

CONNECTICUT DEPARTMENT OF PUBLIC UTILITY CONTROL
DOCKET NO. 00-12-13RE01

Application of the United Illuminating Company and the
Connecticut Light and Power Company
for Approval of Plan to Divest Nuclear Generation Assets -
Sale of Seabrook Station to FPL Energy Seabrook, LLC

**Testimony of
Paul R. Peterson**

**On behalf of
The Office of Consumer Counsel**

July 8, 2002

1

2 **Q. Please state your name, position and business address.**

3 A. My name is Paul R. Peterson. I am a Senior Associate at Synapse Energy
4 Economics, Inc., 22 Pearl Street, Cambridge, MA 02139.

5 **Q. On whose behalf are you testifying in this case?**

6 A. I am testifying on behalf of the Office of Consumer Counsel of the State of
7 Connecticut. ("OCC")

8 **Q. Please describe Synapse Energy Economics.**

9 A. Synapse Energy Economics ("Synapse") is a research and consulting firm
10 specializing in energy and environmental issues, including electric generation,
11 transmission and distribution system reliability, market power, electricity market
12 prices, stranded costs, efficiency, renewable energy, environmental quality, and
13 nuclear power.

14 **Q. Please summarize your educational background and recent work experience.**

15 A. I have twenty-two years of experience with energy efficiency policy issues
16 through work with the University of Vermont Extension Service, the Vermont
17 Public Service Board, ISO New England, the operator of the regional electric grid
18 for New England, and, since March 2001, with Synapse Energy Economics.
19 Over the last 7 years, I have worked on electric restructuring issues directly
20 related to the six New England states, regional wholesale power markets, and
21 Federal Energy Regulatory Commission ("FERC") initiated proceedings. I
22 currently represent clients in NEPOOL Committee meetings and I am the voting
23 representative at NEPOOL governance meetings. I have recently testified in
24 proceedings before regulatory commissions in Nevada and Arizona.

25 I have a BA from Williams College and a Juris Doctor degree from Western New
26 England College School of Law.

27 A copy of my current resume is attached as Exhibit PRP-1.

1 **Q. What is the purpose of your testimony?**

2 A. Synapse was retained by the Office of Consumer Counsel to examine the
3 proposed sale of the Seabrook Nuclear Station to FPL Energy Seabrook, LLC.
4 This testimony and the testimony being filed by Bruce Biewald report the results
5 of our review of the proposed sale.

6 **Q. Please summarize the results of your review.**

7 A. The Department's approval of the proposed sale of Seabrook Station should
8 include the following conditions:

- 9 1. The Department should require that the pro-rated shares of any excess or
10 surplus funds remaining in the Seabrook Station's decommissioning fund
11 after the completion of decommissioning be refunded to the ratepayers of
12 the United Illuminating Company ("UI") and Connecticut Light & Power
13 Company ("CL&P").
- 14 2. The Department should require that FPL Energy Seabrook vigorously
15 pursue negotiation with or litigation against the U.S. Department of
16 Energy concerning DOE's failure to begin removing spent nuclear fuel
17 from the Seabrook Station in 1998. The Department should further require
18 that FPL Energy Seabrook refund the pro-rated shares of any damages
19 received from the DOE to the ratepayers of UI and CL&P.
- 20 3. The Department should require that UI and CL&P prove that any
21 damages, remediation or other costs that they might incur as a result of
22 Seabrook-related liabilities that are not transferred to the Buyer were not
23 due to mismanagement before they are permitted to pass such costs
24 through to ratepayers.
- 25 4. The Department should require FPL Group, the parent corporation of FPL
26 Energy Seabrook, LLC, to guarantee supporting funds for Seabrook
27 Station of up to \$200 to \$260 million.

1 Surplus Decommissioning Funds

2 **Q. Under what circumstances could there be excess funds (or surpluses) in the**
3 **Seabrook decommissioning fund?**

4 A. Quite simply, there would be excess funds in the Seabrook decommissioning fund
5 if the amount in the fund when decommissioning is completed exceeds the actual
6 and required cost of decommissioning.

