STATE OF CONNECTICUT

BEFORE THE DEPARTMENT OF PUBLIC UTILITY CONTROL

Application of United Illuminating and Connecticut Light & Power for Approval of Plan to Divest Nuclear Generation Assets- Sale of Seabrook Station to FPL Energy Seabrook, LLC	**)**	**Docket No. 00-12-13RE01**

DIRECT TESTIMONY OF

PAUL L. CHERNICK

ON BEHALF OF

THE OFFICE OF CONSUMER COUNSEL

Resource Insight, Inc.

JULY 9, 2002

Confidential information has been redacted from this document.

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EXHIBITS

I. Identification and Qualifications

Q: State your name, occupation and business address.

A: I am Paul L. Chernick. I am President of Resource Insight, Inc., 347 Broadway, Cambridge, Massachusetts.

Q: Did you testify in the initial phase of this proceeding?

A: Yes. I prefiled testimony in Docket No. 99-09-12 on January 18, 2000.

Q: Summarize your professional education and experience.

A: I received an SB degree from the Massachusetts Institute of Technology in June, 1974, from the Civil Engineering Department, and an SM degree from the Massachusetts Institute of Technology in February, 1978, in technology and policy. I have been elected to membership in the civil engineering honorary society Chi Epsilon, and the engineering honor society Tau Beta Pi, and to associate membership in the research honorary society Sigma Xi.

I was a utility analyst for the Massachusetts Attorney General for more than three years, and was involved in numerous aspects of utility rate design, costing, load forecasting, and the evaluation of power supply options. Since 1981, I have been a consultant in utility regulation and planning, first as a research associate at Analysis and Inference, after 1986 as president of PLC, Inc., and in my current position at Resource Insight. In these capacities, I have advised a variety of clients on utility matters. My work has considered, among other things, the cost-effectiveness of prospective new generation plants and transmission lines; retrospective review of generation planning decisions; and the valuation of power plants. My resume is attached as Exhibit PLC-1.

Q: Have you testified previously in utility proceedings?

A: Yes. I have testified approximately one hundred and eighty times on utility issues before various regulatory, legislative, and judicial bodies. A detailed list of my previous testimony is contained in my resume.

Q: Have you testified previously before the Connecticut Department of Public Utility Control (the DPUC or the Department)?

A: Yes. I testified in

- Docket No. 83-03-01, a United Illuminating (UI) rate case, on behalf of the Office of Consumer Counsel, on Seabrook costs.
- Docket No. 83-07-15, a Connecticut Light and Power (CL&P) rate case, on behalf of Alloy Foundry, on industrial rate design.
- Docket No. 99-02-05, the CL&P stranded-cost docket.
- Docket No. 99-03-04, the UI stranded-cost docket.
- Docket No. 99-03-35, the UI standard-offer docket.
- The initial phase of this Docket No. 99-03-36, the CL&P standard-offer docket.
- Docket No. 99-08-01, investigation into electric capacity and distribution.
- Docket No. 99-09-12, the nuclear-divestiture plan for CL&P and UI.
- Docket No. 99-09-03, on the performance-based ratemaking proposal of Connecticut Natural Gas.
- Docket No. 99-09-12 RE01, on the Millstone auction.
- Docket No. 99-03-36 RE03, on CL&P's Generation Services Charge.
- Docket No. 99-04-18 Phase 3 and Docket No. 99-09-03 Phase 2, on the earnings sharing mechanism proposed by Connecticut Natural Gas and Southern Connecticut Natural Gas.
- Docket No. 01-10-10, on UI's rate Plan Proposal.

Q: Have you testified previously in connection with regulatory review of the sale of power plants?

A: Yes. I have testified on the sales of

- the fossil assets of Atlantic City Electric (New Jersey BPU Docket No. EM00020106),
- the multiple-owner Centralia coal plant to TransAlta (Utah PSC Docket No. 99-2035-03),
- the Millstone nuclear power plant (DPUC Docket No. 99-09-12RE01),
- the Vermont Yankee nuclear power plant (Vermont PSB Docket No. 6545).

My resume details this experience.

II. Introduction

Q: On whose behalf are you testifying in this proceeding?

A: I am testifying on behalf of the Office of Consumer Counsel.

Q: What is the purpose of this testimony?

A: I address three subjects related to the sale of the Seabrook nuclear power plant by its current owners, including CL&P and UI, to FPL Energy's subsidiary FPL Energy Seabrook LLC. First, I compare the proposed sales price for Seabrook to prices of other nuclear plants sold for operation in the competitive market. Second, I review the auction process. Third, I review the evaluation of the final bids for the plant, conducted by J.P. Morgan on behalf of the Seabrook owners.

Q: What do you conclude from your comparison of the proposed price for Seabrook to the sales prices of other nuclear plants?

A: There are no close comparables to the proposed sale of Seabrook, which is younger than other nuclear plants that have been sold, but is a single unit, while

most recent sales of similarly-sized units have involved multi-unit plants. FPL is acquiring only 88.2% of Seabrook, while most other nuclear transactions have either involved the entire plant, or involved the acquisition of minority interests by other existing owners.

The value of the proposed transaction is at the top of the range of recent nuclear sales. The relatively high price for Seabrook may be explained, at least in part, by its favorable age and unit size.

Q: What are your conclusions regarding the auction process?

A: It is difficult to evaluate the management of an auction process from documents alone, since the effectiveness of the auction depends on the quality of communications between the participants and the auction manager. J.P. Morgan has not documented its activities in any detail.

With those limitations in mind, J.P. Morgan appears to have structured the auction in an appropriate manner. I have not identified any problems in the operation of the auction.

Q: What are your conclusions regarding J.P. Morgan's evaluation of the bids for Seabrook?

A: J.P. Morgan included all the components of value that varied among the offers. With a few exceptions, J.P. Morgan appears to have reasonably modeled those components.

As I explain in §IV below, the exceptions occur in the modeling of the purchased-power agreement, where several of J.P. Morgan's assumptions and methods are either questionable or incorrect.

A. The Basis for Valuation

Q: How are the sales prices for nuclear plants generally expressed?

A: There is a great deal of variation in the form in which the value of a nuclear plant sale may be stated.[1] The value of the sale certainly includes any cash payment for the plant at the time of closing. In addition, various reports of the sales value of nuclear assets include the following components:

- cash for materials and fuel;
- deferred payments for plant, materials, and fuel, often structured as a note from the buyer to the seller;
- reduction in the seller's potential liability for nuclear decommissioning;
- the difference (which may be positive or negative) between projected market power prices and the price of a plant-contingent purchased-power agreement (PPA) from the plant buyer to the seller;
- the expected value of a revenue-sharing agreement, under which the buyer will pay the seller a fraction of the plant's revenue, if market prices rise above a target level;
- payment by the seller to "top off" nuclear decommissioning funds, often to the minimum level required by the NRC for nuclear plants that are not subject to cost-of-service regulation;
- other fixed or contingent payments, such as (a) sharing of property-tax payments and refunds, (b) sharing of insurance refunds, (c) bonuses if the buyer also acquires other nearby plants, (d) sharing of O&M costs during some transition period.

Q: Does this accounting for the sales value reflect the total benefit to the seller, or the total cost to the buyer, from the transaction?

[1]Many of the same issues arise in the sale of non-nuclear generating assets. Some issues are unique to nuclear assets (such as decommissioning).

A: Not necessarily. The value of the sales transaction does not usually include all the ongoing costs and benefits of the transaction. The seller, for example, saves the O&M, property taxes, and insurance associated with the plant, but loses the value of its energy and capacity. The buyer assumes the O&M, property taxes, and insurance, and gains the revenues from the plant's output.

Thus the reported value of nuclear sales is often greater than the cash payment for the plant, but is not the same as a full accounting of costs and benefits for either the seller or buyer.

Q: Are there any complications in interpreting the value of a nuclear transaction?

A: Yes, numerous such complications and ambiguities arise with respect to nearly every aspect of nuclear transactions, other than the cash price for the plant itself.

- Some tabulations of nuclear sales do not include the cash payments for nuclear fuel and materials as part of the plant's value. Without the plant, the irradiated fuel has little or no value (or perhaps a negative value, for storage and disposal costs) and the materials have little value. Consequently, payments for these items should be considered payments for the plant.
- In transactions that include delayed payments, those payments may be presented at their nominal value (without discounting for the delay), or discounted at a discount rate. The discount rate may be derived from the sales agreement (such as the interest rate on any notes issued for delayed payments), representing the seller's cost of capital, or representing the buyer's cost of capital.[2]

[2]In principle, the discount rate could reflect the inherent risk in the particular cash flow. I have not seen any nuclear-sale valuation that used an explicitly risk-adjusted discount rate.

- The benefit to the seller of reducing its decommissioning liability may be measured against what it already has in its decommissioning fund (in which case any top-off payment is a cost), against the NRC's generally lower funding targets, against the utility's generally higher estimate of decommissioning costs at the end of the plant's license, or against the still-higher cost of unplanned early decommissioning (which seemed to be a real possibility for Pilgrim and Oyster Creek prior to their sale).
- Similarly, estimates of the timing of decommissioning vary from next year or next refueling, to well beyond the end of the current license life. Valuing a sale as if it avoided the immediate shut-down and dismantling of the plant will produce a much higher valuation of the transaction than would an analysis that assumes a long life, orderly shutdown, and delayed decommissioning.
- The value of PPAs and Revenue-Sharing Agreements (RSAs) depend on the expected value of future power prices; the value of the RSA also depends on the distribution of prices around the expected value.[3]
- Some nuclear sales provide that the buyer will flow through to the seller the return of payments the seller made previously, such as for outage insurance or for disputed property taxes. Whether this is regarded as an additional benefit to the seller depends on whether the payment stream is thought of as part of the plant, or as already belonging to the seller.
- Some transactions include non-cash components that are hard to value (such as the coal plants Duquesne-FirstEnergy swapped for nuclear shares).

[3]In a typical revenue-sharing agreement, the buyer pays the seller a percentage of the difference between the actual market price and a predetermined reference price, times the plant's output.

- Some terms of nuclear deals are not fully public. For example, GPU disclosed that its agreement to sell its Three Mile Island 1 unit to AmerGen included an RSA, and the maximum benefit from the RSA, but did not disclose such details as the strike price at which the RSA would take effect.

As a result, the same information about a nuclear-plant sale can produce widely different valuations of the transaction, depending on the assumptions made about future decommissioning costs, market prices, and other factors.

Q: How have you dealt with these uncertainties and complications?

A: I include a range of available estimates for PPAs, decommissioning, and other adjustments. Exhibit PLC-2 lists the nuclear sales and for each provides some information (capacity, percentage of each unit, life remaining on the NRC operating license) and the values of the sales, interpreted in multiple ways.

Q: Are any broad trends evident in the data in Exhibit PLC-2?

A: Yes. There is a clear split between the sales that were announced prior to January 2000, and those after that date. The earlier group comprises the following nine sales and two proposed sales:

- Two small old single-unit plants (Pilgrim, Oyster Creek).
- Two larger, newer single-unit plants (Clinton, TMI 1).
- Five sales of minority portions of one or more plants (Montaup's sale of its Seabrook share, the transfer of the bankrupt Cajun Coop's share of River Bend to Entergy, Duquesne's sale of Beaver Valley and Perry, and Conectiv's sale of Hope Creek and Salem to PSEG Power and of Peach Bottom to both PSEG Power and Excelon).
- Two sales to AmerGen announced in 1999, but never consummated (the original proposal to sell Vermont Yankee, the proposal of NiMo and NYSEG to sell Nine Mile Point 1 and their shares of Nine Mile Point 2).

Q: How useful are these early sales in evaluating the price FPL has offered for Seabrook?

A: These sales are of limited relevance, for several reasons.

First, in the early years of restructuring (1996–1999), the general perception was that most nuclear plants were of little value, O&M costs would continue to be high, capacity factors would remain low, market prices for electric energy would be low, and that the issues of risk, spent-fuel disposal, and decommissioning would result in negative net values for most plants. Much of the perceived value in the sales lay in the elimination of risk of operating and decommissioning costs.

Second, several of the early sales were of minority shares (sold by Montaup, Conectiv, Duquesne, and Cajun). Minority shares are often less valuable than controlling shares, and especially less than 100% ownership, for two reasons. Minority owners generally have little voice in the operation of a power plant. Since the value of a nuclear plant depends critically on how well it is operated, and the potential purchasers clearly believe they are able to operate plants reliably and economically, potential purchasers may not be much interested in owning a small portion of a plant controlled by someone else.

Minority ownership is also less valuable because the co-owners of power plants generally hold rights of first refusal in the event of a sale.[4] It is widely recognized that the existence of a right of first refusal can depress the price of assets sold at auction. As a witness for CL&P said in Docket No. 99-09-12RE01, on the Millstone sale:

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[4]A right of first refusal generally provides that, should any participant decide to sell its share, each other participant has the right to match any offer that the seller may accept from a third party. Among other things, these provisions assure the participants in the enterprise that they can choose to increase their share, rather than deal with a new and perhaps undesirable associate.

> A right of first refusal possessed by a third party could lower the value of an asset to be sold in an auction. Prospective bidders may be less likely to spend the necessary resources in preparing a bid for an asset where there is a high likelihood that a third party will exercise this right. Consequently, there could be fewer and less serious bidders and thus theoretically a tendency for auction prices to be lower.[5]

In other words, a bidder will tend to be less aggressive in its bidding if it knows that, should it get a good price, a co-owner can take the asset away for the same price. Rights of first refusal have been invoked at least twice in the sale of power plants, as follows:

- In November 1998 Pacific Gas and Electric selected FPL Group to purchase its Geysers geothermal capacity. In January 1999 the minority owner of the steam field (Calpine) bought out the majority owner and exercised its joint right of first refusal, acquiring the plants at the price negotiated by FPL.
- In June 1999 Niagara Mohawk attempted to sell its shares of Nine Mile Point 1 and 2 (100% and 41%, respectively) and NYSEG's 18% share of Unit 2 to AmerGen through an exclusive negotiation process. This attempt failed when Rochester Gas & Electric, owner of 14% of Unit 2, exercised its right of first refusal. While Rochester Gas & Electric would have been the nominal purchaser, it had partnered with Entergy, which would have assumed responsibility for funding the acquisition and operating the plant, and would have assumed all associated risks. The sale was subsequently cancelled.

All of the sales of minority shares of nuclear plants have been to joint owners. These sales cannot be considered to be fully competitive.

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[5]Robert T. McWhinney, President and Chief Executive Officer of Stone & Webster Management Consultants, CDPUC Docket 99-09-12, in response to OCC-021.

