CUB DT EXHIBIT No. 1.2

Illinois Commerce Commission
Docket No. 00-0361

Commonwealth Edison Company
Petition for Approval of a Revised
Decommissioning Expense Adjustment Rider

Direct Testimony and Exhibits of David A. Schlissel

On Behalf of the

Citizens Utility Board

and the

City of Chicago

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July 31, 2000

Q. Please state your name and business address.

A. My name is David A. Schlissel. My business address is Schlissel Technical Consulting, Inc., 45 Horace Road, Belmont, Massachusetts 02178.

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

A. I am testifying on behalf of the Citizens Utility Board ("CUB") and the City of Chicago.

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

A. I graduated from the Massachusetts Institute of Technology in 1968 with a Bachelor of Science Degree in Engineering. In 1969, I received a Master of Science Degree in Engineering from Stanford University. In 1973, I received a Law Degree from Stanford University. In addition, I studied nuclear engineering at the Massachusetts Institute of Technology during the years 1983-1986.

Since 1983 I have been retained by governmental bodies, publicly- owned utilities, and private organizations in 25 states to prepare expert testimony and analyses on engineering and economic issues related to electric utilities. My clients have included the Staff of the California Public Utilities Commission, the Staff of the Arizona Corporation Commission, the Staff of the Arkansas Public Service Commission, municipal utility systems in Massachusetts, New York, North Carolina and Texas, state attorney generals in five states, the majority owners of the Great Bay Power Company, and state consumer counsels or public advocates in twelve states.

I have testified before state regulatory commissions in Arizona, New Jersey, Connecticut, Kansas, Texas, New Mexico, New York, Vermont, North Carolina, South Carolina,

Maine, Illinois, Indiana, Ohio, Massachusetts, Missouri, and Wisconsin and before an Atomic Safety & Licensing Board of the U.S. Nuclear Regulatory Commission.

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

Q. Have you previously testified before the Illinois Commerce Commission?

A. Yes. I have testified before this Commission in Dockets Nos. 83-0537, 84-0555, 86-0043, 86-0096, 86-0405, 87-0695, 95-0119, 97-0015, and 99-0115. In addition, I filed testimony, but did not testify in Docket No. 97-0018.

Q. What is the purpose of your testimony in this docket?

A. Schlissel Technical Consulting, Inc., was retained by the Citizens Utility Board and the City of Chicago to evaluate Commonwealth Edison's proposed decommissioning cost settlement proposal, to address certain questions raised by the Hearing Examiners, and to respond to claims made by the Company's witnesses. This testimony was prepared in coordination with the testimony of Mr. Bruce Biewald which also is being filed in this proceeding by CUB and the City of Chicago.

Q. Please summarize your conclusions.

A. 1. Available evidence suggests that ComEd will continue to operate its Dresden and Quad Cities Stations at least through the expiration of their existing NRC licenses.

2. Current NRC regulations allow utilities to request that their nuclear plant operating licenses be extended for up to twenty years.

3. To date, four utilities have requested that the NRC extend the operating licenses for eight nuclear units located at four sites. Two of these requests have recently been approved. The other two requests are currently undergoing review by the NRC staff.

4. The NRC has not denied any license extension applications.

5. The NRC and the nuclear industry expect that utilities will submit as many as twenty-four new applications for license extensions over the next four years, with additional applications expected in following years.

6. ComEd's Chief Nuclear Officer has said that the Company intends to make a decision by November of this year on whether it will submit license extension applications to the NRC for the Dresden and Quad Cities Stations. Evidence suggests that the Company will not decide for several years whether to submit similar applications for the Braidwood, Byron, and LaSalle Nuclear Stations.

7. It is reasonable to expect that ComEd ultimately will seek to submit applications to the NRC to extend the operating lives of its ten remaining nuclear plants. It is also reasonable to expect that the NRC would approve such requests if ComEd continues to properly maintain its nuclear units, if it operates those units in a conservative and safe manner, and if the Company submits license renewal applications that satisfy NRC requirements.

8. For this reason, the ICC should base its decommissioning collection policies on the assumption that the operating lives of each of the Company's nuclear plants will be extended beyond the expirations of their existing NRC licenses.

9. Extending the operating lives of ComEd's nuclear plants by twenty years would increase the amount of time for the decommissioning funds to grow through investment earnings. As a result, when decommissioning actually begins, the Company (or its Genco) could have more money in its decommissioning funds that it would need to dismantle and decommission the plants in a manner that protects the public health and safety and the environment. Consequently, the Company could gain a substantial windfall profit if the ICC ignores the potential for nuclear plant life extension and approves ComEd's request that the Genco be permitted to keep all of the excess decommissioning funds that have been contributed by ratepayers.

10. An NRC licensee can choose to immediately dismantle its nuclear plant or it can choose to delay decommissioning by up to 60 years following the conclusion of the plant's operating life. Both of these methods are acceptable to the NRC.

11. The impact of a ComEd decision to delay the start of dismantlement and decommissioning of its nuclear plants for a period of twenty years after the plants are shutdown would generally be the same as a decision to extend the plants' operating lives. Such a delay would provide economic benefits by allowing additional time for the decommissioning funds to grow through investment earnings. As a result, there could be significant excess funds remaining in the plants' decommissioning funds when decommissioning activities are completed.

12. ComEd's witnesses have over-emphasized the potential for significant future increases in the cost of decommissioning the Company's nuclear plants.

13. Synergies and efficiencies that should be available to a larger nuclear operator could significantly lower nuclear plant decommissioning costs. The ICC should assume that ComEd and its affiliated companies should be able to take advantage of such synergies and efficiencies.

14. When nuclear plant life extension and delayed decommissioning are considered, it appears that ComEd may already have collected adequate funds for decommissioning its plants in a manner that protects the public health and safety and the environment.

15. Recent nuclear plant sales prices suggest that ComEd's ten operating plants would be worth approximately $3 billion if they were sold to other utilities.

Q. Have you been able to complete discovery prior to preparing this testimony?

A. No. The Company has not yet answered CUB's Fifth and Sixth Sets of Data Requests which include the discovery that CUB has submitted in response to the Supplemental Direct Testimony filed by Messrs. Berdelle and Speck earlier this month.

Q. Are you reserving the right to supplement this testimony when you have had an opportunity to review and evaluate the outstanding data requests?

A. Yes.

I. HEARING EXAMINERS' REQUESTS NOS. 1, 2, AND 3 ON THE POTENTIAL FOR NUCLEAR PLANT LIFE EXTENSION

Q. Company witness Berdelle has testified in response to the Hearing Examiners' Request No. 1 that "Economic analyses suggest an economic life for Dresden Units 2 and 3 and Quad Cities Units 1 and 2 substantially shorter than the remaining NRC license lives for the stations."[1] Have you seen any evidence that suggests that the Company expects to continue to operate these stations for at least the remainder of their NRC license lives?

A. Yes. ComEd has told the NRC that it intends to submit an application by December 29, 2000, for an extended power uprate at both the Dresden and Quad Cities Stations. According to the viewgraphs presented by ComEd at a May 14, 2000 meeting with the NRC Staff, the Company's "feasibility studies showed that [extended power uprate] is cost-effective for increasing generating capacity" and that such an uprate is a "significant factor in ComEd business planning."[2]

Q. What is an extended power uprate?

A. A power uprate means increasing the thermal power produced by each plant. A power uprate allows a utility to increase the output of its plant at a relatively low cost.

Boiling Water Reactor nuclear plants like Dresden and Quad Cities were originally licensed by the NRC for power levels 10-20 percent below their physical capacity. Since the late 1980's, the NRC has permitted utilities to uprate the licensed power levels at their BWRs by up to 5 percent after the utilities have conducted very detailed analyses that

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[1] Edison Exhibit 6, page 2, lines 23-26.

[2] ComEd Licensing Plan for Transition to GE14 Fuel and Extended Power Uprates, dated May 31, 2000, at page 13.

show that acceptable safety margins exist at the higher power levels. No significant equipment changes or modifications have generally been required to achieve these 5 percent power uprates.

At the same time, the NRC has allowed some plants to perform extended power uprates of up to 10-15 percent. These extended power uprates generally require detailed analyses plus more significant plant modifications than the initial 5 percent uprates.

Q. How expensive would implementing such an extended power uprate be at Dresden and Quad Cities?

A. Unfortunately I have not yet seen the Company's economic analyses. However, the list of the significant modifications that would be required in order to achieve the extended power uprate reveals that it will be a costly endeavor.[3] I do not believe that ComEd would be considering such an expensive modification unless it intends to continue to operate the units at both stations for a considerable number of years.

Q. Does the Company need the NRC's approval in order to implement extended power uprates at Dresden and Quad Cities?

A. Yes.

Q. When does ComEd intend to implement the extended power uprates at Dresden and Quad Cities?

[3] ComEd Licensing Plan for Transition to GE14 Fuel and Extended Power Uprates, dated May 31, 2000, at page 16.

A. The Company has told the NRC that it intends to implement the extended power uprates starting in late 2001 and throughout 2002.[4]

Q. Has the Company implemented any other modifications at Dresden or Quad Cities that have improved the relative economics of operating the plants?