7 **Q. Is it possible to determine the magnitude of any such surpluses at this time?**

8 A. No. It is not possible to determine the magnitude of any such surpluses, or even
9 whether there will actually be any surpluses in the fund at the conclusion of
10 decommissioning. The magnitude of any surpluses will depend on the earnings
11 rates on the investments in the funds and on increases in the actual and required
12 decommissioning expenditures.

13 **Q. Does the Purchase and Sales Agreement for the Seabrook Station require**
14 **that surpluses in the decommissioning fund be returned to customers**
15 **following the completion of decommissioning?**

16 A. Yes. Section 5.10(h) of the Purchase and Sales Agreement state that surpluses in
17 the decommissioning fund that are attributable to customer contributions must be
18 returned to customers following the completion of decommissioning, if the
19 appropriate State authority has imposed such a requirement:

20 *Customer Contribution.* When the buyer or its successors have
21 completed Decommissioning of the Facility as required by Section
22 5.23 and by applicable Law, (i) any remaining Decommissioning
23 Funds determined by the NDFC to be New Hampshire customer
24 contributions pursuant to RSA 162-F:21-b II(c), and (ii) any remaining
25 Decommissioning Funds determined by the Governmental Authority
26 having jurisdiction in Connecticut, Massachusetts and Rhode Island, as
27 the case may be, to be customer contributions from the customers of
28 such state under the applicable Law of such state, to the extent
29 required by the applicable Law of such state, shall be paid by the
30 Buyer in coordination with applicable Governmental Authority having
31 jurisdiction in such state for the benefit of the customers of the
32 relevant Seller or Sellers in such state.

1 FPLE Seabrook has said that three conditions must be met before it would be
2 required to make such refunds to customers of the current owners of Seabrook:

- 3 1. There must be remaining funds after completion of decommissioning.
- 4 2. There must be a determination by a governmental authority having
5 jurisdiction that such funds are attributable to customer contributions.
- 6 3. There must be a legal requirement in the state in question that such funds
7 must be returned to customers.¹

8 Consequently, we believe that it is necessary for the Department to require that
9 after the decommissioning of the Seabrook Station has been completed the pro-
10 rated shares of any excess or surplus decommissioning funds that are due to
11 contributions by the Connecticut ratepayers of UI and CL&P be refunded to the
12 customers of those companies. These refunds would include both the original
13 contributions made by the Connecticut ratepayers of UI and CL&P and any
14 earnings on those contributions.

15 DOE Compensation

16 **Q. Please explain the circumstances that have led to the U.S. Department of**
17 **Energy owing money to the current owners of Seabrook and their**
18 **ratepayers.**

19 A. The U.S. Department of Energy ("DOE") was obligated by the Nuclear Policy Act
20 of 1982 to begin removing spent nuclear fuel from reactor sites by no later than
21 February 1, 1998. However, the DOE has failed to do so. A number of nuclear
22 power plant owners, including FPL, have initiated litigation against DOE in the
23 U.S. Court of Claims for damages. A federal court has found that DOE has failed
24 to fulfill its contractual obligations to nuclear power plant owners under their
25 contracts for the disposal of spent nuclear fuel.²

¹ FPL Energy Seabrook response to Interrogatory EL-2.

² Indiana Michigan Power Co. v. Department of Energy, 88 F.3d 1272 (D.C. Cir. 1996).

1 **Q. In general, have nuclear power plant owners incurred additional costs as a**
2 **result of the DOE's failure to begin removing spent nuclear fuel by February**
3 **1, 1998?**

4 A. Yes. Nuclear power plant owners have incurred additional costs as a result of the
5 DOE's failure to perform under the existing spent nuclear fuel disposal contracts.
6 As a result, the litigation by some nuclear power plant owners against DOE is
7 currently in the quantification of damages phase. Other owners have participated
8 in negotiations with the DOE in an effort to resolve the spent fuel disposal issue.