Third, some of the early nuclear sales involved non-cash values that are difficult to quantify. The most striking case is that of Duquesne, which traded minority shares in several coal units, as well as in three nuclear units, for sole ownership of several coal units of various vintages. The valuation of the nuclear assets depends on the value assumed for both the minority coal-plant shares and the wholly owned coal plants.

Q: What was the second group of nuclear sales?

A: Since January 2000, the following six sales have been announced:

- The sale by NYPA to Entergy of its Fitzpatrick and Indian Point 3 nuclear power plants.
- The re-auctioning of the Nine Mile Point units, including all of Unit 1 and 82% of Unit 2, resulting in their sale to Constellation.
- Con Edison's sale of Indian Point 2 to Entergy.
- The sale of Millstone 2 and 93.5% of Millstone 3 by Northeast Utilities (and in the case of Unit 3, other utilities) to Dominion.
- The sale of Vermont Yankee by its several owners to Entergy.
- The proposal of Southern California Edison to sell its 16%, 590 MW share of the Palo Verde nuclear plant in Arizona and its 48% 710 MW share of the coal-fired Four Corners plant in New Mexico to Pinnacle West. Pinnacle is the holding company for Arizona Public Service, which is a part owner and operator of both plants.

The proposal in this proceeding to sell Seabrook constitutes the seventh proposed nuclear sale since January 2000.

Q: How useful are these later sales in evaluating the price FPL has offered for Seabrook?

A: The first five sales on the post-2000 list, above, are more relevant to the current proposal than are the earlier sales. They represent recent expectations regarding decommissioning liabilities, nuclear performance and electric market prices.

Seabrook's location is comparable or superior to the units in the other recent northeastern nuclear sales. Millstone and Vermont Yankee are in New England, and market prices would tend to be similar for these units and Seabrook.[6] Indian Point is located in southeastern New York, where market energy prices have been comparable to New England, or slightly higher, and market capacity prices have been higher than in New England. The Fitzpatrick and Nine Mile plants are located in western New York State, where market prices tend to be lower than in New England.

The NYPA sale was the result of an exclusive negotiation with Entergy, rather than an auction. An unsolicited bid from Dominion resulted in Entergy's improving its bid somewhat, but the price may have been depressed by the lack of full competition.

The other units are all older than Seabrook, giving them fewer years of operation before they face relicensing. Seabrook's more-recent design may be easier and less expensive to relicense than the oldest units, such as NMP 1 and Vermont Yankee.

The individual units vary widely in size, ranging from 510 MW for Vermont Yankee, 610 MW for NMP 1, and 820 MW for FitzPatrick, to more than 1,000 MW for Millstone 3 and NMP 2, compared to Seabrook's 1,161 MW.

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[6]New England currently operates as a single regional market, with uniform energy prices. When locational market prices are introduced in New England (probably by early 2003), energy prices are expected to be higher (at least for a few years) in Connecticut than in Vermont or New Hampshire, due to transmission constraints. Buyers who expect those conditions to persist would pay more for Millstone than for Seabrook or Vermont Yankee, even if all other factors were equal.

Larger generators tend to have lower O&M costs per kilowatt; this consideration would increase the value of Seabrook compared to the other sales.

On the other hand, Nine Mile Point and Millstone each have two operating units on the same site. While each of the NYPA plants was nominally a single unit, Indian Point 3 is adjacent to Indian Point 2; when Entergy was bidding on the latter unit, it was essentially bidding to acquire a two-unit plant. Multiple units on a site share costs, which tends to make them less expensive to operate than single-unit plants, on a dollar-per-kilowatt basis.[7]

Age, size, and siting differences are summarized in Exhibit PLC-3.

Q: Please describe the attempt to sell Palo Verde.

A: Southern California Edison attempted to sell its share of Palo Verde together with its share of Four Corners. Initially, the utility negotiated a sales price for its shares in the two plants to Pinnacle West. The agreement with Pinnacle West allowed other parties to make competing offers for Four Corners, or for the two plants together, but did not allow bids for Palo Verde separately from Four Corners, and gave Pinnacle West the right of first refusal for any bid.

An alternative bid was received for Four Corners, but not for the two plants together. The transaction never closed, due to the rapid escalation of electricity prices in the West and a legislative prohibition on generation-asset sales.

The peculiar nature of the Palo Verde auction, the minority status of Southern California Edison's share, and the prohibition on competing bids for the nuclear assets without the coal plants, as well as the prospect of legislation banning the sale, may all have discouraged bidders and reduced the bid price.

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[7]Part of the extra value of a two-unit site is reflected in Entergy's purchase agreement with NYPA, which provided for an additional $25 million payment if Entergy acquired Indian Point 2, and a similar payment if Entergy acquired Nine Mile Point, which is adjacent to FitzPatrick.

B. Valuation of Past Sales

Q: What range of valuations have you estimated for the early group of nuclear sales?

A: Most of the sales announced prior to 2000 were for prices in the $100/kW–$200/kW range, although some were lower and some—depending on the interpretation of the decommissioning costs and the valuation of the Duquesne coal plants—may have been worth more than $500/kW.

Q: What range of valuations do you estimate for the more-recent sales?

A: The post-1999 nuclear sales included $322/kW to $779/kW in cash and/or notes, expressly for plant, fuel and materials and supplies. In addition,

- The NYPA sale included a PPA (which NYPA considered to be at market prices) to cover NYPA's remaining contract obligations for power from each unit, plus another lower-priced PPA for uncommitted power from Fitz-Patrick for four years, plus payment streams designated as being related to repaying NYPA's decommissioning contribution and for compensating NYPA for entering into the second FitzPatrick PPA, an RSA, and bonus payments if Entergy acquired NMP or Indian Point 2.
- The Indian Point–2 sale included a PPA that Con Edison has described as below market price, as well as sharing of the savings from deferred decom-missioning (Order in NYPSC Case 01-E-0040, August 31 2001, at 6).
- The Nine Mile Point sale included PPAs covering 90% of plant output for the remaining license life of Unit 1 and 10 years of Unit 2, as well as an RSA for Unit 2 for the subsequent 10 years.
- The current agreement for the sale of Vermont Yankee includes a PPA for the plant's output for the remainder of the plant's license life (to 2012),

with a low-market adjuster that will reduce the price after 2005 if the market price is much lower than the base contract price.

Exhibit PLC-4 summarizes these payments.

Including the present value to the seller of all these other cash-flow streams, the values of the sales rise to roughly $400–$900/kW. For at least some of the sales, reduction in decommissioning obligations may add to the value.

Q: How do these prices compare to the price FPL has offered for Seabrook?

A: The cash portion of the proposed Seabrook sale is $807/kW, which is towards the top of the range of recent sales.

III. Review of Auction Process

Q: What aspects of the auction process did you review?

A: I reviewed the documentation provided by J.P. Morgan regarding the following aspects of the auction:

- potential bidders contacted
- the structure of the auction
- the encouragement and support of potential and actual bidders through the auction process
- arrangements for due diligence by final bidders
- the decision to proceed to final negotiations.

Most of these activities were actually undertaken by J.P. Morgan.

Q: Did J.P. Morgan contact an appropriate group of potential bidders?

A: J.P. Morgan appears to have contacted all the parties that would have been likely to bid on Seabrook. They are as follows.

- [redacted]

- [redacted]

- [redacted]

- [redacted]

The auction was widely anticipated and extensively reported, so it is unlikely that any potential bidder was unaware of the auction.

Q: Was the auction structured reasonably?

[redacted]

A: J.P. Morgan appears to have followed the standard design for auctions of generation assets.

In many auctions non-binding indicative bids are requested to assess the level of interest of bidders and, in multiple-asset auctions, assist in defining bundles of assets for the binding bids. I do not believe that the omission of this step in the Seabrook auction sacrificed much information of value.

Q: How did J.P. Morgan perform in encouraging and supporting bidders?

A: This aspect of the auction is particularly difficult to review. J.P. Morgan has not provided a detailed paper trail of its interactions with potential bidders.

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Q: Were there any special considerations in the structuring of this auction?

A: Yes. Nearly 12% of Seabrook owned by the Massachusetts Municipal Wholesale Electric Company and two Massachusetts municipal utilities (Taunton and Hudson) was not included in the auction. Potential bidders may have been concerned by the prospect of these bidders cooperating with a third party to exercise their rights of first refusal, as Rochester Gas & Electric did with respect to Nine Mile Point.[10] The buyers may also have been concerned about the prospect of dealing with three minority owners in the continued operation of Seabrook.

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[10]This concern would be mitigated by the superior rights of first refusal of UI and Northeast Utilities, who could insist on purchasing the shares at issue and turn them over to the winning bidder. .....

.....

Q: What did JP Morgan do to encourage the three non-selling owners to participate in the sale?

A: That is not at all clear. Mr. Dabbar states that "JPMorgan work[ed] with the joint owners to include as many shares as possible in the auction process…. The Commissions authorized JPMorgan to include other minority co-owner interests in the Auction. As a result, five additional co-owners did agree to participate in the Auction totaling 88.2% of the ownership interest in Seabrook." (Dabbar direct at 21, lines 4–8). Mr. Dabbar does not discuss the three additional co-owners that did *not* agree to participate in the Auction.

On discovery, J.P. Morgan was asked for "the documentation and correspondence related to JP Morgan's work with the three minority co-owners (MMWEC, Taunton Municipal, Hudson Massachusetts Light and Power) that elected not to include their interests in the auction," and to provide Mr. Dabbar's understanding of why each such minority owner chose not to participate in the auction." (Data Request OCC-01, Q-OCC-24). In response, J.P. Morgan stated that "JPMorgan worked with the NHPUC and CT DPUC to include as many shares of the joint owners as possible in the auction process. Please find Attachment A.OCC-24, a copy of the pre-marketing letter and confidentiality agreement provided to MMWEC…. The three minority owners that did not include their ownership interests in the auction did not provide an explanation of their decision to JPMorgan."

The "pre-marketing letter and confidentiality agreement provided to MMWEC" are two letters to potential bidders, not communications to the potential sellers. These documents do not ask MMWEC to participate, suggest reasons why it should participate, or even suggest a meting. Far from encouraging MMWEC to participate in the sale, the letters both state

It does not appear that J.P. Morgan even contacted the two municipal utilities, and there is no evidence that J.P. Morgan made any attempt to determine why the three owners were not selling, and whether changes in the sale terms might encourage them to participate. Contrary to Mr. Dabbar's testimony, J.P. Morgan does not appear to have "worked with the joint owners to include as many shares as possible in the auction process," but only to have included the shares of the sellers who had already decided to participate.

Q: Were the arrangements for due diligence adequate?

A: J.P. Morgan seems to have provided a large amount of data and made additional documents and plant inspections available. There is no way of knowing whether

IV. The Bid-Evaluation Process

Q: What bids did J.P. Morgan evaluate?

A: The high bidder, FPL Energy, offered

[redacted]

Q: Did J.P. Morgan properly evaluate the alternative bids?

A: The numerical evaluations of the bids included all of the readily quantifiable elements of value: [redacted]

The inputs to these numerical evaluations, such as the discount rate used to present-value the PPA, are generally appropriate, with the exception of the market prices used to value the PPA.

Q: Did JP Morgan clearly select the highest bid?

A: JP Morgan selected the highest *bidder*. [redacted]. JP Morgan's analysis understates the value of [redacted].

The situation with respect to [redacted] is less clear.

Q: What were the problems in J.P. Morgan's valuation of the PPA?

A: The spreadsheet model with which J.P. Morgan evaluated the PPAs is [redacted]

The more relevant problems in J.P. Morgan's modeling of the PPA are as follows:

[redacted]

Q: Why do you say that J.P. Morgan used market prices that were too low?

A: At the time of the evaluation in late March 2002, forward market prices in New England had increased compared to [redacted] The forward contract prices for sellers' choice power for 2003 reported by Natsource on April 4, 2002 average out to $35.2/MWh, $[redacted]/MWh higher than the $[redacted]/MWh [redacted] used by J.P. Morgan in its "Review of Offers for Seabrook Station" on March 26. Seller's choice contracts allow the suppliers to provide power anywhere in New England; typically, they will choose to deliver the power in the areas with generation surpluses, Maine, Rhode Island or southeastern Massachusetts. Seabrook is located in New Hampshire, where

[14] [redacted]

prices are much closer to those in central and northeastern Massachusetts than to the generation pockets or the load pockets (Connecticut and the Boston area). In the April 4 Natsource, energy delivered to the Massachusetts hub was priced at $38.8/MWh, $ /MWh .[15]

I included in these estimates a mix of 46% peak-period energy, 54% off-peak energy, and installed capacity at the Seabrook capacity factor projected by J.P. Morgan.

Q: Do the estimates include capacity and reflect the higher value of the Seabrook location?

A: It is not clear. J.P. Morgan has not provided any documentation of the estimate, so we do not know what intended to model.

In its modeling, J.P. Morgan uses the same estimate of market prices, without adjusting the capacity value per MWh for the different capacity factors of . This suggests that J.P. Morgan did not intend to include capacity value.

Q: Would correction of J.P. Morgan's assumptions about market power prices have changed the determination of the best bid?

A: I examined both the choice of FPL over , and the choice of FPL's Bid .

I do not have bid market prices for years after 2004, and only sporadic data for 2004. Even making assumptions favorable to , I increase the value

[15]The most recent Natsource I have seen reports prices only about $1/MWh lower than in April.

of that bid by less than $ million, .

The situation is quite different for Using the hub price from the April 4 Natsource for 2003, and extrapolating the hub price for 2004 from the available bid data, Even decreasing the market price by 10%, to reflect the contingent nature of the contract, and by another $0.3/MWh to reflect the slightly lower prices expected in New Hampshire, compared to Massachusetts,

Q: Does this conclude your testimony?

A: Yes.

[16]I computed the $0.3/MWh from the simulations in "2001 Regional Transmission Expansion Plan (RTEP01)," ISO-NE, October 19, 2001.

Exhibit PLC-1

PAUL L. CHERNICK

Resource Insight, Inc.
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SUMMARY OF PROFESSIONAL EXPERIENCE

1986–Present **President, Resource Insight, Inc.** Consults and testifies in utility and insurance economics. Reviews utility supply-planning processes and outcomes: assesses prudence of prior power planning investment decisions, identifies excess generating capacity, analyzes effects of power-pool-pricing rules on equity and utility incentives. Reviews electric-utility rate design. Estimates magnitude and cost of future load growth. Designs and evaluates conservation programs for electric, natural-gas, and water utilities, including hook-up charges and conservation cost recovery mechanisms. Determines avoided costs due to cogenerators. Evaluates cogeneration rate risk. Negotiates cogeneration contracts. Reviews management and pricing of district heating systems. Determines fair profit margins for automobile and workers' compensation insurance lines, incorporating reward for risk, return on investments, and tax effects. Determines profitability of transportation services. Advises regulatory commissions in least-cost planning, rate design, and cost allocation.