A. Yes. The Dresden cooling pond is too small to naturally dissipate all of the heat produced by Units 2 and 3 on the hottest days in the summer and remain within environmental limits. As a result, the units had to derate a total of 700 MW during the July 1999 heat wave.[5]

In the past two years, ComEd has installed 48 small cooling towers to eliminate the need to derate during the high heat days. According to an article in Nucleonics Week, the Company believes that this modification will more than pay for itself in the first year of operation. ComEd has estimated that it would have saved $100 million in replacement power costs had all 48 cooling towers been in place in 1999.[6]

Q. What approvals must ComEd seek and obtain in order to operate its nuclear plants beyond the expiration dates of their current NRC licenses?[7]

A. The Company must seek the NRC's approval for renewing the operating licenses for each unit. ComEd must satisfy the same requirements as other applicants for license renewal.

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[4] ComEd Licensing Plan for Transition to GE14 Fuel and Extended Power Uprates, dated May 31, 2000, at page 13.

[5] Nucleonics Week, May 4, 2000, at page 6.

[6] Nucleonics Week, May 4, 2000, at page 6.

[7] Hearing Examiners' Request No. 4, dated June 19, 2000.

Q. Have any utilities applied to the NRC for approval to continue operating nuclear power plants beyond the expiration of their existing NRC-issued operating licenses?

A. Yes. To date, four utilities have requested that the NRC extend the operating licenses for eight nuclear units located at four sites.[8]

[8] The NRC currently allows a utility to submit a single application for a multiple unit site. Several utilities apparently are planning to submit single applications for several multiple unit sites. Inside NRC, January 17, 2000, at page 6.

Q. Has the NRC granted any of these requests?

A. Yes. The NRC has recently approved the applications of Baltimore Gas and Electric to extend the operating license of the two unit Calvert Cliffs nuclear plant and of Duke Power Company to extend the license for the three unit Oconee nuclear station. The applications by Entergy (Arkansas Nuclear One) and Southern Nuclear Operating Company (Hatch Units 1 and 2) are currently under review by the NRC.

Q. What are the durations of the licenses extensions that have been granted by the NRC?

A. The NRC's license renewal regulations allow a utility to submit an application for a twenty year extension beyond the current expiration of its existing operating license.

Q. Are any of the nuclear power plants whose applications for license extensions are currently under review by the NRC similar in design and vintage to any of the Company’s nuclear stations?

A. Yes. The Hatch nuclear plant is similar in design and vintage to the Company's Dresden and Quad Cities plants.

Q. Has the NRC denied any license extension applications?

A. No.

Q. Have other utilities indicated whether they intend to apply for similar license extensions?

A. Yes. According to published reports, the NRC and the nuclear industry expect that utilities will submit as many as 24 applications over the next 4 years for license

extensions, with additional applications expected in following years.[9] The President of the industry's Nuclear Energy Institute ("NEI") has said that "The owners of about one-third of the 103 nuclear power reactors will apply for license renewals by the year 2003 and more will follow."[10] Duke Energy's Vice President for Nuclear Generation has explained that utilities want to come in early with applications for license renewal so that they can satisfy their "economic considerations" relating to capital investments, staffing and planning.[11]

Indeed, Entergy's President has warned utilities: "License renewal -- everybody's jumping on that bandwagon…. If you've not already decided, you better do it quickly because resources are going to get tight."[12]

Q. Are any of the nuclear power plants whose owners have said that they will submit applications for license extensions similar in design and vintage to any of the Company's nuclear stations?

A. Yes. The owners of a number of nuclear plants with designs and vintages similar to ComEd's Dresden and Quad Cities plants have announced that they will submit applications for license extensions. For example, PECO, Unicom's proposed merger partner, has said that it will submit a license extension application for its Peach Bottom plant to the NRC in July 2001. Other utilities whose plants have similar designs and vintages to Dresden and Quad Cities, including CL&P (the Brunswick nuclear plant) and

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9 Nucleonics Week, May 4, 2000, at page 1.
10 Nucleonics Week, May 25, 2000, at page 1.
11 Inside NRC, May 22, 2000, at page 16.
12 Inside NRC, August 16, 1999, at page 1.

the Nebraska Public Power District (the Cooper nuclear plant), have made similar announcements.

Q. Has ComEd stated whether it intends to apply to the NRC to extend the licenses of any of its ten operating nuclear power plants?

A. The Company's Chief Nuclear Officer, Oliver Kingsley, has said that the Company is currently conducting detailed studies on renewing the NRC licenses for Dresden and Quad Cities and intends to make a decision by November of this year on whether it will submit an application to the NRC.[13]

Q. What is the cost of seeking and obtaining NRC approval for extending a nuclear plant's operating license?

A. ComEd Chief Nuclear Officer Kingsley has told Inside NRC that the Company believes that it can accomplish the license renewal process for $15 to $20 million for the four Dresden and Quad Cities units.[14]

Q. Is it likely that the Company will decide to extend the operating lives of the Dresden and Quad Cities plants?

A. Yes. I think that it is reasonable to expect that ComEd will decide to submit an application to the NRC to extend the operating lives of the Dresden and Quad Cities plants for the following reasons: (1) each unit's dramatically improved performance in

[13] Inside NRC, May 8,2000, at page 1.

[14] Inside NRC, May 8, 2000, at page 1.

recent years; (2) the high prices for which utilities have been able to sell electricity in the new competitive markets; (3) the significant expenditures that ComEd has made and continues to make on improving the material condition and operating cultures at each of these plants, including the installation of the 48 cooling towers at Dresden that I have already discussed; (4) the relatively low cost of completing the license renewal process; and (5) if the Company's decommissioning cost proposal is approved by the ICC, the ability of the Genco to retain all excess decommissioning funds will act as a further incentive for the Company to seek to extend the operating lives of its nuclear plants.

Q. Have you seen any evidence that the NRC would not approve such a request?

A. No. I think that it is reasonable to expect that the NRC would approve such a request if the Company continues to properly maintain its nuclear units, if it operates those units in a conservative and safe manner, and if the Company submits license renewal applications that satisfy NRC requirements.

Q. Has the Company said when it will decide whether it will seek to extend the NRC operating licenses for the Byron, Braidwood, and LaSalle nuclear plants?

A. No. However, the testimony of the Company’s witnesses in this Docket indicates that the decision to seek NRC approval to extend the operating licenses for the Braidwood, Byron, and LaSalle plants will not be made for a number of years.

Q. Nevertheless, do you think that it is reasonable to assume that the Company ultimately will apply to the NRC to extend the operating lives of the Braidwood, Byron, and LaSalle plants?

A. Yes. For the following reasons, I think that it is likely that the Company ultimately will decide to apply to the NRC to extend the operating lives of the Braidwood, Byron, and LaSalle stations: (1) All four of the Braidwood and Byron units have been strong performers since the units began commercial operations; (2) the Company has recently installed new steam generators at Braidwood Unit 1 and Byron Unit 1, which involved very expensive modifications; (3) the significant expenditures that ComEd has made to improve the material condition and operating culture at LaSalle and on restarting the two LaSalle units from their multi-year outages; (4) planned power uprates at Braidwood, Byron, and LaSalle will further improve the economic viability of each of these plants; (5) the high prices at which utilities have been able to sell electricity in the new competitive markets; and (6) if ComEd's decommissioning cost proposal is approved by the ICC, the ability of the Genco to retain all excess decommissioning funds will act as a further incentive for the Company to seek to extend the operating lives of its nuclear plants.

Q. Have you seen any evidence that the NRC would not approve a request by ComEd to extend the operating lives of the Braidwood, Byron and LaSalle plants?

A. No. I think that it is reasonable to expect that the NRC would approve such requests if the Company continues to properly maintain its nuclear units, if it operates those units in

a conservative and safe manner, and if the Company submits license renewal applications that satisfy NRC requirements.

Q. Do you agree with the claim by Company witness Speck that there is a significant risk that the NRC will change regulatory requirements for license extensions?[15]

A. No. Although Mr. Speck uses the term "potential volatility" when discussing the criteria that the NRC uses for evaluating license extension applications, the evidence is that the NRC has been working to improve the relicensing process for applicants. For example, an article in Nuclear News, a monthly publication of the American Nuclear Society, has explained:

> The process is likely to improve as more plants go through the process and the NRC settles on what NRC commissioner Jeffrey Merrifield calls "the right regulatory touch – not asking for too much information, but [asking for] a sufficient amount so we can feel confident." Merrifield said the NRC needs to be disciplined to ensure that the requirements of the second wave of license renewal applicants are the same as the first, and that the agency needs to continually strive to operate "more efficiently, better, faster, and less expensively."[16]

In fact, industry representatives have commended the NRC's approach to license renewal. For example, the President of the industry's Nuclear Energy Institute has said that the NRC's review of the Calvert Cliffs and Oconee licenses renewal applications "provides a clearly marked path for other electric companies pursuing license renewal."[17] At the same time, the Vice President for Nuclear Generation at Duke Energy Company said that as the cost for seeking license renewal comes down with experience gained on

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[15] Edison Exhibit 7, at page 2, line 40, to page 3, line 41.

