted design requirements put increasing pressure each year on this "cushion". The Company itself has stated that if the Canadian gas contract is not approved it will have to reconsider its growth pattern (EFSC memorandum December 30, 1980). Therefore, in its next filing, the Company should address in detail its contingency plans should the supply of Boundary Gas be delayed or denied.

Lastly the Council notes that Berkshire forecasted that Distrigas would deliver 90% of its contractural quantities of LNG. The Company bases this projection principally on the percent delivered last year, which was 89%. The Company testified that over the past four years the percent of annual contract volumes actually delivered has run as low as 12% (Tr.

Vol. 1, 37). In response to the Council's directive in the 1979 Decision*Berkshire stated that it would utilize its propane air facilities as a peaking supplement.

III. THE PROPOSED FACILITIES

A. PROPOSED GAS MAIN IN NORTHAMPTON

1. Description of Proposed Gas Main

The Company has proposed construction of an 8" high pressure natural gas main in the city of Northampton, Massachusetts. This proposed main will parallel the existing 6" high pressure gas main running from the Greenfield sales station of the Tennessee Gas Pipeline Company to the southerly property line of Locust Street in Northampton, where it will connect with the Company's existing distribution system. Total length of the proposed gas main is 2.5 miles. The proposed main will cross public lands owned by Hampshire County, the Massachusetts Department of Mental Health, the City of Northampton School Department and the Smith Vocational School, City of Northampton. The main will have three street crossings and will cross the Mill River and lands classified as wetlands. The proposed 8" main will be located in the strip of land presently licensed for the existing 6" main. A detailed map of the proposed route for the new main has been provided by the Company and is part of the record of this proceeding. (Exhibits 7, 8, 9).

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* The specific condition contained in EFSC 79-29 was: "That the Company explain how it plans to address tha short-term and long-term impacts of an immediate cessation of Algerian LNG deliveries. Specifically, how would the Company meet each year's projected requirements under this circumstance." The Company has stated that the capacity of the existing propane-air facilities would be adequate to supply the additional propane required to maintain service during a cut-off of LNG. (Tr. Vol. 2, 38). The Company also stated that the additional propane storage facilities approved herein provide increased flexibility in the event of an LNG cut-off (Tr. Vol. 2, 39). Because of the Company's assurances concerning this matter, the Council has not attached a similar condition to the present decision; however, the Council continues to regard this as a matter of highest concern.

2. Purpose of Proposed Gas Main

The proposed main will serve natural gas to approximately 4,500 gas customers in the Company's service territory.

The Company's Amendment to the 1980 Gas Company Forecast Supplement states that the proposed 8" gas main is needed "to handle the increase in daily volumes (of natural gas) and to provide additional pipe capacity necessitated because of lower delivery pressure (of natural gas) from the Tennessee Gas Pipeline" (Exhibit 2, p. 19).

The Company has stated on the record that without the proposed 8" main the Company will be unable to transport increased supplies of natural gas which have been contracted for on a firm basis from the Tennessee Gas Pipeline Company (Tr. Vol. 2, p. 87). Under present Company policy, no new gas hook-ups are being made. The Company states that the new main will allow the Company to add new customers -- both residential and industrial. Some of these are customers who have requested service and have been unable to receive gas due to supply limitations (Tr. Vol. 2, p. 91).

The major issue raised by the autherization of this new natural gas main is whether new gas customers should be added to existing customer loads in the face of higher costs for incremental supplies and uncertain future supply and price conditions. This issue is discussed in detail in the next section of this decision.

3. Analysis of Proposed Gas Main

A. NEED

The record in this case indicates that there is no need to construct the proposed gas main to serve existing gas cus-

tomers in the Company's service territory. The proposed gas main will allow the Company to add new customers and the issue before the Council in this case is the prudence of such additional customer loads. This issue must be assessed in the context of future natural gas supplies available to Berkshire Gas Company and other Gas Companies in the Commonwealth.

Two additional supply sources and increases in Tennessee's pipeline capacity have improved the outlook for natural gas supplies in the Commonwealth since the supply-constrained period in the late 1970's. The first of these supply sources are the underground storage facilities located in New York State and Pennsylvania. The availability of these natural gas storage sites and the strong market for natural gas in the Northeast has led Tennessee Gas Pipeline Company to invest in a significant upgrading of their gas transmission pipeline capacity from New York State into Massachusetts. As a result of the increased pipeline capacity, the Tennessee Gas Pipeline Company has made available new firm supplies of natural gas to Gas Companies in New York State, the Commonwealth, Connecticut, Rhole Island and New Hampshire. In the Commonwealth, Berkshire Gas Company, Haverhill Gas Company and the Lowell Gas Company signed agreements with the Tennessee Gas Pipeline Company for increased firm transportation of natural gas from the storage facilities. These agreements have now been approved by the Federal Energy Regulatory Commission (FERC). The contracts between the Berkshire Gas Company and the Tennessee Gas Pipeline Company provide for firm transportation of 1.273 MCF (maximum dialy delivery) of natural

gas through the Tennessee pipeline to the Greenfield sales station, commencing before the coming heating season (Exhibit 13). An additional 2,364 MCF (maximum daily delivery) will be available on a firm basis for the 1982-83 heating season.

This new firm supply of natural gas from storage facilities represents a substantial increase in the firm supplies available to the Company. The Company's prior agreement with Tennessee provides for 19,900 MCF (maximum daily delivery). From the standpoint of physical supply availability, the recently approved agreement provides a sound basis for future customer load additions. However, in addition to physical availability of supplies, the Council must consider the cost of the necessary facilities and the ultimate price of the gas to the consumers. The cost of the proposed gas main and the price of the storage return gas are considered in the next section of this decision.

The second major improvement in the natural gas supply outlook for the Company and the Commonwealth is the Boundary Gas Project. If authorized by the FERC and the state and local authorities, this project will bring substantial additional firm supplies of natual gas into the Commonwealth. Berkshire Gas has signed a Precedent Agreement providing for 2,000 MCF (maximum daily delivery) of gas from this project. The Company has stated on the record however, that it will defer adding new customers (aside from those who will be able to utilize the firm storage return supplies) until final approval

of the Boundary Gas Project and all sales agreements have been finalized. The Council notes that this is prudent Company policy and wishes to emphasize this point. Addition of new customers must proceed in a prudent manner in order to avoid jeopardizing the adequacy of supplies for existing customers. The Council wishes to assure reliable supplies to existing customers without unduly constraining the availability of gas service to potential new gas customers.

B. COST OF PROPOSED GAS MAIN

The total cost of the proposed gas main has been estimated by the Company at $471,000. This includes all materials, equipment, contract services, Company labor, engineering and overheads. The Company performed a detailed engineering/cost analysis and determined that paralleling the existing 6" main with the proposed 8" main is the most economical choice for transporting the increased gas volumes provided for under the storage return agreement.

In addition to the cost of the proposed facilities, the Council must consider the price of the gas to be delivered through the proposed main and the effect of these new supplies on the average price of gas to the Company's customer. The contract between Berkshire Gas and Tennessee Gas Pipeline Company shows that the new firm supplies from the storage facilities will be more expensive than the natural gas delivered under the existing long-term firm supply contract, yet less expensive than the Company's supplemental supplies of propane and LNG. The average costs of the Company's present supplies and the firm supplies from the storage facilities are shown in Table 1.

Table 1

	Average Cost per MCF*
Natural Gas (CD-6 Contract)	$3.19
LNG	$6.72
Propane	$7.51**
Natural Gas (Storage Return)	$4.70

* Costs as of May 1981

** Includes costs of operating propane/air facilities

The addition of the new firm storage return gas will make it possible for the Company to sell more gas to more customers. It is also clear that this growth will increase the average price of gas to the Company's customers. Assuming constant prices, the addition of the storage return gas to the Company's supply mix will increase the average price of gas sold from $3.59/MCF at the present time to $3.88/MCF in 1984-85. These figures do not include the potential supplies of Boundary Gas which are likely to further raise the average price of gas sold by the Company; nor do they anticipate the removal of gas price controls before 1985.

Several economic considerations are relevant to the decison granting the Company's request for approval of the proposed gas main. The fact that the purchase of the additional gas supplies transported through the main will increase the average price of gas to all the Company's customers does not mean that the proposal is without public benefits. The expansion of the gas heating market facilitated by the proposed gas main will

displace oil presently used for home heating in the Company's territory. In the decision on Boston Gas Company's request for approval for vaporization facilities (EFSC 79-25) the Council stated,

> "as long as the proposed.. facilities are not likely to raise gas prices above oil prices then such facilities can be found to be necessary for the Commonwealth as a whole... As long as any increase in gas prices caused by adding customers is offset by decreases in energy costs to the former oil customers who are switching to gas, the Commonwealth as a whole has achieved a more reliable energy supply by reducing its dependence on foreign oil without a net increase in energy costs".

The decision to approve the proposed gas main in the present proceeding reaffirms the Council's position concerning expansion of gas heating in the Commonwealth. In addition to the measureable benefits of gas outlined in the foregoing citation, the Council recognizes the intangible benefits of secure supplies of domestic gas as opposed to foreign supplies of oil.

Another consideration important in the analysis of the costs and benefits of the proposed gas main and the concomitant increase in firm gas supplies is the payback which consumers will achieve upon converting from oil to gas heat. Conversions involve considerable investments by the customer and the strong market for gas conversions at the present time is primarily a function of the price differential between oil and gas. Under present federal laws governing the regulation of gas prices, natual gas prices will be decontrolled by 1985. Although a tremendous amount of uncertainty exists over the long-term effects of gas price decontrol, the evidence at the present time suggests that gas prices will rise substantially and the price differential that

exists today between oil and gas will shrink. Some analysts believe this differential will disappear entirely as gas and oil prices reach parity. In light of these prospects, the Council is concerned about consumers who convert to gas in the coming years. Specifically, there is substantial uncertainty regarding the payback that these consumers will achieve by converting from oil to gas. If the differential between oil and gas prices is reduced or eliminated after decontrol of gas prices, consumers will face long payback periods for their initial conversion investments. In the extreme case of oil and gas price parity, consumers may not recover their investment costs. The Company should realize also that this will reduce the market incentives to convert form oil to gas and could result in a softening of the conversion market. The Council cautions the Company to bear these issues in mind when talking to customers considering conversion to gas. The Council requests that in its next forecast, the Company address the costs and benefits (from the customer's perspective) of converting from oil to gas heat. The Company should identify the factors which affect this cost/benefit equation (e.g. age or efficiency of existing oil burners, efficiency of new gas burners, insulation levels, cost of conversion), examine the consumer's payback under different assumptions regarding the price of heating oil and the price of gas to the Company's customers and offer any documentation available regarding the future impact in the Company's service territory of gas price decontrol.

C. ENVIRONMENTAL IMPACTS OF THE PROPOSED GAS MAIN

The record indicates that there will be no adverse environ-

mental impacts due to the construction and operation of the proposed gas main.

The Company filed a "Notice of Intent" under the Wetland Protection Act, Massachusetts G.L. c. 131 sec. 40 on May 7, 1981 with the Northampton Conservation Commission and has had its preliminary hearings and final hearing granting approval on June 2, 1981 (Exhibit 9).

In addition to wetland protection, the route does not require any cutting of trees over 6" in diameter. Brush and debris on the present right of way will be cleared and disposed of in compliance with any regulation covering same.

As much as possible, all surfaces will be restored to the same condition existing before excavation. In locations where washing or gullying could occur, proper breakers and surface protection will be provided. On agricultural lands, the construction work will be so time to allow harvesting of present crops. Also on agricultural lands, appropriate seeding of cover crop and fertilizer will be applied to restore the land to existing fertility (Exhibit 2, p. 19).

Visually, the main will be out of sight by its nature of being underground except for above ground casting vents and roadway crossing and main line markers to witness the fact there exists a gas main as required by regulation (Ex. 2, p. 20).

There will be no sound or odor pollution from the proposed 8" H.P. main (Exhibit 2, p. 20).

D. ALTERNATIVES TO THE PROPOSED GAS MAIN

The alternatives to the proposed gas main fall into two categories: (1) a no-build scenario; (2) construction of a

main having a different capacity and configuration. Each of these will be discussed in turn.

Approval of the gas main installation implicitly gives Council sanction to expansion of the Company's gas heating market in the Greenfield Division. Some of the issues raised by this expansion have been discussed in the previous section of the decision. The Council recognizes, however, that construction of the proposed main is not the sole means of expanding this market. Several alternatives exist, including: construction of LNG facilities, construction of propane facilities and installation of materials and equipment designed to increase the efficiency of natural gas use.

The record in this case indicates that construction of the proposed main is a more economical means of increasing gas supply than construction of either LNG facilities or propane facilities. In addition, the main is a more dependable means of increasing supply than either of these two alternatives. The Company's testimony does not, however, include comparison of the proposed main with increased investment in energy efficiency measures, or conservation.

The choice between construction of the proposed main or construction of alternative supply facilities such as LNG or propane facilites is a clear cut either/or decision. Construction of one negates the need (in the immediate future) of the others. This is not the case with the conservation alternative. The Company has stated that natural gas conserved through increased efficiency and changes in consumer behavior has supplied the gas used to make space heating service available to additional

customers in the past, when no other new supply sources were available. The Company has submitted evidence of its efforts to make consumers more aware of conservation opportunities such as improved gas burners, more efficient water heaters, insulation and weatherization. The Council commends the Company's efforts and wishes to stress that the increased availability of pipeline gas does not diminish the need to continue to expand the supply of "conservation gas". Conservation carries with it a host of benefits to the Commonwealth including: creation of jobs in the local area; long-term savings which make increased purchases of other consumer goods and services possible; and decreased dependence on foreign supplies of energy.

The second category of alternatives to the proposed gas main is the construction of a gas main having a different capacity and configuration. The Company has performed a detailed engineering/cost analysis of alternative pipeline capacities and has determined that the 8" main is the most economical system to serve the increase in gas supplies (Ex. 2, p. 18).

E. CONCLUSIONS REGARDING THE PROPOSED GAS MAIN

The evidence in this proceeding indicates that the proposed gas main in Northampton is an economical means of supplying increased firm supplies of natural gas to the Commonwealth. Without the proposed main, the capacity of the Company's existing main is inadequate to transport the increased volume of storage return gas which has recently become a firm supply. The supply of these increased firm supplies is more costly than the Company's

present firm supplies; however, it is more economical and more reliable than construction of alternative facilties. The costs of the proposed main are reasonable and there will be little or no long-term environmental impacts from construction or operation of this equipment. The expansion of the gas heating market made possible by the proposed main will benefit consumers in the Commonwealth who presently rely on fuel oil for heating.

B. PROPOSED PROPANE STORAGE AND RAIL UNLOADING FACILITIES IN NORTH ADAMS

1. Description of the Proposed Facilities in North Adams

Berkshire Gas Company's second proposal is to increase the liquefied propane gas (LPG) storage capacity at the LP-Air Plant in North Adams and to improve railroad unloading facilities (Ex. 2, pp. 8-9). First, the plan calls for installation of two additional 60,000-gallon storage tanks above ground on a site which now includes six (6) 30,000-gallon LPG storage tanks. The proposed addition would increase storage capacity at the North Adams site from 180,000 gallons to 300,000 gallons.

Second, the Company proposes to increase its capacity to handle LPG at the site by extending the present railroad siding and adding two (2) additional railroad tank car unloading towers to the two existing towers. Each unloading tower is capable of unloading one 33,500-gallon railroad tank car per 24-hour day. Therefore, the proposal would double the handling capacity to 134,000 gallons per day. The total estimated cost of the proposal is $215,000.

2. Purpose of the Proposed Facilities in North Adams

The stated purpose of the North Adams proposal is to provide an adequate and reliable supply of LPG product at the plant during cold winter periods to supply customers in the North Adams area (Ex. 2, p. 12). The increased storage capacity would also accommodate growth in pipeline supplies which could serve new customers in the area (Tr. Vol. 2, 37). The latter purpose is implicit in the proposal.

3. Analysis of Proposed Facilities in North Adams

A. Need

The Company's justification of need for the storage facility is based on estimates of days of storage under peak day sendout conditions. The Company calculated days of storage by dividing the LPG storage tank capacity at North Adams by the "maximum peak day LP-Air gas sendout" at the plant during the 1980-81 winter (Ex. 2, p. 5). Using this method, the Company found that the present LPG storage capacity allowed only 3.6 days of storage compared to the 5-6 day period desired by the Company (Tr. Vol. 2, Berkshire claimed that "last winter's and previous winters' intense sendout requirements over two to three week periods and the consequent transportation hardships" necessitate increased days of storage (Ex. 2, p. 6). Deliveries of LPG by 10,000-gallon truck (the primary mode) were delayed during the coldest periods (Ex. 2, p. 13).

The Company's argument has merit. Although the Company's method of calculating days of storage assumes a worst case (a series of maximum sendout days, the probability of which would be slight), the weather data in Exhibit 10 indicate that near maximum sendout conditions could occur four to five days in a row during extended cold periods. For example, during February 10-14, 1979, the degree days stayed close to the peak (73 degree days) and four of the five days were over 70 degree days based on a wind chill factor.

The Company based the calculation of storage days on the 1980-81 winter, which probably represents a worst case in terms of running low on LPG storage. The Company testified that at the

lowest point, LPG storage in the whole Berkshire system was 30-40,000 gallons: less than half of the requirements for a peak day (Tr. Vol. 2, 43). Yet, the maximum daily sendouts in 1976-77 (pipeline gas curtailments boosted LP-Air production) and 1978-79 were nearly as high as the peak sendout in 1980-81 (Ex. 10). The choice of the 1980-81 peak as a base overstated the peak day requirements, but not enough to change the Company's conclusion: during extended period's of cold weather, the LP-Air requirements at the North Adams plant could drain LPG storage tanks before they could be replenished.