1981–86 **Research Associate, Analysis and Inference, Inc.** (Consultant, 1980–81). Researched, advised, and testified in various aspects of utility and insurance regulation. Designed self-insurance pool for nuclear decommissioning; estimated probability and cost of insurable events, and rate levels; assessed alternative rate designs. Projected nuclear power plant construction, operation, and decommissioning costs. Assessed reasonableness of earlier estimates of nuclear power plant construction schedules and costs. Reviewed prudence of utility construction decisions. Consulted on utility rate-design issues, including small-power-producer rates; retail natural-gas rates; public-agency electric rates, and comprehensive electric-rate design for a regional power agency. Developed electricity cost allocations between customer classes. Reviewed district-heating-system efficiency. Proposed power-plant performance standards. Analyzed auto-insurance profit requirements. Designed utility-financed, decentralized conservation program. Analyzed cost-effectiveness of transmission lines.

1977–81 **Utility Rate Analyst, Massachusetts Attorney General.** Analyzed utility filings and prepared alternative proposals. Participated in rate negotiations, discovery, cross-examination, and briefing. Provided extensive expert testimony before various regulatory agencies. Topics included demand forecasting, rate design, marginal costs, time-of-use rates, reliability issues, power-pool operations, nuclear-power cost projections, power-plant cost-benefit analysis, energy conservation, and alternative-energy development.

EDUCATION

SM, Technology and Policy Program, Massachusetts Institute of Technology, February 1978.

SB, Civil Engineering Department, Massachusetts Institute of Technology, June 1974.

HONORS

Chi Epsilon (Civil Engineering)

Tau Beta Pi (Engineering)

Sigma Xi (Research)

Institute Award, Institute of Public Utilities, 1981.

PUBLICATIONS

"Environmental Regulation in the Changing Electric-Utility Industry" (with Rachel Brailove), *International Association for Energy Economics Seventeenth Annual North American Conference* (96–105). Cleveland, Ohio: USAEE. 1996.

"The Price is Right: Restructuring Gain from Market Valuation of Utility Generating Assets" (with Jonathan Wallach), *International Association for Energy Economics Seventeenth Annual North American Conference* (345–352). Cleveland, Ohio: USAEE. 1996.

"The Future of Utility Resource Planning: Delivering Energy Efficiency through Distributed Utilities" (with Jonathan Wallach), *International Association for Energy Economics Seventeenth Annual North American Conference* (460–469). Cleveland, Ohio: USAEE. 1996.

"The Future of Utility Resource Planning: Delivering Energy Efficiency through Distribution Utilities" (with Jonathan Wallach), *1996 Summer Study on Energy Efficiency in Buildings,* Washington: American Council for an Energy-Efficient Economy 7(7.47–7.55). 1996.

"The Allocation of DSM Costs to Rate Classes," *Proceedings of the Fifth National Conference on Integrated Resource Planning*. Washington: National Association of Regulatory Utility Commissioners. May 1994.

"Environmental Externalities: Highways and Byways" (with Bruce Biewald and William Steinhurst), *Proceedings of the Fifth National Conference on Integrated Resource Planning.* Washington: National Association of Regulatory Utility Commissioners. May 1994.

"The Transfer Loss is All Transfer, No Loss" (with Jonathan Wallach), The *Electricity Journal* 6:6 (July 1993).

"Benefit-Cost Ratios Ignore Interclass Equity" (with others), *DSM Quarterly*, Spring 1992.

"ESCos or Utility Programs: Which Are More Likely to Succeed?" (with Sabrina Birner), *The Electricity Journal* 5:2, March 1992.

"Determining the Marginal Value of Greenhouse Gas Emissions" (with Jill Schoenberg), *Energy Developments in the 1990s: Challenges Facing Global/Pacific Markets, Vol. II*, July 1991.

"Monetizing Environmental Externalities for Inclusion in Demand-Side Management Programs" (with E. Caverhill), *Proceedings from the Demand-Side Management and the Global Environment Conference*, April 1991.

"Accounting for Externalities" (with Emily Caverhill). *Public Utilities Fortnightly* 127(5), March 1 1991.

"Methods of Valuing Environmental Externalities" (with Emily Caverhill), *The Electricity Journal* 4(2), March 1991.

"The Valuation of Environmental Externalities in Energy Conservation Planning" (with Emily Caverhill), *Energy Efficiency and the Environment: Forging the Link*. American Council for an Energy-Efficient Economy; Washington: 1991.

"The Valuation of Environmental Externalities in Utility Regulation" (with Emily Caverhill), *External Environmental Costs of Electric Power: Analysis and Internalization*. Springer-Verlag; Berlin: 1991.

"Analysis of Residential Fuel Switching as an Electric Conservation Option" (with Eric Espenhorst and Ian Goodman), *Gas Energy Review*, December 1990.

"Externalities and Your Electric Bill," *The Electricity Journal*, October 1990, p. 64.

"Monetizing Externalities in Utility Regulations: The Role of Control Costs" (with Emily Caverhill), in *Proceedings from the NARUC National Conference on Environmental Externalities*, October 1990.

"Monetizing Environmental Externalities in Utility Planning" (with Emily Caverhill), in *Proceedings from the NARUC Biennial Regulatory Information Conference*, September 1990.

"Analysis of Residential Fuel Switching as an Electric Conservation Option" (with Eric Espenhorst and Ian Goodman), in *Proceedings from the NARUC Biennial Regulatory Information Conference*, September 1990.

"A Utility Planner's Checklist for Least-Cost Efficiency Investment" (with John Plunkett) in *Proceedings from the NARUC Biennial Regulatory Information Conference*, September 1990.

Environmental Costs of Electricity (with Richard Ottinger et al.). Oceana; Dobbs Ferry, New York: September 1990.

"Demand-Side Bidding: A Viable Least-Cost Resource Strategy" (with John Plunkett and Jonathan Wallach), in *Proceedings from the NARUC Biennial Regulatory Information Conference*, September 1990.

"Incorporating Environmental Externalities in Evaluation of District Heating Options" (with Emily Caverhill), *Proceedings from the International District Heating and Cooling Association 81st Annual Conference*, June 1990.

"A Utility Planner's Checklist for Least-Cost Efficiency Investment," (with John Plunkett), *Proceedings from the Canadian Electrical Association Demand-Side Management Conference*, June 1990.

"Incorporating Environmental Externalities in Utility Planning" (with Emily Caverhill), *Canadian Electrical Association Demand Side Management Conference*, May 1990.

"Is Least-Cost Planning for Gas Utilities the Same as Least-Cost Planning for Electric Utilities?" in *Proceedings of the NARUC Second Annual Conference on Least-Cost Planning*, September 10–13 1989.

"Conservation and Cost-Benefit Issues Involved in Least-Cost Planning for Gas Utilities," in *Least Cost Planning and Gas Utilities: Balancing Theories with Realities*, Seminar proceedings from the District of Columbia Natural Gas Seminar, May 23 1989.

"The Role of Revenue Losses in Evaluating Demand-Side Resources: An Economic Re-Appraisal" (with John Plunkett), *Summer Study on Energy Efficiency in Buildings, 1988*, American Council for an Energy Efficient Economy, 1988.

"Quantifying the Economic Benefits of Risk Reduction: Solar Energy Supply Versus Fossil Fuels," in *Proceedings of the 1988 Annual Meeting of the American Solar Energy Society*, American Solar Energy Society, Inc., 1988, pp. 553–557.

"Capital Minimization: Salvation or Suicide?," in I. C. Bupp, ed., *The New Electric Power Business*, Cambridge Energy Research Associates, 1987, pp. 63–72.

"The Relevance of Regulatory Review of Utility Planning Prudence in Major Power Supply Decisions," in *Current Issues Challenging the Regulatory Process*, Center for Public Utilities, Albuquerque, New Mexico, April 1987, pp. 36–42.

"Power Plant Phase-In Methodologies: Alternatives to Rate Shock," in *Proceedings of the Fifth NARUC Biennial Regulatory Information Conference*, National Regulatory Research Institute, Columbus, Ohio, September 1986, pp. 547–562.

"Assessing Conservation Program Cost-Effectiveness: Participants, Non-participants, and the Utility System" (with A. Bachman), *Proceedings of the Fifth NARUC Biennial Regulatory Information Conference*, National Regulatory Research Institute, Columbus, Ohio, September 1986, pp. 2093–2110.

"Forensic Economics and Statistics: An Introduction to the Current State of the Art" (with Eden, P., Fairley, W., Aller, C., Vencill, C., and Meyer, M.), *The Practical Lawyer*, June 1 1985, pp. 25–36.

"Power Plant Performance Standards: Some Introductory Principles," *Public Utilities Fortnightly*, April 18 1985, pp. 29–33.

"Opening the Utility Market to Conservation: A Competitive Approach," *Energy Industries in Transition, 1985–2000*, Proceedings of the Sixth Annual North American Meeting of the International Association of Energy Economists, San Francisco, California, November 1984, pp. 1133–1145.

"Insurance Market Assessment of Technological Risks" (with Meyer, M., and Fairley, W) *Risk Analysis in the Private Sector*, pp. 401–416, Plenum Press, New York 1985.

"Revenue Stability Target Ratemaking," *Public Utilities Fortnightly*, February 17 1983, pp. 35–39.

"Capacity/Energy Classifications and Allocations for Generation and Transmission Plant" (with M. Meyer), *Award Papers in Public Utility Economics and Regulation*, Institute for Public Utilities, Michigan State University 1982.

Design, Costs and Acceptability of an Electric Utility Self-Insurance Pool for Assuring the Adequacy of Funds for Nuclear Power Plant Decommissioning Expense, (with Fairley, W., Meyer, M., and Scharff, L.) (NUREG/CR-2370), U.S. Nuclear Regulatory Commission, December 1981.

Optimal Pricing for Peak Loads and Joint Production: Theory and Applications to Diverse Conditions (Report 77-1), Technology and Policy Program, Massachusetts Institute of Technology, September 1977.

REPORTS

"Review and Critique of the Western Division Load-Pocket Study of Orange and Rockland Utilities, Inc." (with John Plunkett, Philip Mosenthal, Robert Wichert, and Robert Rose). 1999. White Plains, N.Y.: Pace University School of Law Center for Environmental Studies.

"Avoided Energy Supply Costs for Demand-Side Management in Massachusetts" (with Rachel Brailove, Susan Geller, Bruce Biewald, and David White). 1999. Northborough, Mass.: Avoided-Energy-Supply-Component Study Group, c/o New England Power Supply Company.

"Performance-based Regulation in a Restructured Utility Industry" (with Bruce Biewald, Tim Woolf, Peter Bradford, Susan Geller, and Jerrold Oppenheim). 1997. Washington: NARUC.

"Distributed Integrated-Resource-Planning Guidelines." 1997. Appendix 4 of "The Power to Save: A Plan to Transform Vermont's Energy-Efficiency Markets," submitted to the Vermont PSB in Docket No. 5854. Montpelier: Vermont DPS.

"Restructuring the Electric Utilities of Maryland: Protecting and Advancing Consumer Interests" (with Jonathan Wallach, Susan Geller, John Plunkett, Roger Colton, Peter Bradford, Bruce Biewald, and David Wise). 1997. Baltimore, Maryland: Maryland Office of People's Counsel.

"Comments of the New Hampshire Office of Consumer Advocate on Restructuring New Hampshire's Electric-Utility Industry" (with Bruce Biewald and Jonathan Wallach). 1996. Concord, N.H.: NH OCA.

"Estimation of Market Value, Stranded Investment, and Restructuring Gains for Major Massachusetts Utilities" (with Susan Geller, Rachel Brailove, Jonathan Wallach, and Adam Auster). 1996. On behalf of the Massachusetts Attorney General (Boston).

From Here to Efficiency: Securing Demand-Management Resources (with Emily Caverhill, James Peters, John Plunkett, and Jonathan Wallach). 1993. 5 vols. Harrisburg, Penn: Pennsylvania Energy Office.

"Analysis Findings, Conclusions, and Recommendations," vol. 1 of "Correcting the Imbalance of Power: Report on Integrated Resource Planning for Ontario Hydro" (with Plunkett, John, and Jonathan Wallach), December 1992.

"Estimation of the Costs Avoided by Potential Demand-Management Activities of Ontario Hydro," December 1992.

"Review of the Elizabethtown Gas Company's 1992 DSM Plan and the Demand-Side Management Rules" (with Jonathan Wallach, John Plunkett, James Peters, Susan Geller, Blair. Hamilton, and Andrew Shapiro). 1992. Report to the New Jersey Department of Public Advocate.

Environmental Externalities Valuation and Ontario Hydro's Resource Planning (with E. Caverhill and R. Brailove), 3 vols.; prepared for the Coalition of Environmental Groups for a Sustainable Energy Future, October 1992.

"Review of Jersey Central Power & Light's 1992 DSM Plan and the Demand-Side Management Rules" (with Jonathan Wallach et al.); Report to the New Jersey Department of Public Advocate, June 1992.

"The AGREA Project Critique of Externality Valuation: A Brief Rebuttal," March 1992.

"The Potential Economic Benefits of Regulatory NO_X Valuation for Clean Air Act Ozone Compliance in Massachusetts," March 1992.

"Initial Review of Ontario Hydro's Demand-Supply Plan Update" (with David Argue et al.), February 1992.

"Report on the Adequacy of Ontario Hydro's Estimates of Externality Costs Associated with Electricity Exports" (with Emily Caverhill), January 1991.

"Comments on the 1991–1992 Annual and Long Range Demand-Side-Management Plans of the Major Electric Utilities," (with John Plunkett et al.), September 1990. Filed in NY PSC Case No. 28223 in re New York utilities' DSM plans.

"Power by Efficiency: An Assessment of Improving Electrical Efficiency to Meet Jamaica's Power Needs," (with Conservation Law Foundation, et al.), June 1990.

"Analysis of Fuel Substitution as an Electric Conservation Option," (with Ian Goodman and Eric Espenhorst), Boston Gas Company, December 22 1989.

"The Development of Consistent Estimates of Avoided Costs for Boston Gas Company, Boston Edison Company, and Massachusetts Electric Company" (with Eric Espenhorst), Boston Gas Company, December 22 1989.

