A Briefing Book on THE ENERGY SITUATION IN NEW ENGLAND

October 1976

MASTER

**POLICY ANALYSIS DIVISION
NATIONAL CENTER FOR ANALYSIS OF ENERGY SYSTEMS
BROOKHAVEN NATIONAL LABORATORY
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A Briefing Book on THE ENERGY SITUATION IN NEW ENGLAND

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NEW ENGLAND

I. INTRODUCTION

This briefing book is designed to give a concise overview of the facts of the energy situation in New England and of attitudes within the region towards current energy issues. It was prepared by the Policy Analysis Division of the National Center for Analysis of Energy Systems at Brookhaven National Laboratory in preparation for a meeting in Boston at the end of November, 1976 at which the Administrator of the Energy Research and Development Administration and his staff will present ERDA's research and development plans and policies for public discussion.

Many of the central problems of U.S. energy policy are manifested in the region in a magnified form. The region entered the period of energy shortages and increasing prices in an economically declining condition. Manufacturing activity and jobs were being lost to other regions of the country and personal income was increasing at significantly slower rates. Energy prices were already high in 1970, 30% higher than the rest of the country. The difference would increase to 38% by 1974.

With essentially no indigeneous energy resources New England is an energy importing region. For various reasons it is also more dependent on petroleum than other regions of the country and at the same time distant from domestic petroleum producing regions. The result is that over 60% of the fuels it consumes is imported from abroad.

Although the future supply of energy to the region is critically dependent on energy resource policies, policies related for example to coal and oil shale development, the region's concerns cluster around policies and technologies that are perceived to have a more direct impact on its energy welfare. Thus, energy conservation, solar energy, nuclear power, offshore oil development and, in general, the price of energy to the region are paramount issues of concern and debate.

These issues are explored in more detail in the body of this report. It should be borne in mind, however, that the energy situation changes rapidly. The current version was completed in October 1976 and, particularly in terms of the representation of regional concerns and attitudes, should be used with caution as time progresses from that point.

II. THE ENERGY SITUATION IN NEW ENGLAND

A. Introduction

In this section we present an overview of the past and present energy supply and demand situation in New England. In particular, we document some of the differences that exist between the energy situation in this region and other regions of the country. We find that those differences are large and that many of the central problems of the U.S. energy situation exist in magnified forms in the northeast corner of the nation.

Analysis of the energy problems of New England and finding solutions to these problems is complicated by the varied nature of many of the basic characteristics that directly or indirectly affect energy use in the region. For example, the number of degree days per year in northern Maine is nearly as high as in the coldest regions in the lower 48 states, while a relatively moderate climate prevails in the southern coastal areas of New England. Population densities also vary widely from the heavily populated urban areas to the sparsely settled rural counties. Even on a state basis, population densities in New England range from slightly more than half to nearly 13 times the U.S. average. Such variations mean that energy policies appropriate for one area in the region may be inappropriate for another.

Per capita income also varies widely in the region as can be seen in Figure 1. While the region had an average per capita income close to 5% higher than the national average in 1974, average per capita income in Connecticut was about 19% above that of the U.S. while income in Maine was about 18% below the national average. During the period 1970 to 1974 when per capita income in the U.S. grew at about 8.2% per year, income in most states in New England grew at substantially lower rates. Only in Vermont, which had one of the lowest average per capita income levels in New England, did the growth rate exceed that of the nation.

Figure 1

Despite the diversity that exists throughout New England, there are many common elements among the states in the region which relate to the demand for energy and its sources of supply. As we will discuss shortly in more detail, states in New England are all heavily dependent on petroleum products for energy and almost all of the petroleum used in New England had its origin in a foreign country. Thus, in addition to the presentation of basic statistics on energy use on a state by state basis, we have found it useful to discuss many of the common characteristics on a regional basis.

B. Current Energy Consumption Patterns

The basic statistics on recent levels of energy consumption in the New England region and each state in the region are set forth in Tables 1, 2, and 3.* Table 1 shows the net annual energy consumption by fuel type for the New England States and the region in 1974. This table includes net electricity consumption, but not the energy resources used to generate electricity. Table 2 shows the resources used by the electric utilities in the region, and Table 3 shows the energy consumed by sector. On the basis of end use, New England consumes approximately 4.2% of the energy used in the country.

Energy consumption by sector on a per capita basis is shown in Figure 2 for 1972 and 1974. On a per capita basis, net energy consumption in 1974 in New England was approximately 27% lower than the national average. In terms of gross energy resource consumption, the difference is slightly greater; New England's per capita consumption level was approximately 29% lower than the national average. It is clear from Figure 2 that the lower level of per capita energy consumption in New England relative to the United States results from a much lower energy consumption, on a per capita basis, in

*Many different sources of data were relied on in preparing this section. Different sources typically follow different conventions when categorizing data. Thus, it is frequently inappropriate to compare data from different sources without first making adjustments which compensate for major differences in the way the data were collected and processed. For example, the FEA "Son of Strawman" collection of data on energy use in the industrial sector does not include estimates of the energy resources used for feedstocks in this sector, whereas the Bureau of Mines does include such estimates in its data. Where we present data for comparison purposes, we have attempted to put the data on a consistent basis.

Table 1
Net Annual Energy Consumption - 1974
(10¹²Btu)

<u>State</u>	<u>Gasoline</u>	<u>Dist. Oil</u>	<u>Diesel Oil</u>	<u>Resid. Oil</u>	<u>Jet Oil</u>	<u>Natural gas</u>	<u>Liq. Gases</u>	<u>Electricity</u>	<u>Coal</u>	<u>Other</u>	<u>Total</u>
Connecticut	165.8	113.6	15.4	71.9	10.7	68.6	8.0	64.1	1.8	7.4	527.6
Maine	65.0	66.5	6.1	71.0	10.4	3.0	3.1	21.3	1.9	6.3	254.5
Massachusetts	287.0	324.3	18.7	204.1	38.8	154.7	8.2	100.2	3.1	18.0	1156.9
New Hampshire	48.8	43.2	2.5	15.9	4.8	8.6	4.7	16.6	0.3	3.8	149.1
Rhode Island	46.5	43.7	4.1	27.2	0.7	22.6	1.6	15.5	-	11.3	173.3
<u>Vermont</u>	29.4	27.4	2.5	3.3	0.6	2.5	2.8	10.5	0.3	0.7	80.1
New England	642.5	618.7	49.3	393.4	66.0	260.1	28.4	228.2	7.4	47.5	2341.4

Note: Totals do not include utility use of petroleum or coal.

Source: "Son of Strawman" data, FEA, April 1976.

Table 2
Energy Resources Used By Electric Utilities - 1974
(10¹²Btu)

<u>States</u>	<u>Distillate Fuel</u>	<u>Residual Fuel</u>	<u>Natural Gas</u>	<u>Nuclear</u>	<u>Hydro</u>	<u>Coal, Other</u>	<u>Total</u>	<u>Total Sales of Electricity</u>
Connecticut	2.8	168.4	0.6	83.7	4.4	3.8 -	263.6	64.1
Maine	0.6	25.0	0.4	37.5	18.2	0.0 -	81.8	21.3
Massachusetts	5.3	232.2	7.5	30.3	3.7	16.0 -	295.1	100.2
New Hampshire	0.5	14.2	1.0	-	13.4	24.6 -	53.8	16.6
Rhode Island	0.3	11.2	2.0	-	-	1.6 -	15.1	15.5
Vermont	0.7	-	0.3	26.1	9.6	1.4 -	38.0	10.5
<hr/> New England	10.2	451.0	11.7	177.6	49.4	47.4 -	747.3	228.2

Source: "Son of Strawman" data, FEA, April 1976.

Table 3
Energy Consumption by Sector - 1974
(10¹² Btu)

<u>State</u>	<u>Residential & Commercial</u>	<u>Industrial</u>	<u>Transportation</u>	<u>Agriculture</u>	<u>Electric</u>
Connecticut	240.7	88.0	193.0	4.9	
Maine	102	57.6	93.0	1.8	
Massachusetts	682.8	112.7	396.2	2.6	
New Hampshire	72.9	19.9	54.9	0.8	
Rhode Island	95	19.7	57.4	0.8	
<u>Vermont</u>	<u>40.4</u>	<u>7.1</u>	<u>32.0</u>	<u>0.7</u>	<u> </u>
New England	1233.8	305.0	826.5	11.6	519.1

Source: "Son of Strawman" data, FEA, April 1976.

Figure 2

Figure 2, bar graphs for New England:
Numbers and percents are correct, graphic proportions are incorrect.

the industrial sector. While this is partly due to the particular industrial activities engaged in in New England and the fact that industries in New England have had strong economic incentives to use energy efficiently for some time, it also reflects the fact that New England imports many goods that were manufactured, in some cases in energy intensive industries, in other regions of the country. Thus, New England effectively imports a substantial amount of energy in the form of manufactured products.

The Effect of Energy Conservation

Figure 2 also reveals that New England reduced its per capita consumption of energy more than the nation as a whole both in absolute and percentage terms between 1972 and 1974. It is sometimes suggested that the reduction observed in New England resulted from the fact that a much larger portion of total energy consumption occurs in the residential and commercial sector in New England than for the United States as a whole and that this sector has historically been more responsive to changes in energy prices. However, it should also be noted that within the residential and commercial sector, New England reduced its per capita energy consumption more than the United States in both absolute and percentage terms. Thus, even if New England had had the same distribution of energy consumption over sectors as the United States, we would still have seen a larger reduction in per capita energy consumption in New England than in the United States. When interpreting the data on residential and commercial energy consumption in New England, it should be remembered that part of the reduction in per capita energy consumption observed between 1972 and 1974 was due to the winter being milder in 1974 than 1972.

Figure 2 indicates that energy consumption for both New England and the United States remained essentially unchanged between 1972 and 1974 on a per capita basis in the industrial sector. However, New England cut back about 3% on per capita energy consumed in the transportation sector while there was essentially no reduction in transportation energy use in the United States as a whole.

C. Energy Supply

In 1975 New England imported over 98% of its major energy resources either from other regions of the United States or from foreign countries. In addition to its dependence on energy supplies from outside the region, New England has come to rely much more heavily on petroleum as a source of energy, particularly foreign imports, than the rest of the country.

Figure 3 shows the mix of energy sources and imported fractions for New England and the United States. Figure 4 presents the fuel mix for New England and the United States in greater detail for a period preceding and following the oil embargo. It is clear from Figure 3 that while New England differs somewhat from the United States in terms of the percentage of energy obtained from nuclear and hydroelectric plants, the major differences are (1) that the United States on the average meets a large portion of its energy demand with natural gas and coal, while New England relies much more heavily on petroleum, and (2) that New England relies on foreign imports for a much larger portion of its petroleum products than the United States.

Approximately 80% of the energy use in New England in 1974 came from petroleum, whereas the corresponding percentage for the United States as a whole was about half that: 42%. Of the petroleum products used in New England, about 34% were direct foreign imports. However, since most of the petroleum products consumed in New England are purchased from domestic sources and refined from foreign crude, New England is actually dependent on foreign sources for over 80% of the petroleum products used in the region.

Figure 3

COMPARISON OF NEW ENGLAND AND U.S. ENERGY RESOURCES, 1974

Figure 4

COMPARISON OF NEW ENGLAND AND U.S. ENERGY USAGE

1968

1974

Source: "Son of Strawman" data, FEA, April 1976.

Figure 4 indicates that the mix of resources used for energy in New England and the United States has not changed substantially over the last 6 years. The most noticeable change, particularly for New England has been the increased use of nuclear power in 1974 as compared to 1968.

A closer look at the fuel sources for electric generation is presented in Figure 5. It is evident that New England has shifted to heavy reliance on nuclear and oil fired plants while the United States depends much more on coal fired plants. Preliminary data indicate that approximately 29% of the electric power produced in New England in 1975 was generated in nuclear power plants. Some recent projections suggest that most growth in capacity in New England will result from the installation of nuclear power plants and that by 1985 they will account for over 30% of the installed capacity in the region and will provide over 40% of the electric power generated. The reserve margin is expected to fall until the early 1980's to approximately 19% as the current system matures. However, as large new nuclear units come on line, the reserve margin will rise and is expected to be about 23% by the mid 1980's.

A summary of the generating capacity for the New England states is presented in Appendix A. Principal generating plants and transmission lines of New England as projected by the Electric Council of New England for 1985 are shown in Figure 2 in that appendix.

Figures 3, 4, and 5 of Appendix A show where petroleum products and natural gas used in New England come from.

D. Trends and Projections of the Demand for Energy

Figure 6 shows the historical trends of energy consumption in New England along with some recent projections of possible energy consumption levels in 1985. The historical data indicate that energy consumption grew in New England at an average annual rate of about 3.6% per year from 1968 to 1973. A noticeable drop occurred during and after the oil embargo of 1973 such that

Figure 5

ELECTRIC GENERATION FUEL SOURCES
1974

Source: "New England Hydroelectric Development Potential," Hydroelectric Facilities Workgroup, Energy Resource Development Task Force, New England Federal Regional Council, June 1976.

Figure 6

Sources: "Son of Strawman Data", FEA April 1976; "Interim Report to the New England Energy Policy Task Force", FEA Region I, June 1976; and "A Perspective on the Energy Future of the Northeast United States", Brookhaven National Laboratory, BNL-50550, June 1976.

the level of energy consumption in 1975 was slightly less than it was in 1970.

Four projections are shown in Figure 6 for total energy consumption. The wide range of possible levels of energy consumption in 1985 shown by these projections is indicative of the wide range of possibilities open to federal, state, and local governments to affect the efficiency, patterns, and levels of energy use in New England.

Figure 7 shows the historical trends and some recent FEA projections for certain selected energy forms: gasoline, heating oil, and electricity. Federally mandated improvements in automobile fuel efficiencies are expected to result in the nearly constant level of gasoline consumption shown in Figure 7 even though automobile usage is expected to increase over time.

Although the consumption of electricity grew at about 8% per year from 1964 to 1973, this growth occurred primarily in the residential sector. The shift in relative importance of consuming sectors can be seen in Table 4.

Table 4

CONSUMPTION OF ELECTRICITY 1964-1973

<u>Sector</u>	<u>Growth (10^9 Kwh)</u>	<u>Growth Rate Per Year</u>
Residential	14	9%
Commercial	11.8	11%
Industrial	8	5.4%

E. Energy Prices

On the average in 1974, New Englanders paid 38% more for their energy than those living in other parts of the country. This difference has been increasing over the years. In 1970, for example, the difference was about 30%. There are basically two reasons for

Figure 7

CONSUMPTION OF ELECTRICITY AND SELECTED PETROLEUM PRODUCTS

Source: "Interim Report to the New England Energy Policy Task Force," FEA Region I, June 1976, and "Son of Strawman" data, FEA, April 1976.

this situation: the higher prices paid for individual fuels in the region, and the specific mix of fuels used.

Table 5 compares average prices for certain fuels in New England with the national average. Natural gas and coal show large price differences primarily due to geographical relationships and costs of fuel transport. The high cost of electricity in the region is due partially to the high cost of petroleum, which is used to generate approximately 60% of the electricity in the region. Not only are the fuels used in New England relatively expensive, but from 1971 to 1974 the rise in fuel prices had a much larger impact on New England than on the nation as a whole. Figure 8 shows the cost components for several fuels. More detail on regional energy prices is given in Appendix A.

The individual prices of fuels account for only a part of the differential in energy costs in the region. Also important is the quite different mix of fuels used in the region, as shown in Figure 3. This can be seen by the fact that, based on 1974 prices, if the region purchased its fuels at average U.S. prices, the average fuel bill would be 11% higher in New England than in the U.S. as a whole. Petroleum is a relatively expensive energy resource, and it is New England's heavy reliance on petroleum that is responsible for this portion of the high overall fuel cost in the region.

However, one should not conclude that because the region's mix of fuels can account for only an 11% energy cost differential that it is therefore simply regional price differences, and not differences in fuel mix, which account for most of the higher cost of energy in New England. The high cost of electricity alone accounts for over 40% of the energy cost differential. But, as we have seen, electric generation is much more heavily dependent on petroleum in New England than in other regions of the country. Thus, once again, the region's heavy dependence on petroleum is seen as a major factor contributing to its high energy bill.

\$ / MIL. BTU

Figure 8

NEW ENGLAND ENERGY
COST COMPONENTS
END OF 1974

Source: Linda K. Mansfield, "The Price Differential for Energy Between New England and the United States - Updated," FEA Region I, Boston, Mass., May 30, 1975.

Table 5

Comparison of Average Prices for Selected Energy Products
- New England and U. S.

		1972		1976	
		<u>New England</u>	<u>U.S.</u>	<u>New England</u>	<u>U.S.</u>
Regular Gasoline	(¢/gal)				
- Retail excluding taxes		27	24	44	45
Residential Heating Oil	(¢/gal)	21	20	41	40
Electricity					
- Total Sales	(¢/Kwh)	2.49	1.77	3.65*	2.3*
- Industrial	(¢/Kwh)	1.55	1.09	2.81*	1.55*
Residual Oil					
- Utility	(¢/10 ⁶ Btu)	65	60	183	194
Natural Gas					
- Utility	(¢/10 ⁶ Btu)	NA	65	166	87
Coal					
- Utility	(¢/10 ⁶ Btu)	NA	48	124	80

*Prices are for 1974

The next most important factor contributing to expensive energy in New England, after the high cost of electricity and the heavy reliance on petroleum, is the price of natural gas in the region. The high price paid for natural gas can, by itself, account for over 17% of the energy price differential between the New England and national averages.

While it is apparent that both fuel mix and fuel specific regional price differences are responsible for the high cost of energy in New England, it is not at all certain how changes in these factors would affect the relative cost of energy in the region. For example, recent changes in coal prices and likely regional price differences for this resource are such that a major shift to coal by utilities, as a substitute for residual oil, might not bring about any reduction in electricity prices. Deregulation of natural gas, while it would most certainly raise gas prices in New England, might have a much more severe impact on other regions of the country. This is because the rest of the nation meets a much larger portion of its energy demand with natural gas, as seen in Figure 3, and because deregulation may have a greater impact on gas prices in some other regions. It may well be, as stated by the Massachusetts Energy Policy Office, that deregulation would adversely affect other regions far more than New England and that, in particular, deregulation could enhance the competitive position of industry in the New England region.

F. Energy Sources Indigenous to the Region

Less than 2% of New England's gross energy consumption is currently supplied from hydroelectric plants. Essentially all other commercial energy sources used in the region are imported from other domestic or foreign sources. Various estimates have been made of the amounts of energy which could be supplied by

conversion of some of the energy found in solid waste, wood, sunlight, and wind. While recent FEA estimates are that such sources will provide less than 1% of the region's energy by 1985, other more optimistic estimates are more than double this.

There is also some possibility of increasing the supply of hydropower in the region. A recent report on "New England's Hydroelectric Development Potential" states that approximately 3.2 billion Kwh could be attained by developing hydropower sites that have benefit to cost ratios greater than 0.8. In addition, this report estimates that close to 1.9 billion Kwh could be obtained from tidal power. Since the actual benefit to cost ratio of many of these sites is less than 1, these numbers suggest that hydro and tidal power facilities would at most supply less than 3% of the region's gross energy demand as projected by the FEA for 1985.

The role indigenous energy sources could play in meeting New England's energy demand is discussed further in Section III, "Regional Energy Issues."

G. Environmental Issues

Water Resources

Lack of adequate water supplies to meet expected demands is an increasingly serious problem in the Northeast. Representatives from the New England River Basins Commission (NERBC), state and federal environmental and planning agencies, regional planning commissions, as well as other government units, have all identified shortages of both surface and groundwater as important constraints to future growth in the area. Also identified as problems are fluctuations in flow due to impoundments used for hydroelectric power generation, frequent major flooding, and depletion of groundwater supplies due to increased pumping. Interestingly, despite severe conditions imposed during New England droughts of the 1950's and 1960's, no new major water supply programs such as reservoirs or aquifer recharge projects have been

undertaken. However, there is a controversial proposal for augmenting Boston's water supply by transbasin diversion of Connecticut flood waters using the Northfield pumped storage facility. Most of the storage of the Connecticut, Housatonic, and Merrimack Rivers has already been utilized, though storage of the Androscoggin River (New Hampshire), as well as the Penobscot, Kenebec, and St. John Rivers (Maine) remain undeveloped.

Widespread concern also exists for the quality of the region's water. Agricultural runoff, discharges from industries (primarily textiles, pulp and paper, tanneries, silviculture, and refineries), municipal sewage treatment plants, and malfunctioning private septic systems have all been identified as major sources of pollution. Approximately 50% of New England's main stem river and tributary mileage presently do not meet the fishable-swimmable water quality standards stipulated by the Federal Water Pollution Control Act (PL92-500). While conditions with respect to this goal continue to improve, it is doubtful that the target date of 1983 for the standards will be met by the region. Dissolved oxygen and bacterial levels are the most frequently violated water quality criteria. Chloroform, PCB's and lead are presently focal points for specific water quality improvement programs. In a five-year study (1962-1967) of U.S. rivers and lakes, the Federal Water Pollution Control Administration identified 19 trace metals in the waters of the Northeast. Zinc, boron, iron, manganese, aluminum, copper, lead, chromium, barium, and strontium were all observed in the study with a frequency of at least 36%, although basin averages for these metals were generally found to be equal to or below nationwide averages. While some specific elements such as copper and zinc in trace amounts are actually beneficial to health, the presence of the indicated metals is usually taken as representative of degraded water quality.

Restoration to the area of anadromous fish (e.g., salmon) has been hampered due to lack of or poor facilities for fish passage through existing impoundments especially at older run-of-river hydroelectric plants on the Connecticut and other major rivers. Concern also exists for fishing and recreational activities in the coastal zone, primarily because of proposals for deep water ports, tank farms, refineries, tanker traffic, and drilling platforms, all related to offshore oil activities. Pollution from oil spills is already a problem in western Long Island Sound (as is the problem of nutrient enrichment), in Boston Harbor as well as Lake Champlain and the Champlain Barge Canal. Thermal effluents from existing and proposed nuclear and conventional power plants have already been identified as a potential water related problem; the imposition of cooling towers on all new thermal plants, while largely removing thermal capacity constraints, creates consumptive water use problems.

Institutional and legal constraints will be increasingly important in relation to water resource use in New England. Meeting demands for both water quantity and quality by competing users will require an interconnected system of cooperating agencies to implement much needed programs for increased water storage, flood management, and interbasin transfers.

Air Quality

The New England states have had fair success in controlling pollution from stationary fossil fuel combustion. Of 1240 major polluters identified in New England as of 31 December 1975, 946 (76%) were in compliance with emission standards or on schedule toward compliance and 244 (30%) were in violation (the status of 50 (4%) was unknown). There were no violations of the SO₂ ambient air standard in either 1974 or 1975. Particulates remain somewhat

of a problem. The ambient standards were violated at at least one monitoring station in every state but Maine. Nitrogen oxides, a product of both stationary combustion and automobiles, was satisfactory at all stations but two (and those two only slightly exceeded the standard).

Relaxation of emission standards and/or shifts from oil to coal at electric power plants could alter this situation. Some evidence has been presented that selected conversion to coal, with appropriate environmental safeguards, could be made without violating SO₂ standards. The large population at risk in the Northeast certainly requires that caution be exercised in such a decision.

The same success that was achieved with respect to SO₂ has not been achieved with automobile pollutants. In 1975, carbon monoxide standards were violated at most monitoring stations (21 of 31) and oxidant standards were violated at essentially all stations.

As would be expected, New England's air is generally cleanest in the rural areas and more polluted in heavily developed urban and suburban regions. The dirtiest areas by pollutant in 1975 were

Particulates: Meriden, Connecticut and Worcester, Massachusetts

CO: New Britain, Connecticut; Worchester, Massachusetts; and Providence, Rhode Island

Oxidant: Middletown, New Haven, and Bridgeport, Connecticut.

There is substantial evidence that New England's air is affected by pollutants produced in other parts of the country. Oxidant concentrations in Connecticut seem clearly related to auto emissions in the New York metropolitan area. Policy decisions on the use of tall stacks on power plants in Ohio and Pennsylvania may affect sulfate levels in New England.

III. REGIONAL ENERGY ISSUES

A. Introduction

New Englanders are known for the independence of their views on all matters and under all conditions. Unanimity of opinion on energy matters is precluded--almost on principle--and consensus on specific issues is elusive, transitory and subject to considerable intra-regional diversity. And yet the energy conditions of the region have imposed circumstances leading to a convergence of opinion and action that differentiates New England from other regions of the nation.

In this section we attempt to reflect those tendencies and views on energy matters that seem to be most widely held in the region or have resulted in policy or development conflicts. It should be regarded as a sampler of issues, views, and problems rather than as a definitive accounting of opinion. The general caution expressed in the introduction is particularly pertinent here. This review of issues was completed at the end of October, 1976. The rate of transition of energy issues and concerns will make much of this discussion obsolete relatively soon after that date.

These observations have been assembled through personal interviews carried out in the course of the BNL Regional Energy Studies Program, and particularly for this document; participation in state and regional conferences; analysis of regional research activities; and review of periodicals. Some issues and policies are well documented: an example of such documentation is the "New England Energy Policy" by the New England Regional Commission reproduced in Appendix B. Others must be inferred from patterns of action or inaction; such as the conflicting regional response to Massachusetts' flat rate referendum.