The Company stated that the railroad unloading improvements were needed to increase flexibility in the LPG delivery systems (rail and truck). The Company is able to receive LPG in North Adams by railroad tank car and transport the product in Berkshire Gas Company trucks to LP-Air plants in Greenfield, Hatfield, Pittsfield, and Stockbridge (Ex. 2, p. 13). The proposed unloading facilities would expand the amount of LPG that could be handled per day. For example, if the proposed storage capacity at North Adams (300,000 gallons) were nearly empty, the tanks would be refilled by rail in two to three days once rail cars arrived. One day of unloading could provide nearly as much LPG as would be required on a system-wide peak day.

Other justifications of need for North Adams storage and railroad unloading improvements are evident in the record of this case. The proposed facilities in North Adams are consistent with the Company's growth plans (Exhibit 1, pp. 1-4). While the Company forecasts a constant normal peak day LP-Air

sendout (139 MMCF) over the forecast period, the additional LPG storage and delivery flexibility will allow the Company to provide back-up to increased volumes of other firm and best efforts gas supplies. The relatively high price of LPG* will discourage greater annual use of LP-Air. However, during extended cold periods, LP-Air would be a key supplemental supply in the Berkshire system.

Another justification for the proposed North Adams facilities is the need for additional LPG storage in the event of a cut-off of supplies of Algerian LNG. The proposed additional storage at North Adams (9.1 MMCF) alone would cover peak day LNG sendout (3.7 MMCF/day) for 2.5 days (assuming consecutive maximum daily sendouts and not considering existing LPG storage). The Council trusts that the Company would seek a less expensive alternative to LP-Air for LNG replacment over the long term. In the short term, the additional LPG storage capacity at North Adams provides Berkshire with valuable flexibility.

The Company also testifed that it "backed off" pipeline gas and used more propane at the request of other companies in past winters, including 1980-81 (Tr. Vol. 2, 41). That allowed gas companies further along the Tennessee pipeline to use the extra pipeline gas and compensate Berkshire. If the Company were to increase its LPG storage capacity at North Adams as proposed, the Company would have more flexibility in meeting its own requirements and making gas avail-

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* The Company testified that the price of LPG (presently $7.51/MCF) is expected to remain above the price of LNG (presently $6.72/MCF over the forecast period (Tr. Vol. II, 36).

able to other companies during extremely cold periods.

B. Cost of the Proposed Facilities in North Adams

The Company estimated the total cost of materials, equipment, labor, services and overhead for the North Adams's project at $215,000 (Ex. 2, p. 10). The project would be financed by short-term loans and all expenditures related to the project would "be rolled into the rate base" (Tr. Vol. 2, 71). Therefore, all customers in the Berkshire service territory would be sharing the costs of the proposed storage and unloading facilities. The benefits of the new facilities would be shared primarily by about 8,700 gas customers in the North Berkshire County area, especially new customers which could be added when new pipeline supplies can be backed up by LPG storage. Customers in the other divisions of the Company would benefit somewhat from the availability (by truck) of LPG from the North Adams plant.

The costs of the storage and unloading facilities would be partially offset by savings related to the new facilities. The additional LPG storage may allow the Company to avoid penalties ($10 per MCF) for taking pipeline gas over and above daily allotments, purchase more LPG before the heating season when prices may rise, and avoid costlier weekend deliveries of LPG by truck (Tr. Vol. 2, 40, 76). Further, the rail unloading improvements would decrease demurrage charges for rail cars; reduce weekend deliveries, overtime, and switching charges; decrease hazardous waste charges by the Interstate Commerce Commission; and save on transport charges if truck rates exceed rail rates, as the Company expects (Tr. Vol. 2, 76-78).

C. Environmental Impact of Proposed Facilities in North Adams

The proposed storage tanks and unloading facilities at North Adams would have no adverse environmental impact (Ex. 2, p. 14). The project would be constructed on an existing site next to existing storage and unloading facilities. The site is located in an Industrial and Commercial zone; the nearest residence is 600 ft. from the site. No odor or sound pollution or any other emissions would be expected from the additional facilities. Truck deliveries to the plant would be spread more evenly over time, and such deliveries may decrease if the Company uses the rail unloading facilities to capacity.

The Company is regulated by the Mass. Department of Public Utilities (DPU 11725H, Section 4) and has filed this proposal with the Department of Public Safety. Further, the Company has obtained approval of the Town of North Adams for a Flammable Liquids Storage Permit (Ex. 2, p. 14).

D. Alternatives to the Proposed Facilities in North Adams

The Company discussed four alternatives to the proposed facilities: (i) maintain the present storage capacity, (ii) increase storage capacity, but less than proposed, (iii) install additional storage capacity elsewhere, or (iv) add LNG storage capacity at the site or elsewhere (Ex. 2, p. 10). The Company's choice of the proposed facilities over the four alternatives appears to be reasonable: the enlargement of the existing facilities was planned years ago (Ex. 6), the location has the advantages of rail access and ideal proximity to the North Adams lateral of the Tennessee Gas Pipeline, and the size

of the tanks are most practical in terms of cost and delivery of equipment.

The "no build" alternative would be the most reasonable course of action for the Company if Berkshire and the Council were willing to risk that the 1981-82 winter would not be severe, that LNG supplies would not be interrupted, or that pipeline supplies would not be curtailed. However, the value of increased reliability, although unquantified, weighs against taking these risks. The benefits of not building would be a slightly lower rate base, but if real costs of storage facilities increase, costs of future construction could negate the short-term rate benefits.

Conclusions Regarding the Proposed Facilities in North Adams

The Company has demonstrated a need for additional storage capacity at North Adams. The proposed facilities would provide greater reliability at a reasonable cost with no environmental impact. Alternatives could achieve the same system benefits only at greater cost or greater risk of unreliable service.

C. PROPOSED PROPANE STORAGE FACILITIES IN STOCKBRIDGE

1. Description of the Proposed Propane Storage Facilities

Berkshire Gas Company's third proposal is to increase the LPG storage capacity at the LP-Air Plant in Stockbridge (Ex. 2, pp. 1-2). The Company would add two (2) 30,000-gallon storage tanks to an existing site that was built to accommodate the proposed tanks. This $100,000 project would triple the existing storage capacity from 30,000 to 90,000 gallons.

2. Purpose of the Proposed Propane Storage Facilities

The stated purpose of the Stockbridge proposal is "to provide an adequate and reliable supply of LPG product at this plant during cold winter periods to supply customers in this area" (Ex. 2, p. 5).

3. Analysis of the Proposed Propane Storage Facilities

A. Need

The Stockbridge proposal is similar to the North Adams proposal, shares a similar need, and is justified by the same criteria. The Company found that the present LPG storage capacity at Stockbridge allowed only 1.7 days of storage (Ex. 2, p. 5). The proposed facilities would increase the days of storage to 5.1. The analysis of the Company's criteria regarding the North Adams proposal, above, also pertains to the Stockbridge proposal.

Although the Stockbridge project includes no rail unloading improvements (the LPG is delivered only by truck), the benefits of increased storage for the Stockbridge area and the system as a whole are sufficient to justify the project. The Council agrees with the Company: "sound planning would call for increased storage capacity to allow for an additional reliability margin to afford greater flexibility in refilling LPG storage tanks during periods of intense sendout" (Ex. 2, p. 7).

B. Cost of Proposed Storage Facilities

The Company estimated the total cost of equipment and installation at $100,000 (Ex. 2, p. 2). The cost issues discussed in the analysis of the North Adams project, above, pertain to this project as well. However, the offsetting savings in rail-

related activities are absent for this project. The benefits of the new facilities would be shared primarily by about 2,600 customers in the Company's South Berkshire County area.

C. Environmental Impacts of the Proposed Storage Facilities

The proposed storage tanks would be constructed on an existing site in an agricultural area. One abutter has farm land on all four sides (Ex. 3). The proposed facilities would not engender greater truck traffic in Stockbridge (Tr. Vol. 2, 70). Currently about three trucks per week deliver propane to the site. With additional storage capacity, deliveries could be spread out over time and, consequently, the incidence of truck deliveries during the winter would not increase noticeable (Tr. Vol. 2, 70).

No odor or sound pollution or any other emissions would be expected from the additional facilities. Because the tanks will be mounded underground (as opposed to the above ground tanks in North Adams), the Company will install an electric powered rectifier and ground bed to protect the buried tank from corrosion. The Department of Transportation will monitor the rectifier (Ex. 1, p. 2).

The Company is regulated by the DPU and has filed this proposal with the Department of Public Safety. Further, the Town of Stockbridge approved a Flammable Liquids Storage Permit for the facilites (Ex. 2, p. 7).

D. Alternatives to the Proposed Storage Facilities

The Company presented the same four alternatives to the Stockbridge project as above for the North Adams proposal. The proposed project appears to best satisfy the need for storage by adding to an existing storage facility as originally planned (Ex. 3). The location of the present plant is practical and

established.

The "no build" option would be reasonable only at risk of unreliable service, as discussed above regarding alternatives to the North Adams proposal.

Conclusion

The Company has demonstrated a need for additional storage capacity at North Adams. The proposed facilities would provide greater reliability at a reasonable cost with no adverse environmental impact. Alternatives could achieve the same system benefits only at a greater cost or greater risk of unreliable service.

Given the foregoing consideration and comments, it is now ORDERED that the fourth Annual Berkshire Gas Company Forecast Supplement and the proposed facilities described in the Amendment to the Forecast Supplement be APPROVED subject to the following conditions.

1. That in its next filing the Company illustrates how the forecast of normal and design season sendout and peak day sendout on Tables G-1 through G-5 were calculated. The Company should also list all projected customer use factors.
2. That in its next filing the Company discuss historical trends and judgements used as bases for projections of customer use factors.
3. That in its next filing the Company address the issue of conservation in more detail, including, but not limited to, considerations of factors which influence conservation, how these factors are likely to affect the fore-

cast of sendout requirements, how the Company's conservation efforts can be improved, and the bases for any conclusions drawn.

4. That in its next filing the Company addresses in detail its contingency plans should the supply of Boundary Gas be delayed or denied.

5. That in its next filing the Company analyze the costs and benefits (from the customer's perspective) of converting from oil to gas heat. The Company should identify the factors which affect this cost/benefit equation (e.g. age or efficiency of existing oil burners, efficiency of new gas burners, insulation levels, cost of conversion), examine the customer's payback under different assumptions regarding the price of heating oil and the price of gas to the Company's customers and offer any documentation available regarding the impact in the Company's service territory of gas price decontrol.

Robert T. Smart Jr., Esq.
EFSC Hearing Officer

This decision was unanimously approved by those members present and voting at the Energy Facilities Siting Council meeting of July 20, 1981.

Date

Joseph S. Fitzpatrick
Chairman

In the Matter of the Wellesley Municipal Light Department

DOMSC (April 30, 1981)

EFSC No. 80-40

Fourth Supplement to the Long-Range Forecast 1980-89

This decision concerns the 4th and most recent annual supplement for the municipal light department of the town of Wellesley (EFSC No. 80-40) hereinafter referred to as "Wellesley". In this case, the Council is issuing a REJECTION since the department neither submitted a supplement nor made any apparent attempt to do so. Thus, the department has shown a distinct lack of interest in its statutory responsibilities under M.G.L.c. 164 section 69I which requires it to file either a long-range forecast or annual supplement with the Council each year. This is not the first time the Council has found it necessary to reject a supplement by this department. As will be discussed later in this decision, Wellesley has historically exhibited a lack of diligence in preparing and submitting its filings.

The Council has no authority to compel a utility to fulfill its statutory responsibilities; the Council can only attempt to prod a utility into filing. Telephone conversations, always initiated by the Staff, revealed that the department had recently undergone a change in management: consequently, the new management was finding it difficult to complete the supplement. Although the original filing date had been April 1, 1980, the Staff agreed that an extension would be appropriate in order to allow the new

management additional time to prepare the supplement. The extended deadline was set for November 10, 1980, felt by the Staff to be a generous amount of time. Wellesley was also invited to consult freely with the Staff regarding any difficulties encountered in the supplement's preparation. At this time, it was understood that the department fully intended to meet the extended filing deadline; however, when no supplement was received, there was no explanation forthcoming. The Council finds this apparent lack of cooperation by Wellesley to be unacceptable, especially in light of the department's record of non-compliance with filing requirements.

To date, there have been five filings required from each electric utility: one long-range forecast and four annual supplements to that forecast. Wellesley has submitted only three filings and only two have been approved. In 1977, ongoing litigation involving the department prevented it from preparing the 1977 supplement. The Council, fully aware of the shortage of manpower faced by many small utilities, did not issue a rejection. Instead, the Council "rolled-over" the 1977 filing and required the department to include the 1977 information in the 1978 supplement. In addition, the company was requested to address fully certain issues in the 1978 Supplement. However, in 1978, Wellesley submitted an incomplete and inadequate supplement which was eventually rejected after numerous unsuccessful attempts by the Staff to obtain necessary additional information. This current and second rejection brings the total absent or unacceptable filings for this department to three.

Such a condition exists with no other utility, except the Norwood Municipal Light Department. On the contrary, most small utilities have been diligent in meeting their filing requirements

and in communicating with the Staff. The process has been mutually beneficial, enabling refinements and improvements in data requests and reporting techniques.

In the interest of fulfilling its own statutory responsibility per M.G.L.c. section 69H, the Council will, as in 1978, send a copy of this decision to the Board of Selectmen in the town and to the Department of Public Utilities for any action it may deem appropriate pursuant to its supervisory authority under M.G.L.c. 164 section 76.

The Council will require the department to meet with the Staff before the next filing is submitted so that any problems the department encounters regarding the filing can be addressed and appropriately remedied. The Council sincerely urges this department to cooperate with the Council and assures the department that the Staff will, as always, continue to be available to assist in the preparation of the forecasts.

Order

Given the foregoing discussion, it is now ORDERED that the fourth Annual Electric Supplement of Wellesley Light Company be REJECTED and that the following procedures and data be incorporated for the next filing:

1) The company shall meet with the Staff at a mutually convenient time and place before the submission of the second long-range forecast due April 1, 1981, to discuss the forecast's format and content, and thereby to aid the company in submitting an adequate filing.

2) In the next filing, the company shall fully address the Conditions of Approval set out in the Council's 1979 Decision.

Barbara Robinson
EFSC Hearing Officer

Dated at Boston this 30th day of April, 1981.

In the Matter of the Norwood Municipal Light Department

DOMSC (April 30, 1981)

EFSC No. 80-41

Fourth Supplement to the Long-Range Forecast 1980-89.

This decision concerns the 4th and most recent annual supplement for the municipal light department of the town of Norwood (EFSC No. 80-41), hereinafter referred to "Norwood". In this case, the Council is issuing a REJECTION since the department did not submit a supplement nor did it make any apparent attempt to do so. Thus, the department has shown a distinct lack of interest in its statutory responsibilities under M.G.L.c. 164 section 69I which requires it to file either a long-range forecast or annual supplement with the Council each year. This is not the first time the Council has found it necessary to reject a supplement by this department. As will be discussed later in this decision, Norwood has historically exhibited a lack of diligence in preparing and submitting its filings.

The Council has no authority to compel a utility to fulfill its statutory responsibilities; the Council can only attempt to prod a utility into filing. To this end, the Council reduced the filing requirements for Norwood's 4th annual supplement and granted the department successive filing extensions. Although the Staff asked the department to submit formal requests for the extended deadlines, none were received. Furthermore, when the deadlines passed and no filing had arrived, Norwood failed to notify the Staff

or to explain the reason for not complying. The Council finds this apparent lack of cooperation to be unacceptable, especially in light of Norwood's record of non-compliance with filing requirements.

To date, there have been five filings required from each electric utility: one long-range forecast and four annual supplements to that forecast. Norwood has submitted only three filings and only two have been approved. In 1977, ongoing litigation involving the department prevented it from preparing the 1977 supplement. The Council, fully aware of the shortage of manpower faced by many small utilities, did not issue a rejection. Instead, the Council "rolled-over" the 1977 filing and required the department to include the 1977 information in the 1978 supplement. In addition, the company was requested to address fully certain issues in the 1978 Supplement. However, in 1978, Norwood submitted an incomplete and inadequate supplement which was eventually rejected after numerous unsuccessful attempts by the Staff to obtain necessary additional information. This current and second rejection brings the total absent or unacceptable filings for this department to three.

Such a condition exists with no other utility, except the Wellesley municipal Light Department. On the contrary, most small utilities have been diligent in meeting their filing requirements and in communicating with the Staff. The process has been mutually beneficial, enabling refinements and improvements in data requests and reporting techniques.

In the interest of fulfilling its own statutory responsibility per M.G.L.c. section 69H, the Council will, as in 1978, send a copy of this decision to the Board of Selectmen in the town and to the Department of Public Utilities for any action it may deem appropriate pursuant to its supervisory authority under M.G.L.c. 164 section 76.

The Council will require Norwood to meet with the Staff before the next filing is submitted so that any problems Norwood encounters regarding the filing can be addressed and appropriately remedied. The Council sincerely urges this department to cooperate with the Council and assures the department that the Staff will, as always, continue to be available to assist in the preparation of the forecasts.

Order

Given the foregoing discussion, it is now ORDERED that the fourth Annual Electric Supplement of Norwood Municipal Light Company be REJECTED and that the following procedures and data be incorporated for the next filing:

1) The company shall meet with the Staff at a mutually convenient time and place before the submission of the second long-range forecast due April 1, 1981, to discuss the forecast's format and content, and thereby to aid the company in submitting an adequate filing.