[16] Nuclear News, August 1999, at page 41.

the initial reviews and the NRC review time shrinks, "it becomes more likely that utilities are going to line up [for license renewal]."[18]

Indeed, the NRC actually completed its review of Duke Power Company's request for renewal of the operating licensee for the three unit Oconee plant is 23 months, which was about 7 months less than had been originally estimated.[19]

Q. Please comment on the claim by Company witness Speck that license extensions might actually increase decommissioning costs beyond the levels currently estimated.[20]

A. At most, there appears to be a minor risk that nuclear plant license extensions might increase decommissioning costs beyond the levels currently estimated. In fact, as ComEd witness LaGuardia has explained, the estimated decommissioning costs will not differ materially if a plant operates for an additional 20 years because "once components become irradiated or contaminated (which occurs soon after initiating full-power operations), the plant's contaminated components will have to be removed and disposed of in essentially the same manner."[21]

Consequently, Mr. Speck is left to speculate that if the DOE continues to breach its obligation to remove spent nuclear fuel from operating plants, decommissioning costs could increase due to the increased quantity of discharged spent fuel that would be

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17 Nucleonics Week, May 25, 2000, at page 1.

18 Inside NRC, August 16, 1999, at page 1.

19 Nuclear News, July, 2000, at page 20.

20 Edison Exhibit 4, at page 18, lines 6-18.

21 Edison Exhibit 1, at page 9 and Edison Exhibit 4, at page 20, lines 18-27.

produced during the twenty year license extension period.[22] However, if ComEd extends the operating licenses for its remaining ten nuclear plants, the Company would not incur such additional post-shutdown spent fuel storage costs until the year 2030, at the earliest.[23] Consequently, Mr. Speck's claim that life extension could increase decommissioning costs assumes that the DOE will continue to breach its obligation to remove spent fuel for at least another thirty years and that the federal government will not fully compensate ComEd for the resulting increased costs. Clearly this risk is too remote and speculative to consider for planning purposes.

Q. Please comment on the claim by Company witness Speck that the NRC will not allow utilities to submit license extension applications more than twenty years before expiration.[24]

A. Mr. Speck is simply wrong when he says that the NRC will not allow utilities to seek a license extension when their current licenses have more than 20 years before expiration. In fact, the NRC has recently approved Duke Energy Company's request to make an early submittal in June 2001 for renewing the licenses for its McGuire and Catawba plants.[25] At this time, McGuire Unit 2 will only be 18 years old, Catawba Units 1 and 2 will be 16 and 15 years old respectively.

However, the NRC has said that these younger units would not receive full 60 year operating licenses. Instead, they would receive approval to operate for 40 more

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[22] Edison Exhibit 4, at page 18, lines 7-11.

[23] Dresden Unit 2 entered commercial service in 1970. Consequently, it would complete a 60 year service life in the year 2030.

[24] Edison Exhibit 7, at page 3, line 43, to page 4, line 7.

years from the date of the issuance of the renewal, and not an additional 20 years from the date of expiration of the current 40 year licenses. Duke Energy has said that it is nevertheless pleased, believing that giving up a few years of operating life is worth sacrificing because of the front end savings it can achieve on the application preparation and review costs.[26]

Q. Please comment on Company witness Speck's claim that economic uncertainties could cause a utility to decide not to seek to extend the operating life of a nuclear power plant.[27]

A. Theoretically, economic uncertainties can cause a utility to decide not to seek to extend the operating life of its nuclear power plant. Nevertheless, for the reasons I explained above, I believe that it is likely that ComEd will seek to extend the operating lives of its remaining ten nuclear plants.

Q. Company witnesses Speck and Berdelle have claimed that because there are so many uncertainties surrounding the possible life extension of ComEd's currently operating nuclear plants, speculating over such life extensions is an unreliable basis for establishing decommissioning collection policy.[28] Do you agree?

A. No. For the reasons set forth earlier in this testimony, I believe that it is reasonable to expect that the Company will likely seek to renew the operating licenses for its

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[25] Inside NRC, January 17, 2000, at page 6.

[26] Inside NRC, January 17, 2000, at page 6.

[27] Edison Exhibit 7, at page 4, lines 9-25.

Braidwood, Byron, Dresden, LaSalle and Quad Cities nuclear stations and that the NRC will grant the Company's requests. Therefore, the Commission should base its decommissioning collection policies on the assumption that the operating lives of each of the Company's remaining nuclear plants will be extended.

[28] For example, see Edison Exhibit 4, at page 17, lines 6-12. Edison Exhibit 6, at page 5, line 45, through page 6, line 21. Edison Exhibit 7, at page 2, lines 26-38.

II. HEARING EXAMINERS' REQUEST NO. 5 ON THE POTENTIAL IMPACT OF NUCLEAR PLANT LIFE EXTENSION

Q. What would be the potential impact of nuclear power plant life extension on the adequacy of the decommissioning funds being collected from ComEd's ratepayers?

A. Extending the operating lives of ComEd's nuclear plants by twenty years would increase the amount of time for the decommissioning funds to grow through investment earnings. As a result, when decommissioning actually began, the Company (or the Genco) could have more money in its plant decommissioning trust funds than it would need to dismantle and decommission its nuclear plants in a manner that protects the health and safety and the environment. This effect is quantified in the testimony of Mr. Biewald that is being filed in this Docket on behalf of CUB and the City of Chicago.

Q. Have you seen any independent assessments of the impact of nuclear power plant life extension on the adequacy of the decommissioning funds being collected from ratepayers of other utilities?

A. Yes. In an ongoing Vermont Public Service Board Docket examining the proposed sale of the Vermont Yankee nuclear plant to AmerGen, testimony filed by the Vermont Department of Public Service[29] has concluded that there would be a significant excess in the plant's decommissioning fund if AmerGen were to choose to delay the decommissioning of Vermont Yankee, either by extending the unit's operating life or by using a delayed dismantlement option:

> However, if AmerGen were to choose to delay dismantling significantly beyond the decommissioning period assumed by [the current Vermont Yankee owners] in its comparison of the sale, there would be the possibility of very high excesses in the decommissioning fund. For example, at the arbitrage I have described above, a 10 year delay could create an estimated excess of approximately $280 million (in 2022 dollars, or $150 million in 1999 dollars) and a 20 year delay approximately $900 million (in 2032 dollars, or $350 million in 1999 dollars). Decommissioning could be delayed 20 years or more if AmerGen were able to extend Vermont Yankee's operating life by 20 years, or if AmerGen simply chose to delay decommissioning.[30]

For this reason, the witness for the Department of Public Service, State of Vermont Nuclear Engineer William Sherman, recommended that the Public Service Board should condition its approval of the proposed sale on a sharing between ratepayers and AmerGen of any excess funds in the decommissioning fund if decommissioning of the Vermont Yankee plant is significantly delayed.[31]

Q. Do you believe that it is appropriate for the ICC to assume that ComEd will seek and obtain nuclear plant license extensions when the Commission establishes decommissioning collection policy?

A. Yes. As shown in the testimony of Mr. Biewald being filed on behalf of CUB and the City of Chicago, the Company's Genco would gain a substantial windfall profit if the

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[29] The Vermont Department of Public Service serves the same role in regulatory proceedings before the Vermont Public Service Board that the ICC Staff does in hearings before this Commission.

[30] Testimony of State of Vermont Nuclear Engineer William Sherman on behalf of the Department of Public Service in Docket No. 6300 before the Vermont Public Service Board, at page 54, lines 1-11.

[31] Testimony of William Sherman on behalf of the Department of Public Service in Docket No. 6300 before the Vermont Public Service Board, at page 54, lines 1-11.

ICC ignores the potential for nuclear plant life extension and approves ComEd's request that the Genco be permitted to keep all of the excess decommissioning funds that have been contributed by ratepayers.

III. THE POTENTIAL IMPACT OF DELAYED DISMANTLEMENT

Q. Is it difficult for a licensee to choose a delayed dismantlement option for decommissioning its nuclear power plant(s)?

A. No. A licensee can choose either immediate dismantlement (called DECOM) or delayed decommissioning (SAFSTOR) at its sole discretion. Both methods are acceptable to the NRC.

Q. Have any utilities actually decided to use the SAFSTOR method for decommissioning their nuclear plants?

A. Yes. A number of retired commercial nuclear plants are currently being maintained in a SAFSTOR mode, with actual decommissioning activities delayed until future years: Three Mile Island Unit 2 (shutdown in 1979); LaCrosse BWR (shutdown in 1987); Rancho Seco (shutdown in 1989); and San Onofre Unit 1 (shutdown 1992). Several other plants, Millstone Unit 1 and Zion Units 1 and 2 also are using modified delayed dismantling approaches.

Q. What would be the impact on the adequacy of ComEd's nuclear plant decommissioning funds of a decision to delay the start of dismantlement and decommissioning of its nuclear plants for a period of twenty years after the plants are shutdown?

A. The impact would be generally the same as a decision to extend the operating lives of the plants. The delaying of dismantlement and decommissioning activities would provide economic benefits by allowing additional time for the decommissioning funds to grow through investment earnings. As a result, there could be significant excess funds remaining in the plants' decommissioning trust funds when decommissioning activities are completed.

IV. THE POTENTIAL RISKS FOR UNDER- OR OVER-RECOVERY OF DECOMMISSIONING COSTS

Q. Company witness Speck has testified that there is a significant financial risk for the decommissioning of ComEd's nuclear plants as a result of DOE's failure to take spent nuclear fuel.[32] Do you agree?