"The Valuation of Externalities from Energy Production, Delivery, and Use: Fall 1989 Update" (with Emily Caverhill), Boston Gas Company, December 22 1989.

"Conservation Potential in the State of Minnesota," (with Ian Goodman) Minnesota Department of Public Service, June 16 1988.

"Review of NEPOOL Performance Incentive Program," Massachusetts Energy Facilities Siting Council, April 12 1988.

"Application of the DPU's Used-and-Useful Standard to Pilgrim 1" (With C. Wills and M. Meyer), Massachusetts Executive Office of Energy Resources, October 1987.

"Constructing a Supply Curve for Conservation: An Initial Examination of Issues and Methods," Massachusetts Energy Facilities Siting Council, June 1985.

"Final Report: Rate Design Analysis," Pacific Northwest Electric Power and Conservation Planning Council, December 18 1981.

PRESENTATIONS

"Distributed Utility Planning." With Steve Litkovitz. Presentation to the Vermont Distributed-Utility-Planning Collaborative, November 1999.

"The Economic and Environmental Benefits of Gas IRP: FERC 636 and Beyond." Presentation as part of the Ohio Office of Energy Efficiency's seminar, "Gas Utility Integrated Resource Planning," April 1994.

"Cost Recovery and Utility Incentives." Day-long presentation as part of the Demand-Side-Management Training Institute's workshop, "DSM for Public Interest Groups," October 1993.

"Cost Allocation for Utility Ratemaking." With Susan Geller. Day-long workshop for the staff of the Connecticut Department of Public Utility Control, October 1993.

"Comparing and Integrating DSM with Supply." Day-long presentation as part of the Demand-Side-Management Training Institute's workshop, "DSM for Public Interest Groups," October 1993.

"DSM Cost Recovery and Rate Impacts." Presentation as part of "Effective DSM Collaborative Processes," a week-long training session for Ohio DSM advocates sponsored by the Ohio Office of Energy Efficiency, August 1993.

"Cost-Effectiveness Analysis." Presentation as part of "Effective DSM Collaborative Processes," a week-long training session for Ohio DSM advocates sponsored by the Ohio Office of Energy Efficiency, August 1993.

"Environmental Externalities: Current Approaches and Potential Implications for District Heating and Cooling" (with R. Brailove), International District Heating and Cooling Association 84th Annual Conference; June 1993.

"Using the Costs of Required Controls to Incorporate the Costs of Environmental Externalities in Non-Environmental Decision-Making." Presentation at the American Planning Association 1992 National Planning Conference; presentation cosponsored by the Edison Electric Institute. May 1992.

"Cost Recovery and Decoupling" and "The Clean Air Act and Externalities in Utility Resource Planning" panels (session leader), DSM Advocacy Workshop; April 15 1992.

"Overview of Integrated Resources Planning Procedures in South Carolina and Critique of South Carolina Demand Side Management Programs," Energy Planning Workshops; Columbia, S.C.; October 21 1991;

"Least Cost Planning and Gas Utilities." Conservation Law Foundation Utility Energy Efficiency Advocacy Workshop; Boston, February 28 1991.

"Least-Cost Planning in a Multi-Fuel Context," NARUC Forum on Gas Integrated Resource Planning; Washington, D.C., February 24 1991.

"Accounting for Externalities: Why, Which and How?" Understanding Massachusetts' New Integrated Resource Management Rules; Needham, Massachusetts, November 9 1990.

"Increasing Market Share Through Energy Efficiency." New England Gas Association Gas Utility Managers' Conference; Woodstock, Vermont, September 10 1990.

"Quantifying and Valuing Environmental Externalities." Presentation at the Lawrence Berkeley Laboratory Training Program for Regulatory Staff, sponsored by the U.S. Department of Energy's Least-Cost Utility Planning Program; Berkeley, California, February 2 1990;

"Conservation in the Future of Natural Gas Local Distribution Companies," District of Columbia Natural Gas Seminar; Washington, D.C., May 23 1989.

"Conservation and Load Management for Natural Gas Utilities," Massachusetts Natural Gas Council; Newton, Massachusetts, April 3 1989.

New England Conference of Public Utilities Commissioners, Environmental Externalities Workshop; Portsmouth, New Hampshire, January 22–23 1989.

"Assessment and Valuation of External Environmental Damages," New England Utility Rate Forum; Plymouth, Massachusetts, October 11 1985; "Lessons from Massachusetts on Long Term Rates for QFs".

"Reviewing Utility Supply Plans," Massachusetts Energy Facilities Siting Council; Boston, Massachusetts, May 30 1985.

"Power Plant Performance," National Association of State Utility Consumer Advocates; Williamstown, Massachusetts, August 13 1984.

"Utility Rate Shock," National Conference of State Legislatures; Boston, Massachusetts, August 6 1984.

"Review and Modification of Regulatory and Rate Making Policy," National Governors' Association Working Group on Nuclear Power Cost Overruns; Washington, D.C., June 20 1984.

"Review and Modification of Regulatory and Rate Making Policy," Annual Meeting of the American Association for the Advancement of Science, Session on Monitoring for Risk Management; Detroit, Michigan, May 27 1983.

ADVISORY ASSIGNMENTS TO REGULATORY COMMISSIONS

District of Columbia Public Service Commission, Docket No. 834, Phase II; Least-cost planning procedures and goals; August 1987 to March 1988.

Connecticut Department of Public Utility Control, Docket No. 87-07-01, Phase 2; Rate design and cost allocations; March 1988 to June 1989.

EXPERT TESTIMONY

1. **MEFSC** 78-12/MDPU 19494, Phase I; Boston Edison 1978 forecast; Massachusetts Attorney General; June 12 1978.

   Appliance penetration projections, price elasticity, econometric commercial forecast, peak demand forecast. Joint testimony with Susan C. Geller.

2. **MEFSC** 78-17; Northeast Utilities 1978 forecast; Massachusetts Attorney General; September 29 1978.

   Specification of economic/demographic and industrial models, appliance efficiency, commercial model structure and estimation.

3. **MEFSC** 78-33; Eastern Utilities Associates 1978 forecast; Massachusetts Attorney General; November 27 1978.

   Household size, appliance efficiency, appliance penetration, price elasticity, commercial forecast, industrial trending, peak demand forecast.

4. **MDPU** 19494; Phase II; Boston Edison Company Construction Program; Massachusetts Attorney General; April 1 1979.

Review of numerous aspects of the 1978 demand forecasts of nine New England electric utilities, constituting 92% of projected regional demand growth, and of the NEPOOL demand forecast. Joint testimony with S.C. Geller.

5. **MDPU** 19494; Phase II; Boston Edison Company Construction Program; Massachusetts Attorney General; April 1 1979.

   Reliability, capacity planning, capability responsibility allocation, customer generation, co-generation rates, reserve margins, operating reserve allocation. Joint testimony with S. Finger.

6. **ASLB, NRC** 50-471; Pilgrim Unit 2, Boston Edison Company; Commonwealth of Massachusetts; June 29 1979.

   Review of the Oak Ridge National Laboratory and NEPOOL demand forecast models; cost-effectiveness of oil displacement; nuclear economics. Joint testimony with S.C. Geller.

7. **MDPU** 19845; Boston Edison Time-of-Use Rate Case; Massachusetts Attorney General; December 4 1979.

   Critique of utility marginal cost study and proposed rates; principles of marginal cost principles, cost derivation, and rate design; options for reconciling costs and revenues. Joint testimony with S.C. Geller. Testimony eventually withdrawn due to delay in case.

8. **MDPU** 20055; Petition of Eastern Utilities Associates, New Bedford G. & E., and Fitchburg G. & E. to purchase additional shares of Seabrook Nuclear Plant; Massachusetts Attorney General; January 23 1980.

   Review of demand forecasts of three utilities purchasing Seabrook shares; Seabrook power costs, including construction cost, completion date, capacity factor, O&M expenses, interim replacements, reserves and uncertainties; alternative energy sources, including conservation, cogeneration, rate reform, solar, wood and coal conversion.

9. **MDPU** 20248; Petition of MMWEC to Purchase Additional Share of Seabrook Nuclear Plant; Massachusetts Attorney General; June 2 1980.

   Nuclear power costs; update and extension of MDPU 20055 testimony.

10. **MDPU** 200; Massachusetts Electric Company Rate Case; Massachusetts Attorney General; June 16 1980.

    Rate design; declining blocks, promotional rates, alternative energy, demand charges, demand ratchets; conservation: master metering, storage heating, efficiency standards, restricting resistance heating.

11. **MEFSC** 79-33; Eastern Utilities Associates 1979 Forecast; Massachusetts Attorney General; July 16 1980.

Customer projections, consistency issues, appliance efficiency, new appliance types, commercial specifications, industrial data manipulation and trending, sales and resale.

12. **MDPU** 243; Eastern Edison Company Rate Case; Massachusetts Attorney General; August 19 1980.

Rate design: declining blocks, promotional rates, alternative energy, master metering.

13. **Texas PUC** 3298; Gulf States Utilities Rate Case; East Texas Legal Services; August 25 1980.

Inter-class revenue allocations, including production plant in-service, O&M, CWIP, nuclear fuel in progress, amortization of canceled plant residential rate design; interruptible rates; off-peak rates. Joint testimony with M. B. Meyer.

14. **MEFSC** 79-1; Massachusetts Municipal Wholesale Electric Company Forecast; Massachusetts Attorney General; November 5 1980.

Cost comparison methodology; nuclear cost estimates; cost of conservation, co-generation, and solar.

15. **MDPU** 472; Recovery of Residential Conservation Service Expenses; Massachusetts Attorney General; December 12 1980.

Conservation as an energy source; advantages of per-kWh allocation over per-customer-month allocation.

16. **MDPU** 535; Regulations to Carry Out Section 210 of PURPA; Massachusetts Attorney General; January 26 1981 and February 13 1981.

Filing requirements, certification, qualifying facility (QF) status, extent of coverage, review of contracts; energy rates; capacity rates; extra benefits of QFs in specific areas; wheeling; standardization of fees and charges.

17. **MEFSC** 80-17; Northeast Utilities 1980 Forecast; Massachusetts Attorney General; March 12 1981 (not presented).

Specification process, employment, electric heating promotion and penetration, commercial sales model, industrial model specification, documentation of price forecasts and wholesale forecast.

18. **MDPU** 558; Western Massachusetts Electric Company Rate Case; Massachusetts Attorney General; May 1981.

Rate design including declining blocks, marginal cost conservation impacts, and promotional rates. Conservation, including terms and conditions limiting renewable, cogeneration, small power production; scope of current conservation program; efficient insulation levels; additional conservation opportunities.

19. **MDPU** 1048; Boston Edison Plant Performance Standards; Massachusetts Attorney General; May 7 1982.

Critique of company approach, data, and statistical analysis; description of comparative and absolute approaches to standard-setting; proposals for standards and reporting requirements.

20. **DCPSC** FC785; Potomac Electric Power Rate Case; DC People's Counsel; July 29 1982.

Inter-class revenue allocations, including generation, transmission, and distribution plant classification; fuel and O&M classification; distribution and service allocators. Marginal cost estimation, including losses.

21. **NHPUC** DE1-312; Public Service of New Hampshire-Supply and Demand; Conservation Law Foundation, et al.; October 8 1982.

Conservation program design, ratemaking, and effectiveness. Cost of power from Seabrook nuclear plant, including construction cost and duration, capacity factor, O&M, replacements, insurance, and decommissioning.

22. **Massachusetts Division of Insurance;** Hearing to Fix and Establish 1983 Automobile Insurance Rates; Massachusetts Attorney General; October 1982.

Profit margin calculations, including methodology, interest rates, surplus flow, tax flows, tax rates, and risk premium.

23. **Illinois Commerce Commission** 82-0026; Commonwealth Edison Rate Case; Illinois Attorney General; October 15 1982.

Review of Cost-Benefit Analysis for nuclear plant. Nuclear cost parameters (construction cost, O&M, capital additions, useful like, capacity factor), risks, discount rates, evaluation techniques.

24. **New Mexico PSC** 1794; Public Service of New Mexico Application for Certification; New Mexico Attorney General; May 10 1983.

Review of Cost-Benefit Analysis for transmission line. Review of electricity price forecast, nuclear capacity factors, load forecast. Critique of company ratemaking proposals; development of alternative ratemaking proposal.

25. **Connecticut Public Utility Control Authority** 830301; United Illuminating Rate Case; Connecticut Consumers Counsel; June 17 1983.

Cost of Seabrook nuclear power plants, including construction cost and duration, capacity factor, O&M, capital additions, insurance and decommissioning.

26. **MDPU** 1509; Boston Edison Plant Performance Standards; Massachusetts Attorney General; July 15 1983.

Critique of company approach and statistical analysis; regression model of nuclear capacity factor; proposals for standards and for standard-setting methodologies.

27. **Massachusetts Division of Insurance;** Hearing to Fix and Establish 1984 Automobile Insurance Rates; Massachusetts Attorney General; October 1983.

    Profit margin calculations, including methodology, interest rates.

28. **Connecticut Public Utility Control Authority** 83-07-15; Connecticut Light and Power Rate Case; Alloy Foundry; October 3 1983.

    Industrial rate design. Marginal and embedded costs; classification of generation, transmission, and distribution expenses; demand versus energy charges.

29. **MEFSC** 83-24; New England Electric System Forecast of Electric Resources and Requirements; Massachusetts Attorney General; November 14 1983, Rebuttal, February 2 1984.

    Need for transmission line. Status of supply plan, especially Seabrook 2. Review of interconnection requirements. Analysis of cost-effectiveness for power transfer, line losses, generation assumptions.

30. **Michigan PSC** U-7775; Detroit Edison Fuel Cost Recovery Plan; Public Interest Research Group in Michigan; February 21 1984.

    Review of proposed performance target for new nuclear power plant. Formulation of alternative proposals.

31. **MDPU** 84-25; Western Massachusetts Electric Company Rate Case; Massachusetts Attorney General; April 6 1984.

    Need for Millstone 3. Cost of completing and operating unit, cost-effectiveness compared to alternatives, and its effect on rates. Equity and incentive problems created by CWIP. Design of Millstone 3 phase-in proposals to protect ratepayers: limitation of base-rate treatment to fuel savings benefit of unit.

32. **MDPU** 84-49 and 84-50; Fitchburg Gas & Electric Financing Case; Massachusetts Attorney General; April 13 1984.

    Cost of completing and operating Seabrook nuclear units. Probability of completing Seabrook 2. Recommendations regarding FG&E and MDPU actions with respect to Seabrook.