2) In the next filing, the company shall fully address the Conditions of Approval set out in the Council's 1979 Decision.

Barbara Robinson
EFSC Hearing Officer

Dated at Boston this 30th day of April, 1981.

TENTATIVE

In the Matter of Chester Municipal Light Department

DOMSC (April 30, 1981)

EFSC No. 80-30

This decision concerns the Chester Municipal Light Department's fourth annual supplement to the long-range forecast filed September 12, 1980 pursuant to M.G.L. c. 164, sec. 69I and Chapter G of the EFSC Regulations. The Supplement was reviewed by the Council's staff.

The Department posted notice of an adjudicatory hearing, but the Council received no responses to the notice. Due to the small size of the Chester system and the distance from Boston, the absence of proposals for new facilities, the lack of change in the forecast, and the lack of public interest, the hearing officer decided not to hold a public hearing in this matter. Technical issues were adequately covered in an information request (April 15, 1981).

Chester is served by Western Mass. Electric Company (WMECo) under an all-requirements wholesale power agreement. The 1980 filing shows a 2.4% compound annual growth rate for total requirements 1980-1989 (compared to a 5.2% rate forecasted for 1979-1988 in the 1979 filing). The Department's forecast methodology is judgemental. Projections in this 1980 forecast are based on several factors: consumers switching from oil to electricity for home heating or supplementing oil heat with quartz heaters; wood heat replacing much demand for electricity in space heating; slower growth in housing construction due to higher transportation costs from Chester to regional employment

centers; and little or no growth in industrial and commercial customers due to transportation costs from Chester to regional markets.

Due to the small size of the Chester system and its contractual relationship with WMECo, the Council will raise any substantive forecast issues in the review of the WMECo (Northeast Utilities System) 1980-99 forecast.

The Department met two of the conditions in the Council decision on the 1979 forecast: the 1980 forecast includes calculations of average use per customer and the Department notified the Council in response to an information request that Chester has not established a "purchase power" rate and has not had any requests for such rates.[1] The Department did not meet two other conditions: tables were not typed and not all annual percent changes were calculated in the tables.

The filing needs improvement. The filing is difficult to review due to the lack of narrative, incorrect or missing calculations,[2] and historical data that is inconsistent with previous filings.

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1 The one wind machine in the Chester service territory indepently generates only about 300 Kw.

2 The "annual percent change" in Tables E-1, E-2 and E-8 should be calculated as follows:

for example, on Table E-1, annual change in the number of customers in 1975 should be

$$\left[(\#\text{ customers } 1975 - \#\text{customers } 1974) \div \#\text{customers } 1974\right] \times 100 \quad \text{or}$$

$$\left[(499 - 439) \div 439\right] \times 100 = \frac{10}{439} \times 100 = 2.3\%$$

Note, also, that the column labeled "Sales for Resale" in Table E-8 should be zero since Chester does not sell any power to other utilities.

For a system like Chester, which receives all the power it needs from a wholesale supplier, accurate and complete historical data may be more important than reasonable statistical projection methods. The conditions in this decision reflect the need for Chester to spend a bit more time in completing the tables. The Council realizes that the Department's staff is small, but accurate and complete data are important. The Council reminds the Department that the EFSC staff is available to answer questions at any time.

ORDER

The Council APPROVES the Chester Municipal Light Department's 1980 Supplement subject to the following conditions:

1) In future filings Chester will submit TYPED forecasts and calculate annual percent changes indicated on the tables which are applicable to Chester.
2) The Department will submit accurate and complete historical data for the years 1970-1980 to the best of its ability.
3) The Department will file Table E-11 which shows peak load (MW) for 1970-1980 and 1981-1990 (forecast) as completely as possible.

Barbara Robinson
EFSC Hearing Officer

Dated at Boston this 1st day of May, 1981.

In the Matter of the Concord Municipal Light Plant

DOMSC (May 1, 1981)

Petition of the Concord Municipal Light Plant for Approval of the Fourth Annual Supplement to its Long-Range Forecast.

Introduction

This decision concerns the Concord Municipal Light Plant's fourth annual supplement filed on July 25, 1980 pursuant to M.G.L. c. 164, sec. 69I and Chapter G of the EFSC regulations. The supplement was reviewed by the Council's staff. This decision addresses the forecast methodology, projected demand requirements, and the power supply plan.

History of the Proceedings

The Light Plant published notice of a public hearing on March 19, March 26, and April 2, 1981. The Council received no responses to the notice. The hearing officer suggested that no adjudicatory hearing be held. The rationale for this approach was that no new facilities were proposed, no significant change from the long-range forecast was noted, and technical issues were covered sufficiently in a technical session with the EFSC staff, held April 16, 1981.

The Forecast

Concord is served by Boston Edison Company under an all-requirements wholesale power agreement. The 1980 filing shows a 3.9% compound annual growth rate for total requirements 1979-

1989 (compared to a 2.5% rate forecasted for 1978-1989 in the 1979 filing). This difference in growth rates reflects projections of greater industrial growth over the forecast period. The Light Plant satisfied the conditions set in the Council's decision on the 1979 forecast: the bases for methods and judgements were addressed in the filing and in the technical session; Concord has not filed "buy back" rates with the Federal Energy Regulatory Commission, but the Plant Manager has decided to use Boston Edison's wholesale rate as the rate Concord would pay for power from a small producer.

Analysis of Demand Forecast Methodology

Concord's 1980 filing resembled the 1979 forecast and showed improvement in the narrative. Concord used a forecast methodology that combined judgement and time trend regression analysis to project demand requirements in four customer classes over the 1980-89 forecast period.

1. Residential Customers with Electric Heat

The customers in this category (rate A-2) heat water solely with electricity under a time switch control. Most of these customers have electric space heating, but some may not. These customers accounted for 7.5% of the system's sales in 1979.

The Light Plant separately projected the number of customers and average use per customer. The average annual change 1975-1980 and judgement were the bases for the selected growth rates in these two vari-

ables. The two were then multiplied to derive total sales for the class (Table E-1). Judgement was based partly on a tendency for customes on the A-2 rate to switch to the A-1 rate (uncontrolled water heat). The Light Plant intends to review the rate differential with an objective to make the A-2 rate more attractive to customers.

2. Residential Customers Without Electric Heat

The customers in this category (rate A-1) do not use electricity as the sole means of heating water under a time control. For example, an electric back-up for solar hot water unit would be included in this rate. This class accounted for 19.1% of the system's 1979 sales. Projections for this class (Table E-2) were derived using the same method used for Table E-1. Judgements supporting a slow growth projection were based on overall slow growth in housing development.

3. Commercial Class

The projection of total class sales was based on time trend linear regression analysis (base period 1975-80; 1973-74 was excluded because of atypical changes during the "energy crisis"). This class represented 26.8% of system sales in 1979. Regression analysis that includes only six data points, by itself, does not inspire confidence in the forecast of commercial sales. However, the light Plant pointed out factors which make the 1.1% annual change appear reasonable: a new shopping center will add some load,

but growth will be slow due to the Concord Planning Board's efforts to control growth. Currently, fast food restaurants are excluded from Concord and development is constrained by relatively large historical districts. The Light Plant should consider giving more weight to its judgement about commercial class demand in light of town controls and potential conservation other than voluntary peak day reductions.

4. Industrial Class

Industrial sales represented 30.6% of system sales in 1979. The Light Plant forecasted power demand separately for each Standard Industrial Classification (SIC) group. The forecasts for SIC's 20, 33, and "other" were based on time trend linear regressions. Projections for SIC 38 were judgemental based on information from firms in that group. Although the Light Department felt comfortable with the regression results, the forecast method for the industrial class is of questionable reliability. The Light Plant does not have a sufficient data base to produce a strong, reliable regression model for a class in which power demands change significantly year to year. A time trend is one factor to consider, but the method used for SIC 38 (judgement based on specific customer information) should carry more weight where SIC groups are made up of only a few firms. Further, the Planning Board enforced a one year moratorium (April 1980 - March 1981) on industrial development. This and other

known or expected factors such as development of an industrial park in southwest Concord and extension of service to the Virginia Road development should carry weight in the industrial class forecast.

The Council is not confident that the industrial class forecast predicts what is most likely to occur. The Light Plant projected that industrial power demand would more than double from 1979 to 1989. A growth of this magnitude, even in a small service territory, needs a methodology behind it to inspire confidence that the growth is likely to occur. In this instance, a methodology that relies less on time trend regression and more on specific industry information and the forecaster's judgement would likely be more reliable.

Peak Load Forecast

The peak forecast (Table E-11) was based on "known requested load amounts from a number of industrial and large commercial customers and developments as well as including a normal growth beyond those mentioned above". Although this method appears reasonable, the magnitude of the growth (1989 summer peak load would be 60% greater than 1979 summer peak) and the declining load factor raises doubts about the method. First, growth in the load factor would appear to be constrained somewhat by the Light Plant's load control efforts in all classes. Second, the declining load factor is not consistent with the growth in industrial demand which generally improves a system load factor. The load factor is merely derived from the projected power demand

(Mwh) and peak load (Mw), but the load factor decline at least indicates that the Light Plant should review its peak load forecast method.

Supply

Concord's power needs are wholly provided under a wholesale purchase agreement with Boston Edison Company. The Town of Concord passed "Chapter 164A" which enables the Town to join the New England Power Pool (NEPOOL) as an independent member. Concord is not likely to change its contractual status soon, however, until more equipment and purchase options are obtained and more system upgrading is completed.

The Light Plant listed one transmission line and one substation as "under consideration" with an in-service date for both changed from 1988 (in last year's filing) to 1990-1992.

Conclusion

Concord has improved its forecast and willingly cooperated with the Council. However, the Council would have more confidence in the forecast if Concord would rely less on time trend regression in the industrial class and rely more on knowledge of the industries and judgement of the forecaster. Further, the peak load forecast should be reviewed by the Light Plant to solve the inconsistency between growth in the industrial class and a projected declining load factor. The Light Plant could also include in the filing many of the facts and insights which were discussed at the technical session.

Order

The Council finds that the Concord Municipal Light Plant's Supplement contains historical data that are accurate and complete and a forecast methodology that is a reasonable statistical projection method. The forecast is APPROVED subject to the following condition:

> The Light Plant shall review its forecast methods for the industrial class and peak load in light of the discussion of time trend regression, specific customer information, forecaster judgement, and load factor contained herein, and describe any resulting changes in methods in the next filing.

Barbara Robinson

Barbara Robinson
Hearing Officer

Dated at Boston this First day of May, 1981.

In the Matter of the Rowley Municipal Light Board

DOMSC 80-47 (May 5, 1981)

Petition of the Rowley Municipal Light Board for Approval of the Fourth Annual Supplement to its Long-Range Forecast.

Introduction

This decision concerns the Rowley Municipal Light Board's Fourth Annual Supplement filed on April 23, 1980 pursuant to M.G.L. c. 164, sec. 69I and Chapter G of the EFSC regulations. The Supplement was reviewed by the Council's staff. This decision addresses the forecast methodology, projected demand requirements, and the power supply plan.

History of the Proceedings

The Light Board published notice of adjudicatory proceedings in local newspapers on March 13, 20, and 23, 1981 as ordered by the Council in a letter dated March 3, 1981. The Council received no responses to the notice. The Hearing Officer conducted a public hearing on April 28, 1981 at the Council offices, with G. Robert Merry, Manager, representing the Light Board. Although no new facilities were proposed and no significant change from the Long-Range Forecast was noted, the Hearing Officer chose to hold a hearing as the most practical way to cover a number of technical issues not previously addressed by the Staff and the Light Board. The recent change of management at the Light Board added to the need to cover a number of topics.

The Forecast

Rowley is served by the Ipswich Municipal Light Department under an all-requirements wholesale power agreement. The 1980 filing shows a 4.1% compound annual growth rate for total requirements 1980-1989. Last year's filing showed an equivalent

growth rate for the same period. Rowley projects that sales to commercial/industrial customers will expand at a 4.8% compound annual growth rate, while sales to other customer classes will be closer to the 4.1% growth in the system as a whole.

The Council's final decision on Rowley's previous filing (79-47) included four conditions. Rowley complied with the order in this 1980 filing, but the Staff needed further explanation of three of the resulting changes in order to review the forecast. The fourth change was clearly stated: the Board has not received any requests for "buy back" rates, but will negotiate an equitable agreement on request (Supplement, p. 1).

Analysis of Demand Forecast Methodology

Rowley projected energy requirements in four customer classes by extrapolating from historical data and adjusting those projections based on judgements about local constraints to growth such as water supply, wetlands-zoning, an apartment moratorium, subdivision plans, and sewer system facilities.

1. Residential Customers

Rowley projected residential electricity sales by projecting the number of customers and average use per customer and multiplying the two to derive total sales. In spite of recent declines in average use per customer, explained to be the result of conservation and "abnormal climate conditions" (Supplement, p. 1), the Light Board forecasted an annual growth rate of 3% in average use over the forecast period. Judgement in this instance

was based on an assumption that rising oil costs are sending heating customers back to electricity. However, such a tendency may be more than offset by the Town's conversion of master-metered apartments to individually metered units, new space heating customers supplementing electricity with wood, and conservation by all customers in use of appliances such as refrigerators, water heaters and air conditioners. The Light Board should back up its forecast with evidence concerning the magnitude of these and other factors such as competition from gas, the end of the apartment moratorium, zoning changes, and the availability of new water services. Spot checks, for example, could be used as evidence regarding many of these factors.

2. Commercial/Industrial Class

The Light Board projected a 4% compound annual growth rate 1980-89. For a small town, this would translate into significant growth. The current manager's judgement does not support such a growth rate. The manager explained that Rowley has no large industry and no large commercial establishments and no municipal sewerage. The manager should review the projections in the commercial/industrial class and, in the next filing (1981), state the basis for judgements about growth.

3. Streetlighting

The 1980 forecast shows a 3.1% compound annual growth rate for energy requirements in streetlighting 1980-89. The basis for this projection needs to be stated in the

next filing. The important determinants of power needs in this class will likely be the rate at which Rowley reduces the number of streetlights and replaces lights with sodium luminaries.

4. Losses and Internal Use

Losses represent about 5% of total requirements in 1980 and are projected to increase to 14% of total in 1989. The present manager did not know the basis for this projection and intends to review this category for the next filing.

Peak Load Forecast

Rowley projected peak load 1980-89 by applying the 1979 annual load factor to the total requirements forecast, resulting in a 4.1% compound annual growth rate. Rowley has no programs to control peak demand, but intends to look at potential for reducing peak loads of electric space heating customers. This underscores the need for Rowley to continue to separate heating and non-heating customers and to perhaps explore further the characteristics of heating customers in the service territory.

Historical Data in the Demand Forecast

The Council requires that statistical projection methods be based on accurate historical data. In Rowley's case, accurate historical data is not essential to the largely judgemental projections. Nevertheless, the Council has more confidence in judgements that are based, at least in part, on accurate historical data. In the 1980 filing, Table E-8 included subtotals of energy requirements that did not add to total requirements as

listed on Table E-11. The Light Board submitted a revised Table E-8 (Exhibit A), but the discrepancy (about 8% each year 1979-89) was not solved. The Light Board should review the historical data and be sure that all sales are attributed to appropriate customers classes.*

Supply

Of all the small electric utilities in Massachusetts, Rowley is in a unique situation in that the Light Board obtains all of its electric power needs from another small municipal utility --Ipswich. The all-requirements contract, renewed annually, has a limit of 7 Mw. Rowley is now well within that limit, and the forecasted peak load for 1989 is only 4.84 Mw. However, Rowley accounted for 21% of the total requirements of Ipswich (1979), making accuracy in Rowley's forecast important to Ipswich's own generation plans.

From Rowley's viewpoint, the supply arrangement is far from ideal. Although the contract is renewable automatically, Ipswich can be expected to press for rate increases and, possibly, for upgrading of Rowley's transmission lines from 5 and 15 Kv to 23 Kv. Presently, Rowley has no practical options, but the Light Board intends to explore possibilities such as joint purchase (with surrounding towns) of a New England

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* If, for example, not all municipal power requirements were included in Table E-8, then municipal needs could be reported as a separate column or added to the commercial/industrial category.

Power Company line, a regional facility that would burn trash to generate electricity, or membership in the Massachusetts Municipal Wholesale Electric Company (MMWEC).

Conclusion

Considering the size and nature of the Rowley system, the 1980 forecast methodology is a reasonable statistical method based on accurate historical data. However, the Council would have more confidence in the forecast if the bases for judgements were more fully stated in the narrative, the discrepancy in Table E-8 were solved, and if the judgements about growth in residential average use, commercial/industrial demand, and losses were reviewed before the next filing.

The Council appreciates the cooperation of the new plant manager and looks forward to seeing a reflection of his judgement and his own growing knowledge of the Rowley system in the next filing.

Order

The Rowley Municipal Light Board's Fourth Supplement is APPROVED subject to the following conditions:

1. The Light Board will review historical data, especially on EFSC Tables E-8 and E-11, to verify accuracy and completeness.
2. The Light Board will review judgements about growth in residential average use, commercial/industrial demand, and losses in light of knowledge of factors which are most likely to

affect electric power requirements over the forecast period.

Barbara Robinson
Hearing Officer

Dated at Boston this fifth day of May, 1981.

In the Matter of the Groveland Electric Light Department

DOMSC (May 4, 1981)

80-39

Petition of the Groveland Electric Light Department for the Approval of the Fourth Annual Supplement to its Long-Range Forecast.