A. No. Although I agree that there is some risk that the Company might not fully recover from the DOE all of the costs it may incur as a result of the DOE's failure to accept spent nuclear fuel for permanent disposal, I believe, for the following reasons, that that risk is relatively small and should not concern the ICC at this time:

1. As part of its Zion decommissioning fund, the Company already is seeking to collect at least $71.7 million in post-shutdown spent fuel costs resulting from

[32] Edison Exhibit 4, at page 10, lines 7-13.

DOE's failure to accept spent nuclear fuel.[33] Under the Company's proposal, the new Genco would keep all recoveries from the DOE.[34] Consequently, if the ICC approves Company's proposal, these Zion-related post-shutdown spent fuel costs will be recovered from ratepayers and, perhaps, a second time from the DOE.

2. Federal courts already have found that the DOE is in breach of its contract to take spent nuclear fuel for permanent disposal. Quantification of damages is the remaining issue to be litigated.

3. As I have explained earlier, if the Company extends the operating lives of its remaining ten nuclear power plants by approximately twenty years, which I believe is likely, ComEd would not incur post-shutdown spent fuel storage costs (i.e., those spent fuel-related costs that would be paid from the decommissioning funds) at Dresden or Quad Cities until 2030, at the earliest. Similarly, the Company would not incur such post-shutdown spent fuel storage costs at LaSalle until 2042, at the earliest, at Byron until 2044, and at Braidwood until 2046. Consequently, the financial risk to the Genco would be that the DOE might not fully compensate the Company for these costs that would not be incurred for at least another 30 years or longer.

[33] This $71.7 million figure is taken from the Rebuttal Testimony of Robert Berdelle in Docket 99-0115, at page 6, lines 23-40.

[34] Edison Exhibit 2, at page 9, lines 18-30.

Q. Company witness Speck has testified that there is a significant financial risk related to possible changes in the scope of the required decommissioning work.[35] Do you agree?

A. I do agree that there is some risk that site-specific factors could affect the scope of the required decommissioning work. However, there is simply no evidence to support Mr. Speck's claim that that possible risk is significant.

In fact, Mr. Speck's two examples regarding possible decommissioning work scope changes actually suggest that this will not be a significant problem for ComEd's currently operating nuclear power plants. First, Mr. Speck discusses the discovery of secondary side radiological contamination following the shutdown of the Zion Nuclear Station as a factor which increased the estimated cost of decommissioning that plant by about $59 million.[36] However, the Company's witnesses in Docket No. 99-0115 testified that the secondary side contamination found at Zion was caused by steam generator tube leaks.[37] But Mr. Speck's testimony in this proceeding fails to consider that the current tubes in the steam generators at the Braidwood and Byron nuclear plants were fabricated from materials that have not shown any evidence of being susceptible to the corrosion mechanisms that led to the steam generator tube leaks at Zion. Consequently, secondary side contamination should not be a significant issue at either Braidwood or Byron.

Mr. Speck's second example — the recent termination of Stone & Webster's contract as the decommissioning operators contractor for the Maine Yankee plant — also has no

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[35] Edison Exhibit 4, at page 12, line 18, to page 13, line 7.

[36] Edison Exhibit 4, at page 12, lines 18-27.

[37] For example, see the Direct Testimony of Thomas S. LaGuardia in Docket No. 99-0115, at page 12, the Rebuttal Testimony of Thomas S. LaGuardia in Docket No. 99-0115, at pages 3 and 4, and the Rebuttal

relevance to ComEd because there is no evidence that the Company will hire any outside firm, let alone Stone & Webster, as the DOC for the decommissioning of its nuclear plants. In fact, as I will explain below, it is more reasonable to expect that ComEd, or one of its affiliated companies such as AmerGen, ultimately will be the Decommissioning Operations Contractor (DOC) for the decommissioning of ComEd's nuclear plants.[38] Or, ComEd could retain an experienced and financially sound firm such as Entergy or Bechtel who already have been retained as decommissioning operations contractors for other nuclear decommissioning projects.

Q. Company witness Speck has testified that there is a significant financial risk attributable to possible modifications in the regulations governing decommissioning.[39] Do you agree?

A. No. Although, again, there is some possibility that the NRC could modify its regulations governing nuclear power plant decommissioning, there is no evidence that it intends to make these regulations more stringent in the foreseeable future or that any changes that the NRC might implement would have a significant impact on decommissioning costs. In fact, it is just as realistic to assume that the experience being gained through the actual decommissioning of recently retired nuclear power plants could lead the NRC to relax some of its current requirements. This might lead to lower, rather than higher, decommissioning costs.

Testimony of John C. Blomgren in Docket No. 99-0115, at page 3, lines 42-44.

[38] In fact, ComEd is already using its own personnel to over-see and manage decommissioning-related activities at Dresden 1 and Zion 1 and 2.

[39] Edison Exhibit 4, at pages 14 and 15.

Q. Please comment on the claim by Company witness Speck that there is a significant financial risk to decommissioning ComEd's plants due to higher than expected decommissioning cost inflation.[40]

A. The Company's assumed 4.84 percent annual decommissioning cost escalation rate appears to be reasonable and consistent with:

1. The decommissioning cost escalation assumed by ComEd in its recent filings with the NRC concerning the adequacy of plant decommissioning funds;

2. Decommissioning cost escalation rates assumed by other utilities. For example, Vermont Yankee's owners have assumed that future decommissioning costs will escalate at an annual rate of 3.8 percent.[41] Similar, Northeast Utilities has assumed 3.99 to 4.3 percent annual decommissioning cost escalation in its analyses of decommissioning options for its three unit Millstone Nuclear Station.

3. Assessments of future decommissioning cost escalation including estimates by such independent bodies as the Vermont Department of Public Service which projects that future decommissioning costs will increase at a 3.5 percent annual rate.[42]

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[40] Edison Exhibit 4, at page 15, lines 10-26.

[41] Vermont Yankee Nuclear Power Corporations responses to Department of Public Service Interrogatories 1-42 and 1-50(c) in Vermont Public Service Board Docket No. 6300.

[42] Testimony of State of Vermont Nuclear Engineer William Sherman on behalf of the Department of Public Service in Docket No. 6300 before the Vermont Public Service Board, at page 52, lines 14-17.

In addition, the Company's 4.84 percent annual decommissioning cost escalation rate allows for 10 percent annual increases in LLW disposal costs.[43] Finally, the decommissioning cost estimates prepared for ComEd by TLG, Inc., include significant contingency allowances which could cover increased LLW disposal costs.

Q. Has the Company been able to provide any information on how the actual costs for decommissioning recently retired nuclear plants compare with the estimates made for those plants prior to decommissioning?

A. No. The Company was unable to provide any information on the actual costs incurred during the decommissioning of recently retired nuclear power plants.[44]

Q. Company witnesses Berdelle and Speck have emphasized the factors that they believe could lead to future decommissioning costs being higher than the Company's current estimates. Are there any factors that could lead to future decommissioning costs being less than the current estimates prepared for ComEd by TLG, Inc.?

A. Yes. In April 1999, TLG, Inc., estimated that it would cost approximately $557 million, in 1999$, to decommission the Vermont Yankee nuclear plant. This estimate appears to have used the same methodology as the estimates that TLG, Inc., has prepared for ComEd.

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[43] Testimony of ICC Staff Witness William Riley, ICC Staff Exhibit 3 in Docket No. 99-0115, at page 17, line 18, through page 19, line 14.

[44] ComEd's response to Question No. 20 of CUB's First Set of Data Requests.

However, AmerGen, which wants to purchase the Vermont Yankee nuclear plant, has said that based on its own independent evaluation, it believes that it can reduce the cost of decommissioning Vermont Yankee to $384 million by more effectively planning, implementing and standardizing its approach to decommissioning.[45]

Q. Did AmerGen's lower cost estimate include the same scope of decommissioning activities for Vermont Yankee as the higher TLG, Inc., estimate?

A. Yes. AmerGen has explained that its estimate reflected all activities that occur after plant shutdown, including items such as ramp-down, wet fuel storage, dry fuel storage, radiological dismantlement, non-radiological dismantlement, property taxes, and insurance.[46] AmerGen also explained that it is committed to the same NRC decommissioning requirements and standards as the current Vermont Yankee owners.[47]

Q. Did AmerGen explain the basis for its lower decommissioning cost estimate?

A. Yes. AmerGen acknowledged that its estimate is lower than the estimate prepared by TLG, Inc., but explained that it intends to "take advantage of both the synergies available to a large nuclear operator and experience in achieving our decommissioning goals in a more efficient manner than was possible for or foreseen by [the current Vermont Yankee

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[45] Testimony of Duncan Hawthorne, Vice President of AmerGen Energy Company L.L.C., in Vermont Public Service Board Docket No. 6300, at page 3.