33. **Michigan PSC** U-7785; Consumers Power Fuel Cost Recovery Plan; Public Interest Research Group in Michigan; April 16 1984.

    Review of proposed performance targets for two existing and two new nuclear power plants. Formulation of alternative policy.

34. **FERC** ER81-749-000 and ER82-325-000; Montaup Electric Rate Cases; Massachusetts Attorney General; April 27 1984.

Prudence of Montaup and Boston Edison in decisions regarding Pilgrim 2 construction: Montaup's decision to participate, the Utilities' failure to review their earlier analyses and assumptions, Montaup's failure to question Edison's decisions, and the utilities' delay in canceling the unit.

35. **Maine PUC** 84-113; Seabrook 1 Investigation; Maine Public Advocate; September 13 1984.

Cost of completing and operating Seabrook Unit 1. Probability of completing Seabrook 1. Comparison of Seabrook to alternatives. Rate effects. Recommendations regarding utility and PUC actions with respect to Seabrook.

36. **MDPU** 84-145; Fitchburg Gas and Electric Rate Case; Massachusetts Attorney General; November 6 1984.

Prudence of Fitchburg and Public Service of New Hampshire in decision regarding Seabrook 2 construction: FGE's decision to participate, the utilities' failure to review their earlier analyses and assumptions, FGE's failure to question PSNH's decisions, and utilities' delay in halting construction and canceling the unit. Review of literature, cost and schedule estimate histories, cost-benefit analyses, and financial feasibility.

37. **Pennsylvania PUC** R-842651; Pennsylvania Power and Light Rate Case; Pennsylvania Consumer Advocate; November 1984.

Need for Susquehanna 2. Cost of operating unit, power output, cost-effectiveness compared to alternatives, and its effect on rates. Design of phase-in and excess capacity proposals to protect ratepayers: limitation of base-rate treatment to fuel savings benefit of unit.

38. **NHPUC** 84-200; Seabrook Unit 1 Investigation; New Hampshire Public Advocate; November 15 1984.

Cost of completing and operating Seabrook Unit 1. Probability of completing Seabrook 1. Comparison of Seabrook to alternatives. Rate and financial effects.

39. **Massachusetts Division of Insurance;** Hearing to Fix and Establish 1985 Automobile Insurance Rates; Massachusetts Attorney General; November 1984.

Profit margin calculations, including methodology and implementation.

40. **MDPU** 84-152; Seabrook Unit 1 Investigation; Massachusetts Attorney General; December 12 1984.

Cost of completing and operating Seabrook. Probability of completing Seabrook 1. Seabrook capacity factors.

41. **Maine PUC** 84-120; Central Maine Power Rate Case; Maine PUC Staff; December 11 1984.

Prudence of Central Maine Power and Boston Edison in decisions regarding Pilgrim 2 construction: CMP's decision to participate, the utilities' failure to review their earlier analyses and assumptions, CMP's failure to question Edison's decisions, and the utilities' delay in canceling the unit. Prudence of CMP in the planning and investment in Sears Island nuclear and coal plants. Review of literature, cost and schedule estimate histories, cost-benefit analyses, and financial feasibility.

42. **Maine PUC** 84-113; Seabrook 2 Investigation; Maine PUC Staff; December 14 1984.

Prudence of Maine utilities and Public Service of New Hampshire in decisions regarding Seabrook 2 construction: decisions to participate and to increase ownership share, the utilities' failure to review their earlier analyses and assumptions, failure to question PSNH's decisions, and the utilities' delay in halting construction and canceling the unit. Review of literature, cost and schedule estimate histories, cost-benefit analyses, and financial feasibility.

43. **MDPU** 1627; Massachusetts Municipal Wholesale Electric Company Financing Case; Massachusetts Executive Office of Energy Resources; January 14 1985.

Cost of completing and operating Seabrook nuclear unit 1. Cost of conservation and other alternatives to completing Seabrook. Comparison of Seabrook to alternatives.

44. **Vermont PSB** 4936; Millstone 3; Costs and In-Service Date; Vermont Department of Public Service; January 21 1985.

Construction schedule and cost of completing Millstone Unit 3.

45. **MDPU** 84-276; Rules Governing Rates for Utility Purchases of Power from Qualifying Facilities; Massachusetts Attorney General; March 25 1985, and October 18 1985.

Institutional and technological advantages of Qualifying Facilities. Potential for QF development. Goals of QF rate design. Parity with other power sources. Security requirements. Projecting avoided costs. Capacity credits. Pricing options. Line loss corrections.

46. **MDPU** 85-121; Investigation of the Reading Municipal Light Department; Wilmington (MA) Chamber of Commerce; November 12 1985.

Calculation on return on investment for municipal utility. Treatment of depreciation and debt for ratemaking. Geographical discrimination in street-lighting rates. Relative size of voluntary payments to Reading and other towns. Surplus and disinvestment. Revenue allocation.

47. **Massachusetts Division of Insurance;** Hearing to Fix and Establish 1986 Automobile Insurance Rates; Massachusetts Attorney General and State Rating Bureau; November 1985.

Profit margin calculations, including methodology, implementation, modeling of investment balances, income, and return to shareholders.

48. **New Mexico PSC** 1833, Phase II; El Paso Electric Rate Case; New Mexico Attorney General; December 23 1985.

Nuclear decommissioning fund design. Internal and external funds; risk and return; fund accumulation, recommendations. Interim performance standard for Palo Verde nuclear plant.

49. **Pennsylvania PUC** R-850152; Philadelphia Electric Rate Case; Utility Users Committee and University of Pennsylvania; January 14 1986.

Limerick 1 rate effects. Capacity benefits, fuel savings, operating costs, capacity factors, and net benefits to ratepayers. Design of phase-in proposals.

50. **MDPU** 85-270; Western Massachusetts Electric Rate Case; Massachusetts Attorney General; March 19 1986.

Prudence of Northeast Utilities in generation planning related to Millstone 3 construction: decisions to start and continue construction, failure to reduce ownership share, failure to pursue alternatives. Review of industry literature, cost and schedule histories, and retrospective cost-benefit analyses.

51. **Pennsylvania PUC** R-850290; Philadelphia Electric Auxiliary Service Rates; Albert Einstein Medical Center, University of Pennsylvania and AMTRAK; March 24 1986.

Review of utility proposals for supplementary and backup rates for small power producers and cogenerators. Load diversity, cost of peaking capacity, value of generation, price signals, and incentives. Formulation of alternative supplementary rate.

52. **New Mexico PSC** 2004; Public Service of New Mexico, Palo Verde Issues; New Mexico Attorney General; May 7 1986.

Recommendations for Power Plant Performance Standards for Palo Verde nuclear units 1, 2, and 3.

53. **Illinois Commerce Commission** 86-0325; Iowa-Illinois Gas and Electric Co. Rate Investigation; Illinois Office of Public Counsel; August 13 1986.

Determination of excess capacity based on reliability and economic concerns. Identification of specific units associated with excess capacity. Required reserve margins.

54. **New Mexico PSC** 2009; El Paso Electric Rate Moderation Program; New Mexico Attorney General; August 18 1986. (Not presented).

Prudence of EPE in generation planning related to Palo Verde nuclear construction, including failure to reduce ownership share and failure to pursue alternatives. Review of industry literature, cost and schedule histories, and retrospective cost-benefit analyses.

Recommendation for rate-base treatment; proposal of power plant performance standards.

55. **City of Boston, Public Improvements Commission;** Transfer of Boston Edison District Heating Steam System to Boston Thermal Corporation; Boston Housing Authority; December 18 1986.

    History and economics of steam system; possible motives of Boston Edison in seeking sale; problems facing Boston Thermal; information and assurances required prior to Commission approval of transfer.

56. **Massachusetts Division of Insurance;** Hearing to Fix and Establish 1987 Automobile Insurance Rates; Massachusetts Attorney General and State Rating Bureau; December 1986 and January 1987.

    Profit margin calculations, including methodology, implementation, derivation of cash flows, installment income, income tax status, and return to shareholders.

57. **MDPU** 87-19; Petition for Adjudication of Development Facilitation Program; Hull (MA) Municipal Light Plant; January 21 1987.

    Estimation of potential load growth; cost of generation, transmission, and distribution additions. Determination of hook-up charges. Development of residential load estimation procedure reflecting appliance ownership, dwelling size.

58. **New Mexico PSC** 2004; Public Service of New Mexico Nuclear Decommissioning Fund; New Mexico Attorney General; February 19 1987.

    Decommissioning cost and likely operating life of nuclear plants. Review of utility funding proposal. Development of alternative proposal. Ratemaking treatment.

59. **MDPU** 86-280; Western Massachusetts Electric Rate Case; Massachusetts Energy Office; March 9 1987.

    Marginal cost rate design issues. Superiority of long-run marginal cost over short-run marginal cost as basis for rate design. Relationship of consumer reaction, utility planning process, and regulatory structure to rate design approach. Implementation of short-run and long-run rate designs. Demand versus energy charges, economic development rates, spot pricing.

60. **Massachusetts Division of Insurance** 87-9; 1987 Workers' Compensation Rate Filing; State Rating Bureau; May 1987.

    Profit margin calculations, including methodology, implementation, surplus requirements, investment income, and effects of 1986 Tax Reform Act.

61. **Texas PUC** 6184; Economic Viability of South Texas Nuclear Plant #2; Committee for Consumer Rate Relief; August 17 1987.

STNP operating parameter projections; capacity factor, O&M, capital additions, decommissioning, useful life. STNP 2 cost and schedule projections. Potential for conservation.

62. **Minnesota PUC** ER-015/GR-87-223; Minnesota Power Rate Case; Minnesota Department of Public Service; August 17 1987.

    Excess capacity on MP system; historical, current, and projected. Review of MP planning prudence prior to and during excess; efforts to sell capacity. Cost of excess capacity. Recommendations for ratemaking treatment.

63. **Massachusetts Division of Insurance** 87-27; 1988 Automobile Insurance Rates; Massachusetts Attorney General and State Rating Bureau; September 2 1987. Rebuttal October 8 1987.

    Underwriting profit margins. Effect of 1986 Tax Reform Act. Biases in calculation of average margins.

64. **MDPU** 88-19; Power Sales Contract from Riverside Steam and Electric to Western Massachusetts Electric; Riverside Steam and Electric; November 4 1987.

    Comparison of risk from QF contract and utility avoided cost sources. Risk of oil dependence. Discounting cash flows to reflect risk.

65. **Massachusetts Division of Insurance** 87-53; 1987 Workers' Compensation Rate Refiling; State Rating Bureau; December 14 1987.

    Profit margin calculations, including updating of data, compliance with Commissioner's order, treatment of surplus and risk, interest rate calculation, and investment tax rate calculation.

66. **Massachusetts Division of Insurance;** 1987 and 1988 Automobile Insurance Remand Rates; Massachusetts Attorney General and State Rating Bureau; February 5 1988.

    Underwriting profit margins. Provisions for income taxes on finance charges. Relationships between allowed and achieved margins, between statewide and nationwide data, and between profit allowances and cost projections.

67. **MDPU** 86-36; Investigation into the Pricing and Ratemaking Treatment to be Afforded New Electric Generating Facilities which are not Qualifying Facilities; Conservation Law Foundation; May 2 1988.

    Cost recovery for utility conservation programs. Compensating for lost revenues. Utility incentive structures.

68. **MDPU** 88-123; Petition of Riverside Steam & Electric Company; Riverside Steam and Electric Company; May 18 1988, and November 8 1988.

Estimation of avoided costs of Western Massachusetts Electric Company. Nuclear capacity factor projections and effects on avoided costs. Avoided cost of energy interchange and power plant life extensions. Differences between median and expected oil prices. Salvage value of cogeneration facility. Off-system energy purchase projections. Reconciliation of avoided cost projection.

69. **MDPU** 88-67; Boston Gas Company; Boston Housing Authority; June 17 1988.

Estimation of annual avoidable costs, 1988 to 2005, and levelized avoided costs. Determination of cost recovery and carrying costs for conservation investments. Standards for assessing conservation cost-effectiveness. Evaluation of cost-effectiveness of utility funding of proposed natural gas conservation measures.

70. **Rhode Island PUC** Docket 1900; Providence Water Supply Board Tariff Filing; Conservation Law Foundation, Audubon Society of Rhode Island, and League of Women Voters of Rhode Island; June 24 1988.

Estimation of avoidable water supply costs. Determination of costs of water conservation. Conservation cost-benefit analysis.

71. **Massachusetts Division of Insurance** 88-22; 1989 Automobile Insurance Rates; Massachusetts Attorney General and State Rating Bureau; Profit Issues, August 12 1988, supplemented August 19 1988; Losses and Expenses, September 16 1988.

Underwriting profit margins. Effects of 1986 Tax Reform Act. Taxation of common stocks. Lag in tax payments. Modeling risk and return over time. Treatment of finance charges. Comparison of projected and achieved investment returns.

72. **Vermont PSB** 5270, Module 6; Investigation into Least-Cost Investments, Energy Efficiency, Conservation, and the Management of Demand for Energy; Conservation Law Foundation, Vermont Natural Resources Council, and Vermont Public Interest Research Group; September 26 1988.

Cost recovery for utility conservation programs. Compensation of utilities for revenue losses and timing differences. Incentive for utility participation.

73. **Vermont House of Representatives, Natural Resources Committee;** House Act 130; "Economic Analysis of Vermont Yankee Retirement"; Vermont Public Interest Research Group; February 21 1989.

Projection of capacity factors, operating and maintenance expense, capital additions, overhead, replacement power costs, and net costs of Vermont Yankee.

74. **MDPU** 88-67, Phase II; Boston Gas Company Conservation Program and Rate Design; Boston Gas Company; March 6 1989.

Estimation of avoided gas cost; treatment of non-price factors; estimation of externalities; identification of cost-effective conservation.

75. **Vermont PSB** 5270; Status Conference on Conservation and Load Management Policy Settlement; Central Vermont Public Service, Conservation Law Foundation, Vermont Natural Resources Council, Vermont Public Interest Research Group, and Vermont Department of Public Service; May 1 1989.

Cost-benefit test for utility conservation programs. Role of externalities. Cost recovery concepts and mechanisms. Resource allocations, cost allocations, and equity considerations. Guidelines for conservation preapproval mechanisms. Incentive mechanisms and recovery of lost revenues.

76. **Boston Housing Authority Court** 05099; Gallivan Boulevard Task Force vs. Boston Housing Authority, et al.; Boston Housing Authority; June 16 1989.

Effect of master-metering on consumption of natural gas and electricity. Legislative and regulatory mandates regarding conservation.