B. Energy Policy

Development of energy policy is extremely complicated. As the use of energy affects all facets of the human and natural environment, all must be considered in developing energy policy. Similarly,

policies developed at the federal, state or local level affect all other levels of government, the economic community, the environment, and individuals in distinct and diverse ways. It is the successful resolution of diverse concerns (for example resource constraints, technical limitations, environmental quality, health, economic feasibility and consumer protection) which determines the acceptability of general policies.

The absence of a generally accepted federal energy policy is held, by both state governments and private interests, partially responsible for limited regional energy development. Without effective federal initiative the region may not be able to attract the investment necessary to diversify and strengthen its energy mix, bolster its sagging economy, protect and improve its environment, and provide the necessary services to its citizens. Failure to establish a federal energy policy exacerbates existing conflicts between federal agencies and between state and federal agencies. While a formal study of the results of interagency policy conflict in the region has not been done indications suggest the results are inefficient problem solving; increased costs; a sub-optimal allocation of resources, and the entrenchment of special and unilateral interests. Indeed, an important factor in establishing the regional commissions, the FRC Energy Policy Task Force, and the New England Energy Policy Council, Inc. has been the need for improving coordination in policy development and program implementation.

An additional factor in calling for a federal energy policy is increasing recognition that state and federal priorities often differ. Where such policies are inconsistent they may be aligned through arbitration or adjudication, as was the case when the Federal Energy Administration (in 1974) accepted the argument of New England representatives that the substantially greater impact on those regions dependent on imported oil is inconsistent with the Emergency Petroleum Allocation Act of 1973 and adopted an entitlement system for price controlled domestic oil. More recently the Department of Interior has implemented an Outer Continental Shelf petroleum leasing program which several of the states opposed in court (United States v. Maine

No. 35, Orig. - U.S. Mar. 17, 1975 -). Judicial defeat of the State's case has resulted in a realignment of state programs to meet impending development.

As has been indicated by NERCOM's energy policy statement (Appendix B) and, more recently, several state and federal reports, the region is committed to development of a more nearly balanced energy mix; to reduce dependence on imported petroleum; and to reduce regional inequities in price. Specific policies which the states' choose to follow will be strongly influenced by the extent to which such actions will improve the region's stagnating economy. Unemployment in the region fluctuates 1 to 2 percent above the national average. From 1973 to 1975 farm income in the region fell by over \$110,000,000.00, contract construction income fell by over \$380,000,000.00, while federal income (both civilian and military) in the region increased by approximately \$100,000,000.00 federal income in Rhode Island declined by \$115,000,000.00. Such losses influence the development of energy policy.

C. Fossil Fuels

Petroleum

The dominant use of oil (80% of the region's total energy needs; high levels of imported oil; and location at the end of the "pipeline" make the region doubly insecure to shifts in petroleum policy. Decreases in petroleum availability will affect both supply and price, increases in price will have a greater marginal impact because of proportionally higher prices existing in the region. Whether the emphasis is placed on high priced oil, or insecure sources of oil, or both, the result is the same: each state would like to move away from petroleum dependence.

Natural Gas

As with petroleum the essential problem is a declining supply at an increasing price. It is difficult to gauge the impact of "firm-contract" gas curtailments on the region (last winter was exceptionally mild). However, the proportionally higher price the region pays for natural gas (and whatever "natural level" the price of "new" gas rises to under altered Federal Power Commission regulations) may have a substantial negative impact on attracting new industry. At least one

report (from New Hampshire) has also indicated that failure to secure new natural gas contracts has resulted in the loss of new industry for the State.

Outer Continental Shelf Development

State response to the development of OCS areas has changed following the United States v. Maine decision. Prior to the decision states' interests included a share of the leasing bonus, a share of derived royalties, adequate environmental protection, and adequate research to ensure that development proceeds in a beneficial manner. Current concerns include suggested deficiencies in the environmental impact statement, failure to consider the need for onshore support facilities, and the need for improved rapport with the Department of Commerce Coastal Zone Management Program.

Despite such concerns the states recognize that oil or gas finds on George's Bank, and made available to the region, may affect a relative decrease in the cost of energy to the region. An additional factor for support will be the substantial economic benefit on those areas in which onshore facilities are located.

Refineries

While the history of refinery development in New England is not encouraging the current situation is such that several individuals expressed personal belief that specific states are ripe for development and that failure to site a refinery in the region over the next decade would be the result of poor planning and groundwork, not governmental opposition at the state or local level.

All coastal states have potential refinery and OCS support facility sites. While most states have expressed their willingness (indeed several are actively seeking) to serve as support centers (see for example "An Analysis of Potential Petroleum Development in Massachusetts," July 1975 prepared by the Massachusetts Energy Policy Office) the same is only marginally true for refineries. Refinery proposals generated for Durham, N.H. and Machiasport, Me., initially supported by state and local governments, ultimately failed to receive the permits necessary to begin construction. The sole active

refinery proposal at the moment is for Eastport, Me., made by the Pittston Company. The Environmental Protection Agency has announced that hearings on the preliminary environmental impact statement will be held in Eastport, Me. in December of this year.

Other states are actively considering, if not advocating, refinery development. Serious discussions between Venezuelan and Massachusetts interests concerning a Bay State refinery project have been initiated but as of May, 1976 had not progressed to a site specific level. The general public acceptability of a refinery in Massachusetts will be determined on November 2, 1976 when a non-binding referendum is offered to the voters of the State:

OIL REFINERY AND
DEEP WATER PORT

Non-binding advisory question.
"Shall the General Court enact legislation authorizing the construction of an oil refinery and a deep water port, subject to the approval of those communities directly affected and any reservations that the General Court may prescribe?"

The Legislature has placed this question on the ballot in order to determine whether the people favor or oppose the construction of an oil refinery and deep water port in Massachusetts. The vote on this question deals with the general advisability of such construction and is not a specific proposal for a facility. If a specific proposal is made, it would be subject to approval by the communities directly affected and subject to any restrictions imposed by the Legislature.

Petroleum Storage

The New England Congressional Caucus has protested the exclusion of the Northeast from the Federal Energy Administration's Strategic Petroleum Reserve Storage Plan. Of the five Early Storage Reserve sites designated one is in Texas and the remainder are in Louisiana. The Caucus seeks to ensure that, in case of a major interruption of oil supply, the FEA fulfill its mandate to provide for the region's

needs by assuring product processing and timely delivery from the reserve stocks.

Coal

Despite utility coal costs twice the national average the Edison Electric Institute reports that coal is the cheapest fossil fuel available for electric generation in the region. Yet regional utility use is about 15% of the national average, mostly at the Bow, N.H. power station. The potential for increasing coal use will depend on resolution of a series of distinct, though not entirely independent, issues:

First, utilities must be allowed to burn coal; through improvements in the economics of environmental control technologies; through relaxation of environmental standards and regulations; by increasing the availability of high Btu low sulphur coal; through the development of reliable and accepted coal generating plant siting criteria; or by some mixture of the above.

Secondly, for continued expansion of coal use in the region additional problems are confronted; direct burning or gasification technologies should be compatible with existing and potential federal and state regulations; the transportation infrastructure is not adequate to meet potential coal demands; and long term coal contracts are not available.

Coal use issues are complex. The national coal supply is many, many times the size of domestic oil and gas reserves. Early in October Rev. James J. Skehan, a Boston College geologist, announced the discovery of coal veins, bearing semi-anthracite to low-volatile bituminous coal, up to 25 feet thick in the Narragansett Basin. Yet the region cannot buy clean coal and cannot burn cheap coal. Several utilities expressed the opinion that current dependence on oil is partially the result of failure to obtain long term coal supply contracts some six or seven years ago. More recently the Federal Energy Administration (FEA) announced it will not issue a coal conversion order for the Schiller, N.H. generating station until the

environmental impact statement is drafted and the public and Environmental Protection Agency has had a chance to comment on the adequacy of environmental controls.

The Northeast Rail Services Act (P.L. 93-236, Dec. 11, 1973) and the "Preliminary System Plan" (Feb. 1975) proposed by the U.S. Railway Association affects the ability to transport bulk coal to consumers in New England. While the ultimate fate of the railway system is unclear, abandonment of many miles of light density unprofitable spur lines is explicit. Some state governments are actively supporting spur lines which the Plan would have allowed to collapse. They will continue to support the rail system over other forms of coal transportation which do not provide equal or greater social and economic benefits.

D. Nuclear

The major symptom of nuclear malaise in the region appears to be public opposition. The majority of sentiments expressed in the press or at nuclear hearings are vehemently opposed to the construction or operation of nuclear power plants. The New England Governors (with the exception of Meldrim Thomson, Jr., a nuclear advocate) appear, at best, resigned to fission power. The utilities, finding it difficult to burn coal and expensive to burn oil, see no feasible alternative.

The interaction of interested parties (the public, the regulatory agencies, and the utilities) contributes to, enhances, and prolongs the nuclear electric controversy and plant specific licensing procedures. An example of such conflict is currently at issue in Seabrook, N.H. where a proposed nuclear plant has developed into a major regional issue pitting a diverse array of anti-nuclear groups (including the Clamshell Alliance, the Union of Concerned Scientists and the New England Coalition on Nuclear Pollution) against the Public Service Co. of New Hampshire (PSC), the N.E. Council for Economic Development, the New Hampshire State Labor Council (AFL-CIO), and Governor Thomson.

On August 4, 1976 groundbreaking ceremonies at the proposed site and a luncheon at the Exeter Inn were interrupted by protesters. Six protesters, members of the newly formed Clamshell Alliance, were arrested, found guilty on charges of criminal trespass, given a twenty-day suspended sentence, and released on \$100 personal recognizance. Following on the Nuclear Regulatory Commission's (NRC) decision that new licenses to build or operate nuclear power plants would not be issued until radioactive waste disposal problems were resolved the Atomic Safety and Licensing Appeals Board (ASLB) rescinded PSC's construction permit. At this finding plant opponents rejoiced, plant advocates called for NRC review and William Tallman, President of PSC, revised the total construction cost of the project from \$1.6 billion to \$2 billion. Tallman explained the increase was due to interest payments and inflation. On October 5, NRC reversed the ASLB and allowed construction on the plant to proceed explaining that the problem prompting suspension of the building permit was on its way toward resolution. Response to this finding has been mixed. Both the PSC and Governor Thomson hailed the decision; Governor Thomson citing it as "the best news he has heard since becoming governor" (Concord Monitor, Oct. 6, 1976). Opponents of the plant called the decision "shocking and disgusting" and questioned the integrity of the ruling.

Whether the NRC decision will stand may well depend on meetings at the end of October to present arguments on the waste disposal issue. Whatever the outcome of such hearings it does not seem likely to still the Seabrook controversy. Opposing factions have become entrenched and practical differences given way to politics and dialectics.

Elsewhere in the region, nuclear controversies have not been lacking. The Vermont Yankee plant operating license was remanded to the Atomic Safety and Licensing Board (following an appeals court decision) for determination of whether the license should be continued modified or suspended. Additionally the State of Vermont brought a court suit against the plant for unauthorized discharges. Connecticut has been concerned with its lack of an effective evacuation plan.

Governor Noel of Rhode Island has been criticized by nuclear opponents for support of a meteorological tests at the proposed Charleston nuclear site.

E. Solar and Alternative Energy Resources

Energy alternatives attracting regional interest include solar, hydropower, tidal power, solid waste, and biomass. While the potential contribution of these resources is limited, with proper encouragement their use can help offset continued dependence on uncertain oil supplies, can provide for beneficial and improved utilization of resources, and, can provide varying scales of development suited to the region's range of rural/urban environments.

Waste and Wood

Waste utilization has gained regional acceptance if only as it offers a potential solution for two problems, disposition of municipal waste and diversification of the energy resource base. The Connecticut Resources Recovery Authority is presently selling a 53 million dollar bond issue for a facility to be located in Bridgeport and work has started on a second facility. The Rhode Island Solid Waste Management Corporation plans to issue a Request For Proposal for the first Rhode Island facility next year. Massachusetts has a program under the Executive Office of Environmental Affairs and is negotiating with a private utility to build a facility in Haverhill, Mass. designed to process 3,000 tons per day of waste, serve approximately 50 communities and generate 50 megawatts of electricity.

Wood and agricultural waste have also attracted attention as potential energy or fuel resources. While wood is currently utilized as fuel for process heat and to a marginal extent for home heating and cogeneration, there have been few plans to develop electric generation plants using wood as a fuel (the lone exceptions to this have been Green Mountain Power Co. in Vermont and the Maine Wood Fuel Corporation in Bangor, Maine).

Hydropower and Tidal Power

There have been a number of major hydro and tidal power projects proposed in the region. At the moment the two largest (in size, in paper work, in press coverage, and controversy) are the Dickey-Lincoln School Lakes hydropower project and the Passamaquoddy tidal power project.

The Dickey-Lincoln School Lakes project was authorized by Congress in 1965 at which time planning was initiated. The project consists of two impoundments: The Dickey Dam site, on the upper St. John River immediately above its confluence with the Allagash river, would be an earth filled structure impounding a reservoir with a gross storage capacity of 7.7 million acre-feet. The project would be operated for peaking purposes and have a total installed capacity of 760,000 kW. The second site, Lincoln School, is eleven miles downstream from Dickey. It is much smaller having a useful storage capacity of about 24,000 acre-feet and would be used for regulating discharges from Dickey Dam and for base load power generation (two 35,000 kW units are authorized for this site).

There are three Canadian power plants below the Dickey-Lincoln sites whose energy output will increase through improved flow regulation. One half of the Canadian power increase would come back to the U.S.

Many Passamaquoddy tidal power studies have been conducted. In the late 1930's President Roosevelt initiated the first federal feasibility study of harnessing Passamaquoddy's tidal potential. In 1955 a joint U.S. - Canadian Commission developed a single pool type project but it fell short economically and was not authorized. The present plan is for a two pool project (the upper pool, in Passamaquoddy Bay, would be mostly in Canada and the lower pool, in Cobscook Bay, in the United States) anticipated to provide primary peaking and some base load capacity.

At the time of the last study in 1974 the benefit/cost ratio was .7 and Congress did not fund. However, in light of current

oil prices Congress has given the Corps authority to review the project for a favorable benefit/cost ratio. If such is the case, the Corps anticipates initiating full blown engineering and environmental studies.

In addition to the above projects the Hydroelectric Facilities Workgroup of the Federal Regional Council's Energy Resource Development Task Force has identified 18 other potential hydro sites having a cost/benefit ratio approaching parity, an installed capacity of approximately 1,805 mW, and a total construction cost approaching 1.5 billion dollars.

At least two small hydroelectric initiatives have received setbacks. The City Council of Berlin, N.H. voted to kill a municipal power resolution to appropriate \$60,000.00 in City money to acquire the Smith hydroelectric plant and local transmission lines from the Public Service Co. of New Hampshire. Springfield, Vermont, in attempting to apply condemnation proceedings in order to build a dam for a municipal hydroelectric project in a neighboring town (Cavendish) faces a proposed amendment to the eminent domain law which would require the Town of Springfield to pay the legal fees of the Town of Cavendish.

Solar and Wind Power

Both solar power and wind energy systems are seen as attractive potential assets to the regional energy mix. To date no substantive breakthrough of solar or wind systems has occurred in the region despite general public and governmental enthusiasm.

A workshop convened in Boston by the Center for Energy Policy, Inc. identified nine barriers to solar commercialization in the region. These include: the high initial cost of solar devices, the lack of impartial--Consumer Report type--technical evaluations of various devices on the market, lack of trained service personnel, necessity of installing conventional back up systems, absence of site-specific designs--such as building orientation--for conventional construction projects, lack of

integrated design packages for conventional builders, availability of reliable components carrying guarantees, concern over patent rights if the Federal government sponsors design development, and lack of capital (venture, business and mortgage for purchasers). To these must be added two other barriers; the general lack of legislated incentives for the use of solar energy; and the lack of staff and technical ability in those state agencies deluged with requests for technical advice.

Despite friction to private investment a number of solar initiatives have been made in the region. A New England task force headed by Edward King (of the New England Council) has submitted a joint proposal to the Energy Research and Development Administration nominating the Lyman School in Westboro, Mass. as site for the proposed Solar Energy Research Institute. The Southern Connecticut Gas Company has installed the first of three planned experimental units to test the feasibility of solar power as an alternative to gas for space and water heating and the Department of Housing and Urban Development and the Energy Research and Development Administration have funded solar residential demonstration projects in each state in New England.

F. Conservation

The shock of the oil embargo and high energy costs (combined with fiscal problems in several state governments) have led to an active awareness of the need for energy conservation. This awareness is being translated, with difficulty, into actions designed to reduce the level of energy consuming activities and improve the efficiency of those activities.

Independent of federal support, state governments have been extremely conservation oriented in their own activities. Connecticut, for example, achieved energy cost savings of approximately \$800,000 in lighting and heating costs for state office buildings over a five month period.

Despite formal conservation policies recent trends indicate that motivation for major conservation efforts in the public sector has

diminished. To provide enhanced incentives for conservation most states are studying potential voluntary or regulatory programs. These would include; the development of housing codes; insulation standards; interior and exterior lighting standards; alternative electric rate policies; efficiency rating and labeling; automobile weight or engine displacement taxes; toll and municipal parking increases; materials reuse; and, the co-location of industries which can operate symbiotically on a materials or energy basis.

In addition all states in the region have indicated their ability to achieve the energy conservation required to participate in the Federal Energy Administration Conservation Program. The FEA is in the process of awarding grants (ranging from \$50,000 to \$110,000) for development of state energy conservation plans requiring, but not limited to, the following measures:

- mandatory lighting efficiency standards for public buildings;
- carpool, van-pool, and public transportation programs;
- energy efficiency standards and policies to govern procurement practices of the state and its political subdivisions;
- thermal efficiency and insulation requirements for new and renovated buildings;
- a traffic law permitting, where practicable and safe, right turn on red lights.

G. Environmental Protection

While many individuals argue that current energy and economic problems make it imperative that states slow, or sacrifice, the march towards improved environmental quality; few of the region's member states have evinced an overt willingness to compromise environmental goals.

In general, air and water policies might be summed up as improving quality and limiting (eventually halting) undesirable discharges and

emissions. While there is recognition that incremental improvements in control become increasingly, and ultimately prohibitively, expensive each state seeks to determine its own balance between constricting the economy and protecting the environment. The problem in establishing levels of control is essentially jurisdictional: a desirable level of control or regulation from a state's viewpoint may not match that of federal regulatory agencies. Where the regulatory agency essentially preempts authority, as the Nuclear Regulatory Commission does for nuclear power, the state cannot always achieve the level of control it desires.

Despite this, many state and federal programs may effect a change in the manner in which state environmental goals are attained. Of the more promising programs, land use planning initiatives could have the most comprehensive impacts. With the exception of Vermont, all states in the region participate in the Coastal Zone Management Program run by the Department of Commerce. Attainment of a management plan accepted by the Secretary of the Department of Commerce, after federal review, will commit federal agencies to the development and protection strategy.

Vermont, the only interior state, led the region in land use planning initiatives with its Act 250. Though the land use plan has not been accepted by the Legislature, the information the planning process has developed and the permitting procedure the Act created have helped to check uncontrolled development in the State. The Rhode Island State Planning Office (in conjunction with federal, state, and regional agencies) has also developed a land use plan, in this case one acceptable to the state legislature. The Maine legislature has also passed legislation affecting land use: the Site Location of Development Act finds that some forms of development, because of their size or nature, can damage the natural environment and that, rather than leave the location of developments to their owners, a public authority (the Bureau of Land Quality Control) should have the power to regulate.

Whether state executive agencies and legislatures can anticipate the potential impacts of new (to the nation, region, or state) energy technologies is a matter of some concern. Can Rhode Island and

Massachusetts provide the level and type of regulation necessary to develop Narragansett coal deposits without untowardly damaging the environment? Will the states be able to develop the policies necessary for control of emissions from waste burning power plants? Will Maine ensure adequate protection against erosion and loss of soil quality if the State chooses to implement large scale wood utilization systems? What are the coastal affects of tidal regulation at Passamaquoddy? What new information must be developed to ensure the compatability of such projects with current environmental standards and goals? The variety of novel energy strategies being considered by state policy makers promises to stress the need for improving environmental analysis and regulatory capability at the state level.

H. Consumer Issues

Consumer participation in energy related affairs has increased extensively over the past three years. A number of voluntary and statutory public interest groups (for example the Public Interest Research Group (PIRG) and the Office of Consumer Council in the Connecticut Public Utilities Control Authority respectively) have developed the energy expertise and legal technique necessary to represent consumer interests at administrative, legislative, and judicial hearings. The large majority of consumer issues have fallen into three general categories: rate increases, utility practices, and rate structures.

Each state in the region has at least one rate hike request pending, and several have more than one. In addition, at least one state, Connecticut, has seen an electric utility request a rate hike before controversy over a preceding increase had died out. While acknowledging that rate increases based on increased fuel costs are justifiable, utility commissions are having a difficult time explaining problems similar to that which occurred in New Hampshire and Connecticut. In one case the Public Service Co. of New Hampshire was ordered to repay \$4 million it had charged customers for unburned coal. In the second, a number of municipal utilities lodged five challenges against the Connecticut Light and Power Co., including challenges of three revised rate schedules (R-1, R-2, and R-3), a fuel adjustment charge levied in

1971 and 1972, and an anti-trust suit. The fuel adjustment charge was settled, the R-2 rate was subject of a Federal Power Commission ruling requiring CL&P to refund \$1 million to the municipal utilities, and the remaining three cases are pending (Bulletin, Norwich, Conn., October 2, 1976). Whether the refunds will be passed on to consumers will depend on the municipal utilities policies.

Concern over utility economic practices and electric rate structures is envinced throughout the region. Experiments with peak demand pricing in Connecticut and Vermont have attracted considerable attention, as has a flat rate initiative petition on the Ballot in Massachusetts:

UNIFORM ELECTRIC RATES

Law proposed by initiative petition which was disapproved by the House of Representatives.

Utilities presently charge large users of electricity a lower rate per kilowatt hour than small users. The proposed law would require that every electric utility company charge a uniform rate per kilowatt hour of electricity to most customers. Excepted from this general rule would be rates charged to other electric utility companies and to residential customers who heat their principal place of residence by electricity. The law would permit a different rate to be charged to residential customers for the first three hundred (300) kilowatt hours they consume each month. It would also allow "peak load" pricing whereby a higher rate could be charged during the periods of the day or seasons of the year when consumption of electricity is the greatest. The act would authorize the Department of Public Utilities to issue implementing rules and regulations, and it provides for enforcement.

Though the Uniform Electric Rates petition is opposed by industry and Governor Dukakis the fact that Massachusetts Fair Share has managed to gather over 100,000 signatures on the initiative petition reflects consumer concern with rates.

I. Public Power

Public power, in the form of municipal utilities, is generally accepted in the region. Speculative energy development, such as the

solid waste facilities in Rhode Island, Connecticut and Massachusetts are being financed as public power facilities (that is through state bond issues). Several municipalities (as noted in Section E of this chapter) have met opposition in attempting to develop municipal hydroelectric facilities. Only in Massachusetts has a State Power Authority been proposed. Though disapproved by the House of Representatives the initiative petition received enough public support to be placed on November's ballot:

MASSACHUSETTS POWER AUTHORITY

Law proposed by initiative petition disapproved by the House of Representatives.

The proposed law would establish a Massachusetts Power Authority with seven members appointed by the Governor to staggered six-year terms. The Authority would establish and operate a system to supply electric power to utilities throughout the Commonwealth with minimum adverse impact on the environment. The Authority would be required to engage in research and development of new sources of power, new siting techniques, and methods of environmental protection.

The Authority would build and operate all new generating and transmission facilities in the Commonwealth and could purchase existing facilities through eminent domain. The Authority would finance its activities by issuing tax exempt revenue bonds.

The Authority would be required to develop and update annually a 20-year demand study and siting plan within 18 months of its incorporation. Before a facility could be constructed, it would have to be approved by the Governor and the community in which it is to be located.

The Authority would be exempt from taxation but would make payments in lieu of taxes to cities and towns in an amount equal to the tax which would be paid if the Authority's property were owned by a private electric utility.

The Authority would be forbidden from doing promotional advertising. Employees of utilities displaced by activities of the Authority would have first preference in hiring.

If a city or town should vote to establish a municipal lighting plant and to acquire the

facilities of the utility then serving their community, and if the utility should refuse to sell, the Department of Public Utilities would establish a fair price for the facilities which the utility would be required to accept.

IV. ENERGY RELATED INSTITUTIONS

A. State Agencies

Each state in the region has, at the moment, an energy office established by executive or legislative order or as part of the governor's administrative staff. Although these agencies do not perform all energy related functions for which state governments are responsible most have assumed data collection, allocation, conservation, energy planning, and interagency energy policy coordination responsibilities.

The energy offices in each state are funded, almost entirely, by non-state funds. The majority of financial support comes from the New England Regional Commission (\$90,000.00 per state for the current fiscal year) and the Federal Energy Administration (the amount varies depending on participation in FEA programs). In addition grants may be received from other sources (for example from the Department of Commerce or the Department of Housing and Urban Development) for specific projects; in turn the agency may, if technically poor, form an interagency planning or research pool or farm the project out to an independent contractor.