9 **Q. Has the DOE indicated that it is willing to assume the cost of storing spent**
10 **nuclear fuel until a permanent repository is opened?**

11 A. Yes. The DOE has stated its intention to make a financial commitment to assume
12 the cost of storing spent nuclear fuel until the DOE is able to open a central
13 repository.³

14 **Q. Have the current owners of Seabrook Station participated in any of the**
15 **litigation against the DOE?**

16 A. No. It appears that neither North American Energy Service Corporation nor any
17 Seabrook-Joint Owner has participated in a lawsuit against DOE with respect to
18 the Seabrook Station.

19 **Q. If the current owners of Seabrook were to maintain their ownership of the**
20 **facility, would they be able to recover any of the increased costs that they and**
21 **their ratepayers have incurred as a result of the DOE's failure to begin**
22 **removing spent nuclear fuel by February 1, 1998?**

23 A. Yes. The current owners have two options if they want to recover these increased
24 costs. They could initiate litigation against DOE or they could enter negotiations
25 with DOE concerning compensation for any such increased costs.

³ For example see *Nuclear News*, June 1999, at page 63.

1 **Q. If the proposed sale of the Seabrook Station to FPL Energy Seabrook is**
2 **closed, would the facility's current owners maintain their rights to any**
3 **compensation from DOE?**

4 A. No. Pursuant to Section 2.1(g) of the Purchase and Sale Agreement, these rights
5 would be transferred to FPL Energy Seabrook, LLC.

6 **Q. Has FPL Energy Seabrook stated whether it would be willing to share any**
7 **recovery that it may receive from the DOE with ratepayers?**

8 A. FPL Energy Seabrook has stressed, most emphatically, that it would not be
9 willing to share any compensation from DOE with ratepayers:

10 There is no requirement under Connecticut law or in the Purchase and
11 Sale Agreement that FPLE Seabrook share any proceeds from the
12 DOE litigation with ratepayers. Furthermore, pursuant to section 2.1g
13 of the Purchase and Sale Agreement, FPLE Seabrook has assumed full
14 responsibility for the risks and costs associated with pursuing this
15 litigation and has relieved the Connecticut ratepayers of those risks
16 and costs going forward. As a result, FPLE Seabrook is not willing to
17 share any recovery that it may receive from the DOE with ratepayers.⁴

18 **Q. Are there any risks and costs associated with going forward with pursuing**
19 **litigation against the DOE?**

20 A. No. There are certainly no risks, other than litigation costs, in pursuing litigation
21 against the DOE for its failure to begin removing spent nuclear fuel by February
22 1, 1998. The increased costs resulting from the DOE's default already have been
23 paid by the current owners and their ratepayers. Moreover, DOE already has been
24 found to be in default of its obligations -- the only remaining issue to be litigated
25 is the quantification of damages.⁵ In addition, as I noted earlier, the DOE already
26 has expressed the intention of working with nuclear power plant owners to resolve
27 the issue of responsibility for costs resulting from its default.

⁴ FPL Energy Seabrook response to Interrogatory OCC-51.e.

⁵ Indiana Michigan Power Co. v. Department of Energy, 88 F.3d 1272 (D.C. Cir. 1996).

1 **Q. Is FPL Energy Seabrook's refusal to refund to ratepayers of the current**
2 **Seabrook owners any compensation it receives from the DOE reasonable?**

3 A. No. The current owners and their ratepayers already have paid the increased costs
4 related to DOE's default. Allowing FPL Energy Seabrook to keep the
5 compensation from the DOE as reimbursement of these increased costs would
6 result in unjust enrichment of FPL Energy Seabrook to the detriment of the
7 current Seabrook owners and their ratepayers.

8 **Q. Should FLP Energy Seabrook be entitled to deduct any litigation related**
9 **costs from the compensation that would be refunded to the current Seabrook**
10 **owners and their ratepayers?**

11 A. Yes. FPL Energy Seabrook should be entitled to keep any portion of the
12 reasonable litigation related costs that it can demonstrate were incurred as part of
13 its efforts to seek compensation from the DOE of the increased costs incurred by
14 the current Seabrook owners prior to the closing date of the proposed sale.