Introduction

This decision concerns the Groveland Municipal Light Department's Fourth Annual Supplement filed April 26, 1980 pursuant to M.G.L. c. 164, sec. 69I and Chapter G of the EFSC regulations, the Supplement was reviewed by the Council staff. This decision addresses the demand forecast methodology, projections of demand requirements, and the power supply plan.

History of the Proceedings

The Department published notice of a public hearing on March 12, 19, and 26, 1981 as required by the Council in an order dated March 3, 1981. The Council received no responses to the notice. The hearing officer suggested that no adjudicatory hearing be held; the rationale for this approach was that no new facilities were proposed, no significant change from the long range forecast was noted, and technical issues were covered sufficiently in discussions with Groveland's consultant, R.G. Vanderweil Engineers, Inc. in April 1980 and April 1981.

The Forecast

Groveland is served by the New England Power Company under an all-requirements wholesale power agreement. The 1980 filing shows a 0.5% compound growth rate compared to a 0.4% rate forecasted in the 1979 filing. No facilities were planned by the Department.

The Council made several requests in the final decision on the 1979 filing. Groveland met five of the requests: the Department expanded its narrative considerably, explained fluctuations in losses, provided information on peak pricing, discussed rate design, and discussed "buy back" rates. The other requests were not fully met: the Department did not discuss how new electric homes and sewer projects were expected to affect demand nor did it explain fully how future power requirements were projected. These points were discussed with Vanderweil Engineers, Inc. and should be more clearly expressed in the Department's second long-range forecast (1981).

> The Department's projections are based on "extrapolations of previous years' consumption, weighted averages and familiarity with the local conditions by the Department" (Supplement, p.2). Groveland presented a few details on each of five customer classes -- residential, commercial/industrial, other, street lighting, and losses.

1. Residential

The residential class accounted for 55% of total system sales (1980). The major difference between this Supplement and the previous filing (1979) in the residential class is the prediction of a high percentage change in consumption in the initial years of

the forecast period and smaller percentage changes in later years of the period.

The Department predicted that customers with electric heart will increase by a 2.3% compound annual growth rate, average use will be constant, and total consumption for those customers will increase by a 2.3% rate. Residential customers without electric heat will increase at a 0.5% rate, average use will stay the same, and total use will grow at a 0.5% rate. The Department manager's judgement about future housing development and Planning Commission policies was apparently factored into these numerical projections, but that part of the methodology is not clear in the filing.

2. Commercial/Industrial

This class includes municipal and light industry and made up 30% of total system requirements (1980). The Department projected no increase in consumption in the class until 1984, then a gradual increase in annual percentage change. The Department anticipated a decision to construct Phase III of Groveland's Sewer Project near the end of the forecast period. This would apparently spur growth in this class. After a 4.3% compound annual growth rate 1974-79, the class was forecasted to increase consumption by a 0.2% rate 1980-89.

3. Other

This class included privated area lighting, internal Department use, and consumption by public authorities other than the Town of Groveland. No growth was expected in this small class

(4% of total system requirements).

4. Streetlighting

No growth was expected in this class due to more efficient sodium luminaries.

5. Losses

The Department expected that capacitors installed on the Groveland system would help reduce the compound annual growth rate losses from 8.8% (1974-79) to 0.9% (1980-89). Losses were expected to account for 8% of total requirements in 1980.

Peak Load

The summer peak (3.7 Mw in 1979) was projected to increase slightly at a 0.5% compound annual growth rate. This part of the forecast lacks documentation in terms of the Department's judgements and the basis of such judgements.

The load profiles (EFSC Tables E-26 through E-29) were waived as requested by the Department due to lack of necessary information.

Conservation

The Department discussed conservation briefly, mentioning efforts in off-peak pricing, sodium luminaries, new capacitors, and a study of off-peak electric space heating rates. The forecast did not explain how these factors fit into the calculations of future demand in the various customer classes.

Power Supply

Groveland's power needs are wholly provided under a wholesale purchase agreement with the New England Power Company. For the near future, this arrangement appears to be the most practical for

Groveland. According to the Department, neither membership in the New England Power Pool (NEPOOL) nor the Massachusetts Municipal Wholesale Electric Company (MMWEC) looks attractive when current rates are weighed against future capital expenditures or bond repayments.

Conclusion

Groveland improved its forecast in the 1980 filing and has willingly cooperated with the Council. The forecast methodology included reasonable statistical projection methods considering the size and nature of the Groveland system -- small, stable, largely residential. The forecast of minimal growth in energy requirements appears reasonable. However, the Council would have more confidence in the forecast if Groveland would explicitly include judgements based on the knowledge and experience of the Department. In forecasts filed by Groveland and other small electric utilities, the Council looks for evidence that the utility is exploring and keeping abreast of the determinants of electricity demand. Therefore, the utility's insights and judgements are important supplements to statistical projection methods.

Without much effort on the part of the Department (and consultant), the next filing could show how Groveland incorporates into the forecast such factors as knowledge and assumptions about housing developments, the Town Planning Commission's policies, commercial and industrial prospects, conservation programs and trends, and consistency with NEESPLAN (Groveland's supplier's energy plan for the years 1981-95).

Order

The Council finds that the Groveland Municipal Light Department's Supplement contains historical data that are accurate and complete and a forecast methodology that is a reasonable statistical projection method. The forecast is hereby APPROVED. The Council requests that the Department (or consultant) meet with the Council staff prior to the next filing to discuss the forecast methodology, especially those issues discussed in this decision.

Barbara Robinson
Hearing Officer

Dated at Boston this fourth day of May, 1981.

COMMONWEALTH OF SSACHUSETTS
Energy Facilities Siting Council

In the Matter of a Proposed Rulemaking: Amendments and a New Chapter Relating to Licensing of Hydropower Generating Facilities	)	EFSC No. 80-35B

DECISION AND ORDER

BACKGROUND

The Energy Facilities Siting Council (Council) has undertaken this proceeding in order to implement a new procedure for licensing hydropower generating facilities in Massachusetts. This rulemaking will complete a process begun in 1978.

Chapter 7 of the Acts and Resolves of 1978 required the Council and the Energy Office to study State licensing procedures for hydropower projects. Their Report to the General Court, issued December 27, 1978, found excessive duplication, overlapping jurisdiction among agencies, and potential for significant delay in the existing licensing process. Legislation was recommended. The General Court passed G.L.c. 164 §69H1/2, which instructed the Council to coordinate licensing of hydropower generating facilities by simplifying requirements for permits and licenses, and to promulgate rules and regulations. The Council was further directed to establish preliminary notification forms and other forms after consultation with the licensing agencies, to conduct pre-licensing conferences between developers and those agencies, to assist in resolving disputes, to set time limits for permitting and licensing decisions, and to serve as a forum for final administrative appeal of a permitting agency's action or failure to act.

The Council has consulted extensively with hydropower developers and with the licensing agencies in the course of this rulemaking.

SUMMARY

The draft regulations attached herewith set up a procedure which follows the recommendations of the Report to the General Court and the new law's directives very closely.

A brief description of the process established for hydropower project licensing under these proposed regulations is as follows: the developer will prepare a preliminary notification form for circulation to all appropriate agencies. For most projects, this form will consist of the ENF now prepared under the Massasusetts

Environmental Policy Act plus a Hydropower Supplement. When an ENF is not required, the Hydropower Preliminary Notification Form will be used. Within 30-40 days, a joint meeting of all agencies will be held. The developer will describe his project, and the agencies will respond with questions and comments. Within 15 days, the agencies will submit letters to the developer stating the extent of their jurisdiction over the project, and what additional information, forms or applications will be needed for a final permitting decision. Once it has been determined that an agency has enough information, the Council will set deadlines for final agency decisions not to exceed 90 days. The Council will perform a dispute mediation function and will act as a forum for final administrative appeal and review if the developer is aggrieved by a final agency decision or failure to decide.

PROCEEDINGS

Before this rulemaking proceding was formally commenced, drafts of these proposed regulations and preliminary application forms were sent to licensing agencies, developers, and other interested persons for comment. Extensive revisions were made as a result of the comments received.

Public notice of this rulemaking was widely published in Massachusetts newspapers in late January and early February, 1981. In addition, over 200 notices were sent by mail. Public hearings were held in Boston or February 6th and in Greenfield on February 18th. Public comments were received until February 28, 1981. The Tentative Decision, written by the EFSC's Senior Counsel, was issued on March 27, 1981 and was presented to the Council at its meeting on April 3, 1981 for consideration and a vote.

COMMENTS

The comments received on the proposed regulations and forms have been quite favorable, both from developers and from the agencies. Many of the changes suggested by the commenters have been incorporated into the final drafts; others have not been specifically incorporated but have in substance been "taken care of", often in sections other than those referenced in the comments. Other differences have been ironed out in face-to-face meetings and over the telephone.

One common thread ran through the comments received on the first draft - a concern that the appeal hearing provisions did not comply with Chapter 30A's procedural requirements. That concern has been laid to rest; the appeal portions of the regulations being proposed for a vote now meet all statutory requirements.

One developer suggested an exemption from all state licensing requirements for hydropower projects below 50 KW. This is particulary interesting in light of FERC's current movement towards leaving small hydro project licensing up to the states. Such an exemption cannot be created by regulation; this would require an act of the legislature.

DEQE is now revising the "Notice of Intent" form used under the Wetlands Act, G.L.c. 131 §40. Meetings with the people involved at DEQE indicate that substantial changes will be made. The questions asked of developers in the latest draft of the "Notice of Intent" have in essence been incorporated into the forms proposed with these regulations. Additional changes can be incorporated into the forms even after these regulations have been adopted, so it will not be necessary to delay adoption of the forms as written.

DEQE's General Counsel would allow any agency to decide on a permit application at any time up to the expiration of time for appeal, and seeks a specific change in proposed Rule 95.4. The appeal section is flexible enough for an agency to act even after the time for appeal has expired. Settlement of appeals will always be encouraged under these regulations.

The Council thanks all participating parties for their comments.

ORDER

It is hereby ORDERED that the amendments and new regulations as set out in the Appendix to this decision be, and hereby are, promulgated by the Council. The Council instructs its Senior Counsel to take the necessary step remaining to record this agency action with the Secretary of State so that this action may take effect. The Council also instructs its Senior Counsel to issue a directive establishing the two new forms described in proposed Rule 92.2 for hydropower licensing as soon as these regulations become legally effective.

Energy Facilities Siting Council

by Robert T. Smart Jr.

Robert T. Smart, Jr., Esq.
Senior Counsel

This decision was unanimously approved by those members present and voting at the Energy Facilities Siting Council meeting of April 3, 1981.

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Joseph S. Fitzpatrick
Chairman

APPENDIX: AMENDMENTS

I. EFSC rules under Chapers A,E and J are hereby amended as follows:

A. Amendments to Chapter A

1. Amend Rule 1.3 by adding to the end of the sentence: "and §69H 1/2".

2. Amend Rule 2.3 by adding a second sentence: "The Council is also responsible for coordinating the licensing of hydropower generating facilities under G.L. c. 164 §69H 1/2."

3. Amend Rule 3.3 by striking the word "and" in the sixth line of the second paragraph of the definition of Adjudicatory Proceedings, and by adding to the end of that paragraph the following: "and hearings on appeals under G.L. c. 164 §69H 1/2".

B. Amendments to Chapter E

Amend Rule 41.2 by substituting the following sentence: "These regulations are promulgated pursuant to the authority of G.L. c. 164 §69H, 69H 1/2, 69I."

C. Amendments to Chapter J

1. Amend Rule 81.1 by inserting "L" between "K" and "of" in the second sentence of the second paragraph.

2. Amend Rule 83.1(1) by inserting "69H 1/2" between "69H" and "69I" in the last line.

II A new Chapter L to the EFSC Rules is hereby added as follows:

Regulations of the Energy Facilities Siting Council

Chapter L - Licensing of Hydropower Generating Facilities

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Chapter L - Licensing of Hydropower Generating Facilities

Part 91 - General

Rule 91.1 - Scope

This Chapter shall apply to actions taken by the Council under G.L. c. 164 §69H 1/2, which deals with licensing of hydropower generating facilities.

Rule 91.2 - Statutory Authority

This Chapter is promulgated pursuant to G.L. c. 164 §69H 1/2 and c. 30A §§2, 9.

Rule 91.3 - Purpose

The purpose of this Chapter is to implement the policy and provisions of G.L. c. 164 §69H 1/2 which requires the Energy Facilities Siting Council to coordinate the permitting and licensing of hydropower generating facilities by simplifying requirements for permits and licenses in Massachusetts. To this end, the Council has established preliminary notification forms and other forms to be employed for permitting and licensing; will conduct pre-licensing conferences between developers and these agencies jointly with the Secretary of the Executive Office of Environmental Affairs; will assist in resolving disputes between developers and agencies concerning the form, content, level of detail and schedules of information and data requirements; will set time limits for decisions on permit and license applications; will increase cooperation between the state and federal licensing agencies; and will serve as a forum for final administrative appeal for any party aggrieved by a permitting and licensing agency's action or failure to act.

A developer should use the procedures established by this new hydropower statute and regulations. If he does not enter and follow this process, starting with filing one of the new forms - the Hydropower Preliminary Notification Form or the Environmental Notification Form and Hydropower Supplement, he cannot use the appeal section, Part 95.

It is to be noted that these regulations, promulgated under G.L. c. 164 §69H 1/2, do not affect the responsibilities of the Executive Office of Environmental Affairs under G.L. c. 30 §§62-62H. They do not affect deadlines for final orders imposed upon the Department of Environmental Quality Engineering under G.L. c. 131 §40. Nor do they affect the "federal consistency" review authority of the Massachusetts Coastal Zone Management Office under 16 U.S.C. §1451 et seq.

Developers who have already begun the state licensing process when these regulations become effective may utilize the procedures of this Chapter, but cannot utilize the appeal section, Part 95. unless they have gone through an informal Council-run pre-licensing conference similar to that described in Rule 93.6.

Rule 91.4 - Application of Chapters A and B

The Rules set forth in Chapter A shall apply to this Chapter except to the extent that the two Chapters are in conflict. In the event of a conflict, this Chapter shall prevail over Chapter A. For the application of Chapter B to appeals under this Chapter, see Rule 95.2.

Rule 91.5 - Application of This Chapter to Final Orders of the Department of Environmental Quality Engineering

Notwithstanding other provisions of this Chapter, the Department of Environmental Quality Engineering shall act on a request for a final order within the time limitations specified by G.L. c. 131 §40.

Rule 91.6 - Definitions

For the purpose of the regulations under this Chapter the following definitions shall apply unless the context or subject matter requires and specifies a different interpretation.

"Action or failure to act" occurs when (1) a permitting and licensing agency grants or denies an approval, permit, license, certificate or permission to a developer, (2) an agency fails to grant or deny an approval, permit, license, certificate or permission within a time limit set by the Council under Rule 93.12, or (3) an information deadlock is established, as described in Rule 93.9.

"Agency" means one of the "permitting and licensing agencies" as defined in G.L. c. 164 §69H 1/2. "Permitting and licensing agencies" are defined there as "all agencies, authorities, and departments of the Commonwealth, and local conservation commissions whose approval, order, order of conditions, permit, license, certificate, or permission in any form is required prior to or for construction of a hydropower generating facility, except the secretary of environmental affairs acting under the provisions of section sixty-two to sixty-two H, inclusive, of chapter thirty and shall include, but not be limited to, the department of environmental quality engineering including the division of water pollution control, the department of environmental management, the department of fisheries, wildlife and recreational vehicles, the conservation commission with jurisdiction over the proposed site, the Massachusetts Historical Commission, the department of public utilities, and any other agency, authority, or department of the commonwealth, county, city or town government, as may from time to time be so designated by the energy facilities siting council."

"Appeal" means an appeal under Part 95 of this Chapter from an action or failure to act on the part of a permitting and licensing agency.

"Days" means calendar days; provided that in computing time periods under these regulations, such periods shall exclude the day of the event which triggers the time period. It is further provided that should the last day of a period fall on a Saturday, Sunday, legal holiday or declared state of emergency day, such period shall be extended to the close of business on the next business day.

"Developer" means any person, corporation, partnership, municipality, utility or other entity which is attempting to obtain the permits and licenses required prior to or for the construction or start-up of a hydropower generating facility.

"ENF" is an Environmental Notification Form as defined in the Massachusetts Environmental Policy Act regulations under G.L. Ch. 30 §§52-62H.

"Hearing Officer" means any person designated by the Council or its Executive Director to conduct hearings of appeals pursuant to Part 95 of this Chapter.

"Hydropower Generating Facility" means any electric or mechanical power generating unit whose power source is water flow and which is not a facility as defined in G.L. c. 164 §69G.

"HPNF" is the Hydropower Preliminary Notification Form established by the Council as the developer's preliminary filing form under Part 94 of this Chapter.

"Hydropower Supplement" is the form established by the Council to be filed along with the ENF as the developer's preliminary filing form under Part 93 of this Chapter.

"MEPA Unit" is that branch of the Executive Office of Environmental Affairs which implements the Massachusetts Environmental Policy Act and regulations thereunder.

"Prelicensing Conference" means the meeting between the developer and the agencies to be called, noticed and conducted under Rules 93.4 to 93.6. Whenever possible, this conference will be combined with the MEPA "scoping session"., held under G.L.c. 30 §§62-62H and implementing regulations, in a single meeting.

Part 92 - Forms

Rule 92.1 - General

The Council will consult with the affected agencies before establishing or modifying any forms described under the next two rules. Any Council directive establishing or modifying these forms will become effective on the fifth day after mailing of notice of said directive to the agencies.