77. **MDPU** 89-100; Boston Edison Rate Case; Massachusetts Energy Office; June 30 1989.

Prudence of BECo's decision of spend $400 million from 1986–88 on returning the Pilgrim nuclear power plant to service. Projections of nuclear capacity factors, O&M, capital additions, and overhead. Review of decommissioning cost, tax effect of abandonment, replacement power cost, and plant useful life estimates. Requirements for prudence and used-and-useful analyses.

78. **MDPU** 88-123; Petition of Riverside Steam and Electric Company; Riverside Steam and Electric; July 24 1989. Rebuttal, October 3 1989.

Reasonableness of Northeast Utilities' 1987 avoided cost estimates. Projections of nuclear capacity factors, economy purchases, and power plant operating life. Treatment of avoidable energy and capacity costs and of off-system sales. Expected versus reference fuel prices.

79. **MDPU** 89-72; Statewide Towing Association, Police-Ordered Towing Rates; Massachusetts Automobile Rating Bureau; September 13 1989.

Review of study supporting proposed increase in towing rates. Critique of study sample and methodology. Comparison to competitive rates. Supply of towing services. Effects of joint products and joint sales on profitability of police-ordered towing. Joint testimony with I. Goodman.

80. **Vermont PSB** 5330; Application of Vermont Utilities for Approval of a Firm Power and Energy Contract with Hydro-Quebec; Conservation Law Foundation, Vermont Natural Resources Council, Vermont Public Interest Research Group; December 19 1989. Surrebuttal February 6 1990.

Analysis of a proposed 450-MW, 20 year purchase of Hydro-Quebec power by twenty-four Vermont utilities. Comparison to efficiency investment in Vermont, including potential for efficiency savings. Analysis of Vermont electric energy supply. Identification of possible improvements to proposed contract.

Critique of conservation potential analysis. Planning risk of large supply additions. Valuation of environmental externalities.

81. **MDPU** 89-239; Inclusion of Externalities in Energy Supply Planning, Acquisition and Dispatch for Massachusetts Utilities; December 1989; April 1990; May 1990.

Critique of Division of Energy Resources report on externalities. Methodology for evaluating external costs. Proposed values for environmental and economic externalities of fuel supply and use.

82. **California PUC**; Incorporation of Environmental Externalities in Utility Planning and Pricing; Coalition of Energy Efficient and Renewable Technologies; February 21 1990.

Approaches for valuing externalities for inclusion in setting power purchase rates. Effect of uncertainty on assessing externality values.

83. **Illinois Commerce Commission** Docket 90-0038; Proceeding to Adopt a Least Cost Electric Energy Plan for Commonwealth Edison Company; City of Chicago; May 25 1990. Joint rebuttal testimony with David Birr, August 14 1990.

Problems in Commonwealth Edison's approach to demand-side management. Potential for cost-effective conservation. Valuing externalities in least-cost planning.

84. **Maryland PSC** 8278; Adequacy of Baltimore Gas & Electric's Integrated Resource Plan; Maryland Office of People's Counsel; September 18 1990.

Rationale for demand-side management, and BG&E's problems in approach to DSM planning. Potential for cost-effective conservation. Valuation of environmental externalities. Recommendations for short-term DSM program priorities.

85. **Indiana Utility Regulatory Commission;** Integrated Resource Planning Docket; Indiana Office of Utility Consumer Counselor; November 1 1990.

Integrated resource planning process and methodology, including externalities and screening tools. Incentives, screening, and evaluation of demand-side management. Potential of resource bidding in Indiana.

86. **MDPU** 89-141, 90-73, 90-141, 90-194, and 90-270; Preliminary Review of Utility Treatment of Environmental Externalities in October QF Filings; Boston Gas Company; November 5 1990.

Generic and specific problems in Massachusetts utilities' RFPs with regard to externality valuation requirements. Recommendations for corrections.

87. **MEFSC** 90-12/90-12A; Adequacy of Boston Edison Proposal to Build Combined-Cycle Plant; Conservation Law Foundation; December 14 1990.

    Problems in Boston Edison's treatment of demand-side management, supply option analysis, and resource planning. Recommendations of mitigation options.

88. **Maine PUC** 90-286; Adequacy of Conservation Program of Bangor Hydro Electric; Penobscot River Coalition; February 19 1991.

    Role of utility-sponsored DSM in least-cost planning. Bangor Hydro's potential for cost-effective conservation. Problems with Bangor Hydro's assumptions about customer investment in energy efficiency measures.

89. **Virginia State Corporation Commission** PUE900070; Order Establishing Commission Investigation; Southern Environmental Law Center; March 6 1991.

    Role of utilities in promoting energy efficiency. Least-cost planning objectives of and resource acquisition guidelines for DSM. Ratemaking considerations for DSM investments.

90. **MDPU** 90-261-A; Economics and Role of Fuel-Switching in the DSM Program of the Massachusetts Electric Company; Boston Gas Company; April 17 1991.

    Role of fuel-switching in utility DSM programs and specifically in Massachusetts Electric's. Establishing comparable avoided costs and comparison of electric and gas system costs. Updated externality values.

91. **Private arbitration;** Massachusetts Refusetech Contractual Request for Adjustment to Service Fee; Massachusetts Refusetech; May 13 1991.

    NEPCo rates for power purchases from the NESWC plant. Fuel price and avoided cost projections vs. realities.

92. **Vermont PSB** 5491; Cost-Effectiveness of Central Vermont's Commitment to Hydro Quebec Purchases; Conservation Law Foundation; July 19 1991.

    Changes in load forecasts and resale markets since approval of HQ purchases. Effect of HQ purchase on DSM.

93. **South Carolina PSC** 91-216-E; Cost Recovery of Duke Power's DSM Expenditures; South Carolina Department of Consumer Affairs; September 13 1991. Surrebuttal October 2 1991.

    Problems with conservation plans of Duke Power, including load building, cream skimming, and inappropriate rate designs.

94. **Maryland PSC** 8241, Phase II; Review of Baltimore Gas & Electric's Avoided Costs; Maryland Office of People's Counsel; September 19 1991.

    Development of direct avoided costs for DSM. Problems with BG&E's avoided costs and DSM screening. Incorporation of environmental externalities.

95. **Bucksport Planning Board;** AES/Harriman Cove Shoreland Zoning Application; Conservation Law Foundation and Natural Resources Council of Maine; October 1 1991.

    New England's power surplus. Costs of bringing AES/Harriman Cove on line to back out existing generation. Alternatives to AES.

96. **MDPU** 91-131; Update of Externalities Values Adopted in Docket 89-239; Boston Gas Company; October 4 1991. Rebuttal, December 13 1991.

    Updates on pollutant externality values. Addition of values for chlorofluorocarbons, air toxics, thermal pollution, and oil import premium. Review of state regulatory actions regarding externalities.

97. **Florida PSC** 910759; Petition of Florida Power Corporation for Determination of Need for Proposed Electrical Power Plant and Related Facilities; Floridians for Responsible Utility Growth; October 21 1991.

    Florida Power's obligation to pursue integrated resource planning and failure to establish need for proposed facility. Methods to increase scope and scale of demand-side investment.

98. **Florida PSC** 910833-EI; Petition of Tampa Electric Company for a Determination of Need for Proposed Electrical Power Plant and Related Facilities; Floridians for Responsible Utility Growth; October 31 1991.

    Tampa Electric's obligation to pursue integrated resource planning and failure to establish need for proposed facility. Methods to increase scope and scale of demand-side investment.

99. **Pennsylvania PUC** I-900005, R-901880; Investigation into Demand Side Management by Electric Utilities; Pennsylvania Energy Office; January 10 1992.

    Appropriate cost recovery mechanism for Pennsylvania utilities. Purpose and scope of direct cost recovery, lost revenue recovery, and incentives.

100. **South Carolina PSC** 91-606-E; Petition of South Carolina Electric and Gas for a Certificate of Public Convenience and Necessity for a Coal-Fired Plant; South Carolina Department of Consumer Affairs; January 20 1992.

    Justification of plant certification under integrated resource planning. Failures in SCE&G's DSM planning and company potential for demand-side savings.

101. **MDPU** 92-92; Adequacy of Boston Edison's Street-Lighting Options; Town of Lexington; June 22 1992.

    Efficiency and quality of street-lighting options. Boston Edison's treatment of high-quality street lighting. Corrected rate proposal for the Daylux lamp. Ownership of public street lighting.

102. **South Carolina PSC** 92-208-E; Integrated Resource Plan of Duke Power Company; South Carolina Department of Consumer Affairs; August 4 1992.

Problems with Duke Power's DSM screening process, estimation of avoided cost, DSM program design, and integration of demand-side and supply-side planning.

103. **North Carolina Utilities Commission** E-100, Sub 64; Integrated Resource Planning Docket; Southern Environmental Law Center; September 29 1992.

General principles of integrated resource planning, DSM screening, and program design. Review of the IRPs of Duke Power Company, Carolina Power & Light Company, and North Carolina Power.

104. **Ontario Environmental Assessment Board** Ontario Hydro Demand/Supply Plan Hearings; *Environmental Externalities Valuation and Ontario Hydro's Resource Planning* (3 vols.); October 1992.

Valuation of environmental externalities from fossil fuel combustion and the nuclear fuel cycle. Application to Ontario Hydro's supply and demand planning.

105. **Texas PUC** 110000; Application of Houston Lighting and Power Company for a Certificate of Convenience and Necessity for the DuPont Project; Destec Energy, Inc.; September 28 1992.

Valuation of environmental externalities from fossil fuel combustion and the application to the evaluation of proposed cogeneration facility.

106. **Maine Board of Environmental Protection;** In the Matter of the Basin Mills Hydroelectric Project Application; Conservation Intervenors; November 16 1992.

Economic and environmental effects of generation by proposed hydro-electric project.

107. **Maryland PSC** 8473; Review of the Power Sales Agreement of Baltimore Gas and Electric with AES Northside; Maryland Office of People's Counsel; November 16 1992.

Non-price scoring and unquantified benefits; DSM potential as alternative; environmental costs; cost and benefit estimates.

108. **North Carolina Utilities Commission** E-100, Sub 64; Analysis and Investigation of Least Cost Integrated Resource Planning in North Carolina; Southern Environmental Law Center; November 18 1992.

Demand-side management cost recovery and incentive mechanisms.

109. **South Carolina PSC** 92-209-E; In Re Carolina Power & Light Company; South Carolina Department of Consumer Affairs; November 24 1992.

DSM planning: objectives, process, cost-effectiveness test, comprehensiveness, lost opportunities. Deficiencies in CP&L's portfolio. Need for economic evaluation of load building.

110 **Florida Department of Environmental Regulation** hearings on the Power Plant Siting Act; Legal Environmental Assistance Foundation, December 1992.

Externality valuation and application in power-plant siting. DSM potential, cost-benefit test, and program designs.

111. **Maryland PSC** 8487; Baltimore Gas and Electric Company, Electric Rate Case; January 13 1993. Rebuttal Testimony: February 4 1993.

Class allocation of production plant and O&M; transmission, distribution, and general plant; administrative and general expenses. Marginal cost and rate design.

112. **Maryland PSC** 8179; for Approval of Amendment No. 2 to Potomac Edison Purchase Agreement with AES Warrior Run; Maryland Office of People's Counsel; January 29 1993.

Economic analysis of proposed coal-fired cogeneration facility.

112. A **Michigan PSC** U-10102; Detroit Edison Rate Case; Michigan United Conservation Clubs; February 17 1993.

Least-cost planning; energy efficiency planning, potential, screening, avoided costs, cost recovery, and shareholder incentives.

113. **Ohio PUC** 91-635-EL-FOR, 92-312-EL-FOR, 92-1172-EL-ECP; Cincinnati, City of Cincinnati, April 1993.

DSM planning, program designs, potential savings, and avoided costs.

114. **Michigan PSC** U-10335; Consumers Power Rate Case; Michigan United Conservation Clubs; October 1993.

Least-cost planning; energy efficiency planning, potential, screening, avoided costs, cost recovery, and shareholder incentives.

115. **Illinois Commerce Commission** 92-0268, Electric-Energy Plan for Commonwealth Edison; City of Chicago. Direct testimony, February 1 1994; rebuttal, September 1994.

Cost-effectiveness screening of demand-side management programs and measures; estimates by Commonwealth Edison of costs avoided by DSM and of future cost, capacity, and performance of supply resources.

116. **FERC** 2422 et al., Application of James River–New Hampshire Electric, Public Service of New Hampshire, for Licensing of Hydro Power; Conservation Law Foundation; 1993.

Cost-effective energy conservation available to the Public Service of New Hampshire; power-supply options; affidavit.

117. **Vermont PSB** 5270-CV-1,-3, and 5686; Central Vermont Public Service Fuel-Switching and DSM Program Design, on behalf of the Vermont Department of Public Service. Direct, April 1994; rebuttal, June 1994.

Avoided costs and screening of controlled water-heating measures; risk, rate impacts, participant costs, externalities, space- and water-heating load, benefit-cost tests.

118. **Florida PSC** 930548-EG–930551–EG, Conservation goals for Florida electric utilities; Legal Environmental Assistance Foundation, Inc. April 1994.

Integrated resource planning, avoided costs, rate impacts, analysis of conservation goals of Florida electric utilities.

119. **Vermont PSB** 5724, Central Vermont Public Service Corporation rate request; Vermont Department of Public Service. Joint surrebuttal testimony with John Plunkett. August 1994.

Costs avoided by DSM programs; Costs and benefits of deferring DSM programs.

120. **MDPU** 94-49, Boston Edison integrated resource-management plan; Massachusetts Attorney General. August 1994.

Least-cost planning, modeling, and treatment of risk.

121. **Michigan PSC** U-10554, Consumers Power Company DSM Program and Incentive; Michigan Conservation Clubs. November 1994.

Critique of proposed reductions in DSM programs; discussion of appropriate measurements of cost-effectiveness, role of DSM in competitive power markets.

122. **Michigan PSC** U-10702, Detroit Edison Company Cost Recovery, on behalf of the Residential Ratepayers Consortium. December 1994.

Impact of proposed changes to DSM plan on energy costs and power-supply-cost-recovery charges. Critique of proposed DSM changes; discussion of appropriate measurements of cost-effectiveness, role of DSM in competitive power markets.

123. **New Jersey Board of Regulatory Commissioners** EM92030359, Environmental costs of proposed cogeneration; Freehold Cogeneration Associates. November 1994.

Comparison of potential externalities from the Freehold cogeneration project with that from three coal technologies; support for the study "The Externalities of Four Power Plants."