In addition to the energy offices a number of other executive or administrative agencies participate in state and regional energy affairs. Historically, the most active agencies have been those responsible for the regulation of public utilities and those charged with establishing and enforcing environmental protection standards. This trend continues though with subtle changes in emphasis. For example, the public utility commissions are being required to consider alternative rate schedules and to provide for improved public representation in approving new rates, new generating and transmission facilities, or the termination of utility service.

The participation of other state agencies in state energy policy development or regional energy affairs will depend on the relationship of specific agency programs to various federal and regional energy programs. For example, the agency responsible for promoting industrial development, will, almost as a matter of course, participate in the development of policy that will beneficially influence the development of desirable industry in the state. Those agencies responsible for maintaining, improving, and regulating the transportation system in the state will participate in the development of energy conservation policy and the development of a regional railroad policy. The agency responsible for urban development and housing will participate in the development of housing codes, insulation standards, tax incentives to energy conserving development, and the like.

In addition a number of legislative and executive commissions, councils, and boards meet in an advisory and/or study capacity in each state. Though very few of these have real delegated authority they may, in fact, materially influence the drift of state policy.

Connecticut

A partial reorganization of government in 1975 has resulted in streamlining and enhancing the state's ability for energy planning and policy development; providing for better utility regulation, and providing for better education and protection of the public.

Executive Agencies:

Department of Planning and Energy Policy
20 Grand Street
Hartford, CT 06115

Public Utilities Control Authority
State Office Bldg.
Hartford, CT 06115

Department of Environmental Protection
State Office Bldg.
Hartford, CT 06115

Department of Transportation
24 Wolcott Hill Rd.
Wethersfield, CT 06109

Committees, Councils:

Power Facility Evaluation Council

Petroleum Products Control Commission

Temporary Nuclear Power Evaluation Council

Joint Committee on the Environment (Leg.)

Energy Advisory Board

Committee on Regulated Activities in Energy

Maine

The re-creation of the Office of Energy Resources provides for improved coordination and administration of energy affairs in the State.

Executive:

Office of Energy Resources
State Office Bldg.
Augusta, ME 04330

State Planning Office
184 State St.
Augusta, Me 04330

Public Utilities Commission
State House
Augusta, ME 04330

Department of Environmental Protection
State House
Augusta, ME 04330

Committees, Councils:

Subcommittee on Energy of the Governor's Economic
Advisory Council

Governor's Committee on Maines Electric Power
Industry

Joint Committee on Energy (Leg.)

Advisory Committee on Coastal Development and
Conservation

Massachusetts

Established as part of the Governor's administrative staff, the Energy Policy Office is the lead agency in coordinating energy affairs in the State.

Executive:

Massachusetts Energy Policy Office
1 Ashburton Place
Boston, MA 02108

Department of Public Utilities
Saltonstall Bldg.
Boston, MA 02202

Executive Office of Environmental Affairs
1 Ashburton Place
Boston, MA 02108

Office of State Planning
1 Ashburton Place
Boston, MA 02108

Executive Office of Transportation and
Construction
100 Nashau St.
Boston, MA 02114

Committees, Councils:

Electric Power Facilities Siting Council

New Hampshire

The Governor's Energy Office (created by Executive Order)
is the lead agency in coordinating energy affairs in the State.

Executive:

Governor's Energy Office
(Governor's Council on Energy)
State House
Concord, NH 03301

Public Utilities Commission
26 Pleasant St.
Concord, NH 03301

Department of Resources and Economic Development
State House
Concord, NH 03301

Division of State Planning
State House
Concord, NH 03301

Commissions, Councils:

Senate Standing Committee on Energy and Consumer
Affairs

Senate Standing Committee on Environmental Control

Joint Committee on Energy Resources and Energy Uses

Air Pollution Control Commission

Water Supply and Pollution Control Commission
Energy Facility Study Committee

Governors Executive Council on Nuclear Energy
Energy and Mineral Council

Interim Committee to Study Restructuring of the
Public Utilities Commission

Bulk Power Supply Facility Site Evaluation Committee

Rhode Island

To date energy coordination and policy have originated from the Executive Office of the Governor. However, the State Energy Office, recently created, is expected to shoulder increasing responsibilities as it adds staff and expertise.

Executive:

State Energy Office
State House
Providence, RI 02903

Public Utilities Commission
169 Weybosset St.
Providence, RI 02903

Statewide Planning Program
265 Melrose St.
Providence, RI 02907

Department of Natural Resources
83 Park St.
Providence, RI 02903

Commissions, Councils:

Atomic Energy Commission

Commission to Study Development of Offshore
Oil Deposits Off the Coast of N.E. and Its
Affect on R.I.

Commission on the Feasibility of R.I. Developing
and Owning Any and All New Electric Generating
Facilities

Commission on Safety Economic and Other Factors
Relative to LNG Facilities

Commission on Solar Energy and/or Wind Energy as
Available Energy Resources and Related Technology

Coastal Resources Management Council

Water Resources Board

State Radiation Control Agency

Vermont

The State Energy Office is responsible for handling energy coordination, planning, and policy within the State.

Executive:

State Energy Office
110 State St.
State Office Bldg.
Montpelier, VT 05602

Environmental Conservation Agency
5 Court St.
Montpelier, VT 05602

Department of Public Service
7 School St.
Montpelier, VT 05602

State Planning Office
Pavilion Bldg.
109 State St.
Montpelier, VT 05602

Committees, Councils:

Energy Policy Advisory Board
Standing Committee National Resources (Senate, House)
Standing Committee on Commerce (House)
Air Quality Variance Board
Natural Gas and Oil Resources Board
Interagency Committee on Natural Resources
Board of Water Resources

B. Regional Institutions

Perhaps the two most active organizations in developing energy policy in New England have been a pair of federal-state compact commissions. The first, the New England Regional Commission (NERCOM) has its origins in Title V of the Public Works and Economic Development Act of 1965. Its membership consists of the six New England Governors and a Federal Co-chairman who is appointed by the President. In addition the Federal Co-chairman represents and is the principal contact between the Commission and the participating departments and agencies of the federal government. The Commission focuses its efforts in three major program areas: energy, transportation, and commercial/industrial development. NERCOM has been, perhaps, the major actor in developing regional energy policy and conducting research and assessments designed to serve and inform state and regional energy policy participants on issues of short to mid-term concern (Appendix E is a listing of some of the publications and activities from NERCOM research and assessment efforts).

The second organization active in developing regional energy policy has been the New England River Basins Commission (established under the Water Resources Planning Act of 1965). The Commission is composed of eight federal members, seven state members (it includes part of New York in its region), and six interstate members. The Chairman of the Commission is appointed by the President and acts as coordinating officer for the federal agencies. The Vice-chairman coordinates state and interstate interests and is elected by state representatives. The Commission participates in energy affairs as a result of its responsibility for the coordination of water and related land resources planning. The Commission has taken a lead role in the evaluation of pumped storage alternatives, in water quality and waste discharge policy, in land use planning, and in coordinating the Coastal Zone Management planning efforts of the New England states (see Appendix E for a partial listing of NERBC publications).

In addition to these executive agencies two legislative groups have been active in regional energy affairs. The first, the New England Congressional Caucus co-chaired by Thomas P. O'Neill, Jr. (D-Mass.) and Silvio O. Conte (R-Mass.) has been extremely active in lobbying efforts for, and often proposing energy related legislation including, the Mandatory Petroleum Allocation Act; Northeast Rail Legislation, and improved funding of the CZM program. In addition the Northeastern Legislative Energy Staff has been created as an experiment in regional state legislative staffing. Its primary purpose has been to service and supplement the needs of the region's legislative leadership in the area of energy policy. Participating state legislatures include those of all states in New England as well as the legislatures of New York, Pennsylvania, New Jersey and Delaware.

The New England Regional Commission
53 State Street
Boston, MA 02109

The New England River Basins Commission
55 Court Street
Boston, MA 02108

The New England Congressional Caucus
53 D Street, S.E.
Washington, DC 20003

The Northeastern Legislative Energy Staff
State Senate
Albany, NY 12224

C. Public and Private Interest Groups

Special interest groups play an active role in state and regional energy affairs and they are useful and often influential in defining and determining the crucial issues around which energy decisions will resolve. Though such groups are generally financially poor their ability to marshal human resources, focus public opinion and push for judicial arbitration influences the development of energy policy and the conduct of specific energy activities.

The New England Energy Policy Council, an unbiased policy development committee of the Center for Energy Policy, Inc. has been established in an attempt to resolve critical regional energy issues by providing an unbiased forum in which all sectors of society (governmental, corporate and public interest) would be represented (the regional commissions do not provide for formal public or corporate participation). An interesting attempt to resolve issues by comprehensive representation it is as yet too early to determine whether the Council's lack of authority will not seriously undermine its laudable purpose.

The Center for Energy Policy, Inc.
111 Devonshire St.
Boston, MA 02109
(New England Energy Policy Council)

Conservation Law Foundation
506 Statler Office Bldg.
Park Square
Boston, MA 02116

Environmental Law Society
Harvard Law School
Cambridge, MA 02138

New England Coalition on Nuclear Power
Box 637
Brattleboro, VT 05301

New England Fuel Institute
340 Commonwealth Ave.
Boston, MA 20167

New England Council for Economic Development
1032 Statler Bldg.
Boston, MA 02116

Public Interest Research Group

Friends of the Earth

Sierra Club

New England Consortium on Environmental Protection

League of Woman Voters

Americans for Energy Independence

Audubon Society

Union of Concerned Scientists

D. Federal Agencies

Many federal agencies have programs which effect energy development in the region. In most cases, coordination and cooperation between agencies has been possible. For example the Federal Regional Council's Energy Resource Development Task Force (chaired by Robert Mitchell of the Federal Energy Administration (FEA)) has been effective in melding the skills of various federal agencies in a series of thoughtful and provocative analysis. In other cases this has not always been true (the Department of Interior has been accused of being insensitive to other federal programs in administering the George's Bank oil leasing program.)

In general individual and cooperative federal programs are designed to:

- Supply information, data and analysis useful for energy policy development and in energy planning activities. (For example, the FEA has accumulated extensive state and regional energy data--Strawman and the Son of Strawman--for regional analysis.)
- Provide incentives for developing and implementing energy conservation programs, utilizing indigenous replenishable energy resources, and developing alternative--commercial--energy technologies (the Department of Housing and Urban Development has authorized over \$280,000 for solar residential demonstration project grants in the region in this cycle of its program. The FEA has grants (ranging from \$50,000 to \$110,000) to each state in the region for development of an energy conservation program).
- Implement energy resource development projects. (The National Science Foundation funded the non-drilling expenses of the Narragansett Basin Coal project. The Department of Interior's Bureau of Land Management is responsible for the Outer Continental Shelf leasing program.)

- Regulate interstate electric utility and fuel supplier practices. (Those utilities or suppliers engaged in transactions effecting interstate commerce, e.g., natural gas pipelines, are subject to Federal Power Commission regulations.)
- Develop and administer environmental standards, regulations and enforcement procedures. (There are many federal agencies with potential regulatory power in environmental areas. Of these agencies, the Environmental Protection Agency (EPA) has the most comprehensive authority and is expected to participate in any action which threatens to diminish or endanger environmental quality or health.)

E. The Utilities

Within New England there are three basic types of electric companies: investor owned (for example the Public Service Company of New Hampshire), government owned (generally municipals such as the Burlington Electric Light Co.), and cooperatively owned (similar to the Vermont Electric Co-op., Inc.). The majority of the utilities (accounting for over 98 percent of the region's electric load) are signatories in a cooperative arrangement, the New England Power Pool (NEPOOL), designed to provide reliable electric service with maximum economy and an equitable sharing of benefits and costs. NEPOOL has two functional arms; a central planning staff (NEPLAN) responsible for preparing electric load forecasts, evaluating alternate generation and transmission plans and recommending reliability standards, and, NEPEX (The New England Electric Power Exchange) responsible for monitoring the regions generation and transmission to ensure that power is produced from the most efficient units available at the lowest cost consistent with maximum reliability of service. NEPEX also coordinates its activities with other power pools located in the Northeastern United States and Canada, allowing for an exchange of power and reserve capacity as circumstances dictate.

NEPOOL Participants - October 1975

1. Bangor Hydro-Electric Company
2. Boston Edison Company^a
3. Central Maine Power Company
4. Eastern Utilities Associates^a
 - Blackstone Valley Electric Company
 - Brockton Edison Company
 - Fall River Electric Light Company
 - Montaup Electric Company^b
5. Fitchburg Gas and Electric Company
6. Holyoke Gas and Electric Department
7. New England Power Company^{a, c}
 - Granite State Electric Company
 - Massachusetts Electric Company
 - The Narragansett Electric Company
 - New England Energy Inc.
 - New England Electric System
 - New England Power Service Company
8. New England Gas and Electric Association
9. Northeast Utilities^a
 - Connecticut Light and Power Company
 - Hartford Electric Light Company
 - Western Massachusetts Electric Company
 - Holyoke Water Power Company
10. Public Service Company of New Hampshire
11. United Illuminating Company
12. Vermont Electric Power Company, Inc.^d
 - Investor Owned Systems
 - Allied Power and Light Company
 - Central Vermont Public Service Corp.
 - Citizens Utilities Company
 - Green Mountain Power Corp.
 - Rochester Electric Light and Power Co.
 - Vermont Marble Company

- Municipal Systems

Burlington
Hardwick
Johnson
Lyndonville
Morrisville
Northfield
Orleans
Readsboro
Stowe

- Rural Electric Cooperative Systems

Vermont Electric Cooperative, Inc.
Washington Electric Cooperative, Inc.

^aSeveral utility systems that are signatories to the NEPOOL Agreement are smaller entities, primarily municipals, that purchase either all or part of their bulk power supply from other participants. A provision of the Agreement allows a participant and such wholesale customers to treat their load and capability on a composite basis until Nov. 2, 1977. The systems treated on such a basis, as of Oct. 1975, are indicated below. All are municipals except Newport Electric.

<u>Stand-Alone Participant</u>	<u>Systems Treated on a Composite Basis</u>
Boston Edison Company	Reading
Eastern Utilities Assoc.	Newport Electric Co., Middleboro
New England Power Company	Ashburnham; Boylston, Danvers, Sterling, Hingham, Holdon, Hudson, Littleton, Templeton, Mansfield, Marblehead, N. Attleboro, Paxton, Peabody, Shrewsbury, Wakefield, W. Boylston
Northeast Utilities	Chicopee, S. Hadley, Westfield

^bMontaup is a power supply company for the other three utilities.

^cNew England Electric Power Company (NEPCO) is the bulk power supply company to the distribution companies that comprise the New England Electric System.

^dVermont Electric Power Company, Inc. (VELCO) is a transmission company for the Vermont utilities and serves as the NEPOOL participant. The various Vermont investor-owned, municipal and rural electric cooperative systems enumerated participate in NEPOOL through VELCO.

Reference: "New England Power Pool; Description, Analysis, Implications," Energy Program Technical Report 76-2, New England Regional Commission.

V. STATE LEGISLATION

Introduction

State Legislatures have, on the whole, failed to take a firm stand on many controversial energy issues. This might be attributed, in part, to the fact that it is an election year. But, it is equally likely to be a result of the fact that most New England states are economically stagnate and legislators are unwilling to buck labor and industrial lobbies on the basis of inadequate state energy information.

Major legislative energy initiatives over the past two years fall into three categories: institutional, restrictive and incentive. Institutional legislation includes the creation or ratification of state energy offices, the delegation and clarification of responsibilities for these energy offices and the public utility commission, the creation of legislative or executive study commissions, and the creation of municipal or public cooperatives for the purpose of generating electricity.

Although electric utilities are currently the most heavily state regulated industries in the region, state legislatures show a willingness to increase or change these restrictions. Recent efforts have focused on rates, rate structures, reporting requirements, and planning requirements, with the emphasis falling on rates. Current concern seems to be the need to establish a rate structure which will encourage conservation while not unduly penalizing utility operations, economic development, and the average consumer. In addition the legislatures seek to provide for consumer protection in regard to rates (for example, by restricting the inclusion of advertising costs in costs passed along to the

consumer) and utility operations.

Conservation and alternative energy technologies have also seen legislative encouragement throughout the region. Each state has considered or passed legislation providing for tax incentives for solar heating or cooling in new house construction. In addition most states have also called for housing codes, insulation standards, lighting codes, and in several cases have considered efficiency labeling legislation.

Over the past two years there has been a great deal of nuclear related legislation in New England. With the exception of New Hampshire each state in the region has considered legislation prohibiting or restricting the development of nuclear power. Massachusetts and Connecticut considered bills which would prohibit the construction of nuclear power plants and require the derating of existing facilities; Maine and Vermont considered prohibiting the construction of nuclear power plants unless specific conditions were met; and, Connecticut, Vermont, Rhode Island and Maine considered bills requiring legislative approval of nuclear plant construction. Only in Vermont, where legislation was passed which would require the approval of the general assembly prior to the construction of a nuclear fission plant (Vermont Statutes Annotated, Title 30, Sec. 248-Cum. Supp. 1975) was any restrictive legislation passed. In addition, Connecticut established a Nuclear Power Evaluation Council (Connecticut Special Act 75-85).

Existing Legislation

Apart from legislative energy initiatives following on the heels of the energy crisis there exist large bodies of state law which have extensive influence on energy development. Environmental laws and land use planning initiatives are extremely popular in

New England and affect the siting, operation, and technology of energy facilities. All northeastern states have organizations responsible for electric facility site licensing. Three, Connecticut, Massachusetts, and New Hampshire, have councils created specifically for this purpose. Two others, Vermont and Maine, have land use or site development acts which create organizations responsible for site licensing. Rhode Island's siting council has jurisdiction only over the coastal zone.

Each state also has other environmental laws which should be considered relevant to the energy policy making process. Connecticut and Massachusetts have "mini-NEPA" acts. All states have air and water quality legislation. Vermont and Maine have comprehensive land use legislation; while Rhode Island has a land use plan which has received legislative approval. With the exception of Vermont each state participates in the Department of Commerce CZM program and all have legislation designed to provide protection against undesirable coastal development.

Connecticut

Public Utility Environmental Standards Act of 1971, Amended 1973.

This Act established the Power Facility Evaluation Council which exercises two functions relative to electric generation and transmission facilities, associated equipment and facilities, and fuel transmission facilities. These functions are 1) the facility licensing process, and 2) the review of long-range bulk power supply plans of the state and the interconnected utility systems for adequate reliable and economic service.

Public Act 637

This Act provides that gasoline is to be furnished to independent gasoline retail distributors by refiners as long as the refining companies are furnishing gasoline to their wholly owned or franchised distributors.

Public Act 678

This Act establishes the Petroleum Products Control Commission empowered to conduct investigations and gather information concerning the allocation and pricing of petroleum products in the State.

Public Act 74-285

This Act establishes a Connecticut Energy Advisory Board and an energy agency (the Department of Planning and Energy Policy) for the purpose of energy planning.

Public Act 75-588

Relates to the advertising and promotional expenses of gas and electric utility companies.

Special Act 75-85

Creates a Temporary Nuclear Power Evaluation Council for the purpose of studying, and making recommendations of the extent to which the State can and should regulate, supervise or monitor the operation of nuclear power plants and other facilities involved in the nuclear fuel cycle within the state.

Public Act 75-561

Provides for direct payments to vendors for fuel and utility costs of eligible needy families with children who are beneficiaries of the Aid to Families With Dependent Children and the General Assistance Programs.

Public Act 75-634

The purpose of this act is to permit municipal electric utilities to join together and form cooperative public corporations for the financing of the construction and acquisition of facilities for the purpose of furnishing efficient, low cost and reliable electric power in the areas of their operation.

Public Act 75-486

This Act creates a Public Utility Control Authority (PUCA) to supersede and replace the Public Utilities Commission. Within the PUCA the Act establishes audit teams required to investigate (every six years) whether utility company rate structures reflect efficient and prudent management.

Public Act 76-364

Concerns the gathering of energy resource information.

Under Consideration

S.652 (4/22/76), Finance Committee relates to property tax exemptions for solar energy.

Related Legislation

Connecticut Environmental Policy Act, P.A. 73-562 (1973)

Preservation of Tidal Wetlands, P.A. 695 (1969)

Inland Wetlands and Water Course Act, P.A. 155 (1972)

Public Utility Environmental Standards Act P.A. 575 (1971)

Public Service Corporations, P.A. 426 (1971)

Water Pollution Control, P.A. 57 (1967), P.A. 38 (1973)

Air Pollution Control, P.A. 872 (1971), P.A. 45 (1972)

Environmental Protection Act, P.A. 821 (1971)

Oil Pollution, P.A. 765 (1969), P.A. (1972)

Maine

S.P. 469, April 8, 1975

This Act provides for comprehensive regulations by the Public Utilities Commission of fuel adjustment charges by electric power utilities.

Chapter 409, P.L.

In determining just and reasonable rates, the (Public Utility) Commission may consider whether the utility is operating as efficiently as possible and is utilizing sound management practices.

Chapter 548, P.L.

The Public Utility Commission shall adopt and promulgate reasonable regulations relative to the termination of utility service.

Chapter 549, P.L.

This Act regulates the distribution and sales of motor fuels.

Chapter 587, P.L.

This Act concerns and ratifies the Maine Office of Energy Resources, and further, creates the Maine Energy Resources Development Fund.

Related Legislation

Oil Discharge and Pollution Prevention Control Act, 38 M.R.S.A., Sec. 541 (Supp.) (1970)

Coastal Wetlands Act, 12 M.R.S.A., Sec. 4701 (1967)

Shoreland Zoning Law, 12 M.R.S.A., Sec. 4811, as amended by Chapter 564 (Supp.) (1973)

State Register of Critical Areas Act, 5 M.R.S.A. 3310 (1974)

Public Utilities Law, 35 M.R.S.A., Sec. 1 et seq (as amended 1973)

Protection and Improvement of Waters, 38 M.R.S.A. 361 (Supp.)

Land Use Regulation Commission Law, 12 M.R.S.A., Sec. 681
as amended by Chap. 569 (Supp.) (1973) and Chap. 788 (1974)

Protection and Improvement of Air, 38 M.R.S.A., Sec. 581
(Supp.) (1969)

Site Location of Development Law, 38 M.R.S.A., Sec. 481
(Supp.) (1970)

Oil and Gas Conservation and Development Control Act,
10 M.R.S.A., Sec. 2151

Massachusetts

Chapter 1232 (1973)

Establishes the Electric Power Facilities Siting Council.

Chapter 807 (1975)

Provides for the formulation of a Massachusetts growth and development policy, including the generation and transmission of energy.

Chapter 559 (8/18/76, eff.)

An act to ascertain the will of the people with reference to the question of enactment of legislation by the general court authorizing the construction of an oil refinery and a deepwater port.

Chapter 775 (12/17/76, eff.)

An act providing for a real estate tax exemption for the utilization of solar or wind powered systems.

Under Consideration

S.1389 (4/15/76)

Concerns a special commission established to study regulation of location and operation of electric utility generation and transmission facilities.

S.1418 (4/28/76)

Requires estimates to be taken for solar and wind utilization for all future state construction.

H.4317 (2/12/76)

Relates to the leasing of state land for the purpose of oil and gas pipeline construction and operation and oil and gas exploration and production.

H.4621 (4/1/76)

Study the improved utilization of energy in new buildings,

H.4921 (5/19/76)

Resolution providing for study relative to the regulation and operation of electric utility generation and transmission facilities and other matters.

Related Legislation

Environmental Protection Act, Chap. 781, Acts of 1973 as amended by Chap. 259 of the Acts of 1974

Discharge of Petroleum Products, M.G.L. 91, et seq. Chap. 381, as amended by Chap 564 (Supp.) (1971)

Coastal Fill and Dredge Act, M.G.L., 131, Sec. 40 (1967), as amended by Chap. 163 (1973) and Chap. 769 (1973)

Protection of Coastal Wetlands, M.G.L. 130, Sec. 105 (1965)

Clean Waters Act, M.G.L. 21, Sec. 26-54

Scenic and Recreational Rivers and Stream Act, M.G.L. 21, Sec. 17B (1971)

Electric Power Facilities Site Evaluation Act, M.G.L. 164 (1973)

Manufacture of Gas and Electricity M.G.L. 164 (1932), M.G.L. 166 (1951)

Protection of Inland Wetlands, M.G.L. 130 (1968)

Air Pollution Act, M.G.L. 111, Sec. 142 (1959), Sec. 316 (1970)

New Hampshire

Chapter 368

Establishes an interim committee to study restructuring of the Public Utilities Commission to enable said commission to be more responsive to the public.

Chapter 391

Permits a local option to adopt tax exemptions for realty equipped with solar energy heating or cooling systems.

Senate Concurrent Resolution No. 14

Establishes an interim study committee to investigate the fee structure for registration of automobiles and trucks to provide additional incentive to limit fuel consumption.

Chapter 234

Relative to the appointment and responsibilities of the energy administrator.

Related Legislation

Oil Spillage in Public Waters Act, N.H.R.S.A. 146-A:7 (Supp.) (1971).

Tidal Waters Act, N.H.R.S.A. 483 (Supp.) (1967)

Electric Power Plant, Transmission Siting and Construction Procedure Act, N.H.R.S.A. 162 (1971).