Rule 92.2 - Preliminary Notification Forms

The Council hereby establishes two preliminary notification forms to be filed with the agencies. The agencies may not require the developer to file any forms other than these, except the "Notice of Intent to file an ENF" under G.L.c. 30 §§62-62H and implementing regulations, before the pre-licensing conference. The first of these is a Hydropower Supplement to the ENF, which is to be attached with an ENF so as to create a single form and filed under Part 93; the second is a Hydropower Preliminary Notification Form (HPNF), to be filed under Part 94 when a determination has been made by the Secretary of the Executive Office of Environmental Affairs that an ENF is not required. These forms replace the Notice of Intent normally filed with local Conservation Commissions under the wetlands Act, G.L. Ch. 131 §40.

These forms can be modified in accordance with the procedures of Rule 92.1.

Rule 92.3 - Other Forms

The Council may establish, and later appropriately modify, forms for use in connection with the procedures of Rules 93, 94 and 95, below. It may also establish, consolidate, or modify forms to be used by one or more of the agencies, in lieu of, or in addition to, any forms which developers are required to prepare in order to obtain permits or licenses from said agencies.

Part 93 - Coordination of Permitting and Licensing When an ENF Is Being Filed

Rule 93.1 - Applicability

This Part applies when a developer is filing an Environmental Notification Form (ENF).

Rule 93.2 - Filing

A developer shall file the combined ENF-Hydropower Supplement in accordance with the filing instructions and "List of Agencies" in the Hydropower Supplement, in the number of copies indicated. Evidence of proper filing shall be provided by a developer to the Council.

These filing instructions do not affect the requirement to publish a "notice of intent to submit an ENF", under G.L.c. 30 §§62-62H and implementing regulations, within thirty days before filing the ENF.

The Council may require a developer to submit information supplementing his filing to the agencies, in advance of the pre-licensing conference.

Rule 93.3 - Effect of Filing

Receipt of the ENF and Hydropower Supplement by the agencies will trigger the Massachusetts Environmental Policy Act review process, the local Conservation Commission's review process under G.L.c. 131 §40 (this combined form replaces the Notice of Intent with respect to hydropower projects), and the review process of all other agencies.

Rule 93.4 - Date for Pre-Licensing Conference

The Council shall set a date for any pre-licensing conference to be held under Rule 93.6 after consultation with the MEPA Unit. This date shall be within forty (40) days after the Council receives an ENF and Hydropower Supplement, or within thirty (30) days after publication in the Environmental Monitor under G.L.c. 30 §§62-62H and implementing regulations, whichever is sooner. The pre-licensing conference, whenever feasible, should be held in conjunction with the MEPA Unit's "scoping session", held under G.L.c. 30 §§62-62H and implementing regulations, and should be held at or near the project site.

Rule 93.5 - Notice of Pre-Licensing Conference

The Council shall notify the developer, all agencies, Federal regulatory agencies, providers of financial assistance, the electric utility in whose service territory the proposed facility is located, and other interested persons or parties, of the time, date and place of the pre-licensing conference. Notification shall be a accomplished by mail and publication, as the Council deems appropriate.

Rule 93.6 - Pre-Licensing Conference

(1) Pre-Licensing Conference shall be co-chaired by a person designated by the Council and one designated by the Secretary of the Executive Office of Environmental Affairs, unless they agree otherwise.

(2) Pre-Licensing Conferences will be public and non-adjudicatory, and it is not required that an official record be kept. Copies of documents circulated, however, will be kept by the Council for inspection by any persons interested.

(3) Matters for discussion may include the developer's proposal and the responses of the agencies and other participants. The agencies may be asked to comment upon the following matters:

(i) their jurisdiction over the project as proposed;

(ii) their particular concerns regarding the project;

(iii) what additional information, data and studies they will need; and

(iv) what additional forms or applications the developer will be required to fill out.

Rule 93.7 - Statement of Agency Requirements

(1) Within fifteen (15) days after the pre-licensing conference, each agency notified of the pre-licensing conference shall mail or deliver a statement to the developer, and file a copy with the Council. The statement shall specify:

(i) the extent of the agency's jurisdiction over the project as proposed

(ii) the agency's particular concerns regarding the project;

(iii) what additional information, data or studies the agency will need in order to make a permitting or licensing decision;

(iv) what additional forms or applications developers will be required to fill out; and

(v) that the agency's responses to (i) through (iv) are complete and accurate.

(2) Rule 97.3(1) statements may be used by a developer as evidence of state and local consultation for Federal Energy Regulatory Commission licensing.

(3) These Rule 93.7(1) statements shall be considered by the Council in any informal dispute resolution under Rule 93.11, and shall be part of the record in appeal hearings under Part 95 of this Chapter.

Rule 93.8 - Determination of Filing Adequacy

(1) Once a developer has filed the information, data, studies, forms and applications asked for by a particular agency under Rule 93.7, he shall mail a letter to that agency, with a copy mailed or hand delivered the same day to the Council, stating his opinion that he has filed all materials necessary for that agency to make a final decision.

(2) Within fifteen (15) days after receipt of a Rule 93.8(1) letter, an agency shall mail a responding letter to the developer, with a copy mailed or hand delivered the same day to the Council, stating:

(i) that the materials filed are sufficient for the agency to make a final decision; or

(ii) what additional materials are still needed.

(3) If the agency's response under Rule 93.8(2) is that additional materials are still needed, developer should file the additional requested materials. If the agency does not respond within seven (7) days after this filing, the filing shall be presumed complete.

Rule 93.9 - Information Deadlock

If a developer believes that an agency is unreasonable in requiring additional information, data, or studies under Rules 93.7(1), 93.8(1), or 93.8(2)(ii), it may withold the required materials and request a permit or license denial. Such denial shall be provided within seven days by the agency. This denial may then be appealed under Part 95, after exhaustion of administrative remedies, an an "action or failure to act".

Rule 93.10 - Project Alterations

(1) If a developer makes any substantial changes or modifications in the design or operational plans of his project after the pre-licensing conference, he shall send a description of said changes or modifications to each agency notified of the pre-licensing conference, and to the Council.

(2) If an agency finds the changes or modifications significant, it shall reflect that fact in its Rule 93.7 Statement, or shall mail or deliver to the developer, and send a copy to the Council, an amended Rule 93.7 Statement. If an amended Rule 93.7 Statement is not sent within fifteen (15) days after receipt of notice of the change or modification, the developer and the Council may assume that they will not affect that agency's requirements or final decision.

Rule 93.11 - Informal Dispute Resolution

Upon request by a developer or an agency, the Council shall make reasonable efforts to assist them in resolving disputes concerning the form, content, level of detail and schedules of agency requirements.

Rule 93.12 - Time Limits for Final Agency Decisions

Once an agency indicates, informally, in writing or in a statement under Rule 93.7 or 93.8(2)(i), that it needs no further materials from the developer in order to make a final decision, or once the Rule 93.8(3) presumption is triggered, the Council shall set a time limit of not greater than ninety (90) days within which that agency must issue a final determination whether or not to issue the appropriate license, certificate, sign-off or other evidence of approval of the application.

Rule 93.13 - Effect of Environmental Impact Report Upon Time Limits

If the developer is required to file an environmental impact report under G.L. c. 30 §62B, the Council may alter the time framework contemplated in the Rules of this Chapter, to conform with the requirements of Chapter 30 §62D.

Part 94 - Coordination Permitting and Licensing When an ENF Is Not Required

Rule 94.1 - Applicability

This Part applies when a proposed project does not require MEPA review, pursuant to G.L.c. 30 §62E and implementing regulations.

Rule 94.2 - Filing

A developer shall file the Hydropower Preliminary Notification Form (HPNF) with the agencies listed in the HPNF's Table of Agencies, in the manner of copies indicated thereon.

Rule 94.3 - Effect of Filing

Receipt of the HPNF shall serve in lieu of the Notice of Intent for the local Conservation Commission's responsibilities under G.L.c. 131 §40, and shall trigger action of all other agencies according to their statutory responsibilities.

Rule 94.4 - Date for Pre-Licensing Conference

The Council shall set a date for the pre-licensing conference upon receipt of the HPNF. This date shall be within thirty days after said receipt.

Rules 93.5 to 93.12, inclusive, shall apply to Part 94 except that in Part 94 pre-licensing conferences shall be chaired by the Council designee alone, rather than jointly with a designee of the Secretary of the Executive Office of Environmental Affairs as under Rule 93.6. In addition, Rule 94 pre-licensing conferences will not be held in conjunction with MEPA "scoping sessions", because Rule 94 only applies when a project is categorically excluded from MEPA review.

Part 95 - Appeals to the Council

Rule 95.1 - Scope

This Part shall apply to appeals under G.L. c. 164 §69H 1/2 to the Council or its hearing officer by parties aggrieved by action or failure to act on the part of any permitting and licensing agency.

Rule 95.2 - Application of Chapter B

The following Rules from Chapter B apply to appeals under this Part: Docket (12.1), Signatures (12.4), Date of Receipt (12.5), Extensions of Time (12.6), Ex Parte Communications (12.7), Notice of Hearing (13.3), Prehearing Conferences (13.5), Hearings, Hearing Officer (14.1), Motions (14.3), Evidence, Privileges (14.4), Matters for Offical Notice (14.5), Objections and Offers of Proof (14.6), Production of View of Objects (14.7), Oral Arguments and Briefs (14.8), Subpoenas (15. Intervention (15.2), Participation (15.3), Substitution of Parties (15.4), Consolidatic (15.5), Depositions (15.6), Continuances (15.7), Conferences (15.8), Stipulations (15.' Written Testimony (15.10), Post Hearing Filings (15.11), Re-Opening Hearings (15.12), Form of Decisions (16.1) Settlements (16.2), Tentative Decisions (16.3), Opportunity fc Review of Tentative Decisions (16.4), Final Decisions (16.5, Notice of Decisions (16.6)

Rule 95.3 - Who May Appeal

Parties aggrieved by an agency action or failure to act may appeal. Parties aggrieved include the developer and any party to the agency proceedings determined by the Council to be specifically and substantially affected by those proceedings.

Rule 95.4 - Settlement of Appeal

Before filing an appeal, a party aggrieved must contact the Council. The Council shall notify the other parties to the proceedings below, as well as the agency being appealed, and may require an informal settlement conference before the appeal can be filed. Said conference should be held within ten (10) days after the Council has been contacted.

Rule 95.5 - Time for Appeal

An Appeal under this Part must be filed within twenty (20) days after the agency's action or failure to act, or with ten (10) days after the conclusion of the Rule 95.4 settlement conference, whichever is later. An agency is not deemed to have "acted or failed to act" until after the party aggrieved has exhausted his administrative remedies.

Rule 95.6 - Filing

Papers or documents relating to appeals under this Part shall be delivered by hand or mailed to the Council or its designated hearing officer. They shall be deemed filed on the date received by the Council. Papers or documents filed shall be titled "Rule 95 Appeal by _____ (Party Aggrieved) from _____ (Agency)."

Rule 95.7 - Appeal

An appeal filed under this Part shall contain the following:

(1) The name, address and phone number of the appellant and attorney, if any;

(2) The name of the respondent agency;

(3) The names and addresses of any other participants or parties to the earlier proceedings with the respondent agency;

(4) A description of the action or failure to act which is being appealed, and a brief outline of procedural steps already taken;

(5) A description of facts and documentation in support of appellant's claim for relief;

(6) Argument on the issues of energy needs, cost and environmental impact;

(7) A description of the relief being sought;

(8) A description of efforts which have and are being made to resolve or settle the dispute; and

(9) Where adjudicatory proceedings have been conducted by the agency being appealed, a full record of said agency decision. Appellant shall request that the agency issue findings of fact and conclusions of law, and shall provide these.

Rule 95.8 - Notice of Appeal

The appellant shall send, certified or registered mail, return receipt requested , or hand deliver, a copy of the appeal at the time of filing to the director, secretary, commissioner or other person authorized to receive process within the agency from which the appeal is taken and to any parties and participating persons at the earlier agency proceedings. With the copy of the appeal, appellant shall also give notice that answers, petitions to intervene and petitions to participate under Rule 95.9 must be filed within ten (10) days after receipt of the notice.

Rule 95.9 - Answer, Petitions to Intervene or Participate

(1) Answers and Petitions to Intervene or Participate must be filed with the Council, and copies shall be sent to the other parties, within ten (10) days after receipt of notice of the appeal, unless the Council, for good cause, grants an additional seven (7) days.

(2) The Answer by the respondent agency shall describe (i) the extent to which respondent wishes to participate in the appeal proceedings, (ii) the course of the earlier proceedings with the appellant, (iii) relevant facts and documentation, and (iv) respondent's position or relief sought.

(3) Petitions to Intervene or Participate shall be filed in accordance with Council Rules 15.2 and 15.3, from Chapter B. The Council or its hearing officer shall allow seven (7) days for objections, then rule in accordance with Rule 15.2 and 15.3 within an additional seven (7) days.

Rule 95.10 - Hearings, Hearing Officer

The hearing officer shall conduct hearings under this Part in accordance with Rule [illegible] 1. Hearings shall be commenced as soon as possible after the close of the pleadings, and in no event more than twenty-five (25) days after an answer under Rule 95.9 has been filed.

Rule 95.11 - Official Record and Transcript

For any appeal under this Part, the hearing officer shall keep an official record, including testimony and exhibits, in an individual docket. The hearing officer may, but is not compelled to, require that the hearing be taken by sound recording or be reported by a stenographer. Any objections to the accuracy of a transcript not raised within ten days after the transcript is made available to the parties are waived. Any transcript shall be included in the official record of the proceeding.

Rule 95.12 - Scope of Review

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 applicant, review on an appeal under this Part 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 therefor if the Council determines that said agency findings are:

(i) in excess of the statutory authority or jurisdiction of the agency;
(ii) unsupported by substantial evidence;
(iii) arbitrary or capricious or an abuse of discretion; or
(iv) not sufficient to permit adequate Council review of the appeal pursuant to the Council's obligation to decide the appeal based upon energy needs, cost, and environmental impact.

Any party wishing to challenge agency findings of fact shall specify which of the grounds 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 ninety (90) day time limit set forth in G.L. c. 164 §69H 1/2.

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.

Rule 95.13 - Tentative Decision

The requirements of Rule 16.3 shall be followed by the hearing officer in reaching a tentative decision. The tentative decision shall be reached within fourteen (14) days after the close of the hearing, shall state the reasons therefor, [illegible] be based upon energy needs, cost, and environmental impact.

Rule 95.14 - Final Decision

The requirements of Rules 16.5 and 16.6 shall be followed by the Council in reaching a final decision. The final decision shall be reashed no later than ninety (90) days after the appeal has been filed, shall state the reasons therefor, and shall be based upon energy needs, cost, and environmental impact.

Rule 95.15 - Effect of Decision

A final decision under Rule 95.14 shall for all purposes, including judicial appeal, be deemed equivalent to final agency action on the approval, permit, license, certificate or permission which is the subject of the appeal, unless the Council specifies otherwise in its final decision.

Rule 95.16 - Judicial Review

Any party aggrieved by the final decision may seek judicial review in the manner provided by G.L. c. 30A.

COMMONWEALTH OF MASSACHUSETTS
Energy Facilities Siting Council

In the Matter of the Petition of Boston Edison Company for Approval of Its Annual Supplement (1980-89) to Its Long-Range Forecast of Electric Power Needs and Requirements	)	EFSC No. 80-12

MEMORANDUM and ORDER

This Memorandum and Order concerns the suspension of proceedings in EFSC No. 80-12. Before describing the history of this proceeding and the rationale for the orders made today, we would like to address certain statements by Boston Edison Company which indicate that the Company does not fully understand the nature and purpose of the EFSC forecast review process.

The Company, in a letter to the Council dated November 14, 1980, indicates that it desires a suspension of proceedings on its 1980 forecast. The letter reads, "While we are extremely concerned over such a proposed course of action given the similar history of deferred consideration and consequent lack of approval of the 1979 forecast, the Company is nevertheless agreeable to such a deferral of hearings. It is the Company's position in agreeing to this proposal, however, that the Siting Council should move as quickly as possible to air out once and for all the issues of forecast methodology which have kept Boston Edison on an annual treadmill of forecast filings and detailed, time - consuming, inconclusive adjudications so that both we and the Council can proceed to use the forecast in our planning efforts rather than eternally debate each underlying assumption or source of data." Several misconceptions are evidenced by the quoted language; they will be addressed in the next three paragraphs.

Consideration of the 1979 forecast was not "deferred" by the Council. Rather, an agreement was reached by the parties (including Boston Edison Company) and the Council to suspend those proceedings so that review of the NEPOOL model could be accomplished. See the Memorandum and Order dated March 4, 1980 on EFSC No. 79-12. Additionally, a Council Staff memorandum outlining concerns with Company methodology was attached to the March 4th Memorandum and Order for the purpose of providing the Company with the feedback forecast review proceedings supply.

The nature and purpose of the Council's review of forecast methodologies is set forth in EFSC Rule 63.5. The Council does not prescribe a particular methodology; instead, the Company's selected methodology must be explained and justified. The Company must describe significant determinants of future demand, data used, and assumptions made, and must show that it has used a "reasonable statistical projection method." EFSC Rules 63.5, 62.9. It is not the Council's intent to "eternally debate each underlying assumption or source of data" nor to keep the Company on an "annual treadmill." Rather, the intent is to help the Company improve its methodology; such improvements enhance the reliability of the forecast itself. Forecast methodologies have become increasingly complex, necessitated by the inherent complexity of the forecasting problem. While a forecast presented in a filing is fixed for purposes of adjudication , the process of developing that forecast is dymanic and on-going, as is the review of that forecast by Council staff and intervenors. Each successive Company filing reflects changes in methodology and assumptions, made in response to changed conditions, criticism by the Staff or intervenors, or state-of-the-art advancements.