[46] Testimony of Duncan Hawthorne, Vice President of AmerGen Energy Company L.L.C., in Vermont Public Service Board Docket No. 6300, at page 4, lines 10-13.

owners]."[48] AmerGen also has explained that "a large on-going nuclear company will have more resources to apply to decommissioning and will be able to negotiate lower vendor prices."[49]

Q. Did AmerGen further describe the synergies and efficiencies that should be available to a large nuclear operator?

A. Yes. During cross-examination in Vermont Public Service Board Docket No. 6300, AmerGen witness Hawthorne was asked to explain why AmerGen's decommissioning estimate for Vermont Yankee was significantly less than the cost estimate prepared for the current owners by TLG, Inc., in 1999. In his response, Mr. Hawthorne further described the synergies and efficiencies that should be available to a large nuclear operator:

> I guess that there are a number of views we have taken of synergies coming from the part of the operator. Some of the synergies we contemplate in the operation of the facility are merged in the decommissioning process. Example being AmerGen's experience with a large fleet of nuclear plants. And to decommission plants from our own experiences is based on perhaps making some investments that are not cost effective for a single unit utility to make, but make a lot of sense for someone who owns a fleet of plants. Things like investment in mobile cranes, plasma cutters, lots of equipment to make the

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47 Testimony of Duncan Hawthorne, Vice President of AmerGen Energy Company L.L.C., in Vermont Public Service Board Docket No. 6300, at page 7, lines 1-2.

48 Testimony of Duncan Hawthorne, Vice President of AmerGen Energy Company L.L.C., in Vermont Public Service Board Docket No. 6300, at page 4, lines 6-9.

49 AmerGen's response to Conservation Law Foundation Information Request 1AEC13 in Vermont Public Service Board Docket No. 6300.

> decommissioning process more effective and reduce the cost of that.[50]

Q. Have you seen any independent assessments of the validity of AmerGen's claim that it will have decommissioning advantages from being a large company and from being more efficient?

A. Yes. AmerGen's claim that it could achieve decommissioning advantages from being a large company was found "reasonable" by the Vermont Department of Public Service:

> AmerGen, its parent PECO Energy, and potentially PECO's merger partner Unicom will manage more than 17 nuclear plants. With this market share, the AmerGen partners could create their own decommissioning division, eliminating decommissioning operations contractors fees. The large size could create favorable bidding opportunities with other contractors. Decommissioning experience is being gained by the industry through the number of plants which are now being decommissioned. Through this experience efficiencies are being realized by the industry. Therefore, AmerGen's claim is reasonable.[51]

Q. Have you seen any estimates prepared by AmerGen for decommissioning any of ComEd's nuclear plants?

A. No. ComEd has refused to provide any documents related to any decommissioning cost estimates for the Company's plants prepared by PECO or AmerGen.[52]

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[50] Hearing of May 12, 2000, in Vermont Public Service Board Docket No. 6300, at Transcript page 163.

[51] Testimony of William Sherman on behalf of the Department of Public Service in Docket No. 6300 before the Vermont Public Service Board, at page 48, lines 9-18.

[52] See ComEd's response to Question No. 32 in CUB's Second Set of Data Requests.

Q. Is it reasonable to expect that ComEd and its affiliated companies also should be able to achieve the synergies and efficiencies that AmerGen has said are available to a large nuclear operator?

A. Yes. ComEd with its own thirteen nuclear power plants to decommission should be able to take advantage of these same synergies and efficiencies.

In addition, AmerGen is fifty percent owned by PECO. Consequently, after the merger with PECO is closed, AmerGen and ComEd will be affiliated companies. For this reason, all of the synergies, efficiencies, and experience that will be gained by AmerGen also should be available to ComEd.

Q. Do you agree with ComEd's claim that ratepayers will benefit significantly from the Company's decommissioning proposal, with savings of $1.0 billion?[53]

A. No. As quantified in the testimony of Mr. Biewald, it appears that the Company's proposal would result in windfall profits for the Genco. In fact, it appears that the Company may already have collected adequate funds for decommissioning its nuclear plants in a manner that protects the public health and safety and the environment when life extension and delayed decommissioning are considered.

V. THE MARKET VALUE OF COMED'S NUCLEAR POWER PLANTS

Q. What is the approximate market value of the nuclear power plants that ComEd is proposing to transfer to Exelon Genco?

[53] Edison Exhibit 2, at page 3, lines 13-16 and 39-40, and Edison Exhibit 4, at page 2, lines 5-7.

A. In March of 2000, the New York Power Authority accepted a bid of approximately $319/kw for its two nuclear power plants and related nuclear fuel. At this price, ComEd's ten currently operating nuclear plants would be worth approximately $3 billion.

Q. Please explain why you believe that the price received by the New York power authority is representative of the current market for nuclear plants.

A. The $319/kw received by the New York Power Authority was significantly higher than the prices received in other nuclear plant sales. However, there is substantial evidence that the market for nuclear power plants has become much more robust and competitive within the past year:

1. The sale of the New York Power Authority plants involved a fiercely competitive bidding process between Entergy and Dominion Resources. However, a year to 18 months earlier, the Power Authority believed that there was no market for its two nuclear plants.

2. One of the two bidders who bid approximately one billion dollars for the New York Power Authority plants was a new entrant into the market. Since last November, other new utilities have expressed interest in entering into the market to purchase nuclear power plants.

3. The proposed sale of the two Nine Mile Point nuclear plants to AmerGen was rejected by one of the plant's minority owners and the New York State Public Service Commission because the proposed sale price was too low. The plants will now be sold through an open competitive auction process.

Q. Does this complete your testimony at this time?

A. Yes.

EXHIBIT STC #1

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SUMMARY

I have worked for twenty-six years as a consultant and attorney on complex management, engineering, and economic issues, primarily in the field of energy. This work has involved conducting technical investigations, preparing technical analyses, presenting expert testimony, providing support during all phases of litigation, and advising clients during settlement negotiations. I have received undergraduate and advanced engineering degrees from the Massachusetts Institute of Technology and Stanford University and a law degree from Stanford Law School

PROFESSIONAL EXPERIENCE

Failure Analysis - Evaluated the causes of power plant and system outages, equipment failures, and component degradation, determined whether these problems could have been anticipated and avoided, and assessed liability for repair and replacement costs.

Management Assessment - Assessed whether management fully disclosed potential risks to investors. Investigated whether management fully disclosed or withheld material facts from regulators. Evaluated whether large construction projects totaling more than $40 billion were prudently designed and constructed. Investigated more than one hundred nuclear power plant outages to determine if they were caused or extended as the result of imprudent management. Evaluated management responses to equipment and component failures. Assessed the adequacy of utility quality assurance and maintenance programs. Examined the selection and supervision of contractors and subcontractors. Evaluated the reasonableness of contract provisions and terms in proposed power supply agreements.

System Operations and Reliability Analysis - Evaluated the planning for new utility generating and transmission facilities totaling over $10 billion. Evaluated whether new utility generating and transmission additions were needed to ensure adequate system reliability. Examined utility off-system capacity purchases. Explored the opportunities for off-system sales by electric utilities. Evaluated whether there was excess generating capacity on electric utility systems.

Economic Analysis -. Quantified the economic consequences of management imprudence. Evaluated purchased power availability and cost. Prepared continued operation versus retirement economic analyses for major electric generating facilities.

Electric Industry Restructuring and Deregulation - Presented and published papers on the potential impact of electric industry restructuring and economic deregulation on nuclear power plant safety. Assisted clients in quantifying stranded plant costs. Explored the potential impact on utility maintenance programs of the adoption of performance-based regulation. Evaluated the technical and economic risks of proposed corporate acquisitions by clients.

Expert Testimony - Presented the results of management, technical and economic analyses as testimony in more than sixty-five proceedings before regulatory boards and commissions in twenty one states, before two federal regulatory agencies, and in state and federal court proceedings.

Litigation Support - Participated in all aspects of the development and preparation of case presentations on complex management, technical, and economic issues. Assisted in the preparation and conduct of pre-trial discovery and depositions. Helped identify and prepare expert witnesses. Aided the preparation of pre-hearing motions and post-hearing briefs and appeals. Assisted counsel in preparing for hearings and oral arguments. Advised counsel during settlement negotiations.

REPRESENTATIVE SIGNIFICANT ACHIEVEMENTS

Evaluated the prudence of Niagara Mohawk Power Corporation's management of construction of the Nine Mile Point Unit No. 2 Nuclear Station. Presented testimony that formed the basis for a decision by the New York State Public Service Commission that $300 million of the cost of the unit should be permanently excluded from rates.

Analyzed whether a new coal-fired generating unit represented excess capacity on the Northern Indiana Public Service Company system. Presented testimony that led to a finding by the Indiana Public Service Commission that the new unit was not used and useful and, consequently, that a four year phase-in of the utility's investment in the plant was appropriate. This resulted in a permanent savings for consumers of more than $65 million.

Investigated the prudence of Southwest Gas Corporation's plastic and steel pipe repair and replacement programs. The results of this investigation formed the basis for a settlement by the staff of the Arizona Corporation Commission and the utility that shared pipe repair and replacement costs between ratepayers and shareholders.

Evaluated whether outages of the Wolf Creek Nuclear Plant had been caused or extended by utility mismanagement. Presented testimony that formed the sole basis for a finding by the Kansas Corporate Commission that the utility should bear $6.9 million of replacement power costs incurred during the outages.

Investigated whether outages of the three units at the Palo Verde Nuclear Generating Station were caused or extended by management imprudence. The results of this investigation formed the basis for a settlement by the staff of the California Public Utilities Commission and the Southern California Edison Company that shared outage-related costs between ratepayers and shareholders.

Evaluated whether Northeast Utilities had prudently managed the 1992/1993 replacement of the steam generators at Millstone Unit No. 2.

Assisted clients in evaluating the technical and economics risks associated with purchasing majority ownership in an electric utility company that was a minority owner of the Seabrook Nuclear Station.