An Act Relative to Energy Facility Evaluation, Siting, Construction and Operation, N.H.R.S.A. 162 (1974)

Public Utilities Law N.H.R.S.A. 362

Peaceful Uses of Atomic Energy N.H.R.S.A. 162 amended by C.281 (1955), C.140 (1973).

Water Pollution Act N.H.R.S.A. 149 (1967)

Air Pollution Control Act N.H.R.S.A. 125 (1967).

Rhode Island

Chapter 12, P.L. 1974

Provides for emergency crises management, relates to emergency powers and responsibilities of the Governor.

75 H - 5920

Creates a special legislative commission to study the feasibility of the State of Rhode Island developing and owning any and all new electric generating facilities within the State.

S 2284

Creates a commission to study the lifeline concept of electric rates.

Chapter 334 (6/4/76)

Relates to the ownership of electric generating facilities.

Chapter 195 (5/28/76)

Establishes a State Radiation Control Agency within the Department of Health.

Chapter 148 (5/26/76)

Relates to the relocation of energy facilities.

Under Consideration

S.2650 (Finance Committee)

Concerns registration of motor vehicles on the basis of horsepower.

S.2819 (Finance Committee)

Relates to retroactive price adjustments for public works contracts involving the use of petroleum products.

H.8018 (Corporations Committee)

Relates to natural gas rates.

H.7971 (Finance Committee)

Authorizes the issuance of fuel stamps to qualified individuals.

Related Legislation

Conservation of Marine Resources, R.I.G.L. 46-17.1,
Chap. 47, Sec. 1, P.L. 1971.

Public Utility Law R.I.G.L. 39-1-1 et seq. (1955 C. 3436)
(1973 C. 199)

Port Authority and Economic Development Corporation Act
R.I.G.L. 42-64-1, P.L. 1974 C. 100.

Atomic Energy Commission R.I.G.L. 42-27-1 et seq. (P.L.
1955, C. 3416) (G.L. 1956, Sec. 42-27-1)

Water Pollution R.I.G.L. 46-12 P.L. 1920 C. 1914; P.L.
1971, C. 2361

Clean Air Act R.I.G.L. 23-25, P.L. 1966, C. 256.

Vermont

9 V.S.A., Chapter 109 (April 1975)

Relates to the conduct of Service Station Operators, Oil Companies and Franchises.

Joint Resolution No. 63 (3/25/76)

Relates to a Solar Research Institute.

Act 212 (7/1/76)

Provides the (Public Service) Board with emergency powers in disconnection of service cases to require a utility to apply before abandoning service.

Act 226 (7/1/76)

Relates to the taxation of alternative energy sources.

Act 142 (7/1/76)

Creates a state energy office responsible for applying for federal funds available for energy exploration.

H. 283 (3/31/76, 3/25/76)

Provides for a more equal method of taxation of municipal utility plants.

Related Legislation

Water Pollution Control Act, 10 V.S.A., Sec. 1251 (No. 255, 1972); as amended by No. 112, 1973 (Supp.)

Regulation of Stream Flow, 10 V.S.A., Sec. 1001 (No. 37, 1965 and No. 281, 1969).

Public Service Law, Title 30, 1973 as amended

Natural Gas and Oil Resources Act 29 V.S.A. (No. 328, 1961).

Radiation Control Law 32 V.S.A. 1651 (No. 27, 1967).

Land Use and Development Act, Act 250 (1970).

Air Pollution Control Act 10 V.S.A., Sec. 551 (1972).

APPENDIX A

Additional Information on Electrical Generation and Prices

Figure A-1
Generating Capacity of the Six New England
States for 1964 and 1973

SOURCE: "Electric Power Demand and Supply in New England", New England Regional Commission, January 1975

Figure A-2
Principal
Generating
Plants &
Interconnecting
Transmission
Lines of
New England
Projected to 1985

Source: "Electric Utility Industry in New England: Statistical Bulletin 1975", Electric Council of New England. NEPLAN 3-8-76

Figure A-3

SOURCES OF NEW ENGLAND
REFINED PETROLEUM PRODUCTS

1974

Source: "New England Energy Posture Background and 1985 Alternatives," FEA Region I, September 1976.

Figure A-4: Interstate Natural Gas Movements, 1970.

Source: Gasfacts, American Gas Association, Arlington, Va., 1973.

Figure A-5: Gas Flows to the Northeast, 1973.

Source: Minerals Yearbook, U.S. Bureau of Mines, various years.

Table A-1
Price of Energy to the End User in New England
and in the United States

	New England \$/mil BTU	United States \$/mil BTU	New England higher than US %
1970	1.7880	1.4003	27.7
1971	1.9638	1.5224	29.0
1972	2.0076	1.5739	27.6
1973	2.2909	1.7287	32.5
1974	3.4406	2.5410	35.4

Source: "The price differential for Energy between New England and the United States- Update", Linda K. Mansfield, FEA Region I, May 30, 1975.

Table A-2
1974 Fuel Prices and Index Weights

	New England		United States		N.E. price higher than U.S. %
	Weight	Price \$/mil. BTU	Weight	Price \$/mil. BTU	
Coal			8.0	1.1290	
natural gas	11.4	2.4636	35.9	1.0786	128.4
residual	21.0	1.9135	5.3	1.8657	2.6
gasoline	27.8	3.2876	25.9	3.2340	1.7
distillate	29.8	2.6174	12.9	2.4652	6.2
electricity	10.0	10.6900	12.0	6.7425	58.5
Total	100.0	3.4406	100.0	2.5410	35.4

Source: Same as Table A-1.

Table A-3
Net Monthly Bills for Specific
Kilowatt Hours of
Electricity by Area

November 1975

Standard Metropolitan Statistical Areas	100 Kwh		250 Kwh		500 Kwh	
	Oct. 1975	Nov. 1975	Oct. 1975	Nov. 1975	Oct. 1975	Nov. 1975
Atlanta	5.73	5.70	9.56	9.50	18.13	18.01
Baltimore	6.61	6.61	13.85	13.85	23.54	23.54
Boston	7.61	7.54	15.45	15.29	25.26	25.29
Buffalo	7.41	7.56	12.88	13.17	19.77	20.30
Chicago-N.W. Indiana	6.25	6.19	12.23	12.06	21.54	21.19
Cincinnati	4.91	4.88	9.93	9.85	17.48	17.30
Cleveland	4.43	4.38	10.93	10.83	20.08	19.15
Dallas	5.47	5.57	10.57	10.83	17.24	17.78
Detroit	6.36	6.26	12.01	11.75	21.48	20.95
Honolulu	7.79	7.76	14.77	14.59	17.68	17.62
Houston	5.31	5.32	9.51	9.53	15.19	15.21
Kansas City	5.25	5.37	11.24	11.54	20.37	20.96
Los Angeles-Long Beach	6.27	6.65	12.01	12.76	19.84	21.13
Milwaukee	5.81	5.95	10.61	10.95	17.92	18.64
Minneapolis-St. Paul	6.23	6.23	11.71	11.71	20.85	20.85
New York-N.E. New Jersey	9.74	9.92	20.09	20.48	37.35	37.52
Philadelphia	5.67	5.50	13.76	13.25	25.24	24.05
Pittsburgh	6.50	6.55	12.53	12.66	22.20	22.45
St. Louis	4.69	4.68	10.31	10.31	18.16	18.16
San Diego	6.16	5.87	12.28	11.85	20.57	21.31
San Francisco-Oakland	4.52	4.52	8.82	8.82	15.47	15.47
Seattle	---	---	4.97	4.97	6.97	6.97
Washington, D.C.	6.18	6.11	12.36	12.16	21.62	21.11

Source: "Comparative Energy Prices: An Analysis of Energy Prices in New England in Comparison with those of other Regions", Energy Policy Office, The Commonwealth of Massachusetts, May 3, 1976.

Table A-4
Net Monthly Bills to Residential Customers
for Specified Amounts of Gas by Area
November 1975

Standard Metropolitan Statistical Areas	Monthly bills for use other than heating					
	10 therms		25 therms		40 therms	
	Oct. 1975	Nov. 1975	Oct. 1975	Nov. 1975	Oct. 1975	Nov. 1975
Atlanta	3.19	3.32	5.26	5.60	7.16	7.70
Baltimore	3.91	3.92	7.20	7.23	10.48	10.52
Boston	6.50	6.94	11.27	12.37	15.40	17.14
Buffalo	4.80	4.77	8.32	8.25	11.84	11.81
Chicago-N.W. Indiana	3.01	3.06	5.86	5.97	8.64	8.81
Cincinnati	2.13	2.12	4.28	4.24	6.60	6.55
Cleveland	3.50	3.50	5.40	5.40	7.30	7.30
Dallas	2.13	2.13	4.13	4.12	6.21	6.20
Detroit	4.56	4.59	6.86	6.92	9.14	9.24
Honolulu	9.95	10.20	20.67	20.97	31.27	31.64
Houston	3.79	3.93	7.09	7.46	10.28	10.85
Kansas City	2.71	2.74	4.44	4.49	6.00	6.07
Los Angeles-Long Beach	4.60	4.60	6.64	6.63	8.58	8.56
Milwaukee	4.24	4.38	7.16	7.52	10.09	10.67
Minneapolis-St. Paul	3.42	3.46	6.39	6.49	8.98	9.14
New York-N.E. New Jersey	6.02	6.35	11.59	12.27	16.42	17.42
Philadelphia	3.85	3.89	7.92	8.03	11.74	11.91
Pittsburgh	3.85	3.87	6.23	6.29	8.59	8.67
St. Louis	3.16	3.15	6.78	6.78	9.96	9.99
San Diego	3.20	3.20	5.96	5.96	8.44	8.44
San Francisco-Oakland	2.74	2.74	4.89	4.89	6.96	6.96
Seattle	4.13	4.13	8.24	8.24	12.16	12.16
Washington, D. C.	4.21	4.22	8.06	8.03	11.73	11.77

Source: Same as Table A-3.

Table A-5
Price of Electricity per
Kilowatt Hour - 1974

	<u>Residential Sales ¢/kwh</u>	<u>Commercial Sales ¢/kwh</u>	<u>Industrial Sales ¢/kwh</u>	<u>Street Lighting Sales ¢/kwh</u>	<u>Other Sales ¢/kwh</u>	<u>Total Sales ¢/kwh</u>
CT	4.048	3.808	2.855	6.801	2.868	3.650
ME	3.135	3.148	1.874	7.327	2.217	2.685
MA	4.344	4.126	3.126	7.342	3.055	3.946
NH	3.656	3.906	2.359	7.708	3.391	3.228
RI	4.552	4.014	3.282	6.141	3.529	4.000
VT	3.078	3.302	2.253	6.500	2.586	2.979
NE	4.031	3.925	2.810	7.070	2.870	3.647
US	2.829	2.851	1.548	4.305	1.947	2.300

Source: Same as Table A-3.

APPENDIX B

A New England Energy Policy

New England Regional Commission

November 7, 1975

A NEW ENGLAND ENERGY POLICY

New England recognizes that the national goal of energy independence is aimed at ensuring stable, long-term supplies of fuel at reasonable prices to meet a level of energy growth consistent with long-term economic, social, and environmental goals. New England has a strong interest in that goal because it has the greatest vulnerability to international oil price and supply manipulation. Continued heavy reliance upon imported oil with its consequent, disproportionate regional energy cost will further undermine the economic base of this region and, therefore, cannot be borne.

Therefore, the region of New England is prepared to commit itself to the development of a more nearly balanced mix of energy production capabilities, including nuclear power facilities, hydroelectric and other indigenous resources, domestic oil and gas resources, and the use of coal and other alternative fuels. To that end it has established fuel-use goals to be achieved during the next decade to reflect that balance and to reduce the region's dependence upon oil by one fifth.

In this effort the states of New England are well aware of the necessity to coordinate various technological and institutional aspects of energy resource development within their region and to join that development to the national framework.

1. This coordination has already gained momentum through state participation in energy-related activities at the New England Regional Commission.
2. This coordination has been communicated to the national level by means of joint meetings between representatives of the Federal Energy Administration and of the states and the New England Regional Commission.
3. We emphasize that successful communications of this sort are essential to the creation of a regional energy implementation plan which enhances the capabilities of the states to contribute to a regional

and national energy framework, while increasing the responsiveness of the nation to those particular needs of the region for sound economic development.

4. Continuation of this effort, to which the region is committed, should result in a deliberate, realistic regional energy policy.

Recognizing the need for immediate and intermediate steps, the New England Region is prepared to deal with the following areas:

1. conservation;
2. nuclear energy;
3. outer continental shelf development;
4. coal conversion;
5. hydroelectric and other indigenous resource development; and
6. alternative energy sources--research and development.

Conservation

The New England Region, of all the regions within the United States, has attained an unequalled record of energy conservation. It has recorded a 20 percent conservation effort in stark contrast to a 5% conservation effort recorded in the remainder of the nation.

1. The region is committed to a continued effort of conservation in a systematic and concerted manner and on a regional basis.
2. The establishment of strong quantitative goals and a comprehensive implementation plan commensurate with respective state capabilities will have the highest immediate priority within our region.

Nuclear Energy

The existing base of nuclear generating capacity in New England is far in excess of any other region within the United States. However, the region recognizes the role of additional nuclear capacity in meeting future requirements, mindful of the continuing need for the pursuit of plans for disposition of nuclear wastes.

1. To this end, the region will participate in concert and in equal partnership with the Nuclear Regulatory Commission regarding the evaluation and siting of nuclear facilities.
2. The region will work for the establishment and creation of a regional institution which will plan the implementation of power generation jointly with private and/or public utilities, dependent on the system in the individual states.
3. The region will work as an equal partner with the Nuclear Regulatory Commission in regulatory and licensing procedures to ensure expeditious and safe handling of radioactive materials and wastes and mutually satisfactory construction and operation practices.

OCS Development

Inasmuch as the Federal Government has recognized the need for a national policy with regard to Outer Continental Shelf as a potential site of energy resources, including both natural gas and oil, the New England region stands ready to participate fully with the Federal Government in that endeavor, and in the pursuit of regulations and guidelines to protect the coastal shore line.

The proximity of the New England region to Canada emphasizes the desirability of a close working relationship in the development of the Outer Continental Shelf.

The New England region has the capabilities to:

1. Provide sites for refineries and other facilities so that the potential resources of the Outer Continental Shelf can be processed economically to meet both the regional and national needs for energy resources; and
2. Review the development of facilities to accommodate OCS service and support industries.

Coal Conversion

Recognizing the overall dependence upon imported oil for the generation of electric energy by the utilities within the New England Region, the Region affirms its position:

1. To convert existing oil-fired facilities to coal within a time frame adequate to guarantee implementation that is economically feasible.
2. To review and aggressively pursue the economic viability of new fossil-fuel energy production facilities with the private sector; and
3. To cooperate with the Federal Government in resolving coal transportation problems caused by the incapacity of the northeastern railroad network.

Hydroelectric, Solid Waste, and Other Indigenous Resource Development

Recognizing the imperative of pursuing all possible sources of energy, the New England Region affirms its position:

1. To support the expeditious implementation of feasible hydroelectric, including tidal projects;
2. To support the use of wood for power generation, where feasible; and
3. To continue the discussions and negotiations concerning the purchase of surplus energy from the Eastern Canadian Provinces as it is developed.
4. Recognizing the potential value of energy recovery from solid waste, New England will undertake to develop facilities from solid waste recovery and conversion to energy.

Alternative Energy Sources--Research and Development

Recognizing the immense resources available within the New England region in terms of technical competence in research and development, financial institutions, and creativity, the New England region affirms its intent to pursue the research capability and development technology for solar and other alternative energy resources. To this end New England will:

1. Establish, within our institutions of higher learning, a priority for the development and marketing of alternative replenishable energy sources, e.g., solar, wind, and wood for practical and widespread consumption;
2. Encourage and marshal venture capital in the private sector for the marketing of alternative energy resources; and

3. Provide tax and financial incentives for utilizing solar and other alternative forms of energy.

Economic Implications

The New England Region recognizes the regional and national imperatives which address the issues of its economic viability and its land use patterns, as well as its quality of life. The Region further recognizes that its declaration of principles cannot be achieved without the full cooperation of the national government. As individual states, as the regional entity of New England, and as part of our nation's Federal system, we recognize the different roles we must play and the different stewardships we must discharge.

However, the changes in fuel consumption implied by the previously described targets will themselves generate large capital costs throughout the region. The funds necessary to finance these changes have historically and are currently diverted to high fuel costs. Therefore, only some short-term relief from high energy prices will make possible the capital formation necessary to achieve those energy-use targets.

The commonality of energy as a fundamental base of our society, be it the State, the Region, or the Nation, is inescapable. The responsibilities which we hold separately as well as collectively require action in concert as well as in variation within a central theme. To address the energy issue jointly, to act collectively in the pursuit of its solution--this is the affirmation of the New England Region.

APPENDIX C
PRESS CLIPPINGS

PRESS CLIPPINGS

Introduction

Coverage of energy related news has been extensive in New England. In order to reflect the variety of issues considered newsworthy while cutting down on bulk (three weeks of energy related press coverage amounted to over 800 separate clippings) only a sample of articles is presented in this section. No attempt has been made to exclude contrasting or conflicting views but it should be recognized that all viewpoints have not been included as space limits coverage to representative articles.

In addition, coverage of state specific energy issues is weak. For example, rate increase requests, utility rate structures, and "public utility commission" procedures have been reported on in each state, and in each state the substance of the issue has differed to a greater or lesser extent, such differences are not displayed in this section.

It is also difficult to distinguish sequences of events and trends in this section. The series of events surrounding the Seabrook controversy are not displayed, and, as is pointed out by several of the protagonists, both specific events and the series of events are responsible for increasing opposition to, and costs of, the nuclear power plant.

NUCLEAR

Calls N-Plant Halt Severe Blow to NH

PAGE ONE

By GEORGE BURKE
Exeter Bureau Chief

MANCHESTER — Public Service Co. President William Tallman said this morning the federal decision to suspend construction of the Seabrook nuclear power plant "is a severe blow to New Hampshire and the whole of New England."

Last week the Atomic Safety and Licensing Appeals Board, an arm of the Nuclear Regulatory Commission, rescinded PSCo's construction permit, issued in late June, because of questions concerning under fuel recycling and waste disposal. Tallman termed nuclear waste disposal "a non-problem"

while talking to reporters this morning at PSCo's corporate headquarters.

The utility president also revised the total construction cost of the project from \$1.6 billion to \$2 billion. Tallman explained the bulk of the increase is due to interest payments and inflation.

Tallman cited statistics to show that the military creates 700 times as much nuclear waste as private industry does at this time. He said "The nuclear waste disposal issue must be resolved, but Seabrook Station's contribution to the total nuclear waste question will be

☆ 'Severe Blow' *B*
Please Turn To Page 10

LEBANON, N. H.
VALLEY NEWS
D. 3,500

OCT 4 1976 *Bj*

Labor Leaders Back Seabrook N-Plant

6508
NASHUA, N.H. (UPI) — The proposed Seabrook nuclear power plant received backing Sunday from New Hampshire's top labor leaders.

The New Hampshire State Labor Council, AFL-CIO, called for an immediate change in the decision last week by the Atomic Safety and Licensing Board to stop construction by Oct. 8. The decision was prompted by serious questions about waste disposal at the Seabrook station.

The council said it will send telegrams to the federal Nuclear Regulatory Commission and to New Hampshire's congressional delegation. Meanwhile, in nearby Mil-

ford, opponents of nuclear power said Gov. Meldrim Thomson arranged the Seabrook license through "back door dealings."

Sam Lovejoy of Montague, Mass., told a meeting of about 15 nuclear power opponents that Thomson publicly admitted President Ford had promised him the license. Lovejoy is active in opposition to the Seabrook plant as well as one slated for Montague.

Lovejoy also said the Public Service Co. of New Hampshire, which has contracted to build the plant, has several means of legal recourse open to it to appeal last week's ruling to stop the construction.

DOVER, N. H.
FOSTER S. DEMOCRAT
D. 14,500

OCT 4 1976

☆ 'Severe Blow'

infinitesimally small."

Corporate counsel Thomas Dignan told reporters that the NRC reviews actions by the ASLB only on its own initiative, but there are appeals possible to the U.S. Court of Appeals "if the

NRC does not act within a certain time frame." Although there is no legal precedent, Dignan said an appeal of the ASLB decision might be made if the NRC doesn't review it within 20 days as provided by current regulations. "We'd have to think about it," he said.

Tallman said the permit suspension will affect New Hampshire's job market in a number of ways. There are presently 241 state residents working at the site out of a total of 350. Tallman explained that workers employed by manufacturers supplying Seabrook Station with materials could also be affected by the suspension. He said a \$½ million education and training contract awarded to a Manchester firm was already held up and there could be a problem with a \$19 million contract recently awarded to Lyons Iron Works of Manchester for structural steel.

"Seabrook Station means jobs for New Hampshire's consumers; not only for those building Seabrook Station but jobs for those who will work for businesses and industries needing more electrical energy in the future."

Project manager Bruce Beckley said it's "business as usual" at the site this week, but work could begin gearing down at the end of the week to meet the Oct. 8 deadline set by the ASLB unless there is some review of the decision by that time.

Tallman said the company hasn't thought of possible fossil fuel alternatives to Seabrook Station at this time. He said it would be "premature" to do so.

He opined that it is "incredible" in light of the nation's present energy policy that any decision would be made to slow up construction of the Seabrook nuclear plant on a "technicality."

Adding that the utility is "deeply concerned" over the ASLB decision, Tallman said electricity users "must bear the brunt of this decision."

OCT 6 1976

OCT 6 1976

Regional Group Sought License

BOSTON (AP) — The New England Council for Economic Development said Tuesday it would organize a public campaign to try to get the construction license restored for a nuclear power plant at Seabrook, N.H.

Almost simultaneously, the federal Nuclear Regulatory Commission on Tuesday lifted the suspension of the building permit for Public Service Co. of New Hampshire's \$2 billion plant.

The license was suspended last Thursday and work was to halt next Friday pending a review of nuclear waste disposal problems.

A spokesman for the agency said new hearings will start Oct. 26 either in New Hampshire or Washington.

NEWPORT, R. I.
NEWS
D. 14,500

OCT 7 1976

N-pollution coalition fights seaside plant

CONCORD, N.H. (AP) — The New England Coalition on Nuclear Pollution says it will ask the U.S. Court of Appeals in Boston to overturn a Nuclear Regulatory Commission decision and halt construction of the Seabrook nuclear power plant.

Anthony Roisman, a lawyer for the coalition, said the petition was a move in addition to another petition before the court to halt construction of the \$2 billion seaside plant.

The NRC on Tuesday reversed the decision of its appeals board and told Public Service Co. of New Hampshire it could continue work on the plant.

Concerns about disposal of radioactive waste resulting from nuclear generation prompted the Atomic Safety and Licensing Appeals Board to order a halt to the work.

But the NRC said an environmental impact study of the disposal problem soon would be available and work on the plant should continue until the study is evaluated.

The coalition wants the court to overrule the regulatory commission and halt work.

Meantime, PSC was to appear before the state Public Utilities Commission today to seek permission to issue \$5 million in stocks and bonds to finance the atomic plant.

Robert Backus, a lawyer for a consumer group opposing the plant, said he will contest the action because it is not "consistent with the public good."

On a related front, a subcommittee of the U.S. Senate Commerce Committee headed by Sen. John A. Durkin, D-N.H., was to begin hearings in Concord today on what the federal government can do to cut energy costs.

NRC Overturns N-Plant Work Halt

By The Associated Press

The Nuclear Regulatory Commission (NRC) has reversed its appeals board and allowed construction to continue on the proposed Seabrook nuclear power plant.

The commission order, issued yesterday, overturned last week's appeals board order which would have suspended construction of the \$2 billion plant this Friday. A spokesman for the Public Service Co. of N.H. (PSC), which heads a consortium of electric companies building the oceanside generating station, said work would continue without pause.

Frank Ingram, a spokesman for the NRC, said the problem that prompted suspension of the Seabrook building permit is on its way toward resolution. The NRC, at the urging of federal courts, has been reviewing radioactive waste disposal problems created by nuclear powered generators.

lems created by nuclear powered generators.

Ingram said all parties concerned with nuclear waste will meet Oct. 26 to present arguments on the issue. Because a new environmental impact analysis on nuclear waste is expected soon, Ingram said the commission decided to allow Seabrook construction to continue.

PSC spokesman Donald C. Lundholm hailed the decision and said it added weight to the company's contention that "the project is right."

William C. Tallman, PSC president, told reporters Monday the decision to halt construction was unfair and that concern about atomic waste disposal was a "non-problem."

He also said continued delay would further increase the cost of the plant which has already gone over the \$2 billion mark from an original protection of \$800 million five years ago.

Opponents of the plant called the NRC's reversal "shocking and disgusting."

A spokeswoman for the Clamshell Alliance, a coalition of anti-nuclear groups, said, "What is the point of having an appeals board in a federal agency if the agency itself does not respect the decisions of that board?"

"All we can assume," she said, "is that pressure was brought on the NRC to make this move to contradict a ruling by one of its own regulatory bodies."

New Hampshire Gov. Thomson, who has strongly backed construction of the plant and nuclear power, hailed the decision as the best news he has heard since becoming governor.