15 Liabilities Remaining with the Current Seabrook Owners

16 **Q. Under the proposed Purchase and Sale Agreement do any existing liabilities**
17 **remain with the current Seabrook owners?**

18 A. Yes. Section 2.4 of the Purchase and Sale Agreement lists the liabilities not
19 assumed by FPL Energy Seabrook.

20 **Q. Is it your position that the proposed Purchase and Sale Agreement is**
21 **unreasonable because all such liabilities are not transferred to the Buyer?**

22 A. No.

23 **Q. What then is the significance of these existing liabilities remaining with the**
24 **current owners after the sale is closed?**

25 A. The Department should require that UI and CL&P prove that any damages,
26 remediation or other costs that they might incur as a result of these non-assumed

1 liabilities were not due to mismanagement before they are permitted to pass such
2 costs through to ratepayers.

3 Financial Assurance Issues

4 **Q. Please describe the corporate structure through which FPL will own the**
5 **Seabrook Station.**

6 A. According to FPL Energy Seabrook's response to Interrogatory OCC-34, the
7 Seabrook Station would be owned by FPLE Seabrook, LLC which would be a
8 wholly-owned subsidiary of ESI Energy LLC. ESI Energy LLC, in turn, would
9 be a wholly-owned subsidiary of FPL Energy which is a wholly-owned subsidiary
10 of FPL Group Capital. Finally, FPL Group Capital would be a wholly-owned
11 subsidiary of the parent corporation, FPL Group.

12 **Q. What concerns does this proposed corporate structure raise?**

13 A. The use of complex organizational structures involving limited liability
14 companies ("LLCs") to own nuclear power plants can shield the parent
15 corporations and their shareholders from liabilities incurred by the plant-owning
16 subsidiary. In so doing, the use of multi-tiered holding companies and LLCs to
17 own and operate nuclear power plants raises concerns regarding security, safety
18 and potential federal and consumer liabilities.

19 In particular, the use of an LLC to own Seabrook Station within the multi-tiered
20 corporate structure creates a shield for the parent corporation, FPL Group, if an
21 accident, equipment failure, safety upgrade or unusual maintenance need at one
22 particular plant creates a large, unanticipated cost. The parent corporation can
23 walk away, by declaring bankruptcy for FPL Energy Seabrook LLC, i.e., the
24 subsidiary that owns the power plant, without jeopardizing its other nuclear and
25 non-nuclear investments.

26 In addition, there is also a concern that the parent FPL Group will threaten the
27 long-term financial viability of FPL Energy Seabrook by using that subsidiary's

1 earnings to fund other FPL Group operations, thereby leaving insufficient funds in
2 FPL Energy Seabrook to adequately support nuclear operations.

3 **Q. Is there any formal corporate agreement or policy to control the transfer of**
4 **operating profits or other funds from FPL Energy Seabrook to its direct or**
5 **indirect owners?**

6 A. No.⁶

7 **Q. Is there any formal corporate agreement or policy to control the types or**
8 **magnitudes of the loans that FPL Energy Seabrook can make to affiliated**
9 **companies?**

10 A. No.⁷

11 **Q. Has the parent FPL Group pledged or committed any funds to support**
12 **nuclear operations at Seabrook?**

13 A. Yes. FPL Group Capital at closing will enter into a support agreement with FPL
14 Energy Seabrook to make funding of up to \$110 million available to FPL Energy
15 Seabrook.⁸ This support agreement will be further guaranteed pursuant to an
16 existing guarantee between FPL Group, the parent corporation, and FPL Group
17 Capital.⁹

18 **Q. What is the basis for the \$110 million of funds in the support agreement for**
19 **FPL Energy Seabrook?**

20 A. Under the existing NRC guidelines, the \$110 million would cover the O&M costs
21 of a six month outage of Seabrook Unit 1.¹⁰ These funds are meant to ensure that
22 FPL Energy Seabrook will have adequate funds to maintain Seabrook in a safe
23 condition during an outage period when the company will not have any revenues

⁶ FPL Energy Seabrook response to Interrogatory OCC-43.a.