CLIENTS

Regulatory Commissions in Arkansas, Arizona, California, Kansas and Maine; municipal utilities in Massachusetts, North Carolina, New York and Texas; state attorneys general in five states; state consumer counsels or public advocates in twelve states; independent power producers; law firms; investment firms; shareholders of investor-owned utilities; municipalities and counties in four states; the majority owners of the Great Bay Power Company; elected officials in two states; citizen utility boards in Illinois and Wisconsin; the Associated Industries of Massachusetts; and the Environmental Law and Policy Center of the Midwest.

WORK HISTORY

1994 - Present: President, Schlissel Technical Consulting, Inc.

1983 - 1994: Director, Schlissel Engineering Associates

1979 - 1983: Private Legal and Consulting Practice

1975 - 1979: Attorney, New York State Consumer Protection Board

1973 - 1975: Staff Attorney, Georgia Power Project

EDUCATION

1983-1985: Massachusetts Institute of Technology
Special Graduate Student in Nuclear Engineering and Project Management,

1973: Stanford Law School
Juris Doctor

1969: Stanford University

Master of Science in Astronautical Engineering,

1968: Massachusetts Institute of Technology
Bachelor of Science in Astronautical Engineering,

PROFESSIONAL MEMBERSHIPS

- New York State Bar since 1981
- American Nuclear Society
- National Association of Corrosion Engineers
- National Academy of Forensic Engineers (Correspondent Affiliate)