He said resumption of the project will mean a continuation of construction jobs at Seabrook. Thomson said it was his opinion that the nuclear powered plant will mean lower electricity bills for consumers.

In Washington, a lawyer for the New England Coalition On Nuclear Pollution said a petition would be filed today in the federal appeals court in Boston to dissolve the NRC's latest decision.

Anthony Roisman said the NRC had no legal basis to reissue the construction permit and that "it is the most outrageous thing the commission has done in the years I've been dealing with it."

He said the NRC was out "to see that it does everything it can to protect applicants. It is a very disgraceful opinion."

Roisman said the NRC's own published rules on the waste disposal problem stated that building permits would not be issued until after an interim report on the matter is completed in December.

In Amherst, Mass., meanwhile, the director of the Union Of Concerned Scientists said yesterday, "I'm quite confident Seabrook will never be constructed."

The \$2 billion construction project will be stopped by anti-nuclear protesters and financial problems, Daniel F. Ford told a group at the University of Massachusetts.

Consumer advocate Ralph Nader was scheduled to address the anti-nuclear power gathering today.

When the permit was suspended last week anti-nuclear plant activists called it a major victory.

"There's no way a small utility can afford to spend that much money on one single power project. The utility would need massive federal subsidies to continue the construction," Ford said.

NEWPORT, R. I.
NEWS
D. 14,503

SEP 29 1976

Connecticut is urged to plan evacuation

WATERFORD, Conn. (AP) — Connecticut needs a tested, clear-cut evacuation plan in the event of a nuclear catastrophe, according to testimony heard Tuesday by a state panel.

Alden Meyer, energy coordinator for the Connecticut Citizen Action Group, said an "effective evacuation plan is the essential element" to minimize even the smallest possible catastrophe.

Meyer was one of several who spoke before the Temporary Nuclear Power Evaluation Council which is holding hearings on issues concerning nuclear power plant safety.

Meyer said that in Brown's Ferry, Ala., the site of a recent fire at a nuclear power plant, local officials were hampered in their response because they had no details about emergency evacuation procedures.

"To be fully effective, emergency plans must be publicized and subject to public input. It makes no sense to engage in emergency planning for possible evacuation if the public is kept in the dark," he said.

Meyer proposed that each utility involved with nuclear

power plants be required to notify customers of evacuations plans at least once per year. He said the Public Utilities Control Authority should examine the information for accuracy.

Frances Hopper, of the Central Connecticut People's Action for Clean Energy (PACE), said plans should also be made to cover people who don't want to leave their homes.

David Collins, of the Southwestern Connecticut PACE, said studies reveal a low public awareness about what to do in the event of a nuclear accident.

State Sen. Richard Schneller, D-Essex, said he was concerned that there were no operable evacuation plans in the state in effect at this time. He said a plan is being developed by New London, Waterford and East Lyme but it has not been finalized.

Officials at the hearing noted that it is the state that is responsible for coordinating plans for evacuation.

Representatives from about 20 organizations and state, local and federal agencies testified at the seven hour hearing.

Vermont Wants Plant Open

MONTPELIER, Vt. (AP) — The Vermont attorney general's office has asked the Nuclear Regulatory Commission to keep the Vermont Yankee Nuclear Power plant open pending the outcome of hearings on the waste disposal issue.

In a legal brief filed with the Atomic Safety and Licensing Board, Atty. Gen. M. Jerome Diamond said to shut down the nuclear power plant during the hearings would place an unreasonable burden on Vermont ratepayers.

He said the hearings on waste disposal could last up to six months, which he said would cost Vermonters about \$23 million.

"An immediate shutdown can only be justified by immediate threats," he said.

The NRC will be holding hearings to determine if the Vernon plant's operating license should be continued, modified or suspended pending the outcome of the waste issue.

A pre-hearing conference is scheduled in Brattleboro Oct. 14, and a spokesman for the NRC said hearings on the licensing question also may be conducted in Vermont.

The NRC is under court order to reopen hearings on Vermont Yankee's license to take into account the problems of storing and reprocessing nuclear waste.

The court order was a result of an appeal filed primarily by the New England Coalition on Nuclear Pollution.

Stamford Advocate

STAMFORD, CONN.

D. 30,734

OCT 4 1976

First Rhode Island step taken for nuclear facility

PROVIDENCE (AP) — The first official step in the review of an application for a nuclear power plant in Charlestown has been taken, according to a New England Power Co. spokesman.

Andrew C. Kadak, manager of nuclear information for New England Power, announced over the weekend that the U.S. Nuclear Regulatory Commission has docketed the application.

"Docketing an application for a construction permit is the first official step in a long and involved process," Kadak said.

Docketing means that the NRC staff has examined the 8,000-page application and found it to contain all the necessary elements for the review process to begin, Kadak said.

"Now that our application is docketed, it is likely to take years of technical, safety and environmental review until the NRC is ready to decide whether the plant can be built without harm to the public health and safety," he added.

New England Power and its affiliated Narragansett Electric Co. have proposed constructing a twin-reactor nuclear plant on former Navy land in Charlestown.

The U.S. General Services Administration is currently conducting an environmental impact study on the site to determine whether it should be sold to the utilities.

The New Haven Register

NEW HAVEN, CONN.

D. 106,570 SUN. 121,792

OCT 2 1976

DEDHAM, MASS.
TRANSCRIPT
D. 7,446

DROCKTON, MASS.
ENTERPRISE
AND TIMES
D. 52,500

OCT 2 1976 *B. Fuller*

OCT 1 1976 *B. Fuller*

Waste problem does the job protestors fail to do

WASHINGTON (UPI). — The universal problem of how to dispose of nuclear wastes will do what on-site demonstrators couldn't do — halt construction on the United States' newest atomic power plant, at Seabrook, N.H.

The Nuclear Regulatory Commission Appeals Board voted 2-1 Thursday to include Seabrook, whose construction permit was approved July 7, in the NRC's temporary moratorium on granting construction permits or operating licenses for nuclear power plants.

The board ruled construction must stop at 6 p.m. Friday, Oct. 8, at the Seabrook marsh on New Hampshire's 18-mile coastline. The only exceptions will be construction of a warehouse to protect equipment, and completion of settling basins and ground contouring needed to improve drainage.

The NRC ordered a temporary moratorium on permits and licenses Aug. 13 following a federal appeals court ruling here July 21 which said the NRC had not dealt adequately with the question of how to dispose of radioactive nuclear wastes.

Thursday's decision was the latest setback in a four-year struggle by the Public Service Co. of New Hampshire, which provides 80 per cent of the state's electric power, to go nuclear.

It came in response to a motion by the

New England Coalition on Nuclear Pollution, supported by New Hampshire's Seacoast Anti-Pollution League and the state Audubon Society.

The PSC declined comment until it could see the suspension order. The majority opinion ran 78 pages and the dissenting opinion 43 pages.

The full Nuclear Regulatory Commission could act between now and next Friday to review, extend or overturn the appeals board decision, NRC spokesman Clare Miles said.

The NRC when it ordered a moratorium also ordered a study on the waste disposal problem. The study was to be completed Thursday, but now is not expected to be published until some time this month.

"They don't have the report yet so consequently we don't know yet exactly what's involved. The question of environmental impact of the fuel cycle has to be resolved," Miss Miles said.

Seabrook has been a stormy subject since the PSC began its struggle for permits with state and federal regulatory bodies four years ago. The Environmental Protection Agency still is considering whether the plant's proposed tunnel system for cooling ocean waters used in the reactor would be a threat to marine and human safety. It already has ordered the tunnels extended further out to sea to avoid harming rich lobster beds.

Boston Edison Paying \$5M For Pilgrim N-Plant Buffer

PLYMOUTH — The Boston Edison Company has announced it is completing arrangements to purchase 1,200 acres of buffer land to surround its Pilgrim nuclear power plant.

In making the announcement, Charles G. Newton, the utility firm's public relations

manager, said the purchases have been going on — tract by tract — since September, 1975.

The buffer will serve two purposes. First, it will provide the company with "flexibility" to meet the constantly "changing requirements of the U.S. Nuclear Regulator Commission," said Newton.

And secondly, it will keep real estate interests from developing acreage around the \$220 million Pilgrim 1 plant and the proposed Pilgrim 2 plant, an investment expected to cost Edison close to \$1 billion.

The purchase of the land is expected to come to about \$5 million. Newton said negotiations for almost half the total acreage — a 672-acre tract along Rte. 3 — are nearing the signing stage with the Pine Hills Trust.

Edison officials said they hope Pilgrim 2 will be operating by 1984 at the latest.

The tracts purchased or about to be purchased are primarily "large, single-owner lots we bought to give us the flexibility of complying with whatever EDISON—See Page 14 A

ENTERPRISE
TW 8,875

SEP 17 1976 *B. Fuller*

Quotation . . .

"The government doesn't even know how it's going to meet nuclear power fuel needs in the near future," he said.

"Our proven reserves of uranium in this country are going to deplete by the late 1980's or certainly by the end of the century. Now, to continue to fuel the reactors which are now being built and planned, we are going to have to start importing uranium or go forward with a fast breeder reactor, which raises even more questions. And if we start importing uranium, it puts us right back in the middle of the great argument about importing oil . . .

"I think the best way to meet our future energy needs is through conservation. This might free up energy that's needed for progress, as people call it. But I'm not so sure it is progress. Everybody seems to be running to Cape Cod to get away from it." — Robert Pollard, Chatham summer resident, and former project manager for the U.S. Nuclear Regulatory Commission.

ANSONIA, CONN.
SENTINEL
D. 17,000

SEP 27 1976

Nuclear plants cut costs

HARTFORD (AP) — Northeast Utilities says the use of nuclear energy to produce more than 60 per cent of the electricity provided its customers in August saved the customers \$7.5 million.

The company, which through its subsidiaries the

largest electricity supplier in Connecticut, said the savings resulted from use of nuclear fuel instead of fossil fuels like oil and coal.

More than one billion of the 1.7 billion kilowatt hours of power produced in August were generated by nuclear plants, Northeast said in a Saturday statement.

THE SPRINGFIELD UNION
SPRINGFIELD, MASS.
D. 83,064

OCT 8 1976

NU DENIES MISLOAD

WATERFORD, Conn. (UPI) — A Northeast Utilities spokesman denied Thursday that a truck carrying seven tons of radioactive waste from the company's nuclear power plant to South Carolina was improperly loaded.

The waste was being transported in seven large containers from Northeast's Millstone I plant to a nuclear waste burial site in Barnwell, S.C. when one of the lids came off in North Carolina.

Authorities said the containers apparently had not been properly loaded on the truck.

However, George Fox, Northeast's nuclear information manager, denied the charge and said

"From Nuclear Energy to Alternative Energy," a three-day teach-in at Keene State College sponsored by Students Against Nuclear Power, starts Tuesday. Cheshire County Citizens Against Nuclear Power will have an information booth at the student union from 11

a.m. to noon Tuesday through Thursday.

At 2 p.m. Tuesday, Sam Lovejoy's movie, "Lovejoy's Nuclear War," will be shown in the student union conference room.

At 7:30 that night, there will be an "alternative energy panel" at room 11 in

the truck was secure when it left the plant in Waterford.

North Carolina officials said the truck driver noticed the problem when he pulled into a truck stop Tuesday. He summoned the state Highway Patrol and the truck was moved a half a mile away to a site where work crews fastened down the lid.

Dayne Brown, head of the radiation office, said Wednesday the crate had been "improperly loaded on the vehicle. Frankly, there were no precautions taken to allow it to ride safely."

There were no injuries and officials said there was no danger of radiation in the area where the incident occurred.

Nuclear Power Vigil Set

The Central Massachusetts Citizens Against Nuclear Power will hold a vigil at 11 a.m. tomorrow on Worcester Common.

Officials said the meeting will include distribution of leaflets and conversation about nuclear power with the public.

At 7:30 p.m. Thursday, Guy Chichester and Mary Gregory from the Clamshell Alliance, a New England based antinuclear group, will speak at Trinity Lutheran Church, 72 Lancaster St. on the dangers of nuclear power production. A film, "Nuclear War," will be shown.

Nuclear Plant Foes Plan KSC Teach-In

the science building. Panelists will discuss wood, solar, methane and solid-waste energy systems.

"Who Killed Atomic Worker Karen Silkwood?" will be the topic of Sara Nelson's speech Wednesday at 10 a.m. in the student union conference room. She is with the National Organization for Women (NOW).

At noon Wednesday, Sam Lovejoy will speak in the conference room.

Then at 2 p.m., Richard Grossman, director of Environmentalists for Full Employment, will speak about "Atomic Economics:

Jobs and Alternatives."

Also, from 1 to 2 p.m. John Schnebly of the New England Solar Association will lead a teach-in, followed by Harvey Wasserman's teach-in on "Radiating the Third World" from 3 to 4 p.m.

Thursday, the three-day event ends with Jay Adams' talk on "Seabrook: Past and Present" at 2 p.m. in room 102 of the science building.

Adams is a member of the local anti-nuclear group and was one of 11 persons charged with contempt of court after a sit-in on the Seabrook nuclear power station site.

KEENE, N.H.
SENTINEL
D. 11,642

OCT 4 1976

WOONSOCKET, R.I.
CALL AND REPORTER
D. 30,500

OCT 1 1976

Noel Accused Of Ignoring N-Plant Foes

PROVIDENCE (AP) — A consumer organization has accused Gov. Philip W. Noel of ignoring citizen opposition to a proposed nuclear power plant in Charlestown and catering to the interests of utility companies.

Mrs. Emma Sacco of Narragansett, chairwoman of Rhode Islanders for Safe Power, said Thursday that Noel's role in se-

curing a renewed permit for meteorological tests at the proposed plant site shows "a disregard of citizens' opposition." Earlier this week, Noel asked the state Properties Committee to approve a request from Narragansett Electric Co. to resume tests on a tower already in place on the former Navy land in Charlestown. The request was approved.

A Noel aide said the governor made the proposal to the committee because the Navy deals only with requests from public agencies.

WORCESTER TELEGRAM
WORCESTER, MASS.
P. 62,339 SUN. 108,36Z

SEP 29 1976

Citizens Group Against N-Power To Meet Oct. 14

The newly organized Worcester chapter of the Central Massachusetts Citizens Against Nuclear Power (CANP) will meet at 7:30 p.m. Oct. 14 in Trinity Lutheran Church, 73 Lancaster St.

Guy Chichester and Mary Gregory from the Clamshell Alliance, a New England antinuclear power organization will show the film "Nuclear War" and will lead a discussion.

CANP is working towards preventing further development of nuclear power plants and educating people about the dangers of nuclear power production.

FOSSIL FUELS

SEP 28 1976

Schiller change PAGE ONE delayed

By KENNETH B. DALECKI
Herald Bureau

WASHINGTON — The Federal Energy Administration (FEA) will not order the Schiller Power plant in Portsmouth to burn coal unless the plant can do so without violating New Hampshire's air quality control plan.

Gerald Parker, deputy director of FEA's coal utilization office, told The Herald Monday that his agency will not issue an order requiring the use of coal rather than oil at the Schiller Station this month.

That means FEA will miss an important deadline contained in federal legislation which gives the agency authority to order coal conversion as part of a national effort to reduce dependence on imported oil.

FEA's authority to order coal conversion even where coal burning would violate state air pollution standards expires Friday—Oct. 1. The agency may still require use of coal at Schiller, but the plant would not be allowed to start coal operations until sufficient air pollution control equipment in place to keep it in conformity with New Hampshire's air quality control plan.

If FEA had issued a conversion order before the Oct. 1 deadline, Schiller would have been allowed to violate state standards so long as it was brought into compliance by Jan. 1, 1979.

One reason FEA decided not to act before Oct. 1 was the storm of local protest over the proposed coal conversion — "We want to consider the public record fully," Parker said with reference to a public hearing held by FEA in Portsmouth on Aug. 10.

He noted that FEA has still not issued a final environmental impact report on the proposed Schiller conversion. Such a report must be available to the public for 30 days before FEA can order a plant to burn coal instead of oil.

Sulphur pollution nixed

By BILL BALDWIN

A hearing officer for the state Department of Environmental Protection (DEP) has recommended that a proposed scheme by electric utilities to burn high-sulphur fuel be rejected.

The proposed increase in the fuel-oil sulphur content would increase air pollution but would save Connecticut utility customers millions of dollars a year.

Hearing examiner John Curry ruled last week that environmentalists were basically right in their claim that burning the cheaper but more polluting fuel would do more harm to people's lungs than good to their pocketbooks. The decision now goes to DEP chief Joseph Gill, who can affirm or reject it.

A joint petition was filed last year by Connecticut's three major electric utilities, Connecticut Light and Power, Hartford Electric Light, and United Illuminating, for variances from the DEP regulation setting a maximum

fuel sulphur content of one-half percent.

Low sulphur oil (or coal) is more costly, because it is in demand by utilities trying to comply with air-quality standards. When oil is burned the sulphur in it is burned to sulphur dioxide, which escapes into the atmosphere.

Sulphur dioxide, which has a rotten-egg smell, is poisonous in high concentrations, and, even in the dilute quantities in which it exists in the atmospheres of Connecticut cities, say the environmentalists, has adverse health effects on the elderly and debilitated. Environmental health experts also allege that the sulphur dioxide of polluted air combines with water in raindrops to form sulphuric acid, a corrosive liquid with its own catalogue of environmental effects.

The plan of the utilities was to burn higher-sulphur fuel in cleaner areas where the air was already meeting state and federal standards. Connecticut Light and

Power, for example, was asking permission to increase the maximum sulphur content of fuel at its Norwalk Harbor plant from .5 percent to 2.2 percent.

The utilities said that they could save their rate-payers 10 cents a barrel for every .1 percent increase in sulphur content. The Norwalk station burns some 3 million barrels of oil a year, for an indicated saving of more than \$5 million a year.

United Illuminating wanted to increase the sulphur content of fuel for the largest unit of its Bridgeport Harbor station from .5 to 1.1 percent, with a projected saving of close to \$2 million a year.

Opposing the three utilities at a week-long DEP hearing last winter were the Connecticut Citizen Action Group and the Connecticut Lung Association. The environmental groups had expert witnesses to testify that if the utility proposal were accepted in full, as many as 90 more Connecticut citizens would die each year from respiratory illness.

Mr. Curry rejected the notion that the proposed sulphur increases could be tolerated without a violation of air quality standards. The increases would cause violations of primary standards, or maximum pollutant levels designed to protect the public health, he concluded, and would also increase the present frequency of violations of the stiffer secondary standards, which are designed to protect property and vegetation.

A United Illuminating spokesman said that he could not comment on the likelihood of a court appeal of the decision, assuming Mr. Gill affirms it, since the company had not received a copy of Mr. Curry's findings.

WESTPORT, CONN.
FAIRPRESS

SEPTEMBER 15, 1976

OCT 3 1976

Coal Deposits in Southern New England

6578
THE DISCOVERY of coal in southeastern Massachusetts and Rhode Island's Narragansett Basin may provide the partial answer to New England's energy shortage, according to officials of the New England Council.

The Rev. James J. Skehan, S.J., a Boston College geologist, has been surveying for coal in the area under the auspices of the New England Regional Commission and several utility firms.

During a press conference last week, he said drillings in six test holes in Mansfield, Mass., and Bristol, R.I., had yielded samples of higher quality and much larger quantities than anyone had anticipated. He said he encountered veins as thick as 25 feet.

An analysis by the U.S. Bureau of Mines revealed that the coal is in the range of semi-anthracite to low-volatile bituminous coal. William Barton, a geologist for the U.S. Department of the Interior, said the coal is far superior to that which was mined in the area in the last century.

Edward J. King, president of the New England Council, said the coal find could mean a new mining industry for the region and the beginnings of an indigenous energy supply. Utility officials pronounced themselves "delighted" by the discovery.

New England is so dependent on other parts of the country and the world for its energy supplies that the discovery of a promising fuel supply close at hand should be cheering to all residents of the region. If the coal supply is usable, it could have several salutary effects on the New England economy. Besides providing more jobs and alternate energy supplies, it could induce other industries to locate in the region. It might also mean lower energy costs for homeowners and businesses.

While the search for other energy sources goes on, New Englanders should rededicate themselves to a program of energy conservation to insure that a future energy crisis will not cripple business and industry and impose unnecessary hardships on the people in the six-state area.

100

Mass. coal deposits richer than expected

6508
BOSTON (UPI) — Coal deposits in southeastern Massachusetts and parts of Rhode Island are more valuable than anticipated, according to a geologist who has been prospecting in the area since February.

The Rev. James W. Skehan of the Weston Observatory has conducted test borings in the Mansfield-Foxboro area of Massachusetts and in Portsmouth and Bristol, R.I., on a National Science Foundation grant.

Skehan and William Barton of the U.S. Bureau of Mines said Wednesday samples that have been extracted from the drillings are classified as semi-anthracite and low, volatile bituminous. They said both grades of coal can produce more than 13,000 units of heat per pound if free of moisture and ash.

"We have — if the coal keeps analyzing like this — a far more valuable resource than we ever appreciated," Skehan said.

Earlier tests on bits of coal found near Mansfield had indicated a lower grade of coal.

Skehan said he has two drill rigs operating five days a week in South Foxboro, Taunton and West Bridgewater. He moved his operation out of Rhode Island, he said, because the riggers' union demanded he put one of their men on his rigs.

The coal deposits cover approximately a 900-square mile area, he said. It will take five to 10 years to determine exactly

how much coal there is and how it can best be recovered, Skehan said.

GLoucester, MASS.
TIMES
O. 11,000

SEP 23 1976

OCT 6 1976

Federico Urges Surcharge on Energy Exports

6508
A surcharge levied on electricity or energy-producing resources originating in Rhode Island but sold for use out of state was proposed today by State Senator James Federico of Westerly, New Shoreham.

Federico, a freshman Democrat seeking reelection, made his recommendations, based on the verified existence of coal deposits in Bristol, Newport and Providence Counties, and the possibility of offshore oil and natural gas deposits.

The surcharge would guarantee economic benefits to the state wherein the resource was found, and could be used to finance research programs in the development of alternative energy systems, he added.

If the surcharge were applied on a regional basis, it could encourage the use of these resources in New England, possibly lowering the cost of energy, and generate additional revenue throughout the area, Federico said. He added that if the regional approach were not achieved, the state should institute the surcharge program.

"The economic potential of these resources is vast, including the creation of many jobs and auxiliary enterprises," Federico explained. "With the necessary safeguards applied, Rhode Island's economic development could be promoted without threatening tourism or the environment."

OCT 2 1976 *Byg*

The offshore oil bill

6508

Legislation that would have amended the Outer Continental Shelf Lands Act of 1953 in such a way as to put off development of offshore oil deposits along the East Coast for perhaps two to four years died earlier this week when it was remanded to conference committee. But we are informed that its sponsors have put it at the top of their list for the next session, so the battle is far from ended.

The legislation, which was backed by all four members of the Rhode Island congressional delegation, sounds laudable enough on its surface. It would yield the federal government more money from offshore leases, strengthen environmental protection standards for drilling, and give the states more say in offshore development planning. But the legislation is not needed. The public interest in offshore development is adequately protected at several points along the complicated leasing process set up in the original 1953 act.

What is truly objectionable about the bill is that it would delay offshore oil development by as much as four years. This would frustrate the energy policy objective of reducing this country's reliance on costly imported oil at the very moment that the Arab oil-exporting countries are talking of increasing prices anywhere from 10 to 25 percent.

While reported threats of Saudi Arabia to institute a new oil embargo against the United States have been pretty well dis-

credited, the rumor nonetheless points up the vulnerability of this country to energy blackmail. And that vulnerability is growing. U.S. imports of oil have increased over the past two years, even as domestic production has diminished.

New England is even more vulnerable than the rest of the country, since it depends mainly on high-priced imported oil and its energy bills are significantly higher.

And while it also depends more heavily on nuclear power than do other regions of the country, the prospects of building new nuclear plants here appear increasingly dim — witness the indefinite halt ordered by a federal appeals board to construction of a \$1.6-billion plant in Seabrook, N.H. last Thursday, and the similar delays inflicted on the proposed plant at Charlestown here in Rhode Island.

All of these factors should have convinced our congressional delegation to oppose legislation which would delay development of the offshore oil lands. We would hope that senatorial candidates John Chafee and Richard Lorber will address themselves to this matter as part of their campaign, so that the voters may assess their stand before Nov. 2. As for Senator Pell and Representatives Beard and St. Germain, perhaps during their home visit following the adjournment of Congress they will sound out their constituencies on how they feel about delaying offshore oil development just to build in redundant safeguards.

LEWISTON, MAINE
SUN
D. 32,500

SEP 29 1976

N.E. Fuel Prices May Rise Even with Offshore Finds

NEW BEDFORD, Mass. (AP) — Prices for oil and gas may rise in New England even if they are discovered on the continental shelf offshore, a Shell Oil Co. executive has said.

Such discoveries will not do much for New England's economy either, said William R. Cobb, Shell's manager of exploration affairs for government and industry.

A geologist, Cobb has been aboard the MV Phaedra, a company-owned research vessel used to study the ocean floor of Georges Bank, a rich commercial fishing ground.

"Even with the potential of Georges Bank, we are going to have to turn to other energy sources such as coal, nuclear and solar energy," he said.