⁷ FPL Energy Seabrook response to Interrogatory OCC-43.d.

⁸ The May 17, 2002 Application to the NRC for Order and Conforming License Amendments to Transfer Seabrook's Operating License to FPL Energy Seabrook, LLC, at page 10.

⁹ Ibid.

¹⁰ Testimony of FPL Energy Seabrook witness John A. Stall, in New Hampshire Public Utilities Commission Docket No. DE 02-075, at page 7, lines 25-27.

1 from the sale of electricity. The funds also are meant to assure that there will be
2 adequate funds to maintain Seabrook during the period between a decision to
3 permanently shutdown the facility and the time when FPL Energy Seabrook will
4 be able to gain access to the funds in the plant's decommissioning fund.

5 **Q. Is it reasonable to assume that Seabrook Unit 1 could experience an outage of**
6 **longer than six months?**

7 A. Yes. For example, there have been a substantial number of nuclear power plant
8 outages since January 1996 that lasted longer than six months:

9 **Table No. 1**
10 **Nuclear Power Plant Outages**
11 **Since June 1995**
12 **That Lasted Nine Months or Longer**

<u>Plant</u>	<u>Period Shutdown</u>	<u>Outage Duration</u>
Beaver Valley 2	December 1997 - September 1998	9 months
Clinton	September 1996 - May 1999	32 months
Cook Unit 1	September 1997 - December 2000	39 months
Cook Unit 2	September 1997 - June 2000	33 months
Indian Point 2	February 2000 - December 2000	10 months
Kewaunee	September 1996 - June 1997	9 months
LaSalle Unit 1	September 1996 - August 1998	23 months
LaSalle Unit 2	September 1996 - April 1999	31 months
Millstone Unit 2	February 1996 - May 1999	39 months
Millstone Unit 3	March 1996 - June 1998	27 months
Point Beach Unit 1	February 1997 - December 1997	10 months
Point Beach Unit 2	October 1996 - August 1997	10 months
Salem Unit 1	May 1995 - April 1998	35 months

1

2 Moreover, it is not unreasonable to expect that a nuclear unit might be shut down
3 for more than six months before the ultimate parent corporation makes the
4 decision to permanently retire the unit. After all, the full extent of the plant's
5 problems and the expense and time it would take to repair and restart the unit
6 might not be apparent until the plant had been shut down for a substantial period
7 of time.

8 This could mean that all of the funds guaranteed by an affiliate or the parent
9 corporation could be consumed before the licensee would be able to gain access
10 to the unit's decommissioning fund. For example, Millstone Unit 1 was shutdown
11 for 31 months before Northeast Utilities decided in July 1998 to permanently
12 retire the plant. Commonwealth Edison Company's Zion Units 1 and 2 were
13 shutdown for eleven and sixteen months, respectively, before the Company
14 decided in January 1998 to permanently retire both plants. The Maine Yankee
15 plant was shut down for eight months before its Board of Directors decided in
16 August 1997 to permanently retire it.

17 **Q. Has this issue recently been litigated before any other state regulatory**
18 **commissions in New England?**

19 A. Yes. The adequacy of guaranteeing only six months of estimated O&M costs was
20 recently litigated before the Vermont Public Service Board in the context of the
21 proposed sale of the Vermont Yankee Nuclear Plant to Entergy Nuclear Vermont
22 Yankee ("ENVY"), a subsidiary of the Entergy Corporation.

23 ENVY had originally obtained two \$35 million lines of credit from affiliated
24 companies, similar to the support agreement that FPL Energy Seabrook would
25 have from FPL Group Capital. The \$70 million total for these two lines of credit
26 reflected the estimated O&M cost of a six month outage at the Vermont Yankee
27 Nuclear Plant.