The Staff feels strongly that the technical sessions and discovery over the past months have contributed to its and intervenors' understanding of the BECo methodology; subsequent filings by the Company have demonstrated that the Company has made efforts to improve its methodology.

The Company claims, in effect, that inconclusive adjudications by the Council have interfered with Company planning. Yet no facility proposed by the Company has ever been rejected by the Council. Since 1976, the Council has approved the following facilities: 3 Mystic Station oil tanks, a substation for the Chelsea-East Boston line, and these transmission lines: Walpole to Needham, Hyde Park to Dewar Street, Mystic to Lincoln Street, Woburn to Tewksbury, Chelsea to East Boston.

Proceedings on EFSC No. 80-12

Boston Edison Company filed its Annual Supplement 1-D (1980-89), EFSC No. 80-12 on May 2, 1980, after requesting and receiving an extension from the April 1 due date. A technical session was held on May 14; the Company indicated that it was preparing a technical appendix documenting the Supplement. The Company stated on May 21 that it was not seeking in-service dates or siting approval for any facilities as part of this adjudication. Publication and posting were ordered the next day. At the first pre-hearing conference held July 2, the Company filed its Affidavit of Publication. No potential intervenors appeared. The Company represented that it would provide the technical appendix documenting its Annual Supplement as soon as possible, and was ordered to do so by Procedural Order dated July 2. The Attorney General's motion to intervene late was filed on July 10, the Company's response thereto came in on July 21, and the motion was allowed by Procedural Order dated

July 28. This Procedural Order also mandated preparation for an upcoming technical session and specified August 5 as the deadline for filing the technical appendix. The Company's technical appendix was finally delivered on August 8, making it possible to commence the discovery process.

EFSC's Procedural Order dated August 25 required preparation of draft information requests by the parties. EFSC Staff "Topics of Interest" and information requests regarding supply were mailed out on September 10 and 11, respectively. The Attorney General's "Topics of Interest" were filed September 16. On October 1, the parties and Staff participated in a technical session on relevant portions of the NEPOOL model. The Company answered the Staff's information requests regarding supply on October 20.

A technical session was held at the Boston Edison offices on November 6, 1980. At that session the Company stated it had already essentially completed its 1981 forecast, and identified changes from the 1980 forecast methodology.

On November 7, 1980, a second prehearing conference was held to discuss the effect of the upcoming filing of the 1981 forecast on the 1980 adjudication. Three procedural options were discussed.

Under option one, adjudication of the 1980 filing would continue until completed; adjudication of the 1981 forecast would then begin.

Under option two, review of the 1980 filing would be suspended, and adjudication of the 1981 filing would begin as soon as possible. Materials prepared and filed as part of the 1980 proceedings would be reviewed to the extent relevant and necessary to the 1981 filing, but only the 1981 filing would actually be adjudicated.

Under option three, those components of the 1980 and 1981 filings which were the same, methodologically, would be reviewed as quickly as possible and a decision reached. Those components which had changed would be adjudicated in a separate, and later, proceeding.

At the November 7 prehearing conference the Attorney General expressed a preference for option two. The Company opted for option two by letter dated November 14. The Staff also agreed with this approach, based on its desire to provide feedback to the Company on its current methodology within a schedule which matches the Company's internal schedule for forecast preparation.

The reasons for selecting option two are as follows: First, it appears likely that a decision on the 1980 filing could not be given before March of 1981. Second, the Company has indicated that it intends to file its 1981 forecast by December 15, 1980, and the technical appendix thereto by January 15, 1980. (The supply portion of the forecast will not, according to the Company, be ready until April 1, 1981). Because there are many similarities between the 1980 and 1981 filings, much of the review necessary to

adjudication of the 1981 filing has been accomplished. The parties and Staff feel that the time required for adjudication and decision on the 1981 filing (excepting the supply portion) will not be substantially greater than what would be required to adjudicate the 1980 filing. Third, proceeding under option one would mean that the Company would receive no feedback from the Staff or the Attorney General on its 1981 forecast before it prepares its 1982 forecast. The Company represents that this preparation will begin in March of 1981. (It is hoped that the Company can hold off the major portions of its work on the 1982 forecast until it has received at least a copy of the tentative decision on the 1981 forecast).

Schedule for Proceedings on the 1981 Filing

The parties have asked for a schedule for the adjudication the 1981 filing. Because the forecast and necessary technical appendix have not yet been filed and because there may be additional parties to the 1981 proceedings, the dates set forth here are necessarily tentative, and may be the subjects of future Procedural Orders.

December 2, 1980 - technical session.

December 15, 1980 - filing of 1981 forecast

December 16, 1980 - commence publication and posting

January 15, 1981 - filing of technical appendix and prehearing conference.

January 29, 1981 - technical session.

February 16, 1981 - technical sessions completed and all discovery requests filed.

March 2, 1981 - answers to discovery requests filed.

March 12, 1981 - pre-filed testimony docketed and prehearing conference.

March 17, 1981 - hearing commenced.

Because the Company might not file the supply portion of its 1981 forecast before April 1, 1981, it may be necessary to separate the adjudication of that portion from the 1981 proceeding. This will be the subject of a future Order.

Order

By suspending further formal proceedings on EFSC No. 80-12, it is the intent of the Hearing Officer to close the official record as to this 1980 filing. It is recognized that much work has been done in this case by the parties and the EFSC Staff. All information gathered herein to date can be reviewed again to the extent necessary when proceedings commence on the 1981 Boston Edison Company filing. Comparison with the 1980 filing should be expected and will be allowed to the extent relevant and

necessary to the 1981 forecast review. But it is the 1981 forecast that will be reviewed and adjudicated; Boston Edison will not have to defend two forecasts.

It is hereby ORDERED:

(1) That the adjudicatory proceedings on EFSC No. 80-12 be, and hereby are SUSPENDED, until further notice by the Hearing Officer. Boston Edison Company shall file its 1981 forecast and technical appendix in accordance with EFSC statutes and regulations; said filing is required before April 1, 1981, and is expected before January 15, 1981.

(2) That Boston Edison's Annual Supplement 1-D, EFSC No. 80-12, is hereby ACCEPTED as filed in compliance with statutory and regulatory obligations with the understanding that such acceptance is not to be construed as Council approval of that filing.

Energy Facilities Siting Council

by: Robert T. Smart Jr.

Robert T. Smart, Jr., Esq.
Hearing Officer

Dated at Boston this 2nd day of December, 1980.

COMMONWEALTH OF MASSACHUSETTS
Energy Facilities Siting Council

In the Matter of the Petition of The New Bedford Gas and Edison Light Company for Approval of Its 1979 Occasional Supplement to Its Long-Range Forecast of Electric Power Needs and Requirements	)	EFSC No. 79-4B

RULING ON THE COMPANY'S JANUARY 7, 1981 MOTION TO SEVER COLLATERAL ISSUE FROM PRIMARY ISSUES

New Bedford Gas and Edison Light Company (hereafter the Company) filed a motion on January 7, 1981 to "sever the issue of the manner of long-term maintenance of a section of right-of-way from ... the other issues in this proceeding". In support of the motion, the Company argues that to delay the hearing in this case pending resolution of the question of the limits of Council jurisdiction over right-of-way maintenance will make impossible a timely Council decision on whether the proposed transmission line can be built. The Company also asserts that "the issue of right-of-way maintenance is largely an issue of first impression before the Council", that maintenance jurisdiction has been delegated by the state legislature to the Pesticides Board in G. L. chapter 132B, and that jurisdiction over maintenance is not expressed, but rather is at best implied, by the Council's enabling statute.

The Intervenors filed their written "Opposition to Petitioner's Motion to Sever" on January 14, 1981. In this writing they ask that the Company's motion to sever be denied, arguing that the Council lacks statutory authority to sever the maintenance issue from the other issues in the case. In support of their position, the Intervenors cite the Council's enabling statute, G. L. Chapter 164 §69H, and Council Rule 2.3, which requires the Council "to provide a necessary power supply for the Commonwealth with a minimal impact on the environment at the lowest possible cost". The assert that none of the three considerations - need, environmental impact, and cost - is classified as "primary" or "collateral" by the Council's statute or regulations, and that the Council can take no action in this proceeding without fully considering all three simultaneously.

The Intervenors state, further, that a separation of issues in accordance with the Company's motion would violate Council Rule 42.1, which requires that the Council in all its proceedings comply with Article 49 of the Massachusetts Constitution, G. L. Chapter 30 §61, and environmental statutes and regulations. Article 49 establishes, in brief, that the people have the right to clean air and water, and declares that their right to conserve, develop and use the natural resources is a public purpose. G. L. Chapter 30 §61 requires that agencies determine the impact on the natural environment of their activities and that they minimize damage to the environment. "Damage to the environment" includes air, water, and pesticide pollution, but does not include insignificant damage. Chapter 30 §61 also states that "unless a clear contrary intent is manifested, all statutes shall be interpreted and administered so as to minimize and prevent damage to the environment".

Discussion

The Hearing Officer does not intend to allow these proceedings to be delayed pending resolution of the jurisdictional issue framed by the parties. It is clear from the arguments recited above that a genuine dispute exists. It is also clear that the dispute cannot be resolved without detailed analysis of and argument concerning the Council's statute and regulations and other authority cited by the parties. To the extent that the Company's motion asks that resolution of the issue of the extent of Council jurisdiction over the manner of long-term maintenance be put off until after the hearing, it is allowed.

The Hearing Officer notes that the Company has stipulated, both orally and in its motion, that it will not use herbicides for right-of-way clearence, or for maintenance, for at least one year. This should provide ample time for the Council to consider the scope of its jurisdiction over the manner of long-term right-of-way maintenance. The Council intends to thoroughly examine this jurisdictional question on its own, or perhaps in conjunction with other agencies and interested persons, outside the context of this adjudicatory proceeding. If the Council deems it necessary" upon its own motion or upon the petition on one or both of the parties, it will reopen this proceeding, hear additional evidence or argument, and make appropriate changes in its final order.

When a facility is proposed, G. L. Chapter 164 §69I requires that a Company's forecast or supplement include a description of alternatives and of the environmental impacts of the facility. The Council's Administrative Bulletin 78-2, made part of its Regulations by Rule 64.8(3), requires that a company describe, before it may construct a new transmission line, its planned maintenance practices and provide information concerning surface waters and water courses, aquifers, springs and major wells, wetlands, private on-lot wells, and forest type and vegetation to be cleared. Before the line can be approved, it must be found to be consistent with the Council's mandate to provide a necessary power supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost, G. L. Chapter 164 §69J. Given these statutory and regulatory commands, the Hearing Officer must allow the parties and their witnesses to offer relevant testimony and documents into evidence at the hearing on the costs and environmental impacts of the Company's proposed line, including alternative maintenance practices. This marks no change from existing Council policy.

Ruling

The Hearing Officer hereby rules on the Company's motion and the Intervenors' written opposition as follows:

1. The issue of the scope of Council jurisdiction over the manner of long-term maintenance of transmission line rights-of-way will be severed from the upcoming hearing on the Company's 1979 Occasional Supplement. The issue may be raised at a later date, upon the Council's own motion or upon the motion of one or both of the parties. The Council will entertain any such motion, and may reopen this proceeding, hear additional evidence or argument, and make changes in its order, as it deems appropriate and in accordance with statutory and legal requirements.

2. Relevant evidence on the costs and environmental impacts of the Company's proposed line, including proposed maintenance practices, will be admitted and will become part of the record for this proceeding.

Energy Facilities Siting Council

by Robert T. Smart Jr.
Robert T. Smart, Jr., Esq.
Hearing Officer

Dated at Boston this 15th day of January, 1981.

COMMONWEALTH OF MASSACHUSETTS
Energy Facilities Siting Council

In the Matter of Cape Cod Gas Company's Annual Supplement, EFSC 80-19	)	EFSC 80-19

RULING ON ATTORNEY GENERAL'S PETITION TO INTERVENE

I. Introduction

The Attorney General filed a brief written Petition to Intervene in this proceeding on March 10, 1981. At a Pre-hearing Conference held at the Council offices on March 23, 1981, Palmer and Dodge, Attorneys for Cape Cod Gas Company (hereafter "Company") indicated they would oppose the intervention. A letter of enclosure and written "Opposition to Intervention" were received by the Hearing Officer on March 30, 1981. The Attorney General filed a letter replying to the Company's "Opposition" on April 10, 1981.

II. Summary of Arguments

The Attorney General cites G.L.c. 12 sec. 11E as authorizing its intervention before the Council. It states, in pertinent part: "The Attorney General is hereby authorized to intervene in administrative or judicial proceedings held in the Commonwealth on behalf of consumers in connection with any matter involving the rates, charges, prices or tariffs of a ...gas ... company doing business in Massachusetts and subject to the jurisdiction of the Department of Public Utilities". The Company argues that reliance on G.L. c. 12 sec. 11E is misplaced, because the statutory section contemplates proceedings involving rates, i.e. ratemaking proceedings.

The Attorney General also cited Boston Edison Company, EFSC 79-12, 3 DOMSC at 110, 113-114 as precedent for its intervention. In that decision, individual customers were allowed to intervene in light of the effect of forecast issues upon their rates. There was also administrative "dicta" supporting the Attorney General's position: "Though it might be said that the Attorney General as intervenor represents all interested consumers pursuant to G.L. c. 12 sec. 11E, this is certainly no obstacle to intervention by individual BECo customers", 3 DOMSC at 113-114.

In his March 27, 1981 letter the Attorney General indicates an interest in the adequacy of the Company's supply planning and demand forecasting. The Company in response correctly points out that the Council is prohibited from looking at demand for gas. However, the Council does review forecasts of gas sendout.

III. Discussion

The Attorney General's reliance on G.L. c. 12 sec. 11E is proper. That section authorizes him to represent consumers, who are clearly persons "substantially and specifically affected" by this Council proceeding, as required for intervention under EFSC Rule 15.2. Chapter 12 sec. 11E authorizes A.G. intervention in administrative proceedings (emphasis added), not just in D.P.U. ratemaking proceedings, where they involve the rates or prices of a gas company. There can be no question that the price of gas to the Company's consumers now and in the future will be affected by the Company's supply planning and forecasting of sendout, which issues will be reviewed in this proceeding. Because this linkage exists, this proceeding can be described as "involving" rates and prices.

The Boston Edison Company case and past Council practice support this intervention. The Attorney General has routinely been allowed to intervene in both electric and gas proceedings at the Council. To my knowledge, this is the first time a formal opposition has been presented. The Attorney General has provided useful service to Massachusetts consumers, and to the Council, in past interventions; the Hearing Officer expects that he will do so here as well.

The materials filed by the A.G. in support of his intervention meet the requirements of EFSC Rule 15.2. He will be representing people "substantially and specifically affected" by the proceeding, has cited sufficient statutory authority, and has given adequate indication of the evidence or arguments to be presented. To allow him to be involved in this proceeding only as a "Participating Person" under Rule 15.3 would be unduly restrictive; the Attorney General needs to be able to engage in discovery and to cross-examine witnesses to be effective.

IV. Order

It is hereby ORDERED that the Attorney General's Petition to Intervene under Rule 15.2 is allowed.

Robert T. Smart Jr.

Robert T. Smart Jr., Esq.
EFSC Hearing Officer

Dated at Boston this 28th day of April, 1981.

COMMONWEALTH OF MASSACHUSETTS
Energy Facilities Siting Council

In the Matter of the Petition of Northeast Utilities Company for Approval of a Long Range Forecast of Electric Power Needs and Requirements	)	EFSC No. 81-17

MEMORANDUM AND ORDER

On May 1, 1981, Northeast Utilities System ("the Company) filed a Five Year Forecast of Electric Power Needs and Requirements with the Energy Facilities Siting Council ("the Council") pursuant to 980 CMR parts 6.20, 6.30 and 6.40. At that time, the Council staff was in the midst of an adjudicatory proceeding concerning EFSC 80-17, the Annual Supplement filed by the Company in 1980 pursuant to 980 CMR part 6.50.[1]

On May 26, 1981, the parties to EFSC 80-17, the Company and the Attorney General of the Commonwealth ("A.G.") agreedthat since substantial discovery had been completed on the demand forecast filed by the Company and since the Company's demand forecast methodology in the 1981 filing was not substantially different from that utilized in the 1980 filing, that there would be no objection to the joinder of EFSC 80-17 and EFSC 81-17 in to one proceeding, EFSC 81-17, which would incorporate the docket compiled in EFSC 79-17 and EFSC 80-17.

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1 In a Procedural Order dated May 13, 1980, the hearing officer for EFSC 79-17, review of the Annual Supplement of the Company filed in 1979, joined that proceeding with with EFSC 80-17 for reasons stated therein.

On May 27, 1981, we issues an Order of Notice indicating, among other things that, "... because the forecasting methodologies in the 1981 filing are substantially the same as those used in the forecasts under review, review of the 1981 Annual Supplement (sic) will be consolodated with the ongoing proceedings. (EFSC Docket #80-17, 79-17)". The Order further allowed that, ... "The Council will consider the adequacy of the Northeast Utilities supply plan, including alternatives to oil fired generation, to meet forecasted system demands at the lowest cost with minimal environmental impact ... " The Council invited motions for limited intervention at that time. Two parties, the Conservation Law Foundation of New England, Inc. ("C.L.F.") and the Berkshire and Franklin County Community Action Corporations ("C.A.P.s")filed timely motions to intervene.