"The area just doesn't look as rich as the Gulf of Mexico."

It will be six to 10 years before offshore oil is developed and produced, he said.

Environmental impact hearings are scheduled in Providence in December, and the federal government is expected to begin auctioning areas to oil companies next spring.

Cobb said New England may develop support industries for offshore work, but platforms and crews for drilling and pumping oil probably will come from the South.

He said New England depends heavily on foreign oil because it accounts for one-third of the nation's energy consumption.

"The rest of the nation is subsidizing New England" because foreign crude costs \$12-\$14 per barrel while the price of domestic oil is frozen at about \$7.60, he said.

The Federal Energy Administration requires price blending, so New England pays about \$10 a barrel despite its high reliance on imported oil.

Federal price controls could be lifted because of production from Alaska oil reserves and anything from the continental shelf, Cobb said, and added this would raise New England prices to the level of imported petroleum.

"There is no way America can ever become self-sufficient as far as fossil fuels are concerned," he said.

SEP 30 1976

PUC Cuts Surcharge For October

PAGE ONE

6508
CONCORD, N.H. (UPI) — The Public Utilities Commission today ordered a reduction of \$1,495,768, or more than half, in the fuel surcharge requested for October by New Hampshire's dominant electric company.

The Public Service Co. of New Hampshire had asked for a surcharge of 98 cents per 100 kilowatt hours. The PUC ordered it to cut the surcharge by 51 cents to a total of 47 cents per hundred kilowatt hours.

The cut is stage two in repaying consumers for a \$4.5 million overcharge which accumulated over a four year span as the company billed them for coal it never actually burned. A series of surveys of the PSC's coal stockpile at its Bow generating plant revealed it had piled up but not burned 127,000 tons of coal.

The refund process began in September with a 10 cent per 100 KWH reduction in the surcharge, and is expected to conclude in November.

Not all the repayments will go to PSC retail customers. Part must go to the Vermont Electric Co., which buys 25 per cent of power produced at Bow, and part to the smaller electric companies in New Hampshire which buy wholesale power from the PSC.

Home heating oil may rise 4¢ per gallon
HARTFORD — The cost of home heating oil in Connecticut this winter will rise by four cents per gallon to about 46 cents, the state's energy chief predicted yesterday.
Lynn Alan Brooks, commissioner of the Department of Planning and Energy Policy, suggested that consumers looking for cheaper prices might shop around among suppliers.
A spokesman for the Independent Connecticut Petroleum Association said no immediate hike was expected.
He said any increase would be attributable to the price its members must pay to major petroleum companies.

SEP 27 1976

DANBURY, CONN.
NEWS-TIMES
D. 33,320

OCT 4 1976

Cotter Asks Oil Price Probe

PAGE ONE

6508
WASHINGTON (UPI) — Rep. William R. Cotter, D-Conn., today asked for an investigation of projections that the price of home heating oil in Connecticut will increase this winter by four cents a gallon.

Cotter told Federal Energy Administrator Frank Zarb an increase of the heating oil price, which now averages 42 cents, would violate an agreement negotiated this summer between Zarb and the New England congressional caucus.

He said a four cent hike would cost Connecticut residents an additional \$29 million this winter.

The Democrat said the state energy commission last month said heating oil prices might go up two cents by December and another two cents by the end of the winter.

Cotter said the agreement specifies that the FEA will rollback home heating oil prices if they increase more than two cents above a "carefully monitored index."

Cotter said the index permits modest price increases based on the cost of crude oil, the cost of distribution and seasonal factors and indicates only a one-cent price rise this winter.

OCT 2 1976

Caucus Protests Oil-Plan Exclusion

The Evening Gazette
Washington Bureau

6509
WASHINGTON — The New England congressional caucus has protested the exclusion of the Northeast from the government's regional oil storage plan.

In a letter to Federal Energy Administrator Frank Zarb yesterday, the 25-member delegation urged that the Northeast be protected against any major interruption of oil supply.

The FEA set up an oil-reserve storage program in 1975, to guard against another Arab oil boycott, but the delegation said none of the designated storage sites are in the Northeast.

With crude storage facilities now earmarked for the Midwest and the Gulf Coast, we have a sense of vulnerability in the Northeast regarding Rep. Edward P. Boland, D-Mass.

"We want to make sure FEA fulfills its mandate and that careful plans have been made to provide for the region's needs by assuring product processing and timely delivery from these oil stocks," he said.

SOLAR
AND
ALTERNATIVES

P 30 1976

New State Law Encourages Solar Energy Use In Home

By ROBERT PHILLIPS
Staff Reporter

SOUTHBURY — "It removes a significant roadblock away from people who want to buy solar heating systems."

That's the way James Bette, president of the Solar Energy Structures, Inc., of Southbury Wednesday described a new state law which will offer property tax exemptions for the next 15 years to homeowners who install solar heating and cooling systems in their homes.

The new law becomes effective Friday, and continues through Oct. 1, 1991. It is aimed at encouraging more homeowners to use solar energy.

The town is mandated to pass an ordinance resolving that those who install solar systems in their homes are eligible for the tax exemptions. The Board of Selectmen is already taking steps to do just that.

According to Bette, the full savings for a Southbury homeowner who recently had a solar system installed in his home amounted to \$500. However, the value of the solar system added substantially to the assessed value of his home causing a substantial rise in his tax bill, Bette said.

The homeowners tax bill rose by

about \$140, Bette said, reducing the actual savings of the homeowner down to \$360.

Bette's firm has constructed what is believed to be the largest solar heated home in New England. The house is located on Kettletown Woods Road and was recently sold. "It was built as an experimental model," said Bette, whose construction firm recently branched off into the solar heating business less than a year ago.

"We expect solar energy to be a significant part of our sales as the price of oil increases," said Bette, noting that plans for another solar home his firm plans to build are already on the drawing board.

Bette said that solar heating systems are expensive because of the "sophisticated" control system that must be installed to regulate heat and because of the labor required. He said that his firm recently installed a solar system in a Southbury home at a cost of \$10,000.

"Most of the materials used — glass, copper, aluminum and other metals — are already mass produced and we don't expect the price to go down too much farther," said Bette.

He said it is more expensive to install a solar system in an existing home than to install it in a home being built.

"The problem with most homes is that they are not oriented towards the sun. Only two or three per cent of existing homes can have solar systems installed."

He added that existing homes must have a steeply pitched roof and be facing due south for a solar heating system to work efficiently.

A solar system, by the use of energy cells, captures solar energy from the sun and stores it for electrical power.

URI May Be Site For Solar Energy Plant

KINGSTON, R.I. (AP) — The University of Rhode Island's Kingston campus is one of nine sites being considered for the nation's first solar electric power plant, federal officials say.

The U.S. Energy Research and Development Administration in Albuquerque, N.M., said Wednesday the nine sites were proposed by utility companies and governmental units in response to an ERDA request issued in July.

The governor's office, URI and Narragansett Electric Co. jointly submitted Rhode Island's request, which urges the government to construct the for another solar home his firm plans to plant on the school's campus.

The ERDA announcement said the agency plans to complete the evaluation process and negotiate a contract with the selected builder by Feb. 1, 1977. The agency said construction of the facility will begin in 1978 and should be finished by 1980.

URI officials said construc-

tion costs would be steep, but told the Board of Regents a few weeks ago that the plant, once constructed, could heat URI's entire facility at a tremendous saving to the state.

Other proposed sites are in Arizona, California, Florida, Mississippi, Puerto Rico and Texas.

The project would produce 10,000 kilowatts of electric power under optimum full sunlight conditions, about the amount of power required by a city of 10,000 population, the agency said. The cost of the plant would be about \$100 million.

The agency said the pilot plant would distribute electric power to the partner utility's customers and would serve as a model for future plants.

"Experience gained from the operation will determine the course of future developments and use of solar electric power," the agency said.

MANCHESTER, N. H.
UNION LEADER
D. 57,000

OCT 8 1976

LEWISTON, MAINE
JOURNAL
D. 14,500

SEP 23 1976

Solar System

Cost \$400,000

The more than \$400,000 solar collecting system which rests atop the new Norris Cotton Federal Building in Manchester, which, through a series of operations, heats or cools the building, was made possible through a grant from the new Energy Research and Development Administration (ERDA).

The new department is headed by Dr. Robert C. Seamans Jr., who took office in late December of 1974.

ERDA is responsible for consolidating and administering federal energy programs formerly carried out by the Atomic Energy Commission, the Department of the Interior, the National Science Foundation, and the Environmental Protection Agency.

The ERDA also has the responsibility for the planning, coordinating, encouraging, and conducting research and development geared at advancing energy source and utilization technologies, including fossil, nuclear, solar, geothermal, and other energy-related programs.

WESTPORT, CONN.
FAIRPRESS
W. 43,100

SEP 22 1976

Towns could help solar energy

Commissioner Lynn Alan Brooks of the Connecticut Department of Planning and Energy Policy is urging the state's municipalities to adopt ordinances exempting solar energy systems from local property taxes.

In a letter to the chief executive officers of the 169 towns and cities in Connecticut, Commissioner

Brooks calls to their attention Public Act 409, passed by the 1976 session of the General Assembly, which authorizes the municipalities to exempt the value of the solar portion of solar heating or cooling systems from property taxation.

Solar energy success aided to utility companies

By RAY POTTER
Of The News Staff

H O P K I N T O N — Homeowners in many parts of the country, including New England, stand to save money on their heating bills by using solar energy collectors — if utility rate structures are changed, a solar energy researcher says.

"The utility industry may be the biggest barrier to the introduction of solar energy," according to Stephen L. Feldman of Hopkinton, who has worked the last year on a study of solar energy for the National Science Foundation.

To get answers to whether homeowners could save money by installing solar heating units, Feldman's study looked into weather patterns and electric rates at test sites in New England, Wisconsin, Colorado, California, Arizona, New Mexico and Puerto Rico.

Feldman's study was carried out under a \$140,200 federal grant over 12 months with the help of a research team from New Hampshire.

He is an assistant professor of geography in environmental affairs at Clark University in Worcester.

Feldman presented the study's results two weeks ago at a closed session of the federal Energy Research Development Administration (ERDA) in Houston.

Those results will be used in designing solar energy units the federal government plans to build around the country to demonstrate solar energy technology in the next four years, he said.

The study assumed that long stretches of bad weather would limit use of solar energy and require a back-up system using some other form of energy, Feldman said.

So the question became: would a solar heated home prove less expensive, considering all the costs — the solar unit and the additional electricity that would be needed in poor weather.

The preliminary data from the study said no, Feldman said, given today's electric rate systems that do not consider when the electricity is used and charge a higher unit rate to small users.

Solar heated homes might even be penalized under that rate structure, Feldman said. A solar home heating unit would

in most cases not save enough money over a 20-year period to pay for itself, he said. Preliminary results of the study showed.

Although solar units need little or no maintenance over the years, a unit with storage large enough to heat an average house now costs about \$10,000, Feldman said.

The study showed in the case of a Wisconsin utility, a solar heated home would cost \$89 more in a typical year than conventional heating, if figured on today's electric rates and the cost of the solar unit over a 25-year period, he said.

But, changing the electric rate structure could make the difference in many parts of the country between solar heating unit costing or saving the homeowner money, Feldman said.

What Feldman says is needed is a variable electric rate, that would charge homeowners at a lower rate during the time of the day when demand for electricity is usually low.

By charging the lower rate during periods of "non-peak" demand a utility would be passing along its savings from not building new generators to meet "peak" electric demand, he said.

With the high costs of oil and coal in this region, New England could benefit the most by applying solar energy for home heating, Feldman said. Given changes in the electric rate structures, "this is the best area in the country for solar energy," he said.

"There is some resistance in the public utility field to solar heating," Feldman said. "That is because the public utility feels that solar heating will spike peak electricity demand," he said.

His study showed in many

parts of the country it would not, Feldman said.

In a seven-year study of weather and extra electricity needed for a solar-heated home in Colorado, the house's peak power demand never coincided with the utility's, he said.

The utility's peak power day in 1972 occurred on a day of minus-15 degree temperatures, Feldman said, "yet, the solar building required no auxiliary assistance."

Today's solar units have some storage capacity, so the problem of electric demand might appear only with extended periods of bad weather, he said.

He is now at work on an ERDA study to suggest solar energy legislation to Congress and another National Science Foundation grant for \$147,000 that will study peak load pricing for urban water supplies.

A limited number of brochures resulting from the solar energy study are available, he said, by writing: Total Environmental Action, Inc., Church Hill, Harrisville, N.H. 03450.

FRAMINGHAM, MASS.
SOUTH MIDDLESEX
DAILY NEWS
P. 32,337 SUN. 108,352

OCT 2 1976

WORCESTER TELEGRAM
WORCESTER, MASS.
P. 32,339 SUN. 108,352

SEP 29 1976

Holden Man's Design Of Solar Home Wins

(John H. Wadsworth, an architect at 788 Main St., Holden, won first prize at a recent contest at Worcester Center sponsored by the Central Massachusetts Chapter of the American Institute of Architects. He won for his design for a solar house.)

Donald R. Boyce of 1078 Main St., Holden, a former associate of Wadsworth, took second prize for his design for St. Philip's Church in Grafton.

The awards were made on the basis of results of a public vote for the most popular exhibits of photographs and drawings done by 11 Central Massachusetts architectural firms.

GREENFIELD, MASS.
RECORDER
D. 14,000

OCT 5 1976

Energy saver to be dedicated in Manchester

MANCHESTER, N.H. — The government's first federal building, especially designed to save energy — up to 50 per cent over a regular structure — will be dedicated at noon Friday in Manchester, N.H. by the U.S. General Services Administration.

Dozens of energy-saving innovations, including a solar energy system, will be tested. Among those attending: GSA Administrator — Jack Eckerd; ERDA Administrator Robert Seamans, Jr.; Gov. Meldrim Thomson, Jr.; Sens. Thomas J. McIntyre and John A. Durkin, and Reps. Norman E. D'Amours and James C. Cleveland, all of New Hampshire. Also, former Sen. Norris Cotton for whom the building is named.

A media tour of the building will be at 10:30 a.m. at Chestnut and Merrimack Sts.

Solar Energy 'Is Today,' Dealers Say

by DEBRA WEINER

Free Press Staff Writer

Solar is today, said Barry Tepper of the pre-engineered, solar energy systems Daystar Corp. of Burlington, Mass.

Solar is business, Tepper said, hitting the second word hard. Is, as opposed to will be, he intended to say. A reality right now.

"We must look at the hard, cold facts now instead of in the future, as far as energy is concerned," warned Bob Wheeler of Yankee Solar Systems (8 St. Paul St.), the newly opened area Daystar dealer.

About 40 bankers, architects, businessmen and local and state political officials were guests at the Yankee Solar Systems Solar Energy Seminar Tuesday afternoon at the Sheraton Motor Inn on Williston Road.

They listened as Tepper explained how today's energy demand is greater than the energy supply; how since 1973, production of crude oil and natural gas has been on the downswing; and how the gap between production and demand is destined to grow.

He isolated possible energy solutions: Energy conservation; increased oil, gas and coal production; expansion of nuclear power systems; or the promotion of renewable energy sources, including the direct diversion of sunlight into heat, i.e., solar thermo energy, the meat of Daystar's business.

He explained the three types of solar thermo systems Daystar can provide — the solar domestic hot water heating system, the solar space heating system, and the solar cooling system — and the benefits of all three. These solar systems are environmentally sound, work off an endless energy supply, and will provide protection against rising fuel costs, he said.

Government incentives — tax credits for people buying solar systems in homes and low-interest loans — are spurring solar system interest, Tepper claimed. More than 200,000 solar systems are expected to be installed in 1980, he said,

and by 1985, 500,000 systems will be installed annually.

Wheeler discounted the fact that the sunshine factor in Burlington is only 53 per cent. "In good old sunny Florida, it is only 66 per cent," he said. Boston has a 60 per cent sunshine factor, and yet the roofs of banks, homes, hospitals and apartment complexes there have sprouted solar collectors, he pointed out.

The sun rays that stream through a flat plate of glass are collected in the dark-surfaced absorber plate which conducts the energy into

tubes filled with antifreeze, which transfer the energy to a furnace where the energy can generate enough power, and thus heat enough hot water, to last through a day and a half of cloudy weather. During a cloudy week, a backup system could make energy ends meet, Wheeler said.

In recognition of the potential of modern solar technology for the Vermont area, Yankee Solar Systems presented this community-level seminar with slides and a question and answer period, according to the seminar invitation.

BURLINGTON, VERMONT
FREE PRESS
D 4: 38a

SEP 29 1976

Springfield Daily News
SPRINGFIELD, MASS.
D. 95.055

SEP 27 1976

Vermont News in Brief

BURLINGTON, Vt. (AP) — The Burlington Electric Department is holding off on plans to construct a solar power plant, following rejection of legislation to provide money for such a venture.

The U.S. Senate has failed to pass the funding bill.

Superintendent Robert Young said there is no point in applying for a \$30 million federal grant to construct a sun-powered generator until Congress approves the money.

ST. JOHNSBURY, VT.
CALEDONIAN-RECORD
D. 8.000

OCT 8 1976

Students at WSC To Build Solar Unit

Larry Toole, a Massachusetts Public Interest Research Group (Mass PIRG) student intern, has announced plans for the construction of a working solar energy demonstration model to be designed and built by students at Westfield State College.

Dr. Scott, a physical science professor at Westfield State, will provide technical assistance. Materials needed to construct the model have been donated by the Lumber Center Company located at 44 Broad Street in Westfield.

The Solar Project, the first of its kind in the area, aims to focus public attention on the great potential that solar energy has for reducing space and hot water heating costs in this region. After construction of the model flat-plate collector this fall, students active in the project will arrange to demonstrate the model before school classes and community civic groups and clubs.

Toole said, "We wish to provide the community with a solar energy program that will make available accurate information about sun power, direct consumers to responsible distributors of solar energy equipment, and encourage do-it-yourselfers to initiate a solar energy project of their own. Our model's design will be kept as simple as possible to minimize cost and emphasize the practical applications of current solar technology."

Susan Kohler, PIRG Staff Project Coordinator for Westfield State College, added: "With this solar demonstration model based in Westfield, students and community residents will be working together to build an energy future that is not dependent on the limited resources of fossil fuel, or unsafe, uneconomical, and unreliable nuclear power. Beginning with this local effort, Westfield State students will be making a significant contribution toward informing community residents and the citizens of Massachusetts about the valuable alternative of solar energy."

Chief DePaolo Says Permits Needed For Coal, Wood Stoves

With cold weather approaching, more area residents will be burning wood and coal and Milford Fire Chief John E. DePaolo has issued the following information regarding proper permits which are required for wood and coal burning stoves.

Chief DePaolo said, "Because of the high cost of energy and fuel, more people are using fireplaces and wood burning stoves for additional heat. The State Building Code requires that plans and specifications for the installation of any heating device, must be submitted to the Building Inspector, and a permit must be secured before the start of any such installation (Section 1101 of the Code). Proper venting is probably the most important consideration, taking into account proper draft, proximity of the smoke pipe to combustible construction, which existing flues may or may not be used where the connection should be made to the flue, and sufficient air supply for proper combustion of fuel," said Chief DePaolo.

"Other considerations are distances of the appliance from combustible construction, furniture, blocking paths to exits, clearance under the appliance, safeguarding children who may be in the room unattended and the safety of fuel and disposal of

ashes," said Chief DePaolo.

The Milford Fire Department has made available, a list of rules and suggestions for those who need help or guidance for the installation of a coal or wood burning device.

The New Haven Register
NEW HAVEN, CONN.
D. 106.570 SUN. 121.792

SEP 25 1976

Waste Plan Studied

HARTFORD — The board of directors of the Connecticut Resources Recovery Authority (CRRA) voted Friday to contact towns to determine under what conditions they would join the statewide solid waste recovery system.

The board tabled, however, any action on changes in the state solid waste plan outlining a schedule for building resource recovery plants in New Haven and Hartford.

The CRRA was created by the legislature in 1973 to build a series of plants across the state to recover valuable materials and energy from the municipal waste stream.

Changes in the plan called for meetings with New Haven communities next month and Hartford area communities in November to get the ball rolling on plants for both areas.

However, communities in the Hartford area that were agreeable would have been scheduled to use the New Haven plant until a Hartford plant was built about a year after the New Haven facility.

The board ducked the question of what towns would use what facilities and when they would be built in favor of sounding out towns on how much they would be willing to pay for the services. In Bridgeport, where the first resource recovery plant is to be built, towns have agreed to a top price of about \$13 per ton to have their garbage collected and processed.

Under the contract they signed, however, that can be reduced to zero if the conditions for sale of the recovered materials is favorable.

Charlotte Reid, chairwoman of the Connecticut Solid Waste Management Advisory Council and a non-voting member of the CRRA board, told members many communities think the board has a closed mind to other, smaller solutions to the

garbage problems like small-scale resource recovery plants.

Further, she said the towns would like to see in writing that smaller plants aren't possible economically, if that is true and also would like a commitment from the board that it would consider starting on two plants at once.

In other discussion, board member and Transportation Cmsr. James Shugrue objected to the absence of a bid policy by the board on transfer stations for Bridgeport. Shugrue was put on a subcommittee handling the bids after raising his concerns.

WESTERLY, R. I.
SUN
D. 10,000

SEP 29 1976

Garbage Study Bill Is Passed

By DAVE RILEY

Associated Press Writer

WASHINGTON (AP) — Before you throw those egg shells, coffee grounds and orange peels in the trash can, stop and think about this:

The House of Representatives is willing to spend \$282.5 million for a national effort to find something useful that can be made from garbage like that.

The House has passed a bill that would supply the money for research aimed at finding ways to use wastes that now burden most municipal governments. The bill now needs Senate approval.

Most Americans haven't given much thought to trash, except to notice if it hasn't been picked up. And the garbageman has just been some guy who runs over your trash can twice a week.

Still, a very few people already have found a variety of highly useful, although not always esthetic, uses for their garbage.

For instance, in Richmond, Va., houses were made from recycled trash several years ago, but potential homebuyers were somewhat wary about living in something made of compressed things somebody else had thrown away. And newspapers not long ago told of a man who built a house out of his collection of beer bottles.

Rep. Fred Rooney, D-Pa.,

who managed the garbage bill in the House, said one goal would be finding ways to use garbage as a source of fuel after proper processing and treatment.

Consider this: The Federal Energy Administration said Monday the nation's dependence on foreign oil is still increasing, with imports in the first six months of the year up by 16.7 per cent.

Some energy experts say Americans produce in garbage each year a potential energy source equivalent to 290 million barrels of low sulphur fuel oil or 5 per cent of current domestic oil consumption. And they say total municipal refuse collection could generate 6 per cent of the nation's total annual electric production.

But with \$282.5 million at stake there should be lots of other classy suggestions about what to do with all those empty milk cartons, gum wrappers and cigarette butts that litter the homestead.

For instance:

—How about a new automobile made from gnawed chicken bones that runs on gas made from carrot tops, potato eyes and radish roots.

—Or fake eyelashes made from all that spinach you have to scrape off the kids' plates.

—Maybe cement made from coffee grounds, stale bread crumbs and fruit pits. America could have an interstate highway system that smells like a prune danish.

—Or how about wearing the latest in double-knit suits woven from last night's spaghetti dinner.

Cars, clothes, highways and eyelashes made from garbage would be cheap, but they also would have some obvious drawbacks — a certain air about them, you might say.

Mixed Reaction To PSB Ruling

Springfield's Hydroelectric Project Helped and Hurt.

By CAM MONTGOMERY
Windsor County Bureau

SPRINGFIELD — Two decisions from the Public Service Board Wednesday dealing with the town's proposed hydroelectric project were met with different reactions by the chairman of the town's selectmen.

Although pleased the board did say Springfield did not violate the state's "Right-to-Know Law," some changes in the eminent domain law, as suggested by a special legislative committee, were not as readily accepted.

Chester P. Scott Jr. termed the PSB decision that

selectmen were in compliance with the law for prior warning at the town meeting of 1975 — when the hydroelectric project was given voter approval — was "gratifying," although he expects Central Vermont Public Service Corp. "will continue to harass us" by appealing the decision to the state Supreme Court.

CVPS, the private utility in the Springfield area, is challenging the town's efforts to establish its own municipal facility.

Scott was concerned, however, that a proposed amendment to the eminent domain law would force Springfield to pay the legal and consultant fees for neighboring towns in a condemnation proceeding.

The amendment was

suggested by the Joint House and Senate Committee on Eminent Domain Law, and will be decided in the next legislative session.

"This change bothers us," said Scott. "It would mean that we would have to pay court costs for the other side in a condemnation hearing."

"We take exception to that. It doesn't make sense that one side should pay the legal fees of another. This would mean that Cavendish (where Springfield is attempting to apply condemnation proceedings in order to build a dam for the hydroelectric project) wouldn't have an incentive to negotiate a solution because it wouldn't be costing them anything."

"Certainly Cavendish is a smaller town, with less resources, but I think it would be a better solution for PSB to

provide an attorney for the smaller adversary."

Scott also felt there should be an amendment to the Eminent Domain Law concerning taxes.