1 The Vermont Department of Public Service objected to the level of the guarantees
2 and to the fact that they were with affiliated companies rather than the parent
3 Entergy Corporation. In response, the parent Entergy Corporation pledged an
4 addition \$60 million guarantee that would be available if either of the other lines
5 of credit had been drawn upon.¹¹ Consequently, Entergy has pledged
6 approximately \$130 million, in total, to support its ownership of Vermont
7 Yankee, a much smaller unit than Seabrook Station.

8 **Q. What would be a comparable guarantee for Seabrook Station?**

9 A. A comparable guarantee would be \$200 to \$260 million given that Seabrook is
10 approximately twice the size of the Vermont Yankee Nuclear Plant.

11 **Q. Should this level of guarantee be included as a condition to the sale of**
12 **Seabrook Station to FPL Energy Seabrook?**

13 A. Yes. The Department should require FPL Group, the parent corporation of FPL
14 Energy Seabrook, LLC, to guarantee supporting funds for Seabrook Station of up
15 to \$200 to \$260 million.

16 **Q. Does this complete your testimony at this time?**

17 A. Yes.

¹¹ Vermont Public Service Board Order in Docket No. 6545, issued June 13, 2002, at page 119, paragraph 160, and page 123.

EXHIBIT PRP-1

Paul R. Peterson

Senior Associate
Synapse Energy Economics
22 Pearl Street, Cambridge, MA 02139
(617) 661-3248 • fax: 661-0599
www.synapse-energy.com

EMPLOYMENT

Synapse Energy Economics Inc., Cambridge, MA. Senior Associate, March 2001 - present. Provide consulting services on a variety of energy and electricity related studies. Represent New England consumer advocate and environmental concerns in NEPOOL and ISO New England working groups. Co-authored report on Market Monitoring Best Practices in the Northeast (November 2001). Testified in Nevada Power Company hearings (March 2002) and Arizona Corporation Commission hearings (June 2002) on wholesale market issues and FERC policies.

ISO New England Inc., Holyoke, MA.

Coordinator of Regulatory Affairs, 2000 – 2001.

Coordinate regulatory activities with individual state public utility commissions, the New England Conference of Public Utilities Commissioners (NECPUC), and the Federal Energy Regulatory Commission (FERC). Assist the General Counsel on a variety of specific tasks and documents; draft letters and reports for the Chief Executive Officer.

Public Information and Government Affairs, 1998 – 1999.

Worked with all ISO-NE constituencies including NEPOOL Participants, regulatory agencies, and stakeholder groups in large-group and small-group formats. Developed and presented materials that described ISO-NE's functions, special projects (including Year 2000 rollover issues), and future evolution.

Vermont Public Service Board, Montpelier, VT. Senior Associate, March 2001 - present.

Policy Analyst, 1997 - 1998.

Monitored House and Senate legislation on electric restructuring; helped coordinate the passage of Senate Bill S.62 in 1997. Coordinated the New England Conference of Public Utilities Commissioners (NECPUC) activities regarding NEPOOL restructuring; assisted in drafting documents to create an Independent System Operator (ISO) for New England. Worked on New England task forces to develop a model rule for electric disclosure projects for consumer information and regulatory compliance.

Utilities Analyst, 1990 - 1997.

Reviewed regulated utility filings for changes in rates; judicial Hearing Officer for contested cases on a wide range of topics; wrote all decisions regarding annual utility applications for Weatherization Tax Credits. Focused on integrated resource planning and electric industry restructuring; initial Hearing Officer for the Energy Efficiency Utility docket. Chaired the Staff Energy Committee of NECPUC.

Energy Analysis, Burlington, VT. Consultant, 1990.

Energy-efficiency program design and evaluation.

UVM Extension Service, Burlington, VT.

Area Energy Agent, 1985 - 1990.

Performed tasks pursuant to an annual contract with Vermont Department of Public Service to conduct energy research, design energy efficiency programs and provide public education (see attached list of publications).

Home Energy Audit Team (H.E.A.T.), 1978 - 1985.