On June 16, 1981, we issued a notice to all parties, C.L.F. and C.A.P.s that a motions session would be held on June 24th, 1981 to consider: "1. The scope of the proceedings; 2. A hearings schedule; and 3. Motions to Intervene." At that session C.L.F. and the C.A.P.s motions were allowed to the extent only that they were granted status as intervenors. The scope of the instant proceeding was the subject of considerable discussion and each party had a distinct view of the Council's responsibility to consider a wide variety of issues.* Parties were given until 5:00 PM on Wednsday, July 1, 1981 to substantiate oral arguments made at the session by written memoranda or other documentation if they saw fit. None did and no such memoranda were submitted.

The issues raised by the intervenors, and, it must be noted, on the Council's own initiative, reflect the changing characteristics of

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* A more complete description of the issues can be found in the intervenors' Motions to Intervene. Docket No. 81-17.

the electric utility business in the Commonwealth. Of particular note have been the decline in projected growth of demand for electric energy from close to a 7% annual rate to between 1 and 2% at the present time; and, the sharp increases in oil prices beginning with the Arab Oil Embargo of 1973 and climaxing for the moment with the 1979 foreign price increases imposed by the Organization of Petroleum Exporting Countries and domestic price increases due to degregulation of petroleum prices at the federal level.[2] The result of this energy shock has been, at the state level, a strong statement of policy from the Legislative and Executive branches to reduce the Commonwealth's dependence on foreign oil (Ch. 796 of the Acts of 1979, section 1; M.G.L. Ch. 25A section 6 (1980 Supp.); Ch. 465 of the Acts of 1980, section 2; Ch. 464 of the Acts of 1980) and a series of cases handed down from the Department of Public Utilities (the "Department") allowing electric utilities to finance capacity additions which are economically justifiable as additions which substitute for present or planned oil

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2 The issues of the continuing use of oil as a fuel for the generation of electricity are of overriding concern of the Council. Using 1975 as a base period and November 1979, February 1980 and May 1980 as end periods, historic price trends in the yearly rate of increase of #2 fuel oil 19.3, 21.65 and 22.2 percent respectively. DPU 20248 Massachusetts Municipal Wholesale Electric Company, p.51 The price for #6 residual oil escalates similarly. Using any prior base period to 1975 would increase this annual growth rate by at least 39 percent. This trend, projected forward to the last year of the instant forecast would yield oil prices close to $200/bbl. and the portion of a consumers electricity bill reflecting the fuel adjustment alone would be about 310 mills/kwh. id.,at 67.

fired capacity. See Fitchburg Gas & Electric et al. consolodated as D.P.U. 20055 (1980);Massachusetts Municipal Wholesale Electric Co., D.P.U. 20248 (1980).

The decision of the Department in M.M.W.E.C. D.P.U. No. 20248 is of particular concern here in that the Department noted,

> "... today's rising energy costs, any new source which offers economic savings within a particular system mix can be categorized as being needed by that system. ... Displacing oil as a fuel source is a planning objective which cannot seriously be questioned. As early as 1974, this Department recognized the need to reduce our dependence on oil stating that: 'because of the energy crisis and the heavy reliance on fossil fuel for most existing generating units in Massachusetts, there is need for nuclear units to be included in the electric power generating mix.' Massachusetts Municipal Wholesale Electric Co. D.P.U. 18076 p.3 (1974)"

Massachusetts Municipal Wholesale Electric Co. D.P.U. 20248 pp.15-16 (1981).

Such a statement of regulatory policy from the Department, considering the substantial influence its decisions have on the electric utility industry, Cambridge Electric Light Co. v. D.P.U. 363 Mass. 474,494 (1973), Boston Edison v. D.P.U. 375 Mass. 1, 44 (1978), cannot go unheeded by the Council. Effective regulation, by the Department to minimize short term costs, and by the Council to minimize long term costs and environmental impact, requires close coordination of policy; in particular, the policy favoring oil displacement. The Council has acted in concert with the Department, implementing this policy, and recognizing the displacement of oil fired capacity as a justification for capacity additions. In Re M.M.W.E.C. 5 DOMSC 9, EFSC 79-1 (1981); In Re E.U.A. 5 DOMSC 30, EFSC 79-33 (1980); In Re Fitchburg Elec. 5 DOMSC 48-50, EFSC 79-11B (1981); In Re Commonwealth Elec. 6 DOMSC _____, EFSC 79-4, slip opinion at 24 (1981).

The C.A.P.s raise the issues of conservation and load management before the Council and argue that such issues are proper in a consideration and review of the Company's supply plan. Given the scope of the Company's submittal, and the recently announced "Northeast Utilities Conservation Program for the 1980's and 1990's", these issue are placed before the Council by the Company to the extent that: they will impact the demand projections of the Company included in volume 1 of the 1981 submittal; or, that they will provide the Company with a less costly supply of energy for its customers. See: In re: New England Electric Systems et. al., 5 DOMSC 97, EFSC 80-24 (1981). The Council's role as a policy review body is set forth in MGL Ch. 164 sec. 69J:

> "The Council shall...approve a long range forecast... if it determines that it meets the following requirements: ... all information relating to current activities, environmental impact, facilities agreements and energy policies as adopted by the commonwealth is substantially accurate and complete...; and are consistent with policies stated in section sixty-nine H to provide a necessary power supply for the Commonwealth with minimum impact on the environment at the lowest possible cost;..."

Since the Company's conservation program is a "current activity", its review is properly before the Council to the extent necessary to determine if it is, "substantially accurate and complete". In re New England Electric Systems, supra. Such a review shall include all conservation initiatives proposed by the Company in its conservation plan, as the Council considers conservation to the most secure form of supply available, and an analysis of the consistency of this plan with, "energy policy goals established by commonwealth...". However the Council declines to enter into the realm of speculation as to future policies or technologies. Therefore, the Council will limit

the proceedings to consideration of presently available technologies in conservation and more traditional supply areas, as well as to those fields into which the Company has already entered or which are within the traditional ambit of utility service, e.g.: load management systems, load storage devices, metering systems and the like. See In Re MMWEC, supra; In Re E.U.A., supra; In Re Fitchburg Elec., supra; In Re Commonwealth Elec., supra. We will not consider the relative merits of rates or rate designs except as rates or rate designs information is necessary to make an informed judgement concerning the relative cost justification of supply and supply alternatives which are properly before the Council. Rate issues Per se are either presently being considered by the Department or, if they are not, would properly be the subject of a petition addressed to the Department. Nor will we enter into analysis of systems which are not commercially available as valid alternatives to existing or planned supply, or research and development programs. If the C.A.P.'s wish to submit evidence to the Council on such matters not addressed by the Company in its submittal with an eye toward improving the Company's future forecasts and supplements, the proper procedure would be to move the Council to affix conditions to our decision and submit substantial empirical evidence on the matter. In such virgin territory, the movant has the burden of proof and can not establish a prima facie care for such a motion by simple cross examination of the Company's witness.[3]

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3 We note that load management studies have been ordered by the Council in many of the recent decisions through attached conditions. see: In Re MMWEC (1981) supra; In Re EUA (1980), supra; In Re Fitchburg Elec. (1981) supra; In Re Comm. Elec. (1981), supra; In Re New England Electric

(Footnot #3 continued on next page)

Turning to the concerns of intervenor C.L.F. which have not been addressed by the discussion above, we note that, except in the instance of a petition for a "Certificate of Environmental Impact and Public Need" pursuant to MGL Ch. 164 sec. 69K or a proposed facility, the main thrust of the Council's consideration of environmental concerns focuses on the land-use impacts of siting facilities. The primary jurisdiction at the state level for review of air and water quality impacts of proposed changes to existing facilities rests with the Executive Office of Environmental Affairs and its constituents departments,[4] see generally MGL Ch. 131 sec. 40, Ch. 91, Ch. 21, Ch. 130, Ch. 132, secs. 13-17, Ch. 111, Ch. 21C, and any jurisdiction exercised by the Council would be

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(Continuation of footnote #3)

3 et. al. 5 DOMSC 97, EFSC 80-24 (1981). In Re New England Electric et. al., supra; is most closley analogous to the instant case. There, we reviewed the company's submittal of the "NEESPLAN", a conservation coal conversion and alternate energy, plan similar to the Northeast Utilities conservation plan, and allowed intervenor A.G. to submit expert testimony.

4 MGL Ch. 30A sec. 1 provides that an "adjudicatory proceeding" must determine the "legal rights, duties or priviledges of specially named persons". Although the doctrine of primary jurisdiction is generally exercised by courts in defference to agency expertise, its purpose is to assign the determination of issues, "essentially ... of fact and of discretion in technical matters,..." to the agency with the most appropriate expertise. Great Northern Railway v. Merchants Elevator Co. 259 U.S. 285, 291 (1922). To determine the most appropriate forum, one must look to whether the subject matter in question goes to the heart of the mandate of the agency and if the agency's determination would be of material aid to subsequent decision makers. Mashpee Tribe v. New Seabury Corp. 592 F 2d 575, 580-1 (1st Cir., 1979) The application of the doctrine should be guided by principles of "harmony, efficiency and prudence." id., at 580, n.1. Except in the instances noted, Council approval of a forecast is materially aided by the determinations made by environmental agencies on environmental issues which go to the heart of those agencies various mandates.

(Footnote #4 continued on next page)

ancillary in nature.[5] We do not, however, ignore our commitment to "recognize the final Coastal Zone Management Plan ... as a statement of health, environmental and resource use and development policies of the Commonwealth". Massachusetts Coastal Zone Management Program, (March 3, 1978), p. 216; 980 CMR parts 8.31, 8.32.

We also note the limited nature of the review of the Company's demand forecast and methodology. Much work has gone into compiling the present docket and the rerespective staffs of the Company, the A.G. and the Council (past and present) are to be commended for an effort which has spanned three years. In the instant proceeding, we will allow discovery of only those issues which have not been dealt with in the past or have been substantially changed from the 1980 filing by the present filing. The Council noted its intent in the Order of Notice of May 27th, 1981 to follow such a course and consolodate EFSC No. 80-17 with 81-17. The notice was specifically served on intervenor CLF and many other parties because of the Council's perception of the increasing importance of electric utility regulation to the citizens of the Commonwealth. Having heard no objection to such a course, this order formalizes such a consolidation and we limit the scope of the present proceedings, as to the demand

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4. (Continuation of Footnote #4)
This does not preclude a later Council determination which is not entirely consistent with an earlier decision by an environmental agency, provided it is based on evidence substantial enough to overcome the significant defference we give to that former adjudication. see: Mezines, Admin. Law. Vol. 5 sections 47.00 et seq., esp. 47.02(2); Pearl Grange Fruit Exchange v. Imperial Frozen Foods (DOA, 1969); W.M.R. Watch Case Corp. v. FTC (FTC, 1965).

5 We recognize that an agency cannot exercise the equity based ancillary jurisdiction as that doctrine is understood in the Federal Courts. Wright, The Federal Courts 39 (1980 ed.) and cases cited therein; American Cyanamid Co. v. FTC 363 F 2d 757 (6th Cir 1966); Pearl Grange Fruit Ex., supra.

forecast, to the discovery which is presently complete, and one additional round of discovery limited to new issues raised in the 1981 filing. A list of these new issues is affixed as an appendix and incorporated herein.

It is ORDERED:

1. The proceedings in EFSC No.'s 80-17 and 79-17, and the dockets compiled therein are joined with this proceeding.

2. That the scope of discovery in the instant proceedings on the demand side will be limited to those portions of the 1981 demand forecast which differ substantially and materially from the 1980 filing. The parties will use the comparative analysis of these forecasts appended hereto and incorporated above as a guide to the appropriate issues.

3. That the scope of the instant supply side proceeding will be limited to analysis of the 1981 submittal of the Company which incorporates by reference the "Northeast Utilities Conservation Program for the 1980's and 1990's", and alternatives thereto which are presently available, commercially practical or are within the traditional ambit of electric utility service, provided, however that rates and rate design issues will not be considered as a part of this proceeding except to the extent that existing rates have impacted the filing and except as such rate or rate design information is necessary for the Council to make an informed judgement concerning the cost justification of supply and supply alternatives which are properly before the Council;

4. That, as far as concerns the demand forecast, all intervenors shall file with the Council staff and the Company any requests for information or documents and a memorandum describing their areas of interest, to be discussed with the Company at a subsequent technical session, within seven days of this order;

5. That, as far as concerns the supply forecast, all intervenors shall submit to the Council staff and the Company a written memorandum outlining their areas of interest, on which they wish discussion with Company staff at a subsequent technical session, within fourteen days of this order;

6. That all parties be prepared to submit lists of witnesses which they intend to call on the demand forecast within seven days of the end of the technical session on the demand forecast; and,

7. That all testimony in this proceeding is to be prefiled with the Council, and copies served on all parties at least fourteen days prior to the formal introduction of such testimony at a hearing.

8. That the parties will reply in full to all information requests within thirty days unless the Council allows otherwise.

A procedural order on hearings and filings for the supply forecast will be issued at a later date after parties have had sufficient time to digest this ORDER.

for: The Energy Facilities Siting Council

by: Paul T. Gilrain

Paul T. Gilrain, Esq.
Chief Counsel

Issued in Boston this 9th day of July, 1981.

Energy Facilities Siting Council
Room 300, 73 Tremont Street, Boston, Massachusetts 02108 (617) 727-1136

M E M O R A N D U M

TO: Interested Parties

FROM: JoAnne Bos, Economic Analyst

DATE: July 2, 1981

RE: Northeast Utilities 1981 Forecast, EFSC Comments

The attached is a summary of the similarities and differences between the 1980 and 1981 Northeast Utilities forecasts, followed by a listing of the implications of each point and the Council Staff concerns. More detailed comments will be developed after more documentation is received. Also note that the NU Conservation Program for the 1980s and 1990s was not reviewed as a whole herein, but only as a source of assumptions to the various models.

PART A: COMPARISONS OF THE 1980 AND 1981 NU FORECASTS
- -Economic/Demographic Model
- -Residential Class Sales Forecast
- -Commercial Class Sales Forecast
- -Industrial Class Sales Forecast
- -Wholesale Sales Forecast
- -Streetlighting
- -Railroad
- -Hourly Load Model
- -Price Forecast
- -Sensitivity Tests

PART B: IMPLICATIONS AND EFSC STAFF CONCERNS
- -Economic/Demographic Model
- -Residential Class Sales Forecast
- -Commercial Class Sales Forecast
- -Industrial Class Sales Forecast
- -Wholesale Sales Forecast
- -Hourly Load Model
- -Price Forecast
- -Sensitivity Tests

NOTE: The comments herein reflect only the written material contained in the EFSC NU docket, and do not take into account any information exchanged verbally at any technical sessions.

A. ECONOMIC/DEMOGRAPHIC MODEL

1980 Forecast	1981 Forecast
1) Forecasts population using cohort-survival method.	Same.
2) Forecasts are regionally specific due to initializing data by area.	Same.
3) Equations and relationships taken from State of Conn. data and national (DRI) forecasts.	Same.
4) Nonmanufacturing employment forecast by SIC, as a function of national employment to population ratio.	Same.
5) Manufacturing employment is estimated as a function of national employment and time; equations are SIC specific.	Same except for: SIC 20 = f(local population, national employment) SIC 37 = f(production index SIC 372, time, dummy for war periods)
6) Cohort-specific migration equations are estimated, using employment variables as a share of national.	Aggregate migration of the working age population is estimated as a function of relative per capita income and time.
7) Residential electric customers are forecast using a population and household model.	Customers are forecast using ARMA, an AutoRegressive Moving-Average regression technique.

A. RESIDENTIAL CLASS SALES FORECAST

1980 Forecast	1981 Forecast
1) Highly disaggregated end use model using housing forecasts plus forecasted annual use.	Same model used for long run forecast. For short run: econometric model using semilog function of sales regressed on customers and an interaction price term.
2)	Addition of many conservation assumptions from NU 80s/90s.
3) Penetration rates for ESH and EWH largely judgemental.	Penetration rates for ESH and EWH quantified. Other penetration rates unchanged.

4)	Appliance efficiency standards taken from DOE Preliminary Notices of proposed rulemakings.	Same.

A. COMMERCIAL CLASS SALES FORECAST

	1980 Forecast	1981 Forecast
1)	end use model driven by nonmanufacturing employment from econ/demographic model. 3 end uses: heating, cooling, and other. Also divided by stores and offices.	End use model used for long run forecasting, with modifications as noted below. For short run: econometric model using semilog function of sales regressed on residential electric customers and energy proce. These are disaggregated by operating company.
2)	Comsumption analyzed using square footage estimation.	Consumption analyzed on a per-employee basis.
3)	Growth in potential energy use determined judgementally.	Potential energy use determined econometrically, using end use energy consumption by type of fuel.
4)	Penetration is forecast in aggregate.	Penetration is disaggregated into heating, cooling, lighting, and other.
5)	Sales are split between stores and offices based on the NEPLAN forecast.	Sales are split between stores and offices by sales by SIC by operating company.
6)		Addition of conservation assumptions.

A. INDUSTRIAL CLASS SALES FORECAST

	1980 Forecast	1981 Forecast
1)	Econometric model by SIC, in a constant elasticity format. Variables used: national production indexes, national employment, local employment, and dummies for unusual circumstances, eg. strikes.	New model uses a single equation by operating company, for total industrial sales. This is because "dramatic changes occured in the level of recorded sales by SIC due to the codification of accounts that accompanied the creation of the SIC data base". The model uses a semilog equation of sales regressed on electricity price and state and service area-specific production indexes.
2)	A one-time "good housekeeping" conservation measure is utilized.	There is explicit treatment of price induced conservation.