"Under the current law," he said, "a municipal plant, set up in another town than its own is taxed differently than private plants in the same town. In the case of the municipal plant, only the land, not the equipment is taxed. If we had a generating plant, say, in Cavendish, they could tax the land it was on, but not the facilities. This would mean Cavendish couldn't get a fair market value assessment for tax purposes."

"We don't think this is right, and we would support legislation to devise a formula so that municipalities in other towns would have to pay the same taxes as would private utilities."

Except for these changes, Scott said, the committee left the statute alone — something Springfield has been supporting and Cavendish has opposed. That essentially puts the final determination for land condemnation in the hands of the Public Service Board.

Scott also announced Wednesday that R. W. Beck Co., the engineering firm for the hydroelectric project, would hold an open public meeting Oct. 6, at 7:30 p.m. in Springfield Town Hall to discuss its final feasibility report. Scott said there would be a meeting Oct. 7, also, if it is found it is needed to answer further questions.

Panel Told Dickey Power Helped By Cheap Interest

By BOB CUMMINGS

Staff Writer

BANGOR — The Dickey-Lincoln hydroelectric dams may produce electricity cheaper than private power companies could only because federal interest rates are pegged arbitrarily below actual costs, a Citizens Committee appointed by Gov. James B. Longley was told Monday.

John Lawrence, a consultant employed by the U.S. Army Corps of Engineers, told the committee that his figures assume that the money needed to finance the power dams can be borrowed at 6½ per cent interest.

He said the comparable figure for a private utility is 10 per cent.

"Dickey-Lincoln costs are relatively lower because interest rates are lower," Lawrence said in response to questions from committee member William Shipman, a Bowdoin College economist.

Also a factor in the economic feasibility of the project, Lawrence suggested, is the freedom of government projects from paying taxes.

Lawrence said the annual "fixed costs," which include taxes and interest, is computed at 7.5 per cent for Dickey-Lincoln. The Army says "fixed costs" total between 14.5 per cent and 16.5 per cent for privately financed power

Committee Chairmen John Robinson argued that government projects should stand on their own merits and not take "unfair advantages through low interest rates and freedom from taxation."

Robinson asked what the comparable costs would be if both public and private projects were assumed to pay the same interest.

Lawrence said he didn't know and that it was beyond the scope of his contract with the U.S. Army Engineers to find out.

He said, however, that his contract may be amended to compute such figures. "We have wrestled with this for some time. The Engineers are very concerned about comments of this kind coming up."

The committee is reviewing the material being generated by the engineers and their consultants and eventually will recommend to Gov. Longley whether the controversial project should be built.

Its recommendations will be strictly advisory, since the project is federally financed and doesn't require state approval. As a federal project, it is exempt from Maine environmental laws.

Lawrence also revealed that the Army is doing a 50 per cent larger project than that authorized by Congress.

Under consideration, Lawrence said, is

See DICKEY

Back Page This Section

RUTLAND, VT.
HERALD
D. 22,000

SEP 30 1976

BANGOR, MAINE
NEWS
D. 73,000

OCT 2 1976

Municipal power project dead for now

PAGE ONE

Berlin's municipal power project is dead, at least for the foreseeable future.

City Council formally voted to kill the municipal project Monday night. The final rejection of the stalled project came on a seven-to-two roll call vote.

Councillors Yvonne Coulombe, Robert Olivier, Albert Nadeau, Jimmie Poore, Thomas Fortier, Wilfrid Routhier and Mayor Laurier Lamontagne voted against an amended resolution authorizing the power project.

Only Councillors Donald Duquette and Albert Theriault supported the resolution. They are considered by observers to be the only TEPCO-block members still on the Council.

Had it passed, the municipal power resolution would have appropriated \$60,000 in city money for efforts by the Board of Electric Utility Commissioners (EUC) to acquire the Smith Hydroelectric plant and local transmission lines from the Public Service Company of New Hampshire (PSNH).

The EUC had been authorized to make a purchase offer to PSNH when City Council passed a similar resolution weeks before the Feb. 24 municipal elections. The earlier resolution had not actually allocated funds for the project, which would have included the potentially expensive eminent domain proceedings before the New Hampshire Public Utilities Commission and Superior Court.

Action on the municipal project was delayed by the EUC after the city elections drastically altered the balance of power on the Council. The EUC sought advice from the new administration before proceeding with the project.

After meeting behind closed doors with Special Counsel Richard Upton, the EUC's legal advisor for the project, Council decided August 26 to vote on a new municipal power resolution including an allocation of funds for the project.

Little debate preceded Monday's final vote on the resolution. Both supporters and opponents of the municipal project had anticipated the seven-to-two vote.

As the Council finished its agenda, however, municipal power advocates stepped up to the public's microphone to criticize the Council's vote.

Attorney Earl Gage, who has acted as attorney for TEPCO, criticized opponents of the resolution for linking municipal power to the TEPCO nuclear-

aluminum project.

"Municipal power is not TEPCO. It is a project to help the people of Berlin," he declared.

Councillor Poore disagreed. He related the Smith-Hydro project to the original TEPCO contract with the city and the referendum on municipal power.

Poore pointed out that the municipal takeover was recommended in a report prepared for the EUC by Frank Sahlman and John Harris. Harris has acted both as a consultant for the EUC and as the major promoter of the TEPCO nuclear-aluminum project.

Poore indicated that he was against any project that would involve Harris. He said that TEPCO had failed to produce the promised 1,500 jobs that supposedly would have been created by the nuclear-aluminum project.

Poore also rapped the EUC for doing what he saw as inadequate research on the project. The Sahlman and Harris report was reviewed by R.W. Beck Engineering. Poore agreed with

Gage, but "They did not do an in-depth study. They reviewed the figures and walked through the (Smith-Hydro) plant."

Gage said the people of the city were getting the vote they deserved from Council. He observed that very few citizens had come forth to pressure the Council on behalf of the municipal power project.

As for the future, Gage said he and the TEPCO promoters would continue to promote the industrial project despite the loss of support in the wake of city elections which removed most of the TEPCO backers from Council.

"Things are going very well on the industrial project," he claimed.

In a Sept. 13 letter to the Mayor and Council, Gage indicated that TEPCO would consider a "uniting of the Berlin Municipal Project with the TEPCO-I.G.&T (International Generating and Transmission, a TEPCO subsidiary) industrial project...an interference with contract."

"Thus, if the Council so unites

these separate though in many ways parallel projects, then it would be utterly destructive of Berlin's interests, since both projects must thereby suffer," the letter continues.

That letter was forwarded to Attorney Upton for comment. Upton had not replied by Monday.

CONSERVATION

BENNINGTON, VT.
BANNER
D. 6,500

SEP 29 1976

Practice energy saving year-round

By DIANNE H. LAMB
UVM Home Ext. Agent

REMEMBER ENERGY
Conservation Month in Vermont runs through Oct. 15. Here are some energy tips to practice now and all year through.

Lighting: It's easy to use more than you need. Careful use of lighting provides the homemaker other conservation opportunities. Save electricity through wise lighting.

Remove one bulb out of three and replace it with a burned-out bulb for safety; replace others with bulbs of the next lower wattage. Be sure to provide adequate lighting for safety (e.g. in stairwells). Concentrate light in reading and working areas and for safety.

This should save about four per cent in electricity costs in the average home. If everyone took these conservation steps, the nation's consumption of energy would drop by about 50 million kilowatt hours of electricity per day (enough to light about 16 million homes).

TURN OFF ALL lights when not needed (One 100 watt bulb burning for 10 hours uses 11,600 BTU's or the equivalent of a pound of coal or one half pint of oil).

Use fluorescent lights in suitable areas—on the desk, in the kitchen and bath, among others. They give more lumens per watt. One 40 watt fluorescent tube, for example, provides more light than three 60 watt incandescent bulbs. (A 40 watt fluorescent lamp gives off about 80 lumens per watt; a 60 watt incandescent gives off only 14.7 lumens per watt. The lower-watt but higher-lumen fluorescent would save about 140 watts of electricity over a period of 7 hours.)

Where higher illumination is desirable in areas lighted by incandescent bulbs, use one large bulb instead of several small ones. The larger bulb is more efficient.

Use long-life incandescent lamps only in hard-to-reach

places. They are less efficient than ordinary bulbs.

Keep lamps and lighting fixtures clean. Dirt absorbs light. Reduce or eliminate ornamental lights except on special holidays or festive occasions. (Use outdoor lights only when essential.)

Light colors for walls, rugs, draperies and upholstery reduce the amount of artificial lighting required. Install solid-state dimmer switches when replacing light switches. They allow more efficient use of light.

Year round energy savers: Close off unoccupied rooms and turn off the heat or air conditioning. Use bath and kitchen ventilating fans only as needed. Repair all leaky faucets, especially hot water faucets, as quickly as possible.

INSULATE HOT water storage tank and piping. Turn off radio and TV sets when not in use.

Instant-on TV sets, especially the tube types, use energy even when the screen is dark. To

The lecture-demonstration program will be presented in the morning and repeated in the afternoon. The event is open to the public free of charge. Further details of the day's activities will be announced in the next few weeks by the extension service.

Energy savers: home heating, cooling bills

#6508
The 70 million households in the United States use almost 20 per cent of all the energy

consumed in the country. About 54 per cent of the energy used in homes goes in-

to heating and cooling; about 15 per cent is used just to heat water. Cooking, refrigeration, washing and drying clothes and dishes, and other appliances account for the rest.

Yet, an estimated 30 per cent of the energy used in this country is wasted. Individually and collectively, American families can help eliminate much of that waste by wise use of energy and, in the process, save precious energy resources for the nation and money for themselves.

The Workshop, Yard, and Garden

• Maintain electrical tools in top operating shape, clean and properly lubricated.

• Keep cutting edges sharp. A sharp bit or saw cuts more quickly and therefore uses less power. Oil on bits and metal cutting compounds on

saws also reduce power required.

• Buy the power tool with the lowest horsepower adequate for the work you want it to do.

• Remember to turn off shop lights, soldering irons, gluepots, and all bench heating devices as quickly as possible.

• Use handtools in the workshop and hand lawnmowers, pruners, and clippers in place of powered equipment in the yard and garden whenever possible.

• When using gasoline-powered yard equipment, do not allow it to idle for long periods. Turn it off and restart when ready to resume work.

• Plant shade trees and vines in the south and west sides of homes to provide protection against summer sun and to let the natural light in the winter.

eliminate this waste, plug the set into an outlet that is controlled by a wall switch; turn the set on and off with the switch. Or ask your TV serviceman to install an additional on-off switch on the set itself or in the cord to the outlet. Do as much household cleaning as possible with cold water. This saves energy used to heat water (and some cleaning products work better in cold water).

If you have a fireplace, be sure the damper is closed except when the fire is going, otherwise heated or cooled air goes right up the chimney.

—O—

TWO ITEMS of interest — Oct. 6 at St. Margaret Mary Parish Center in Arlington our Annual Craft Day. Workshops include salt dough mushroom, plaques and block printing. Pre-registration is required.

And on Oct. 20, Energy Efficiency in the Home, presented by Deborah Goff, CVPS Home Economist, 7:30 p.m., Conference Room at the Extension Office, Bennington.

Energy Fair To Look At Alternate Sources

CLAREMONT — An all-day energy fair, demonstrating ways to conserve energy, heat with wood and utilize wind and solar power, will be held Oct. 30 at the Sullivan County Home Extension Office, Bennington. The fair is sponsored by the county home energy conservation tips and chain saw safety and maintenance.

There will also be fuel wood-

cutting demonstrations at a nearby woodlot, educational displays by several commercial suppliers of energy-related products, and equipment related to wind and solar power, as well as an electric car. Conventional heating systems such as oil heat and electricity will also be exhibited, with the emphasis on conservation.

The lecture-demonstration program will be presented in the morning and repeated in the afternoon. The event is open to the public free of charge.

Further details of the day's activities will be announced in the next few weeks by the extension service.

OCT 2 1976

LEBANON, N. H.
VALLEY NEWS
D. 8,500

OCT 12 1976

University to utilize variety of energy-conserving plans

by Jefferson Morley

Few things have outstripped the rising cost of education in these inflation-padded years, but the price of energy is certainly one of them. The University spends \$95 million a year on energy, or about \$1000 per hour, according to Robert Sherman, director of the University Utility Division.

"Conservatively speaking, students could cut this figure 10 per cent by turning out lights, using less hot water, and keeping their rooms cool in the winter and warm in the summer," Sherman estimated.

Martin Griffin, Associate Dean of Yale College, explained student's carelessness about energy consumption. "They don't see the bills," he said. "At home students are asked to turn out lights and keep windows closed. At Yale no one has pointed out to them that this is a problem."

YCC Involvement

The Yale College Council (YCC) and the Division of Utilities and Engineering plan a public campaign to persuade students and faculty to conserve energy.

"We would like to get people thinking about how much energy is wasted by a 45 minute shower or by a light bulb burning all night. Right now,

individuals don't take it too seriously," said Peter Langerman, 1977, a member of the YCC Operations Advisory Committee.

"Many students do not appreciate Yale's conservation efforts," he added. "They've done an incredible job cutting down energy use."

Statistics support Langer-

RUTLAND, VT.
HERALD
D. 22,000

SEP 30 1976

Bike-a-thon Wheels Through Montpelier

MONTPELIER (AP) — Three state agencies are teaming up to sponsor an afternoon of bicycling this weekend to highlight Vermont Energy Conservation Month.

The 10-mile bike-a-thon will be held on U.S. 2 between Montpelier and Middlesex Sunday.

The event is sponsored by the state agencies of Transportation and Environmental Conservation, the state Energy Office and a coalition of bicyclists.

The agencies say trucks will follow the bikers along the scenic route for those who have not been on a two-wheeler for a while and are not sure of their range.

man's assertion. In 1970, the University burned 340,000 barrels of heating oil. Continuing at that rate, Yale would have required 380,000 barrels in 1976. Sherman expects, however, that Yale will burn only 284,000 this year, a 38 per cent reduction.

Computer Controlled

The University hopes eventually to connect almost all 200 buildings to a Building Maintenance Operations Control (BMOC) system already operating in about 60 buildings. The BMOC plan centrally monitors energy use on campus, and will soon be linked to a computer which can automatically shut off unneeded heat or air conditioning and perform other energy-saving operations.

Home energy session planned

CLAREMONT: H.E.A.T., or Home Energy Answer Time, is currently in the planning stages at the Sullivan County Cooperative Extension Service. The all-day affair is set for Oct. 30 at the Sullivan County Home, Unity.

Preliminary plans show that the program will include a four-part series of in-depth lecture-demonstration on different aspects of energy use and conservation. These talks slated to be given in the morning and repeated in the af-

SNET Engineer Creates Energy-Free Hot Water

John Galt, fictional hero in Ayn Rand's "Atlas Shrugged," stopped all the motors of the world to make a point.

Southern New England Telephone's Everett Ellis, Hartford building superintendent, has also stopped the motors—but to make hot water instead.

Ellis, a Cromwell resident, has devised a nearly energy-free hot water source for the 350 employees who work at SNET's 52 East Center Street building in Manchester. Thanks to the system, wasted heat from both a furnace exhaust stack and an air conditioning hot gas line is trapped and put back to work.

Ellis's heat bypass system is simple in concept. Briefly: last September he installed copper tubing coils in the building's smokestack which captured escaping furnace heat to warm the water coursing through the coils. Pipes connect the coils to a 300-gallon water storage tank. The system heats up the water to between 125

and 150 degrees—plenty hot for lavatory and shower use.

When the furnace shut down due to warmer weather, Ellis added another heat by-pass system that makes similar use of compressor-generated heat to warm the hot water supply.

These two procedures will allow SNET to save an estimated 2,000 gallons of fuel oil yearly resulting in an annual savings of about \$800. The initial investment in labor and pipe will be returned within one year. In addition to making possible energy savings the system will help improve the environment through a reduction in pollutants.

MERIDEN, CONN.
JOURNAL
D. 10,000

OCT 7 1976

CLAREMONT, N.H.
EAGLE TIMES
D. 7,000

OCT 1 1976

ternoon, will cover such topics as wood stove installation and safety, insulating your home for winter, homemaker helps for conserving energy, and chain saw safety and maintenance.

Plans also show there will be an on-going fuel wood cutting operation in a near by wood lot. Demonstrations and talks related to the home fuel wood supply will be given at the wood lot site. Educational displays by many commercial suppliers of energy and energy

related products will add another dimension to the day's program. Such items as wind energy, solar energy, and an electric car will be included in the display along with more conventional items such as oil heat and electricity.

This program is open to the general public free of charge. It is hoped that many people will plan to take advantage of the timely information that will be available at the Home Energy Answer Time H.E.A.T.

JUL 10 1976 *ELK*

Massachusetts is left with only one major, short-term option for energy use

By MICHAEL S. DUKAKIS
Governor of Massachusetts

At a recent energy conference, a local banker commented on New England's lack of local energy supplies, observing, "If the Pilgrims had landed in California, New England would be the nation's most scenic national park today."

Fortunately, the Pilgrims landed in Plymouth. For 200 years, New England prospered through perseverance, imagination and initiative. We found that water could be harnessed for power, and thus built the largest textile industry in the nation. We found that whale oil could be burned for fuel, and towns like New Bedford became whaling centers of the world.

But as we grew, our economy changed. Whale oil and water power were replaced by coal, oil and natural gas — resources we did not have. Our manufacturing industries found it increasingly difficult to compete with their counterparts in regions of the country close to vital new energy resources. Some manufacturing industries relocated in the South and Southwest. Many stayed, since the value of proximity to the marketplace outweighed the cost of transporting energy supplies.

Recent developments in the energy area are familiar: the sharp move away from coal to oil in the '60s; the development of air pollution standards cementing this

realizing its true potential. We can hope to move away from oil for electrical generation, but even with the most optimistic projections, we would only be able to reduce our total dependency on oil by 8 percent, and the economic costs of this move would be very high.

• The differential between energy costs in New England and those in other regions will shrink in the coming years. Congress will probably allow higher natural gas prices, while outlawing natural gas as fuel for electric power, and will have to engage in rapid and costly efforts to construct new power plants.

Our options, in dealing with high energy prices, are limited. New supply initiatives, while necessary, will not decrease our costs. Our ability to shift away from oil in the next decade is negligible. The prime supply alternatives open to us are George's Bank oil and solar energy. Yet it will not be until the mid-80s that these alternatives will begin to play a major role in the mix of energy used in New England. This leaves us with one major, short-term option: learning to use what we have more efficiently.

I am not talking as much about energy conservation as I am about energy efficiency. Our homes and office buildings are little more than energy sieves, and our automobiles are ravenous in their appetites for fuel.

If we begin a massive program to build and repair our homes and offices, limiting energy waste; if we demand that Detroit build efficient cars; if we explore the myriad ways to make oil and gas heat more efficient; if we en-

trend; the oil import quotas; and finally, the tripling of international oil prices.

What was once an energy "problem" became a crisis. Because while we in New England depend heavily on oil, and are subject in large part to the whims of an international oil cartel, much of the country enjoys using natural gas at regulated prices one-third the cost of oil. Very simply, while oil prices have tripled, natural gas prices have remained close to their pre-embargo levels.

These escalations have made energy prices a tremendous problem for the manufacturing and construction industries in Massachusetts. Labor, business and government are all aware of these difficulties. There is agreement on the existence of a problem, but no consensus on its solution.

However, three fundamental facts that will shape our choices must be recognized:

• The cost of new energy sources, especially new electrical power plants, will be substantially higher than that of existing sources. Nuclear power may be a valid complement, and while in the future it may provide cheaper electricity than fossil fuel, it certainly cannot lower our existing electricity bills.

• Our ability to reduce our reliance on oil is severely limited. Our transportation system in 1986 — and very likely in 1996 — will be oil fueled. Electricity is not competitive with oil for home heating, and probably will not be for the next decade. Solar energy is an exciting and valid alternative, but we must overcome many hurdles before

courage our industries to purchase more effective machinery, to reuse their waste heat, and to make their products more energy-efficient; we could save not only millions of barrels of oil, and billions of dollars, but we could also create thousands of jobs.

Within state government, we have already met our goal of reducing energy consumption in state buildings by 20 percent during the past year. The state has also closed down or consolidated underused state facilities, moved employees from rented space to the new McCormack office building, and reduced lighting on state highways without affecting public safety.

We are also working with cities and towns in the state to assist them with energy conservation guidelines and training. We have learned from Project Conserve that there is a vast potential for saving millions of gallons of oil, as well as millions of dollars in better home insulation and construction.

It is difficult to understand the pervasive and genuine lack of enthusiasm for energy efficiency and savings. This alternative is far superior economically, socially and environmentally to any supply alternative now being put forth. The potential in this area is tremendous, and can be tapped immediately if we in Massachusetts realize the paradoxical axiom that in today's society, using less may, truly, mean more.

UTILITY RATES

Electric Rate Hearings Open In Concord

CONCORD, N.H. (UPI) — A consumer representative says the public is outraged by electric rates and rate structures but is actively discouraged from taking part in hearings to change those structures.

A veteran legislator replied things will just get worse if the public adopts a "politics is too dirty for me" attitude and doesn't keep fighting.

Pauline Anderson of CONNECTION, a legal program representing low income electric users, and Rep. Eugene Daniell, D-Franklin, testified Thursday during the first of two days of hearings on electric rates by the U.S. Senate Commerce Committee, conducted by Sen. John Durkin, D-N.H.

"The ordinary person knows participation in the regulatory process will be discouraged and ignored. That is the reason people are turned off on the governmental process," Miss Anderson said.

Daniell said much of the

problem is public apathy "and people saying politics is too dirty for me."

Durkin criticized the Public Service Co. of New Hampshire for sending none of its officials to testify at the hearing. He asked particularly why Franklin Hollis, a lawyer for the PSC, sent a letter saying he needed more time to be able to answer "complex questions" posed by Durkin.

"Why is it someone who is president of two small electric companies which buy their power from the Public Service Co., and a director of the Public Service Co., and a lawyer for the Public Service Co., says he is not prepared to testify," Durkin asked.

Hollis, who is president of Concord Electric and Exeter & Hampton Electric, said in a letter he learned only Monday he would be called to testify, and was tied up in court all week. He said preparation of testimony requested would be time-consuming, and the subjects being covered "are

already the subject matter of very extensive proceedings presently going forward before various other state and federal agencies."

Daniell testified he was "completely convinced there is a criminal conspiracy between the Public Service Company and the Conoco oil company" to get the highest rates out of the public through manipulation of fuel costs.

He noted Conoco supplies the majority of the oil burned by the PSC at its oil-powered stations, and Consolidation Coal supplies almost all the coal at the PSC's coal-fired station in Bow. Conoco and Consolidation are owned by Continental Oil.

Daniell said when he went to the PSC to check on its contract with Conoco he found the 1972 contract had been voided by a 1975 letter from Conoco. He said PSC officials told him since then they had operated according to the letter and a "verbal contract."

"I feel that verges on the

criminal," Daniell said.

Daniell, a long-term foe of the PSC, charged that company reached the position where it sells 90 per cent of the electricity used in New Hampshire "because of a great deal of political influence."

He said since 1950, when he first became involved in utility rate hearings, "I've found the easiest way of losing your job as a Public Utilities Commissioner is to show a little interest in the consumers."

Daniell charged the PSC has excessive influence on the selection of commissioners and accused it of "domination of the staff" of the PUC.

He cited the case of David Lessels, finance director of the PUC, who was removed to an audit of an obscure small town water company after questioning the PSC publicly about a \$4.5 million error in their coal stockpile. The PSC since has admitted it charged consumers for four and one half years for coal it never burned. It now is repaying that money through a reduction in the monthly fuel surcharge on electric bills.

THE SPRINGFIELD UNION
SPRINGFIELD, MASS.

D. 83,064

SEP 29 1976

CHELSEA, MASS.
RECORD
D. 6,050

SEP 30 1976

Rates Flatly Opposed

NORTHAMPTON — Area industry officials and business and economics professors from the University of Massachusetts Tuesday strongly criticized the flat-rate electricity proposal which will appear on the November ballot.

Eight panelists told more than 50 persons at a breakfast meeting, sponsored by the Greater Northampton Chamber of Commerce, that the projected increases in electricity costs to industry under the flat-rate system would discourage expansion of business in this state, and eventually force some companies out of business, resulting in the loss of 36,000 jobs.

Those at the meeting, mainly members of Chambers of Commerce from Northampton, Easthampton and Amherst, opposed the referendum question, which has been largely sponsored by Massachusetts Fair Share, a consumer lobbying group.

The speakers also said increased electricity costs would eventually be passed on from commercial and industrial users to the consumer, so the

benefit of lower home electric bills would be lost.

Under the proposed uniform electric rates, utility companies would charge a uniform rate per kilowatt hour to all customers, whether residential or industrial. Presently, large industrial users pay a proportionately lower price for electricity than residential customers.

Proponents argue that the present system penalizes average citizens and those who attempt to conserve energy.

Presents Arguments For Reform Of Electric Rates

EDITOR, CHELSEA RECORD:

As Chelsea residents know by now, Mass. Fair Share is actively campaigning for Electric rate reform. Chelsea Fair Share members, along with 14 other Fair Share Chapters throughout the state, gather over 100,000 signatures over the past six months so that a good rate reform bill would be placed on the ballot in November. This "flat rate" bill was clearly needed because not only were our electric bills high but we knew that the rates would be doubled in 5 years (not including the fuel charge).