Home energy audits; energy surveys for commercial, municipal, and non-profit buildings; energy education and information.

The Close-Up Foundation, Washington, D.C. Program Administrator, 1975 - 1978.

Directed weekly government studies program for 200 high school students and teachers; supervised a staff of fifteen; coordinated curriculum and logistical aspects of program.

EDUCATION

Admitted to Vermont Bar, February 1992

Western New England College School Of Law, Springfield, MA.

Juris Doctor degree, cum laude, May 1990

American Jurisprudence Award: Remedies, 1989

Merit Scholarship recipient

Student Bar Association Representative

Williams College, Williamstown, MA

Bachelor of Arts degree, cum laude, June 1974

Political Science and Environmental Studies

Tyng Scholarship recipient

National Judicial College, Reno, NV

Administrative Hearings, Sept., 1994

Civil Mediation, March, 1996

Civil Mediation, July, 1997 (faculty assistant)

American Inns of Court, Northern Vermont Chapter

1995-1996, member

1996-1997, member

Continuing Legal Education, Vermont Bar Association

Americans with Disabilities Act, April 1992

Ethical Issues/Governmental Agencies, October 1992

Advance Medical Directives, May 1993

Family Law Workshop, September 1993

Negotiating Settlements, May 1994

Physician Assisted Suicide Symposium, October 1996

Electric Industry Restructuring, March 1999

Advance Medical Directives, May 1999

Tax Law for Non-Tax Law Attorneys, May 2000

International Law Update, June 2000

UVM Continuing Education, Brattleboro, VT
Small Computer Course, Spring 1983
Communications Workshops, Spring 1983 & Spring 1984

PUBLICATIONS & PROJECTS

SYNAPSE ENERGY ECONOMICS

Best Practices in Market Monitoring: A Survey of Current ISO Activities and Recommendations for Effective Market Monitoring and Mitigation in Wholesale Electricity Markets, prepared for the Maryland OPC, the Pennsylvania OCA, the Delaware DPA, the New Jersey DRA and the DC OPC, November 2001.

The Other Side of Competitive Markets: Developing Effective Load Response in New England's Electricity Market, prepared for The Maine Department of Attorney General and the Maine Office of the Public Advocate, June 2001.

Clean Air and Reliable Power: Connecticut HB 6365 Will Not Jeopardize Electric System Reliability, prepared for The Clean Air Task Force on behalf of The Connecticut Coalition for Clean Air, May 2001.

UNIVERSITY OF VERMONT EXTENSION SERVICE

Residential Construction Survey, Survey of Vermont new home construction for construction techniques, energy-efficient design, appliance loads, etc. 1986, 1989.

Vermont Vacation Home Energy Study, Survey of vacation home energy consumption and impact on Vermont statewide electrical demand. 1989.

Dairy Farm Energy Use, A detailed examination of electrical energy consumption on forty Vermont dairy farms to identify opportunities for improving energy-efficiency. 1987.

Mobile Home Booklet, A fresh look at energy saving opportunities for mobile homeowners. Specific problems of cold climates are addressed. 1987.

Dairy Farm Energy Project, Implemented \$400,000 grant from Vermont Department of Agriculture for installation of milk-cooling equipment that also produced hot water. 1989.

Vocational Building Trades Instructors, Annual workshops on energy-efficient construction practices for the teachers of Vermont building trades students. Classroom presentations on selected topics. 1986 - 1989.

Brattleboro Community Energy Education Project, Coordinated a Central Vermont Public Service Company funded project to promote energy-efficiency awareness through community programs. 1985.

PROFESSIONAL CONFERENCES

Federal Energy Regulatory Commission Conference, Philadelphia, PA. March 2001.

National Association Of Regulatory Utility Commissioners, Washington, DC. 1998 - 2000

Advanced Integrated Resource Planning Seminar, Berkeley, CA 1995

ACEEE Summer Study, Pacific Grove, CA 1992 & 1994

1991 DOE Low-Level Radioactive Waste Conference, Atlanta, GA

Resume dated June 2002.