A. WHOLESALE SALES FORECAST

1980 Forecast	1981 Forecast
Individual, company provided forecasts are used, with slight modification.	Same. Connecticut Municipal Electric Energy Cooperative was formed, which shall no longer purchase power from NU.

A. STREETLIGHTING

1980 Forecast	1981 Forecast
Assumption: 90% incandescent streetlighting installations will be changed to mercury vapor units by 1989.	Assumption: All current incancescent and mercury vapor streetlighting installations will be changed to high pressure sodium. (NU 80's/90's).

A. RAILROAD

1980 Forecast	1981 Forecast
Complete changeover to NU-supplied power for the commuter line will occur 4/1/81.	New estimated date: 1/1/84.

A. HOURLY LOAD MODEL

1980 Forecast	1981 Forecast
End use model, highly disaggregated.	Improved methodology of projecting hourly loads of heat pumps for the residential model. Wholesale sales changed to distribute customers own generation more realistically.

A. PRICE FORECAST

1980 Forecast	1981 Forecast
Derived by multiplying a percentage oil price increase by a conversion factor.	Is "based on an indepth analysis which accounts for all costs of generation... the analysis is very complex... no further documentation will be included."

A. SENSITIVITY TESTS

1980 Forecast	1981 Forecast
Class by class sensitivity test of end use models.	Comparisons of econometric and end use model sensitivity tests. End use model varied by exclusion of conservation assumptions; econometric model varied by assumption of constant price. Short run elasicities were computed with the econometric models.

B. ECONOMIC/DEMOGRAPHIC MODEL

	Implications of 1981 forecast	Concerns
2-5)	Regional data not available.	National trends not clearly applicable for service area.
6)	Consistent treatment of cohorts.	Differences between cohorts cannot be addressed; documentation on formulation of model is lacking.
7)	Can be a more effective model.	Needs careful specification and evaluation; documentation lacking.

B. RESIDENTIAL CLASS SALES FORECAST

	Implications of 1981 forecast	Concerns
1)	Better short run forecasting. Can compute price elasticities.	Lack of documentation on choice and application of model.
2)	More complete model.	Lack of documentation of values and sources of assumptions.
3)	More precise data.	Lack of documentation on method of quantification.
4)		Possible misapplication of data.

B. COMMERCIAL CLASS SALES FORECAST

	Implications of 1981 forecast	Concerns
1)	Short run forecasting with price elasticity computation.	Lack of documentation on choice and application of model.
2)	Removes some troublesome assumptions, eg. that net new employees are proportional to net new floor space.	Still assumes total energy use per employee in a given year is the same for all employees.
3)	Potentially more reliable.	Lack of documentation on model.
4)	More explicit determination of penetrations.	Actual method of projection not documented.
5)	Service area specific.	
6)	More complete model.	Lack of documentation.

B. INDUSTRIAL CLASS SALES FORECAST

Implications of 1981 forecast	Concerns
1) Loss of detail	Reason for change unclear; lack of documentation for new model.
2) Price elasticities computed.	Other conservation effects not considered.

B. WHOLESALE SALES FORECAST

Implications of 1981 forecast	Concerns
NU relies entirely on its customers forecasts.	NU does no tests on the validity of the forecasts; there is no documentation available for review.

B. HOURLY LOAD MODEL

Implications of 1981 forecast	Concerns
These adjustments would apparently make the model more effective.	There is no documentation of how these changes are determined or implemented.

B. PRICE FORECAST

Implications of 1981 forecast	Concerns
	Methodology completely unknown. This is particularly important because the price forecast is used as an input into the other models.

B. SENSITIVITY TESTS

Implications of 1981 forecast	Concerns
These are valuable to determine the sensitivity of the forecasts to the assumptions made.	Further tests would be useful.

COMMONWEALTH OF MASSACHUSETTS
Energy Facilities Siting Council

In the Matter of the Petition of Boston Gas Co. and Massachusetts L.N.G., Inc. for Approval of a Long-Range Forecast of Gas Needs and Requirements	)	EFSC No. 81-25

INTERVENTION ISSUES

Boston Gas Co. and Massachusetts L.N.G. ("Petitioner") jointly filed their second Long-Range Forecast ("forecast") with the Energy Facilities Siting Council ("Council") on April 15, 1981 pursuant to M.G.L. c. 164, §69H and 980 CMR §§7.06, 7.07. The Council published a Notice of Intent to Conduct Session on Interventions on May 13, 1981 in response to a letter from the Massachusetts Attorney General's office ("A.G.") indicating a desire to intervene in the instant proceeding.

The Attorney General filed a Motion to Intervene in the instant proceedings with the Council on May 22, 1981. On May 29th the Petitioner filed an Opposition to the Attorney General's Motion to Intervene. After discussion with Attorneys for the Petitioner and the Attorney General on May 29th, the parties agreed to a schedule for submittal of memoranda of law on the Motion and Opposition. This schedule was formalized in the Procedural Order of the Council dated June 2, 1981. Petitioner filed a response to the Council on June 8, 1981 per agreement of the parties. The Attorney General submitted two letters in response, dated June 3, 1981 and June 9, 1981.

Petitioner filed corrections to their initial brief by letter to the Council dated June 10, 1981. Oral argument on the Motion and Opposition was heard on July 6, 1981.

Petitioner asserts that the A.G. should not be permitted to intervene in the instant proceedings because he is not expressly authorized to do so by statute and, in the alternative, that such participation would unnecessarily duplicate the efforts of the Council to regulate in the public interest pursuant to its statute. In addition, Petitioner asserts that the Motion to Intervene is deficient in that it fails to make the showings necessary pursuant to M.G.L. c. 30A and 980 CMR part 2.152(2) which require a potential intervenor to state:

> "... the manner in which the petitioner is substantially and specifically affected by the proceeding, the contentions of the petitioner, the relief sought, the statutory or other authority therefore, the representative capacity, if any, in which the petition is brought, and the nature of the evidence or arguement which petioner will present..."

We will address these contentions in reverse order.

I. Petitoner correctly identifies the initial Motion to Intervene as deficient. By no reading of that one sentence document can we determine the interest of the A.G.; the nature of the evidence to be presented; how the A.G. will be "substantially and specifically affected," M.G.L. c. 30A §10; the representative capacity of the A.G.; or most important, the contentions of the petitioner. We were, and remain, sympathetic to the plight of the Petitoner in this regard. We ordered the Petitioner and the A.G. to submit briefs or memoranda on the issues in contention and scheduled oral argument at the conclusion of the briefing session.

Petitioner submitted a short brief in support of their Opposition while the A.G. chose to submit two letters, dated June 3 and June 9, 1981, in support of his Motion. In the former letter the A.G. responded that:

> "... This proceeding impacts the same interests of Boston Gas customers as those of Cape Cod Gas Company and Lowell Gas Company customers which are impacted by their respective company's forecast filing. Just as in the case of Cape Cod and Lowell, the customers of Boston Gas have interests in insuring the adequacy, accuracy, and reasonable cost of the Company's projected sendout and supply planning. It is the intent of the Attorney General, through discovery, cross-examination and briefing to insure the adequate representation of these gas customer interests."

Interestingly, the A.G. closes by volunteering to amend his "short form petition" if the Council wishes that he explain his interests in further detail. The offer is misdirected. The Council has a long and productive history of cooperation with the A.G. in adjudicatory proceedings. 3 DOMSC 110, 113-114; 6 DOMSC ___, EFSC No. 80-19, ORDER dated April 28, 1981, and we are fully cognizant of the role played by the A.G. as intervenor vis a vis M.G.L. c. 30A §10. However, it would be unwise for the A.G. to assume such knowledge is held universally. When administrative action is taken in an adversarial proceeding, as in the instant case, basic constitutional rights affording adequacy of notice and opportunity to be heared must be respected. U.S. v. Wood 61 Fed. Supp. 175 (D.C. D.C. 1945). To determine if such notice is adequate, we are guided by the legislative definitions in M.G.L. c. 30A §10 and our own interpretation. 980 CMR part 2.152(2)(3). Petitioner's right to such notice is a basic constituional right and should not be given such short shrift by the Commonwealth's

chief law enforcement officer.

We are directed, however, to be guided by the Massachusetts Rules of Civil Procedure, M.G.L. c. 164 §69J, c. 30A §11(2), to be "practical" in allowing amendments to pleadings and the scheduling of proceedings, M.G.L. c. 30A §11(1). In that all such procedural rules must be, "... construed to secure the just, speedy and inexpensive determination of every action..." M.R. Civ. Pro. Rule 1, we now read the combined submittal of the A.G. to date, including oral argument, to be sufficient and adequate notice to the Petitoner, meeting the requirements of M.G.L. c. 30A §10 and 980 CMR. The A.G. has submitted: the manner in which he, representing the public as affected by the company, is substantially and specifically affected by the present proceedings, A.G.'s letter of June 3, 1981 in support of his Motion; his authority to intervene, Motion to Intervene of the Attorney General; the nature of his argument, letters of June 3 and June 9, supra; and, his representative capacity, id. Pursuant to M.G.L. c. 30A §11, we hold that a representation of the A.G.'s contentions and, if any, relief sought, is premature at this time but must be stated, "... as soon as practicable." M.G.L. c.30A §11(1).
See: Friedman v. Jablonski 358 NE 2d 994 (1976): Dioguardi v. Durning 139 F2d 774 (1944).

II. The next concern of the Petitioner is fear that somehow, the A.G. will perform the role assigned by statue to the Council, giving the A.G. "de facto jurisdiction" over the subject matter of the proceeding. To reach this conclusion, Petitioner states that:

"To allow the Attorney General to appeal whatever eventual order the Council might issue would not only give the Attorney General de facto jurisdiction, but also give him a chance to second-guess the Council in matters in which the Attorney General has no legal interest. Intervention would ... allow the Attorney General to tell the Council how to run this and subsequent proceedings..."

Petitioner's Brief in Support of Opposition. p. 7

In its broadest sense, jurisdiction is the right and ability to apply law to a given situation. M.G.L. c.164 §69J delegates the jurisdiction over energy facility review and the review of Forecasts and Supplements to the Council. Section 69P allows that jurisdiction for appellate review of such decisions shall rest in the Supreme Judicial Court of the Commonwealth and sets forth that Court's standard of review.

We find no support in any arguments made by any party, nor in any precedent known to us, for the Petitioner's assertion in this regard and agree with the A.G.'s characterization of it as "specious." To the extent that intervention allows "the Attorney General to tell the Council how to run this ... proceeding," such advice will only be enforceable by the Supreme Judicial Court, on appeal, pursuant to the standards set forth in M.G.L. c.164 §69P. This is properly the role of the chief law enforcement officer of the Commonwealth, and we welcome it. Attorney General v. Board of Trustees of Boston Elev. Ry. 319 Mass. 642 (1946).

III. Lastly, Petitioner challenges the legal authority of the A.G. to intervene before this Council. Petitioner states in the opening sentence to their argument:

"It is axiomatic that in order to act, the Attorney General must be statutorily empowered to do so."

Brief in Support, p. 3.

Petitioner cites no case, constituional provision or statute in support of such a broad restricition; The Attorney General does not argue the point in his submittals. We are, like the Attorney General, an agency charged with the care of the public's interest, albeit in a much narrower subject matter area; however, we cannot afford to luxuriously bypass a question which bears so directly on our fiduciary role.

The authority of the Attorney General is not only based in statutory enactments, but is found deeply rooted in the common law. In a challenge, by the Governor, to his authority to direct the course of litigation involving representation of a state agency pursuant to M.G.L. c. 12 §3, the Supreme Court clarified the broad responsibilities of the A.G.:

"The Attorney General represents the Commonwealth as well as the Secretary, agency or department head who requests his appearance. G.L. c.12 §3. He also has a common law duty to represent the public interest. Attorney General v. Trustees of Boston Elev. Ry. 319 Mass. 642, 652 (1946)."

See also: Feeney v. Comm. 373 Mass 359 (1977); Richardson, "The Office of the Attorney General: Continuity and Change," 53 Mass. L.Q. 5 (1968).

Such a common law duty survives and inures to the current Attorney General through the Massachusetts Constitution which adopted the common law as the legal fabric of the Commonwealth except where the legislature altered or abolished such law. Mass. Const. Pt. 2, Ch. 6, Art. 6. Further, it is an established rule that a statue is not to be construed so as to repeal the common law, unless the

intent of the legislature is clearly to do so. New Bedford Standard Times v. Clerk of Third District Ct. of Bristol 1979 Mass. Adv. Sh., 515 (1979). Commonwealth v. Rumford Chemical Works 82 Mass. 231 (1860); Commonwealth v. Knapp 26 Mass. 496 (1838). We cannot discern even a hint of legislative intent to abrogate the common law duty of the A.G. to represent the public interest in sections 3 or 11E of chapter 12 of the General Laws, but find substantial and recent case law reenforcing the existence of such a duty. Secretary of A & F. supra; Comm. v. Feeney, supra; Attorney General v. Kenco Optics, Inc. 369 Mass. 412 (1976).

The duty of the Attorney General to represent the public interest is bolstered by yet another constituional provision. Article 17 of the Articles of Amendment of the Constitutional Convention of 1853, allowed for the direct election of the Attorney General, giving the appointing power back to the "supreme power," the people. Official Report of the Debates and Proceedings of the State Convention, 704 (1853). Through this amendment, the Attorney General's common law duties, so far as pertinent to the needs of the Commonwealth, become a direct delegation of authority from the ultimate source of sovereignty under our constitution, the people. Official Reports, supra; Commonwealth v. Kozlowski 238 Mass. 379 (1921).

The final step in defining the scope of the powers and duties of the Attorney General was the consolidation of all responsibilities for appearing on behalf of the Commonwealth in "all suits and other civil proceedings." Ch. 490 of the Acts of 1896. The Court in

Secretary of Administration and Finance observed:

> "This statue dramatically changed the prior scheme, wherein the Attorney General appeared only in the Supreme Judicial Court and acted as advisor only, on request, in other tribunals. It required instead that the Attorney General represent the Commonwealth and department heads in all proceedings in which the Commonwealth was a party or interested...
>
> .... Although it has undergone minor revisions, the statue governing the powers and duties of the Attorney General has remained in substance virtually unchanged since 1896. See G.L. c.12, §3. Thus, the Attorney General is currently mandated to "appear for the commonwealth and for state departments, officers and commissions in all suits and other civil proceedings in which the commonwealth is a party or interested, or in which the official acts and doings of said departments, officers and commissions are called in question, in all the courts of the commonwealth." G.L. c.12, §3." (emphasis supplied).

Most recently, the legislature established a funding mechanism to allow the A.G. to intervene in any matter, "...involving the rates, charges, prices or tariffs of an electric, gas ... company doing business in the Commonwealth and subject to the jurisdiction of the department of public utilities." St. 1973 c.1224, §2; 1976, 266, §3. The intent of this legislation was to remedy a deficiency, perceived by the Governor and General Court, in the adversarial administrative process established for the regulation of public utilities. The chosen method of remedial action is to fund the A.G., through assessments against the utilities, and direct him to represent consumer interests in such adversarial regulatory proceedings. At the time of enactment of Ch. 12 §11E, the Council did not exist (although it was soon to be created by St. 1973, c. 1232) and neither the legislature nor the A.G. had any experience wtih its operations.

Petitioner would have us interpret the case of the single phrase "involving" rates, charges, prices or tariffs" (emphasis

supplied) in this section to prohibit the A.G.'s intervention because, technically, the Council's action "affects" rates but does not "involve" them. Petitioner's Brief at 4-5.

It is axiomatic that a remedial statute must not be given a "narrow, cramped reading" to defeat its purpose. U.S. v. Standard Oil 384 U.S. 224, 225-6 (1966); U.S. v. Esso 375 F^{2d} 621 (3rd Cir, 1967) annotation 16 L. ed. 2d, 256, 1259-60 (1966). Rather, such a remedial statute must be given a liberal construction to effectuate its purpose. U.S. v. Standard Oil supra; letter of the A.G. June 9, 1981 in support of his Motion. Since the intent of Chapter 12, section 11E was to remedy a deficiency in the adversarial, process regulating public utilities, we decline to accept Petitioner's "narrow, cramped reading" of that section as precluding the A.G. from participating in the instant, or, any Council adjudicatory proceedings. The A.G. has the authority to participate before the Council and represent the public interest. Secretary of A & F supra; Comm. v. Feeney, supra; Richardson, supra; M.G.L. c. 12 sec. 3, 11D, 11E, and we now exercise our discretion to allow him to do so. Boston Edison v. D.P.U., 375 Mass. 1, 44 (1979). Since there is no need to reach the question of whether the A.G. may intervene before the Council as a matter of right, we decline to address that issue.

It is therefore ORDERED that:

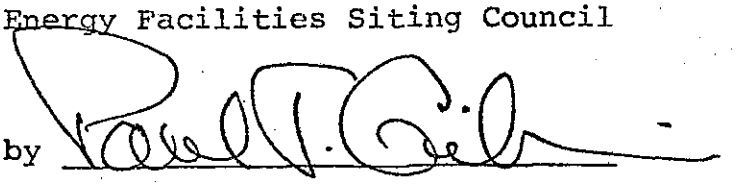
1. The Attorney General's Motion to Intervene in the instant proceeding be ALLOWED:

2. The motion of petitioner to delay this proceeding until after their testimony in D.P.U. Docket number 555 is granted;

3. That Petitioner respond to the requests of the Attorney General and Council Staff on or before September 7, 1981;

4. That, by agreement, the parties will meet in a Technical Session in order to clarify issues of interest at 10:00 A.M., August 25th, 1981 at the Council chambers

Energy Facilities Siting Council

by 

Paul T. Gilrain
Chief Counsel

Dated at Boston this 6th day of August, 1981.