ATTACHMENT 1

TESTIMONY

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
Vermont Public Service Board	6300	Vermont Public Interest Research Group and New England Coalition on Nuclear Pollution	April 2000	Whether the proposed sale of the Vermont Yankee nuclear plant is in the public interest.
Massachusetts Department of Telecommunications and Energy	99-107 (Phase II)	Massachusetts Office of Attorney General	April and June 2000	Investigation of the cause(s) of the May 18, 1999, main transformer fire at the Pilgrim Nuclear Power Station.
Connecticut Department of Public Utility Control	00-01-11	Connecticut Office of Consumer Counsel	March and April 2000	The proposed merger between Northeast Utilities and Con Edison, Inc..
Connecticut Department of Public Utility Control	99-09-12	Connecticut Office of Consumer Counsel	January 2000	The reasonableness of Northeast Utilities plan for auctioning the Millstone nuclear units.
Connecticut Department of Public Utility Control	99-08-01	Connecticut Office of Consumer Counsel	November 1999	Generation, Transmission and Distribution system relibility.
Illinois Commerce Commission	99-0115	Illinois Citizens Utility Board	September 1999	The reasonableness of Commonwealth Edison Company's decommissioning cost estimate for the Zion Nuclear Station.
Connecticut Department of Public Utility Control	99-03-36	Connecticut Office of Consumer Counsel	July 1999	The appropriate standard offer rates for the Connecticut Light & Power Company.
Connecticut Department of Public Utility Control	99-03-35	Connecticut Office of Consumer Counsel	July 1999	The appropriate standard offer rates for the United Illuminating Company.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
Connecticut Department of Public Utility Control	99-02-05	Connecticut Office of Consumer Counsel	April 1999	Stranded nuclear costs of the Connecticut Light & Power Company.
Connecticut Department of Public Utility Control	99-03-04	Connecticut Office of Consumer Counsel	April 1999	Stranded nuclear costs of the United Illuminating Company.
Maryland Public Service Commission	8795	Maryland Office of People's Counsel	December 1998	Future operating performance of Delmarva Power Company's nuclear units.
Maryland Public Service Commission	8794/8804	Maryland Office of People's Counsel	December 1998	Baltimore Gas and Electric Company's proposed replacement of the steam generators at the Calvert Cliffs Nuclear Power Plant. Future operating performance of nuclear units.
Indiana Utility Regulatory Commission	38702-FAC-40-S1	Citizens Action Coalition of Indiana and Indiana Consumers for Fair Utility Rates	November 1998	Whether the current outages of the two units at the D.C. Cook Nuclear Plant were caused or extended due to mismanagement.
Arkansas Public Service Commission	98-065-U	General Staff of the Arkansas Public Service Commission	October 1998	Results of investigation into Entergy's proposed replacement of the steam generators at the ANO Unit 2 Steam Generating Station.
Massachusetts Department of Telecommunications and Energy	97-120	Massachusetts Office of Attorney General	October 1998	Whether the recent outages of the three units at the Millstone Nuclear Station were caused or extended due to mismanagement. The appropriate Transition Charge for the Western Massachusetts Electric Company.
Connecticut Department of Public Utility Control	98-01-02	Connecticut Office of Consumer Counsel	September 1998	Review of nuclear operations, nuclear operating and capital costs, system reliability improvement costs, and other aspects of utility rate filing.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
Illinois Commerce Commission	97-0015	Illinois Citizens Utility Board	May 1998	Whether any of the outages of the twelve Commonwealth Edison Company nuclear units during 1996 were caused or extended by management imprudence. Whether the equipment problems, personnel performance weaknesses, and program deficiencies which led to or extended unit outages could have been avoided or addressed prior to the outage. Quantification of outage-related fuel and replacement power costs.
Public Service Commission of West Virginia	97-1329-E-CN	Consumer Advocate Division of the Public Service Commission of West Virginia	March 1998	Whether a proposed 765 kV transmission line from Wyoming, West Virginia, to Cloverdale, Virginia is needed to enable the Appalachian Power Company to adequately and reliably serve the needs of customers in its Eastern/Southern service areas. Whether the proposed transmission line will enhance Appalachian Power Company's ability to make regional power transfers to support other utilities' system reliability needs.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
Illinois Commerce Commission	97-0018	Illinois Citizens Utility Board	March 1998	Whether any of the outages of the Clinton Power Station during 1996 were caused or extended by management imprudence. Whether the equipment problems, personnel performance weaknesses, and program deficiencies which led to or extended plant outages could have been avoided or addressed prior to the outage. Quantification of outage-related fuel and replacement power costs.
Connecticut Department of Public Utility Control	97-05-12	Connecticut Office of Consumer Counsel	October 1997	The costs associated with the current extended outages of the three units at the Millstone Nuclear Power Station.
New Jersey Board of Public Utilities	ER96030257	New Jersey Division of Ratepayer Advocate	August 1996	Calculation of replacement power costs.
Illinois Commerce Commission	95-0119	Illinois Citizens Utility Board	February 1996	Whether any of the outages of the twelve Commonwealth Edison Company nuclear units during 1994 were caused or extended by management imprudence. Whether the equipment problems, personnel performance weaknesses, and program deficiencies which led to or extended unit outages could have been avoided or addressed prior to the outage. Quantification of outage-related fuel and replacement power costs.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
Public Utility Commission of Texas	13170	Texas Office of Public Utility Counsel	December 1994	Whether any of the outages of the River Bend Nuclear Station during the period October 1, 1991 through December 31, 1993 were caused or extended by management imprudence. Whether the equipment problems, personnel performance weaknesses, and program deficiencies which led to or extended plant outages could have been avoided or addressed prior to the outage. Quantification of outage-related fuel and replacement power costs.
Public Utility Commission of Texas	12820	Texas Office of Public Utility Counsel	October 1994	The Operations and Maintenance expenditures related to extended outages of the two units at the South Texas Nuclear Generating Station.
Wisconsin Public Service Commission	6630-CE-197 6630-CE-209	Wisconsin Citizen Utility Board	September and October 1994	The reasonableness of the projected cost and schedule estimates for the planned replacement of the steam generators at the Point Beach Nuclear Power Plant. Potential impact of the aging of structures, components, and equipment on future plant operating costs and performance.
Public Utility Commission of Texas	12700	City of El Paso, Texas	June 1994	Whether El Paso Electric Company's share of Palo Verde Unit 3 capacity was needed to ensure adequate system reliability. Whether the Company's investment in Palo Verde Unit 3 could be expected to generate cost savings for ratepayers within a reasonable number of years.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
Arizona Corporation Commission	U-1551-93-272	Staff of the Arizona Corporation Commission	May and June 1994	The prudence of Southwest Gas Corporation's plastic and steel pipe repair and replacement programs.
Connecticut Department of Public Utility Control	92-04-15	Connecticut Office of Consumer Counsel	March 1994	Northeast Utilities' management of the planning for the replacement of the steam generators at Millstone Unit No. 2 and the 1992/1993 replacement outage. The causes of the steam generator degradation experienced at Millstone Unit 2 during the 1980s. The reasonableness of the Company's selection of the main contractors for the engineering and installation of the replacement steam generators. The reasonableness of a settlement between Northeast Utilities' and the main contractor for the project concerning inadequate performance by the contractor during the early months of the steam generator replacement outage.
Connecticut Department of Public Utility Control	92-10-03	Connecticut Office of Consumer Counsel	August 1993	Whether the July - November 1991 outage of Millstone Unit 3 due to the corrosion of safety-related plant piping systems was the result of imprudent management. The information that was known by management prior to the outage concerning the potential for erosion corrosion/galvanic corrosion of the piping in the Unit's service water system.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
Public Utility Commission of Texas	11735	Texas Office of Public Utility Counsel	April and July 1993	Whether any of the outages of Comanche Peak Unit 1 between August 13, 1990 and June 30, 1992 were caused or extended by imprudent management. Whether the equipment problems, personnel performance weaknesses, and program deficiencies which led to or extended plant outages could have been avoided or addressed prior to the outage. The reasonableness of Texas Utilities' maintenance practices and corrective action program at Comanche Peak. Quantification of the replacement power costs attributable to specific instances of imprudent management. The actual versus the expected net electrical output of Comanche Peak Unit 1.
Connecticut Department of Public Utility Control	91-12-07	Connecticut Office of Consumer Counsel	January 1993 August 1995	Whether the November 6, 1991 pipe rupture at Millstone Unit 2 and the related outages of the Connecticut Yankee and Millstone units were the result of imprudent management. NU's management of the pipe erosion/corrosion inspection programs at the Millstone Station. Impact of environmental requirements on plant design and operation.
Connecticut Department of Public Utility Control	92-06-05	Connecticut Office of Consumer Counsel	September 1992	The levels of off-system capacity sales that should be attributed to United Illuminating Company in rate proceeding.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
Public Utilities Commission of Texas	10894	Texas Office of Public Utility Counsel	August 1992	Whether the outages of the River Bend Nuclear Station during the period October 1, 1988 through September 30, 1991 were caused or extended by imprudent management. Whether the equipment problems, personnel performance weaknesses, and program deficiencies which led to or extended plant outages could have been avoided or addressed prior to the outage. Gulf States Utilities' management of the corrective action program at River Bend. Mismanagement by outage contractors. Quantification of the replacement fuel and power costs attributable to each identified instance of imprudent management.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
Connecticut Department of Public Utility Control	92-01-05	Connecticut Office of Consumer Counsel	August 1992	Whether the shutdown of Millstone Unit 3 on July 25, 1991 due to the fouling of important plant systems by blue mussels was the result of imprudent management. Design deficiencies which left 130 feet of the Millstone Unit 3 service water system unprotected against fouling by blue mussels. The reasonableness of management's response to this known design defect. The reasonableness of management's response to proposals by plant engineering and operations personnel during the years 1985 through 1988 that the plant be modified to provide protection against fouling for the entire service water system.
California Public Utilities Commission	90-12-018	The Division of the Ratepayer Advocate of the California Public Utilities Commission Staff	November 1991 March 1992 June and July 1993	Whether any of outages of the three units at the Palo Verde Nuclear Generating Station during 1989 and 1990 were caused or extended by management imprudence. Whether the equipment problems, personnel performance weaknesses, and program deficiencies which led to or extended outages could have been avoided or addressed prior to the outage. Whether specific plant operating cost and capital expenditures were necessary and prudent.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
Public Utilities Commission of Texas	9945	The City of El Paso, Texas	July 1991	The level of system reliability that was adequate for the interconnected El Paso Electric Company system. When the Company's share of Palo Verde Unit 3 capacity would be needed to ensure adequate system reliability. Whether the Company's investment in Palo Verde Unit 3 would produce a net economic benefit for ratepayers within a reasonable number of years. Quantification for a Commission finding that Palo Verde Unit 3 represented excess capacity. El Paso Electric Company's management of the planning and licensing of the Arizona Interconnection Project transmission line.
Arizona Corporation Commission	U-1345-90-007	Staff of the Arizona Corporation Commission	December 1990 and April 1991	The reasonableness of Arizona Public Service Company's management of the planning, construction, and operation of the Palo Verde Nuclear Generating Station. The reasonableness of management's responses to changing circumstances and to identified design and equipment issues. Quantification of identified instances of imprudent management.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
New Jersey Board of Public Utilities	ER89110912J	New Jersey Rate Counsel	July and October 1990	The economic costs and benefits of the early retirement of the Oyster Creek Nuclear Plant versus continued operation through the unit's scheduled retirement in the year 2009. The potential impact of the unit's early retirement on system reliability. The cost and schedule of siting, designing and constructing a replacement natural-gas fired generating facility. Opportunities for the utility to make off-system purchases of replacement capacity if Oyster Creek were retired. The potential impact of the aging of plant structures, components, and equipment on the future operating costs and performance of the Oyster Creek unit.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
Public Utilities Commission of Texas	9300	Texas Office of Public Utility Counsel	June and July 1990	Whether Texas Utilities prudently managed the design and construction of the Comanche Peak Nuclear Plant. The impact of regulatory issues on construction costs and schedule. Flaws and biases in the Company's cost and schedule variance analyses. The impact of imprudence by equipment vendors. Whether Texas Utilities was prudent in repurchasing minority owners' shares of Comanche Peak without examining the economic costs and benefits of the repurchase on its ratepayers. Whether Texas Utilities repurchase of the minority owners' shares of Comanche Peak was reasonable in light of other more economic alternatives available to the Company.
Federal Energy Regulatory Commission	EL-88-5-000	Municipal utilities in Massachusetts	November 1989	The prudence of Boston Edison's corporate management of the Pilgrim Nuclear Station.
Connecticut Department of Public Utility Control	89-08-11	Connecticut Office of Consumer Counsel	November 1989	The levels of off-system capacity sales that should be attributed to United Illuminating Company in a rate proceeding.
Kansas State Corporation Commission	164,211-U	Staff of the Kansas Corporation Commission	April 1989	The causes of the 1987 and 1988 extended outages of the Wolf Creek generating facility. Whether any of the 127 days of outage time were the result of the mismanagement of outage activities. The impact of unscheduled outage work.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
Public Utilities Commission of Texas	8425	Texas Office of Public Utility Counsel	March 1989	Whether the capacity from Houston Lighting & Power Company's new Limestone Unit 2 generating facility was required to provide adequate system reliability. Whether the Company's investment in Limestone Unit 2 would produce a net economic benefit for ratepayers. The prudence of the Company's planning for the addition of Limestone Unit 2 to its system. Whether the Company reevaluated its commitment to build Limestone Unit 2 in light of changed circumstances.
Illinois Commerce Commission	83-0537 84-0555 (On Remand)	Illinois Governor's Office of Consumer Services	January 1989	The prudence of Commonwealth Edison Company's management of quality assurance and quality control activities and the activities of project contractors during the construction of the Byron Nuclear Station. The cost and schedule consequences of specific instances of imprudent management.
New Mexico Public Service Commission	2146 Part II	Attorney General of the State of New Mexico	October 1988	The economic consequences for ratepayers of retaining the use of the Company's share of Palo Verde Units 1 and 2.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
United States District Court for the Eastern District of New York	87-646-JBW	Counties of Nassau and Suffolk, New York	October 1988	Whether the Long Island Lighting Company disclosed the existence of agreements with another utility and other information in internal Company documents to the New York State Public Service Commission, the New York State Board on Electric Generating Siting and the Environment, and the U.S. Nuclear Regulatory Commission.
Public Utility Commission of Texas	6668	Texas Office of Public Utility Counsel	August 1988 June 1989	Houston Lighting & Power Company's management of the design and construction of the South Texas Nuclear Project. The reasonableness of HL&P's selection of the primary project contractors. Inconsistencies between Company positions in this proceeding and arguments HL&P had made in earlier litigation against a project contractor. The impact of safety-related and environmental statutes and regulatory requirements on plant construction costs and schedule. Quantification of the impact of identified imprudent management on construction schedule.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
Federal Energy Regulatory Commission	ER88-202-000	Public Advocate of the State of Maine	June 1988	Whether the duration of the 1987 outage of the Maine Yankee Nuclear Plant was extended and/or the cost of the outage was increased by imprudent management. The causes of the turbine generator vibration problems experienced at the end of the outage. Whether work by contractors during the outage was prudently managed and performed.
Illinois Commerce Commission	87-0695	Illinois Governor's Office of Consumer Services	April 1988	The reasonableness of Illinois Power Company's planning for the Clinton Nuclear Station. The information that was available to management during 1983 and 1985 that showed that completion of the Clinton facility was not in the economic interests of the Company's ratepayers. The need for adoption of a performance standard for the Clinton plant.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
North Carolina Utilities Commission	E-2, Sub 537	Attorney General of the State of North Carolina	February 1988	Carolina Power & Light Company's management of the design and construction of the Harris Nuclear Project. Company management of quality assurance and quality control activities and the work performed by project contractors during construction. The reasonableness of the responses by Company management to changing regulatory requirements. The impact of safety-related and environmental statutes and regulatory requirements on construction costs and schedule. The cost and schedule consequences of identified instances of imprudent management.
Ohio Public Utilities Commission	87-689-EL-AIR	Cities and Consumer Organizations	October 1987	Whether any of the Company's share of capacity from the Perry Unit 2 generating facility was needed to ensure adequate system reliability. Whether the Company's investment in Perry Unit 1 would produce a net economic benefit for ratepayers.
North Carolina Utilities Commission	E-2, Sub 526	Attorney General of the State of North Carolina	June 1987	Fuel factor calculations for the Carolina Power & Light Company.
New York State Public Service Commission	29484	New York State Consumer Protection Board and the counties of Nassau and Suffolk, New York	May 1987	The planned startup/power ascension testing program and schedule for the Nine Mile Point Unit 2 generating facility.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
Illinois Commerce Commission	86-0043 86-0096	City of Chicago, IL	April 1987	The reasonableness of terms in proposed Power Supply Agreement.
Illinois Commerce Commission	86-0405	Illinois Governor's Office of Consumer Services	March 1987	The appropriate in-service criteria to be used to determine when a new generating facility was capable of providing safe, adequate, reliable, and efficient service.
Indiana Public Service Commission	38045	Indiana Office of Consumer Counsel	December 1986	The prudence of Northern Indiana Public Service Company's planning for the Schaefer Unit 18 generating facility. Whether the Company reevaluated its commitment to construct Schaefer Unit 18 in light of changed circumstances. Whether the capacity from Unit 18 was required to ensure adequate system reliability. The rate consequences of excess capacity on the Company's system. Flaws and biases in the Company's economic and system reliability analyses.
Superior Court in Rockingham County, New Hampshire	86E328	Elected Officials	July 1986	The radiation effects of low power testing on structures, equipment and components in a new nuclear power plant.
New York State Public Service Commission	28124	New York State Consumer Protection Board and Suffolk County, New York	April 1986 May 1987	The reasonableness of terms and provisions in contract with equipment supplier. Prudence of utility's planning for addition of new generating facility. Reasonableness of expenditures on canceled generating facility.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
Arizona Corporation Commission	U-1345-85	Consumer Organization	February 1986	Comparison of the construction schedule for the Palo Verde Unit 1 generating facility and the construction schedules for comparable nuclear power plants. Regulatory and engineering factors that would likely affect future plant operating costs.
New York State Public Service Commission	29124	New York State Consumer Protection Board	January 1986	The prudence of Niagara Mohawk Power Corporation's management of construction of the Nine Mile Point Unit No. 2 nuclear power plant.
New York State Public Service Commission	28252	New York State Consumer Protection Board	October 1985	Performance standard for the Shoreham nuclear power plant.
New York State Public Service Commission	29069	New York State Consumer Protection Board	August 1985	Performance standard for the Nine Mile Point Unit No. 2 nuclear power plant.
Illinois Commerce Commission	83-0537 84-0555	Illinois Governor's Office of Consumer Services	July 1985	The prudence of Commonwealth Edison Company's management of quality assurance and quality control activities and the activities of project contractors during the construction of the Byron Nuclear Station. The cost and schedule consequences of specific instances of imprudent management.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
Missouri Public Service Commission	ER-85-128 EO-85-185	Missouri Office of Public Counsel	July 1985	The impact of safety-related regulatory requirements on power plant operating costs and performance. The potential impact of the aging of power plant structures, components and equipment on operating costs and performance. Regulatory factors and plant-specific engineering design features that will likely affect the future operating costs and performance of the Wolf Creek Nuclear Plant.
Massachusetts Department of Public Utilities	84-152	Attorney General of the Commonwealth of Massachusetts	January 1985	The impact of safety-related and environmental statutes and regulatory requirements on power plant operating costs and performance. The potential impact of the aging of power plant structures, components and equipment on operating costs and performance. Regulatory factors and plant-specific engineering design features that will likely affect the future operating costs and performance of the Seabrook Nuclear Plant