124. **Michigan PSC** U-10671, Detroit Edison Company DSM Programs; Michigan United Conservation Clubs. January 1995.

Critique of proposal to scale back DSM efforts in light of potential for competition. Loss of savings, increase of customer costs, and decrease of competitiveness. Discussion of appropriate measurements of cost-effectiveness, role of DSM in competitive power markets.

125. **Michigan PSC** U-10710, Power-supply-cost-recovery plan of Consumers Power Company; Residential Ratepayers Consortium. January 1995.

Impact of proposed changes to DSM plan on energy costs and power-supply-cost-recovery charges. Critique of proposed DSM changes; discussion of appropriate measurements of cost-effectiveness, role of DSM in competitive power markets.

126. **FERC** 2458 and 2572, Bowater–Great Northern Paper hydropower licensing; Conservation Law Foundation. February 1995.

Comments on draft environmental impact statement relating to new licenses for two hydropower projects in Maine. Applicant has not adequately considered how energy conservation can replace energy lost due to habitat-protection or -enhancement measures.

127. **North Carolina Utilities Commission** E-100, Sub 74, Duke Power and Carolina Power & Light avoided costs; Hydro-Electric–Power Producer's Group. February 1995.

Critique and proposed revision of avoided costs offered to small hydro-power producers by Duke Power and Carolina Power and Light.

128. **New Orleans City Council** UD-92-2A and -2B, Least-cost IRP for New Orleans Public Service and Louisiana Power & Light; Alliance for Affordable Energy. Direct, February 1995; rebuttal, April 1995.

Critique of proposal to scale back DSM efforts in light of potential competition.

129. **DCPSC** Formal 917, II, Prudence of DSM expenditures of Potomac Electric Power Company; Potomac Electric Power Company. Rebuttal testimony, February 1995.

Prudence of utility DSM investment; prudence standards for DSM programs of the Potomac Electric Power Company.

130. **Ontario Energy Board** EBRO 490, DSM cost recovery and lost-revenue–adjustment mechanism for Consumers Gas Company; Green Energy Coalition. April 1995.

DSM cost recovery. Lost-revenue–adjustment mechanism for Consumers Gas Company.

131. **New Orleans City Council** CD-85-1, New Orleans Public Service rate increase; Alliance for Affordable Energy. Rebuttal, May 1995.

Allocation of costs and benefits to rate classes.

132. **MDPU** Docket DPU-95-40, Mass. Electric cost-allocation; Massachusetts Attorney General. June 1995.

Allocation of costs to rate classes. Critique of cost-of-service study. Implications for industry restructuring.

133. **Maryland PSC** 8697, Baltimore Gas & Electric gas rate increase; Maryland Office of People's Counsel. July 1995

Rate design, cost-of-service study, and revenue allocation.

134. **North Carolina Utilities Commission** E-2, Sub 669. December 1995.

Need for new capacity. Energy-conservation potential and model programs.

135. **Arizona Commerce Commission** U-1933-95-317, Tucson Electric Power rate increase; Residential Utility Consumer Office. January 1996.

Review of proposed rate settlement. Used-and-usefulness of plant. Rate design. DSM potential.

136. **Ohio PSC** 95-203-EL-FOR; Campaign for an Energy-Efficient Ohio. February 1996

Long-term forecast of Cincinnati Gas and Electric Company, especially its DSM portfolio. Opportunities for further cost-effective DSM savings. Tests of cost effectiveness. Role of DSM in light of industry restructuring; alternatives to traditional utility DSM.

137 **Vermont PSB** 5835; Vermont Department of Public Service. February 1996.

Design of load-management rates of Central Vermont Public Service Company.

138. **Maryland PSC** 8720, Washington Gas Light DSM; Maryland Office of People's Counsel. May 1996.

Avoided costs of Washington Gas Light Company; integrated least-cost planning.

138 A. **MDPU** DPU 96-100; Massachusetts Utilities' Stranded Costs; Massachusetts Attorney General. Oral testimony in support of "estimation of Market Value, Stranded Investment, and Restructuring Gains for Major Massachusetts Utilities," July 1996.

Stranded costs. Calculation of loss or gain. Valuation of utility assets.

139. **MDPU** DPU 96-70; Massachusetts Attorney General. July 1996.

Market-based allocation of gas-supply costs of Essex County Gas Company.

140. **MDPU** DPU 96-60; Massachusetts Attorney General. Direct testimony, July 1996; surrebuttal, August 1996.

Market-based allocation of gas-supply costs of Fall River Gas Company.

141. **Maryland PSC** 8725; Maryland Office of People's Counsel. July 1996.

Proposed merger of Baltimore Gas & Electric Company, Potomac Electric Power Company, and Constellation Energy. Cost allocation of merger benefits and rate reductions.

142. **New Hampshire PUC** DR 96-150, Public Service Company of New Hampshire stranded costs; New Hampshire Office of Consumer Advocate. December 1996.

Market price of capacity and energy; value of generation plant; restructuring gain and stranded investment; legal status of PSNH acquisition premium; interim stranded-cost charges.

143. **Ontario Energy Board** EBRO 495, LRAM and shared-savings incentive for DSM performance of Consumers Gas; Green Energy Coalition. March 1997.

LRAM and shared-savings incentive mechanisms in rates for the Consumers Gas Company Ltd.

144. **New York PSC** Case 96-E-0897, Consolidated Edison restructuring plan; City of New York. April 1997.

Electric-utility competition and restructuring; critique of proposed settlement of Consolidated Edison Company; stranded costs; market power; rates; market access.

145. **Vermont PSB** 5980, proposed statewide energy plan; Vermont Department of Public Service. Direct, August 1997; rebuttal, December 1997.

Justification for and estimation of statewide avoided costs; guidelines for distributed IRP.

146. **MDPU** 96-23, Boston Edison restructuring settlement; Utility Workers Union of America. September 1997.

Performance incentives proposed for the Boston Edison company.

147. **Vermont PSB** 5983, Green Mountain Power rate increase; Vermont Department of Public Service. Direct, October 1997; rebuttal, December 1997.

In three separate pieces of prefiled testimony, addressed the Green Mountain Power Corporation's (1) distributed-utility-planning efforts, (2) avoided costs, and (3) prudence of decisions relating to a power purchase from Hydro-Quebec.

148. **MDPU** 97-63, Boston Edison proposed reorganization; Utility Workers Union of America. October 1997.

Increased costs and risks to ratepayers and shareholders from proposed reorganization; risks of diversification; diversion of capital from regulated to unregulated affiliates; reduction in Commission authority.

149. **MDTE** 97-111, Commonwealth Energy proposed restructuring; Cape Cod Light Compact. Joint testimony with Jonathan Wallach, January 1998.

Critique of proposed restructuring plan filed to satisfy requirements of the electric-utility restructuring act of 1997. Failure of the plan to foster competition and promote the public interest.

150. **NH PUC** Docket DR 97-241, Connecticut Valley Electric fuel and purchased-power adjustments; City of Claremont, N.H. February 1998.

Prudence of continued power purchase from affiliate; market cost of power; prudence disallowances and cost-of-service ratemaking.

151. **Maryland PSC** 8774; APS-DQE merger; Maryland Office of People's Counsel. February 1998.

Power-supply arrangements between APS's operating subsidiaries; power-supply savings; market power.

152. **Vermont PSB** 6018, Central Vermont Public Service Co. rate increase; Vermont Department of Public Service. February 1998.

Prudence of decisions relating to a power purchase from Hydro-Quebec. Reasonableness of avoided-cost estimates. Quality of DU planning.

153. **Maine PUC** 97-580, Central Maine Power restructuring and rates; Maine Office of Public Advocate. May 1998; Surrebuttal, August 1998.

Determination of stranded costs; gains from sales of fossil, hydro, and biomass plant; treatment of deferred taxes; incentives for stranded-cost mitigation; rate design.

154. **MDTE** 98-89, purchase of Boston Edison municipal streetlighting, Towns of Lexington and Acton. Affidavit, August 1998.

Valuation of municipal streetlighting; depreciation; applicability of unbundled rate.

155. **Vermont PSB** 6107, Green Mountain Power rate increase, Vermont Department of Public Service. Direct, September 1998; Surrebuttal drafted but not filed, November 2000.

Prudence of decisions relating to a power purchase from Hydro-Quebec. Least-cost planning and prudence. Quality of DU planning.

156. **MDTE** 97-120, Western Massachusetts Electric Company proposed restructuring; Massachusetts Attorney General. Joint testimony with Jonathan Wallach, October 1998. Joint surrebuttal with Jonathan Wallach, January 1999.

Market value of the three Millstone nuclear units under varying assumptions of plant performance and market prices. Independent forecast of wholesale market prices. Value of Pilgrim and TMI-1 asset sales.

157. **Maryland PSC** 8794 and 8804; BG&E restructuring and rates; Maryland Office of People's Counsel. Direct, December 1998; rebuttal, March 1999.

Implementation of restructuring. Valuation of generation assets from comparable-sales and cash-flow analyses. Determination of stranded cost or gain.

158. **Maryland PSC** 8795; Delmarva Power & Light restructuring and rates; Maryland Office of People's Counsel. December 1998.

Implementation of restructuring. Valuation of generation assets and purchases from comparable-sales and cash-flow analyses. Determination of stranded cost or gain.

159. **Maryland PSC** 8797; Potomac Edison Company restructuring and rates; Maryland Office of People's Counsel. Direct, January 1999; rebuttal, March 1999.

Implementation of restructuring. Valuation of generation assets and purchases from comparable-sales and cash-flow analyses. Determination of stranded cost or gain.

160. **Connecticut DPUC** 99-02-05; Connecticut Light and Power Company stranded costs; Connecticut Office of Consumer Counsel. April 1999.

Projections of market price. Valuation of purchase agreements and nuclear and non-nuclear assets from comparable-sales and cash-flow analyses.

161. **Connecticut DPUC** 99-03-04; United Illuminating Company stranded costs; Connecticut Office of Consumer Counsel. April 1999.

Projections of market price. Valuation of purchase agreements and nuclear assets from comparable-sales and cash-flow analyses.

162. **Washington UTC** UE-981627; PacifiCorp–Scottish Power Merger, Office of the Attorney General. June 1999.

Review of proposed performance standards and valuation of performance. Review of proposed low-income assistance.

163. **Utah PSC** 98-2035-04; PacifiCorp–Scottish Power Merger, Utah Committee of Consumer Services. June 1999.

Review of proposed performance standards and valuation of performance.

164. **Connecticut DPUC** 99-03-35; United Illuminating Company proposed standard offer; Connecticut Office of Consumer Counsel. July 1999.

Design of standard offer by rate class. Design of price adjustments to preserve rate decrease. Market valuations of nuclear plants. Short-term stranded cost

165. **Connecticut DPUC** 99-03-36; Connecticut Light and Power Company proposed standard offer; Connecticut Office of Consumer Counsel. Direct, July 1999; Supplemental, July 1999.

Design of standard offer by rate class. Design of price adjustments to preserve rate decrease. Market valuations of nuclear plants. Short-term stranded cost.

166. **W. Virginia PSC** 98-0452-E-GI; electric-industry restructuring, West Virginia Consumer Advocate. July 1999.

Market value of generating assets of, and restructuring gain for, Potomac Edison, Monongahela Power, and Appalachian Power. Comparable-sales and cash-flow analyses.

167. **Ontario Energy Board** RP-1999-0034; Ontario Performance-Based Rates; Green Energy Coalition. September 1999.

Rate design. Recovery of demand-side-management costs under PBR. Incremental costs.

168. **Connecticut DPUC** 99-08-01; standards for utility restructuring; Connecticut Office of Consumer Counsel. Direct, November 1999; Supplemental January 2000.

Appropriate role of regulation. T&D reliability and service quality. Performance standards and customer guarantees. Assessing generation adequacy in a competitive market.

169. **Connecticut Superior Court** CV 99-049-7239; Connecticut Light and Power Company stranded costs; Connecticut Office of Consumer Counsel. Affidavit, December 1999.

Errors of the CDPUC in deriving discounted-cash-flow valuations for Millstone and Seabrook, and in setting minimum bid price.

170. **Connecticut Superior Court** CV 99-049-7597; United Illuminating Company stranded costs; Connecticut Office of Consumer Counsel. December 1999.

Errors of the CDPUC, in its discounted-cash-flow computations, in selecting performance assumptions for Seabrook, and in setting minimum bid price.

171. **Ontario Energy Board** RP-1999-0044; Ontario Hydro transmission-cost allocation and rate design; Green Energy Coalition. January 2000.

Cost allocation and rate design. Net vs. gross load billing. Export and wheeling-through transactions. Environmental implications of utility proposals.

172. **Utah PSC** 99-2035-03; PacifiCorp Sale of Centralia plant, mine, and related facilities; Utah Committee of Consumer Services. January 2000.

Prudence of sale and management of auction. Benefits to ratepayers. Allocation and rate treatment of gain.

173. **Connecticut DPUC** 99-09-12; Nuclear Divestiture by Connecticut Light & Power and United Illuminating; Connecticut Office of Consumer Counsel. January 2000.

Market for nuclear assets. Optimal structure of auctions. Value of minority rights. Timing of divestiture.

174. **Ontario Energy Board** RP-1999-0017; Union Gas PBR proposal; Green Energy Coalition. March 2000.

Lost-revenue-adjustment and shared-savings incentive mechanisms for Union Gas DSM programs. Standards for review of targets and achievements, computation of lost revenues. Need for DSM expenditure true-up mechanism.

175. **NY PSC** 99-S-1621; Consolidated Edison steam rates; City of New York. April 2000.

Allocation of costs of former cogeneration plants, and of net proceeds of asset sale. Economic justification for steam-supply plans. Depreciation rates. Weather normalization and other rate adjustments.

176. **Maine PUC** 99-666; Central Maine Power alternative rate plan; Maine Public Advocate. Direct, May 2000; Surrebuttal, August 2000.

Likely merger savings. Savings and rate reductions from recent mergers. Implications for rates.

177. **MEFSB** 97-4; MMWEC gas-pipeline proposal; Town of Wilbraham, Mass. June 2000.

Economic justification for natural-gas pipeline. Role and jurisdiction of EFSB.

178. **Connecticut DPUC** 99-09-03; Connecticut Natural Gas Corporation Merger and Rate Plan; Connecticut office of Consumer Counsel. September 2000.

Performance-based ratemaking in light of mergers. Allocation of savings from merger. Earnings-sharing mechanism.