We felt as long as the big users, with their bargain prices, were putting large demands on our scarce resources, it was obvious that more power plants would be needed to meet

the demand. And additional power plants mean more rate increases.

Fair Share rates or uniform rates would encourage the large user to stop their wasteful use of electricity. The smaller users cannot cope with any more rate increases caused by the big user. Why should the small, residential user pay for expensive power plants they didn't cause and don't need. And the big users can afford the 1/2 of 1 per cent increase that will result from Question 7.

Question 7 will save residential users 10-20 per cent each month, and small businesses, churches, and municipal buildings would save up to 40 per cent.

Natalie Schneiderman

CL&P Must Return \$1 Million

WASHINGTON — The Federal Power Commission (FPC) has given final approval to the "R-2" rate settlement agreement requiring the Connecticut Light & Power Company to refund \$1 million to seven utilities.

The FPC approval finalizes an agreement between CL&P and members of the Connecticut Municipal Electric and Gas Association, which includes Norwich, Groton, Jewett City, Wallingford, and two taxing districts of Norwalk. The decision also affects the Bozrah Light & Power Company, although it is not a member of the Association.

While the refunds are expected to be made by October 10, whether or not the utilities' customers will see any of it is an open question.

The decision means a \$188,443 refund for Norwich, \$360,983 for Groton, \$341,513 for Wallingford, \$12,668 for Jewett City, \$40,350 for the Norwalk Second Taxing District, \$41,274 for the Norwalk Third Taxing District, and \$24,861 for the Bozrah Light & Power Company.

In addition to the refunds, the settlement, which covers rates in effect from September 2, 1974 to March 1, 1976, stipulates that the utilities receive seven per cent interest on payments made before October 10, 1974, and nine per cent interest on payments made after that.

William Clinton, head of the Groton Utilities Department, said he will recommend to the commissioners that the monies be returned to the customers. He said he hasn't decided

whether this would be done in installments, or in a lump sum.

He said that the firm's per cent of the legal fees for the case have already been paid through the normal operating budget and that this should not be a factor in the commission's decision on his recommendation.

Norwich Department of Public Utilities General Manager Robert E. Grimshaw said that no decision has been made on how the refunds to his department will affect customers.

Frank Zavitoski, head of the Jewett City light Plant, said he would wait to discuss the matter with the Commissioners in his borough before making a statement. He said he would also like to see what course of action the Association may take on the customer refund issue.

Zavitoski noted that a refund of this amount (\$12,668) is small.

This case is one of five challenges the municipals have lodged against CL&P. A challenge of fuel adjustments levied by the firm in 1971 and 1972 has been the subject of a settlement, which will offer the municipals a \$103,498 refund.

A \$54 million anti-trust suit lodged by the municipals against CL&P is still pending. Atty. Charles F. Wheatley, counsel for the Association, said depositions are now being taken and the case won't be heard before December.

In May, the FPC ruled that CL&P's "R-1" rate, effective between January, 1973 and September, 1974 was "unlawful and excessive," and ordered the firm to submit revised rates and a schedule of refunds. CL&P, Wheat-

ley said, appealed this motion, and FPC action on it is still pending.

If the FPC rejects the appeal, he said, the matter could be appealed through the courts.

The municipals have also appealed the R-3 rate, which took effect this past March, on the grounds that it yielded profits much in excess of CL&P's projections.

Wheatley said he expects the FPC to act on the municipals' motion for dismissal of the rates in about two weeks. He said he does not know if the Association will pursue the matter through the courts if the FPC renders an inimical ruling.

GARDNER, MASS.
NEWS
D. 8,033

SEP 29 1976

Gas Co. Wins Rate Hike

BOSTON (AP) — Commonwealth Gas Co. has been granted a rate increase totaling \$7,637,000, according to Chairman Harold J. Keohane of the state public utilities department.

The company, making its first request since 1972, had asked for a rate increase of \$11,342,000.

Keohane said Tuesday the amount requested was reduced by eliminating certain claimed expenses for property taxes, bad debts, abandoned property and an appliance servicing and rental program.

NORWICH, CONN.
BULLETIN
D. 31,500 S. 29,000

OCT 2 1976

PAWTUCKET, R. I.
TIMES
D. 33,500

OCT 6 1976

BIDDEFORD, MAINE
SACO JOURNAL
D. 9,000

OCT 8 1976

The Old One-Two

Consumer has until Oct. 21 to enjoy old electrical rates

AUGUSTA, Maine (AP) — The 306,000 customers of the Central Maine Power Co. will begin paying between 7.95 per cent and 15.92 per cent more for electricity after Oct. 21.

Thursday night, Maine's Public Utilities Commission approved the residential electrical rates that had been proposed by the state's largest electric company.

The average CMP customer, who uses 500 kilowatt hours of electricity a month, will see his bill increase by 8.4 per cent, from the current \$18.92 to \$20.51.

Persons using 300 kilowatt hours of electricity a month face a 7.95 per cent increase in rates, the lowest increase.

While persons who use 25 kilowatt hours a month, such as owners of vacation homes with few electrical installations, face

a 15.92 per cent boost in rates, the highest of the hikes.

The residential rates will provide the utility with an additional \$6.3 million a year. Earlier, the PUC approved higher rates for industrial and municipal customers of CMP totaling about \$5.1 million.

But despite the PUC decisions, the rate case that began Dec. 1, 1975 is far from over.

CMP is scheduled to appear before the State Supreme Court in Bangor this afternoon to seek an order forcing implementation of the new, higher rates to bills that were issued as early as last Friday.

And CMP and several of its large industrial customers have appealed the PUC decision of Sept. 1, which authorized a to-

tal rate increase of \$11.4 million.

CMP says it did not receive enough money and the industrial customers say they are being forced to subsidize other customers of the utility.

Earlier Thursday, the PUC rejected a proposal by Commissioner Peter A. Bradford, which would have reduced the rates currently paid by users of between 100 and 300 kilowatt hours of electricity a month.

But Bradford's plan would have caused increases estimated at between 25 and 77 per cent for high-volume users of electricity—such as operators of small farms.

Here is how some monthly utility bills will increase under the new rates:

—The basic charge for elec-

trical service will jump by 13.33 per cent to \$3.40 from \$3.

—The cost of 250 kilowatt hours of electricity will increase by 8.56 per cent to \$12.81 from \$11.80.

—The cost of 750 kilowatt hours of electricity will increase by 8.7 per cent to \$27.99 from \$25.75.

—The cost of 1,000 kilowatt hours of electricity will increase by 8.87 per cent to \$35.46 from \$32.57.

—The cost of 3,000 kilowatt hours of electricity will increase by 9.94 per cent to \$91.66 from \$83.37.

—The cost of 5,000 kilowatt hours of electricity will increase by 10.2 per cent to \$147.86 from \$134.17.

—The cost of 10,000 kilowatt hours of electricity will increase by 10.41 per cent to \$283.36 from \$256.17.

MISCELLANEOUS

NE Govs Seek Business Tax Break

By LARRY WILLIAMS
Staff Reporter

A coalition of seven Northeast states has decided to seek federal business tax incentives and creation of an "energy development corporation" to pull the region out of its economic slump.

But at a Friday meeting in Hartford, the coalition balked at a more ambitious proposal for a regional development corporation to provide financial incentives for business.

Connecticut Commerce Commissioner Edward Stockton, who attended the coalition meeting with Gov. Ella T. Grasso, said the states' representatives decided to pursue these efforts individually.

The so-called Coalition of Northeast Governors met at the Hartford Sheraton for about three hours, included a 20-minute session with visiting Democratic Presidential candidate Jimmy Carter.

The candidate told reporters

after the closed-door session he supports "special attention" in federal programs for areas "particularly the Northeast" with high unemployment rates and costly energy sources.

He promised his administration, if he's elected, will take the Northeast's problems into account in its allocations of federal funds.

Carter accused the Ford Administration of ignoring the region's unemployment problems and aggravating its energy problems.

After Carter's appearance, the coalition met for more than an hour and a half behind closed doors. Gov. Hugh L. Carey of New York and Gov. Philip Noel of Rhode Island were other top state executives in attendance.

Vermont, Massachusetts, New Jersey and Pennsylvania had officials on hand to represent their governors.

New Hampshire, with a Republican administration, and Maine, with an Independent governor, are not members of the coalition.

Although Mrs. Grasso left abruptly after the meeting, Stockton told reporters the coalition had decided to support proposals for investment tax credits and accelerated depreciation of business equipment taxes for areas with high unemployment rates.

Stockton said that, for example, a business in a state with unemployment 1 per cent more than the national average might be entitled to a 2 per cent tax

investment tax credit in excess of the 10 per cent already in effect.

The change in federal corporate business taxes would require Congressional action, Stockton said, as would the creation of an energy development corporation to push the region toward "energy independence."

Stockton said Carter gave the governor's a generally positive response when asked for his backing.

As for a development corporation to improve the overall region's business climate, Stockton said the states prefer

to pursue their own plans for economic improvement.

Carter said he approved of the regional approach to economic improvement. One of the aims of the Northeast however, is to better its competitive position with the Southeast and Southwest, a stand on which Carter didn't comment.

Stockton said the coalition wants more precise proposals on the tax programs and energy corporation before putting together a drive for Congressional action.

He said the coalition plans to meet again Nov. 13 and 14 in Saratoga Springs, N.Y.

MANCHESTER, CONN.
HERALD
D. 14,500

SEP 29 1976

NEW MILFORD, CONN.
TIMES
D. 8,610

OCT 2 1976

Computers help avert region energy shortage

BOSTON (UPI) — A network of computers is helping the New England region get through the energy shortage.

The computers, which monitor everything from oil prices to auto sales, are used by the governments of all six New England states. The system, called The New England Energy Management Information System, was described Tuesday at MIT, where it was first developed.

Officials said NEMIS has helped save New England over \$500 million in oil import fees and helped the states formulate effective energy conservation policies.

Li. Gov. Thomas P. O'Neill, III, said NEMIS "had proven to be of direct help to the consumer, not just the state governments."

The system is sponsored by the New England Regional Commission, a joint-state agency, and was launched during 1973 in response to the crisis created by the Arab oil embargo. The system consists of a regional computer network and a wide assortment of energy experts.

Public Power Co-Operative Is Official

NORWICH — The Public Power Co-operative comprising Norwich, Groton and Wallingford now has official status.

Norwich Department of Public Utilities General Manager Robert E. Grimshaw said the appropriate forms for creating the co-operative were filed with the Secretary of State's office and

that, on September 24, the organization became a reality.

Grimshaw said he would contact officials of the other two towns in co-operative soon to arrange an organizational meeting.

The public Power Co-operative grew out of by the Connecticut Municipal Electric and Gas Association and is comprised of three of the group's members. While only half of the Association's members are charter members of the co-operative, arrangements will be made to sell electricity to the others, (Jewett City and two Norwalk taxing districts).

The options available to the co-operative, according to Grimshaw, will

be to buy into an existing power plant, build one of its own, or to continue purchasing power from the Connecticut Light and Power Company.

Another matter to be addressed, according to Grimshaw, is whether the co-operative will acquire or build its own transmission lines, or rent them from existing suppliers.

Grimshaw feels the value of a co-operative is that electricity can be provided to customers at a cheaper cost. He has refrained from estimating the extent of the savings.

Grimshaw has said that half of his department's operating expenses derive from the cost of power purchased from CL&P. CL&P costs are similar in Wallingford and make up a higher percentage in Groton, he's said.

NORWICH, CONN.
BULLETIN
D. 31,500 S. 29,000

OCT 2 1976

It Needs Money

Leslie H. Stanley, the diplomat of the Maine Public Utilities Commission, has in his soft-spoken manner underscored the validity of fellow commissioner Peter A. Bradford's strident claim that state utility regulation is less than adequate.

Bradford last week termed state regulation of the nearly 200 public utilities in Maine "a hoax," saying that the PUC lacks both the funds and the manpower to do its job effectively or well.

Now PUC Chairman Stanley responds that Bradford's attention-grabbing comments may have created the impression that the PUC has closed, locked its doors and gone out of business. The PUC continues to work conscientiously under difficult circumstances to serve the public, he says.

Yet with understatement as compelling as Bradford's strong language, Chairman Stanley buttresses the contention that the PUC desperately needs additional funding if it is to adequately protect both the utilities and the public.

Indeed, the need is so great that Chairman Stanley has urged Governor Longley to ask the legislature to increase PUC funding by \$229,000, or about 50 more than it now receives for utility regulation.

The PUC staff is now so small and so overworked, Chairman Stanley says, that auditing is virtually non-existent, the agency is bogged down with hearings on major rate increase requests and, in addition, expects an application for the construction of a nuclear power plant on Sears Island.

In short, he says, unless additional funding is provided, the burden "will be so far beyond our capabilities that we will be unable to do our job."

Together, Commissioners Stanley and Bradford provide eloquent testimony for the urgency of additional PUC funding. Both the Governor and the legislature must respond.

Portland Press Herald
PORTLAND, MAINE
D. 56,603

OCT 4 1976

BERLIN, N.H.
REPORTER
W. 6,700

OCT 7 1976

N.H. awarded
grant by FEA

CONCORD — New Hampshire has been awarded a \$3,922 grant by the Federal Energy Administration to develop a state energy conservation plan. The grant is designed to yield energy savings of at least five percent of New Hampshire's projected energy consumption in 1980.

ACTON, MASS.
ASSABET VALLEY
BEACON
W. 8,700

SEP 23 1976

FEA awards \$112,891 to state for conservation planning

BOSTON — Robert W. Mitchell, Regional Administrator for the Federal Energy Administration, announced a \$112,891 grant to the Commonwealth of Massachusetts for the development of a state energy conservation plan.

The Commonwealth is the first New England state to be awarded funds under Title III, Part C of the Energy Policy and Conservation Act, which provides for technical and financial assistance to the 50 states, the District of Columbia and the five U.S. territories for energy conservation plans. The overall goal for each state and territory will be a five percent reduction in energy consumption projected for 1980.

Mitchell explained that the award to the Bay State is part of \$5 million the FEA is providing

this year for developing state energy conservation plans. "The amount of funding," he said, "is based on the formula: 50 percent according to population; 50 percent divided equally among the states and territories."

Additional funds -- possibly as much as \$50 million each year -- are expected to become available in fiscal years 1977 and 1978 for implementation of the plans.

"We look forward," said Mitchell, "to receiving and approving the planning grant applications from the other New England states. Moreover, we look forward to assisting the states with the implementation of their energy saving plans and working with them to evaluate the results."

Resignation Of PUC Head Demanded

CONCORD, N.H. (UPI) — A New Hampshire state senator studying restructuring of the state Public Utilities Commission has called for the resignation of PUC chairman Alexander Kalinski.

Sen. Al Rock, R-Nashua, Tuesday night was asked on New Hampshire Network what would be the best way to revamp the regulatory PUC, which sets utility rates in the state. Rock chairs a special legislative committee studying the PUC.

"One of the first steps would be to get Mr. Kalinski's resignation as chairman of the Public Utilities Commission because he hasn't been acting in the best interests of the public," Rock answered.

Earlier Rock criticized the PUC for shifting its top financial expert, David Lessels from an audit of the Public Service Co. of New Hampshire to an audit of a Haverhill waste

KEENE, N.H.
SENTINEL
D. 11,642

AUG 11 1976

Chamber Backs UI River Lines

By WALTER DUDAR
Business Editor

The Greater New Haven Chamber of Commerce has come out in support of the

United Illuminating Co. (UI) plan to construct power lines over the Mill and Quinnipiac Rivers.

The chamber's position was announced on the eve of a public hearing on the plan by the Army Corps of Engineers. The hearing will be held in the jury assembly room of the Superior Court building at Church and Wall Streets Thursday at 7:30 p.m.

Opponents of the plan say the lines should be placed underground and under water for esthetic reasons.

In testimony prepared for presentation at the Corps of Engineers hearing, Norman I. Botwinik, chairman of the chamber board, says this concept would drive up the cost of electricity to all New Haven consumers and hamper efforts to attract and retain job-producing businesses.

"We are greatly concerned with the lack of growth in the number of industrial jobs in recent years in this area and in the state," Botwinik said.

"Clearly, one of the principal factors contributing to this problem has been the somewhat higher cost of doing business in Connecticut. In this period of higher energy costs, every effort should be made to minimize the additional burden which is

mercial and industrial users of electricity."

Botwinik noted that the estimated \$9 million extra cost to install the lines underground and underwater could be levied against New Haven customers exclusively, as a surcharge on their monthly bills.

"We must recognize both the economic and esthetic significance of projects," Botwinik said.

Botwinik, who is president of Botwinik Bros., Inc., said the proposed route for the new UI lines will have "minimal" esthetic impact because the installation would be in an area containing gas storage tanks, oil terminals or "tank farms," a cement plant and a lumber yard.

"While these are all essential operations," Botwinik said, "they are not the type noted for extreme visual attractive-

ness."

The lines have received the approval of the State Public Utilities Commission (PUC), now known as the State Public Utilities Control Authority (PUCA); the State Department of Environmental Protection (DEP), State Board of Harbor Commissioners for New Haven, Connecticut Department of Transportation (DOT), Federal Aeronautics Administration (FAA) and the Coast Guard.

The sanction of the Army Corps of Engineers is the final approval required before construction can begin on the project, which will transmit power from the new \$126 million New Haven Harbor Station to central New Haven and also create a needed link with the New England power grid which provides backup electrical service in the six-state region.

Tanker Terminal Under Study

PAGE ONE

By MICHAEL J. WHATEEN
The State of Connecticut is considering creation of a public authority to build a terminal for super tankers three miles off New Haven which could supply refined oil to New England at a rate of 660,000 barrels a day.

The plan could eliminate the need for an off-shore refinery in Long Island Sound, state officials said.

The state departments of Commerce and of Planning (Energy Policy are pre-

the Hartford Courant
HARTFORD, CONN.
170,453 SUN. 219,365

20 1976

plan a report for Gov. Grasso on the \$500-million terminal proposed by two engineering firms.

Joseph T. Powers, manager of the Eastern Marine Division of Morrison-Knudsen Co., of Boise, Idaho, said the proposal could be offered to the major oil companies, "but we wanted the state to have first crack at it." The division's headquarters are in New London.

The proposal came jointly from Morrison-Knudsen and Parsons, Brinckerhoff, Quade & Douglas Inc. of New York. Parsons designed the terminal and Morrison-Knudsen would build it for the state.

Powers said the terminal could supply refined oil to Connecticut, Massachusetts, Rhode Island, New York and New Jersey, ending the use in those states of thousands of trucks and small tankers carrying refined oil.

Super tankers of up to one million dead-weight tons would carry oil from refineries all over the world to Long Island Sound to supply New England, without construction of an oil refinery, Powers said. The refinery

plan has been opposed by residents and environmental departments in the coastal New England states.

Edward J. Stockton, commissioner of the state Department of Commerce, and Lynn Alan Brooks, commissioner of the state Department of Planning and Energy Policy, are studying the terminal proposal and will report to Mrs. Grasso in August.

Brooks was unavailable for comment Monday. David Harrigan, his deputy commissioner, said he was unfamiliar with the proposal, but it would be "far preferable" to plans to build a refinery. Stockton said he thought the idea "fantastic."

"It will be good for industry, it will be good for the consumer and it will be good for the state."

See Tanker, Page 10

The New Haven Register
NEW HAVEN, CONN.
D. 106,570 SUN. 121,792

AUG 11 1976

APPENDIX D

Examples of Current ERDA Program Activities In New England

EXAMPLES OF CURRENT ERDA PROGRAM ACTIVITIES IN NEW ENGLAND

<u>Technology Area</u>	<u>Facility and Location</u>	<u>Nature of Activity</u>
Solar Power	MIT CAMBRIDGE, Mass.	To establish technical feasibility of low cost silicon solar cells and using photovoltaic power systems for a wide range of applications
	HARTFORD, CONN.	Utilization of Solar energy and conservation measures in state supported housing.
	MANCHESTER, N.H.	Providing a solar heating and cooling system for a new Federal building.
	United Technologies, Inc. EAST HARTFORD, CONN.	Solar powered turbocompressor air conditioning system demonstration program
	HUD-ERDA Residential Demonstration Program	Seven sites have been selected in New England to receive grants for solar heating and hot water demonstration
Wind Power	JBF Scientific Corp. WILMINGTON, MASS.	Study of potential wind power use by the Cambridge Light Co., and the New Bedford Gas and Edison Light Co., New England
	United Technologies, Corp. EAST HARTFORD, CONN. WINDSOR LOCKS, CONN.	Experimental and analytical research on wind energy conversion rotors
Tidal Power	Stone and Webster Engineering Corp. BOSTON, MASS.	Study of the economic competitiveness of producing electricity from tidal power in Passamaquoddy, Maine and other areas with exceptionally high tides.

<u>Technology Area</u>	<u>Facility and Location</u>	<u>Nature of Activity</u>
Biomass Conversion	Woods Hole Oceanography Institute WOODS HOLE, MASS.	Cultivation of macroscopic algae for energy conversion
Fossil	AVCO Everett Research Laboratory EVERETT, MASS.	To establish the engineering feasibility of coal fueled MHD systems for use at central stations
	MIT, CAMBRIDGE, MASS.	Performance evaluation of a coal-fired MHD electric generation R&D Program
	MITRE CORP., BOSTON, MASS.	Planning assistance on atmospheric and pulverized coal-fired fluidized bed combustion systems
	TELECO, Inc. MIDDLETOWN, CONN.	Downhole telemetry for oil and gas well directional drilling instrumentation systems
	Combustion Engineering WINDSOR, CONN.	R&D for producing a clean low Btu gas from coal for electric power plants
High, Low and medium energy	Brown University, PROVIDENCE, R.I.	Research in experimental and theoretical high, medium and low energy physics
	Amherst University AMHERST, MASS.	" " " "
	MIT, CAMBRIDGE, MASS.	" " " "
	Yale University NEW HAVEN, CONN.	" " " "
	Tufts University MEDFORD, MASS.	" " " "
	Harvard University CAMBRIDGE, MASS.	" " " "
Geothermal	Sperry Research Center MIDDLETOWN, CONN.	Downwell instrumentation and drilling feasibility demonstration of geothermal pumping system
	EIC, Inc., NEWTON, MASS.	Research on control of hydrogen sulfide emissions from geothermal power plants
Environmental & Biomedical Research	MIT, CAMBRIDGE, MASS.	Effects of radioactivity on humans

<u>Technology Area</u>	<u>Facility and Location</u>	<u>Nature of Activity</u>
	EG&G Inc., SALEM, MASS.	Study to forecast nuclear power plant effects on coastal zones
	Woods Hole Oceanography Institute WOODS HOLE, MASS.	Radio element studies in the oceans Studies of toxicity effects of chemicals on marine biology, distribution of chemicals in the ocean, coastal shelf studies, etc.
Nuclear	General Electric Co. CONNECTICUT	Research on high-temperature gas-cooled nuclear reactor components
Technology Assessment	Dartmouth College HANOVER, NEW HAMPSHIRE	Development of a mid-term technology assessment system
Energy Research	MIT, CAMBRIDGE, MASS.	Interdisciplinary energy research program in eight areas: fossil energy; nuclear energy; solar and advanced energy systems; conservation; environmental technology and planning; R&D strategy and policy analysis; international studies; and exploratory research

APPENDIX E

Publications of the
Regional Commissions

New England River Basins Commission Publications

CONNECTICUT RIVER BASIN PROGRAM

The River's Reach: A Plan for Flood Damage Reduction and Flood Plain Management in the Connecticut River Basin. Main Report-public review draft of final report, January 1975.

Phase One Reports

*Flood Management Decision-Making in the Connecticut River Basin.

*Primer on Alternatives for Flood Analysis-Examination of the Concept and Use of the Standard Project Flood.

*Environmental Reconnaissance Techniques for Connecticut River Basin Watersheds, D. R. Zoellner and G. M. Northrup.

*The River's Reach-An Assessment of Existing Flood Protection in Upstream Watersheds of the Connecticut River Basin, Soil Conservation Service, USDA, March 1974.

*Criteria for Evaluation of Social Impacts of Flood Management Alternatives, Ruth P. Mack, Institute of Public Administration, March 1974.

*Non-structural Measures for Flood Plain and Flood Damage Management with Application to the Connecticut River Basin Supplemental Flood Management Study, Philip B. Cheney, Cheney, Miller, Ellis and Associates, Inc.

*A Report to NERBC on Outdoor Recreation with Application to the Supplemental Flood Management Study of the Comprehensive Water and Related Land Resources Investigation of the Connecticut River Basin, Bureau of Outdoor Recreation, March 1974.

*The River's Reach: Connecticut River Supplemental Flood Management Study-Some Environmental and Flood Plain Management Implications of the Changing Role of Agriculture, USDA-Economic Research Service, March 1974.

*Connecticut River Basin Program, Part III of Phase I-Water Quality Reconnaissance for the Connecticut River Supplemental Study, U.S. EPA, March 1975.

*Available only from: National Technical Information Service, 5285
Port Royal Road, Springfield, Virginia 22151

Phase Two Reports

*The River's Reach-An Analysis of Alternative Flood Management Plans in Upstream Watersheds. Connecticut River Basin Supplemental Flood Management Study, USDA-Soil Conservation Service, June 1975.

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