179. **Connecticut DPUC** 99-09-12RE01; Proposed Millstone Sale; Connecticut Office of Consumer Counsel. November 2000.

Requirements for review of auction of generation assets. Allocation of proceeds between units.

180. **MDTE** 01-25; Purchase of Streetlights from Commonwealth Electric; Cape Light Compact. January 2001

Municipal purchase of streetlights; Calculation of purchase price under state law; Determination of accumulated depreciation by asset.

181. **Connecticut DPUC** 00-12-01 and 99-09-12RE03; Connecticut Light & Power rate design and standard offer; Connecticut Office of Consumer Counsel. March 2001.

Rate design and standard offer under restructuring law; Future rate impacts; Transition to restructured regime; Comparison of Connecticut and California restructuring challenges.

182. **Vermont PSB** 6460 & 6120; Central Vermont Public Service rates; Vermont Department of Public Service. Direct, March 2001; Surrebuttal, April 2001.

Review of decision in early 1990s to commit to long-term uneconomic purchase from Hydro Québec. Calculation of present damages from imprudence.

183. **New Jersey BPU** EM00020106; Atlantic City Electric Company sale of fossil plants; New Jersey Ratepayer Advocate. Affidavit, May 2001.

Comparison of power-supply contracts. Comparison of plant costs to replacement power cost. Allocation of sales proceeds between subsidiaries.

184. **New Jersey BPU** GM00080564; Public Service Electric and Gas transfer of gas supply contracts; New Jersey Ratepayer Advocate. Direct, May 2001.

Transfer of gas transportation contracts to unregulated affiliate. Potential for market power in wholesale gas supply and electric generation. Importance of reliable gas supply. Valuation of contracts. Effect of proposed requirements contract on rates. Regulation and design of standard-offer service.

185. **Connecticut DPUC** 99-04-18 Phase 3, 99-09-03 Phase 2; Southern Connecticut Natural Gas and Connecticut Natural Gas rates and charges; Connecticut Office of Consumer Counsel. Direct, June 2001; Supplemental, July 2001.

Identifying, quantifying, and allocating merger-related gas-supply savings between ratepayers and shareholders. Establishing baselines. Allocations between affiliates. Unaccounted-for gas.

186. **New Jersey BPU** EX1050303; New Jersey electric companies' procurement of basic supply; New Jersey Ratepayer Advocate. August 2001.

Review of proposed statewide auction for purchase of power requirements. Market power. Risks to ratepayers of proposed auction.

188. **NY PSC** 0-E-1208; Consolidated Edison rates; City of New York. October 2001.

Geographic allocation of stranded costs. Locational and postage-stamp rates. Causation of stranded costs. Relationship between market prices for power and stranded costs.

187. **MDTE** 01-56, Berkshire Gas Company; Massachusetts Attorney General. October 2001.

Allocation of gas costs by load shape and season. Competition and cost allocation.

188. **New Jersey BPU** EM00020106; Atlantic City Electric proposed sale of fossil plants; New Jersey Ratepayer Advocate. December 2001.

Current market value of generating plants vs. proposed purchase price.

189. **Vermont PSB** 6545; Vermont Yankee proposed sale; Vermont Department of Public Service. Direct, January 2002.

Comparison of sales price to other nuclear sales. Evaluation of auction design and implementation. Review of auction manager's valuation of bids.

190. **Connecticut Siting Council** 217; Connecticut Light & Power proposed transmission line from Plumtree to Norwalk; Connecticut Office of Consumer Counsel. March 2002.

Nature of transmission problems. Potential for conservation and distributed resources to defer, reduce or avoid transmission investment. CL&P transmission planning process. Joint testimony with John Plunkett.

191. **Vermont PSB** 6596; Citizens Utilities Rates; Vermont Department of Public Service. Direct, March 2002; Rebuttal, May 2002.

Review of 1991 decision to commit to long-term uneconomic purchase from Hydro Québec. Alternatives; role of transmission constraints. Calculation of present damages from imprudence.

192. **Connecticut DPUC** 01-10-10; United Illuminating rate plan; Connecticut Office of Consumer Counsel. April 2002

Allocation of excess earnings between shareholders and ratepayers. Asymmetry in treatment of over- and under-earning. Accelerated amortization of stranded costs. Effects of power-supply developments on ratepayer risks. Effect of proposed rate plan on utility risks and required return.

Exhibit PLC-2:
Valuation of Nuclear Asset Transfers

Sale Dates									Cash at Closing for					Decom funding w/ 2%				
Deal	*Closed*	**Unit(s)**	**Seller**	**Buyer**	**MW Sold**	**% sold**	**Years left on license**	**Case**	Plant	Fuel	**Later Cash**	**PPA**	**Other Payment**	**real return**	**Total**	**$/kW cash**	**$/kW w/ Decom funding**	**$/kW w/o Decom**
Jun-98	Jan-00	Seabrook	EUA (Montaup)	BayCorp	33	2.90%	24		$3.2 M	$1.7 M			$2.5 M		$7.4 M	$147/kW	$222/kW	$222/kW
Jul-98	Dec-99	Three Mile Island 1	GPU	AmerGen	786		14		$23 M	$77 M			$80 M[a]	$7 M	$187 M	$127/kW	$237/kW	$229/kW
Nov-98	Jul-99	Pilgrim	BECo	Entergy	670		12	RII est of market value	$80 M	$41 M		($30)M	$(11)M[b]	$81 M	$161 M	$181/kW	$240/kW	$120/kW
					670			UI est of market price	$80 M	$41 M		($36)M	$(11)M	$81 M	$155 M	$181/kW	$232/kW	$111/kW
Apr-99	Dec-99	Clinton	Illinois Power	AmerGen	930		27		$20 M				$160 M[c]	$126 M	$306 M	$22/kW	$329/kW	$194/kW
Sep-99	Oct-01	Peach Bottom 2, 3	Conectiv	Exelon & PSEG	328	15.02%	11 & 12		$9 M					*not estimated*	$9 M	$29/kW	$29/kW	
Sep-99	Oct-01	Salem 1, 2	Conectiv	PSEG	328	14.82%	14 & 18		$9 M					*not estimated*	$9 M	$29/kW	$29/kW	
Sep-99	Oct-01	Hope Creek	Conectiv	PSEG	52	5.00%	24		$2 M					*not estimated*	$2 M	$30/kW	$30/kW	
Sep-99	Oct-01	Total	Conectiv	PECo & PSEG	709				$21 M	$44 M				$150 M[d]	$215 M	$91/kW	$303/kW	$91/kW
Sep-99	Aug-00	Oyster Creek	GPU	AmerGen	619		9		$10 M		$59 M[e]			$100 M	$169 M	$16/kW	$273/kW	$112/kW
Oct-98	Dec-99	Beaver Valley 1	DQE	First Energy	385	47.53%	26											
Oct-98	Dec-99	Beaver Valley 2	DQE	First Energy	113	13.95%	16											
Oct-98	Dec-99	Perry	DQE	First Energy	161	13.48%	27											
Oct-98	Dec-99	Total	DQE	First Energy	659			30% Discount[f]					$542 M	$105 M	$647 M		$982/kW	$822/kW
					659			Full Value[g]					$115 M	$105 M	$219 M		$333/kW	$174/kW
Jun-99	Cancel	Nine Mile 1	NiMo	AmerGen	610		9		$72 M					$271 M	$343 M	$118/kW	$562/kW	$118/kW
Jun-99	Cancel	Nine Mile 2	NiMO, NYSEG	AmerGen	468	41.00%	28		$64 M					$168 M	$231 M	$136/kW	$494/kW	$136/kW
Oct-99	Cancel	Vermont Yankee	Vermont Yankee	AmerGen	510		10		$24 M					$81 M	$105 M	$46/kW	$205/kW	$46/kW

NOTES

[a] RSA.

[b] O&M support, net of property-tax support.

[c] Does not include buyback (value unknown).

[d] Compared to NRC benchmark.

[e] Refueling costs.

[f] Assumes minority shares of coal plants worth 70% of full control.

[g] No minority discount.

Exhibit PLC-2:
Valuation of Nuclear Asset Transfers

Sale Dates							Years left on		Cash at Closing for Plant		Later		Other	Decom funding			All But Decom	Including Decom
Deal	*Closed*	Unit(s)	Seller	Buyer	MW sold	% sold	license	Case	*Plant*	*Fuel & M&S*	Cash	PPA	Payment	w/ 2%	Total	Cash	funding	funding
Mar-00	Nov-00	Fitzpatrick & Indian Point 3	NYPA	Entergy	1,790	100%	15 & 16	Low RSA Value	$50 M		$631 M	$33 M	$6 M	$264 M	$985 M	$322/kW	$403/kW	$550/kW
Mar-00	Nov-00	Fitzpatrick & Indian Point 3	NYPA	Entergy	1,790	100%	15 & 16	High RSA Value	$50 M		$631 M	$33 M	$512 M	$264 M	$1,491 M	$322/kW	$685/kW	$833/kW
Apr-00	Canceled Apr-01	Palo Verde 1-3	SCEdison	Pinnacle West	602	15.8%	23		$250 M			—		not estimated	$250 M	$424/kW	$424/kW	
Aug-00	Mar-01	Millstone 2	NU	Dominion	875	100%	15		$372 M	$72 M		—			$443 M	$507/kW	$507/kW	
Aug-00	Mar-01	Millstone 3	NU & others	Dominion	1,082	93.5%	25		$751 M	$92 M		—			$843 M	$779/kW	$779/kW	
Aug-00	Mar-01	Millstone 2, 3	NU & other	Dominion	1,957		15, 25		$1,124 M	$164 M		—		$512 M	$1,800 M	$658/kW	$658/kW	$920/kW
Nov-00	Sep-01	Indian Point 2	ConED	Entergy	970	100%	13	Low PPA Value	$372 M	$100 M		$60 M	$30 M	$236 M	$798 M	$487/kW	$579/kW	$823/kW
Nov-00	Sep-01	Indian Point 2	ConED	Entergy	970	100%	13	High PPA Value	$372 M	$100 M		$100 M	$30 M	$236 M	$838 M	$487/kW	$621/kW	$864/kW
Dec-00	Nov-01	Nine Mile 1	NiMo	Constellation	610	100%	9		$117 M		$117 M	$116 M		$56 M	$406 M	$384/kW	$574/kW	$665/kW
Dec-00	Nov-01	Nine Mile 2	NiMO, NYSEG, RG&E, CHG&E	Constellation	936	82%	26	Low RSA Value	$291 M		$291 M	$221 M	$0 M	$33 M	$835 M	$621/kW	$857/kW	$892/kW
Dec-00	Nov-01	Nine Mile 2	NiMO, NYSEG, RG&E, CHG&E	Constellation	936	82%	26	High RSA Value	$291 M		$291 M	$221 M	$517 M	$33 M	$1,353 M	$622/kW	$1,410/kW	$1,445/kW
Aug-01	Jun-02	Vermont Yankee	Vermont Yankee	Entergy	510	100%	11	Low PPA Value	$116 M	$64 M		$15 M		not estimated	$195 M	$353/kW	$382/kW	
Aug-01	Jun-02	Vermont Yankee	Vermont Yankee	Entergy	510	100%	11	High PPA Value	$116 M	$64 M		$173 M		not estimated	$353 M	$353/kW	$693/kW	

Exhibit PLC-3:
Characteristics of Recent Northeastern Plant Sales

Unit(s)	Seller	Purchaser	MW	% sold	Multiple Operating Units on Same Site?	Date of Operation	License Expiration Date	Sale Announced	Licence Years Left	2001 Average Capacity Factor	Reactor Type
Fitzpatrick	NYPA	Entergy	820	100%	If NMP owned	Oct 1974	Oct 2014	Mar 2000	15	99%	BWR
Indian Point 3	NYPA	Entergy	970	100%	If IP2 owned	Apr 1976	Dec 2015	Mar 2000	16	94%	PWR
Millstone 2	NU	Dominion	875	100%	Yes	Sep 1975	Jul 2015	Aug 2000	15	102%	PWR
Millstone 3	NU & others	Dominion	1,082	93.5%	Yes	Jan 1986	Nov 2025	Aug 2000	25	76%	PWR
Indian Point 2	ConEd	Entergy	970	100%	Yes	Sep 1973	Sep 2013	Nov 2000	13	93%	PWR
Nine Mile 1	NiMo	Constellation	610	100%	Yes	Aug 1969	Aug 2009	Dec 2000	9	81%	BWR
Nine Mile 2	NiMo, NYSEG, RG&E, CHG&E	Constellation	936	82%	Yes	Jul 1987	Oct 2026	Dec 2000	26	88%	BWR
Vermont Yankee	Vermont Yankee	Entergy	510	100%	No	Feb 1973	Mar 2012	Aug 2001	11	94%	BWR
Seabrook	NU & others	FPL	1161	88%	No	Mar 1990	Oct 2026	Apr 2002	25	86%	PWR

Exhibit PLC-4:
Summary of Contracts Associated with Recent Nuclear Sales

Sale Dates					Purchased Power Agreement				Revenue Sharing Agreement				Other Payment Streams
Deal	*Closed*	**Unit(s)**	**Seller**	**Purchaser**	*Term*	*% Unit Output*	*Guaranteed capacity factor*	*Price ($/MWh)*	*Term*	*Strike Prices* First Year	Last Year	*% of Excess to Seller*	**Term**
Mar-00	Nov-00	Fitzpatrick	NYPA	Entergy	2000-2004	37%	85%	32.00	2005-2014	38.01	51.80	50%	2008-2015 $11.5M/year for decommissioning
		Fitzpatrick	NYPA	Entergy	2000-2003	61%	85%	29.00	-	-	-	-	2008-2015 $8.5M/year for the second PPA
		Indian Point 3	NYPA	Entergy	2000-2004	100%		36.00	2005-2014	42.76	58.27	50%	
Nov-00	Sep-01	Indian Point 2	Con Edison	Entergy	2001-2004	100%		39.00	-	-	-	-	
Dec-00	Nov-01	Nine Mile 1	NiMo	Constellation	2002-2010	90%		35.70 - 36.32	-	-	-	-	
Dec-00	Nov-01	Nine Mile 2	NiMO, NYSEG, RG&E, CHG&E	Constellation	2002-2011	74%		35.70 - 36.05	2011-2020	40.75	48.70	80%	
Aug-01	Apr-02	Vermont Yankee	Vermont Yankee	Entergy	2002-2012	100%		39.00 - 44.00	-	-	-	-	

Notes: The FitzPatrick PPA % are averages over the period of the sales.
The IP2 PPA price is $46.80/MWh in the summer period (June through August), and $36.40/MWh in other months.