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
Maine Public Utilities Commission	84-113	Staff of the Maine Public Utilities Commission	September 1984	The impact of safety-related and environmental statutes and regulatory requirements on power plant operating costs and performance. The potential impact of the aging of power plant structures, components and equipment on operating costs and performance. Regulatory factors and plant-specific engineering design features that will likely affect the future operating costs and performance of the Seabrook Nuclear Plant.
South Carolina Public Service Commission	84-122-E	South Carolina Consumer Advocate	August 1984	The reasonableness of the repair/replacement strategy adopted by management in response to pipe cracking at the Brunswick Nuclear Station in light of what management knew or should have known about the potential for pipe cracking in safety-related systems. Quantification of replacement power costs attributable to identified instances of imprudent management.
Vermont Public Service Board	4865	Vermont Public Interest Research Group	May 1984	The reasonableness of the repair/replacement strategy adopted by management in response to pipe cracking at the Vermont Yankee Nuclear Plant. Whether that strategy was economically justified in light of what management knew or should have known about the potential for pipe cracking in safety-related systems.

COURT OR COMMISSION	CASE OR DOCKET	CLIENT	DATE	ISSUE(S)
New York State Public Service Commission	28347	New York State Consumer Protection Board	January 1984	The information that was available to Niagara Mohawk Power Corporation management prior to 1982 concerning the potential for cracking in safety-related piping components at the Nine Mile Point Unit No. 1 generating facility.
New York State Public Service Commission	28166	New York State Consumer Protection Board	February 1983 February 1984	Whether the January 25, 1982 steam generator tube rupture at the Ginna Nuclear Plant was caused by imprudent management. The information available prior to January 1982 that should have led management to conduct a visual inspection of the unit's steam generator to search for the presence of a foreign object. The plant output that was lost as a result of the January 25, 1982 tube rupture and subsequent repair outage.
U.S. Nuclear Regulatory Commission	50-247SP	Members of New York City Council	May 1983	The economic consequences of the early retirement of the Indian Point nuclear plants.

ATTACHMENT 2

OTHER SIGNIFICANT STUDIES, INVESTIGATIONS, AND LITIGATION SUPPORT WORK (Non-Confidential)
1981 - Present

DATE	CLIENT	PROJECT
1997	Connecticut Office of Consumer Counsel	Investigated whether the current outages of the thre Nuclear Units were caused or extended by imprude Examined whether the equipment problems, perso weaknesses, and program deficiencies which led to these outages could have been avoided or addresse outage.
1997	Attorney General of the Commonwealth of Massachusetts	Investigated whether the current outages of the thre Nuclear Units were caused or extended by imprude Examined whether the equipment problems, perso weaknesses, and program deficiencies which led to these outages could have been avoided or addresse outage.
1997	New Jersey Division of Ratepayer Advocate	Reviewed the U.S. Nuclear Regulatory Commissio Statement on Electric Industry Economic Deregula
1996	New Jersey Division of Ratepayer Advocate	Investigated whether the current outages of the two Salem Nuclear Station were caused or extended by management. Examined whether the equipment pro performance weaknesses, and program deficiencies extended these outages could have been avoided or to the outage.
1996	Municipal Electric Utility Association of New York State	Evaluated a recent utility estimate of the expected c decommissioning the Fitzpatrick nuclear plant.
1996	Attorney General of the Commonwealth of Massachusetts	Investigated whether the outages of the Pilgrim, M Connecticut Yankee, Vermont Yankee, and Maine plants during the years 1995 and 1996 were caused imprudent management.
1996	Associated Industries of Massachusetts	Assisted client in quantifying the stranded costs ass utility generating facilities in the New England stat
1996	Staff of the Arizona Corporation Commission	Assessed whether U.S. West Corporation's repair programs for telephone cable in Arizona were reas Explored the impact of performance-based regulati utility programs.
1995-1996	City Public Service Board of San Antonio, Texas	Confidential

DATE	CLIENT	PROJECT
1995	Attorney General of the State of Michigan	Investigated whether the December 25, 1993 turbi failure and fire at the Fermi 2 generating plant was Detroit's imprudent management of fabrication, op maintenance.
1995	Environmental Law and Policy Center of the Midwest	Investigated the potential safety consequences of st tube cracking at the Byron and Braidwood nuclear
1995	None	Analyzed the potential impact on nuclear power pla increased competition in the electric industry.
1995	Attorney General of the Commonwealth of Massachusetts	Investigated whether the outages of the Millstone n during the years 1993 and 1994 were caused or ext imprudent management.
1994-1995	Texas Office of Public Utility Counsel	Investigated whether the outages of the two units a Nuclear Generating Station during the years 1990 t were caused or extended by imprudent managemen whether the equipment problems, personnel perfor weaknesses, and program deficiencies which led to these outages could have been avoided or addresse outage.
1994	Investment Firms	Examined the technical risks associated with invest Bay Power Company.
1994	Attorney General of the Commonwealth of Massachusetts	Investigated whether the outages of the Millstone a Yankee nuclear plants during 1992 were caused or imprudent management.
1993-1994	Public Advocate of the State of Maine	Evaluated the 1994 Decommissioning Cost Estimat Yankee Nuclear Plant.
1993	Attorney General of the Commonwealth of Massachusetts	Investigated whether the outages of the Millstone n during 1991 were caused or extended by impruden
1992-1993	Consumer Advocate Division of the West Virginia Public Service Commission	Analyzed whether proposed transmission line was adequate system reliability.
1992	Oregon Public Policy Coalition	Examined the potential impacts of the aging of pov structures, components and equipment on the likely costs and performance of the Trojan Nuclear Plant reasonableness of the assumptions used in the utilit the economics of continued operation of the Trojan retirement.
1992	New Jersey Rate Counsel	Examined whether a proposed natural-gas fired ge was needed to ensure adequate system reliability. F planned licensing and construction schedules for th the potential impact of environmental requirements expected construction cost and schedule.
1992	New York State Consumer Protection Board	Evaluated whether the utility's strategy for the repa replacement of the steam generators at the Indian P plant was reasonable.

DATE	CLIENT	PROJECT
1990-1991	Shareholders of Public Service Company of New Mexico	Examined if Company management had known or known that the New Mexico Public Service Comm considering whether to exclude the Company's inv Verde Units 2 and 3 from rate base. Examined wh management had adequately disclosed to potential i inability to market the resulting excess capacity.
1989	Connecticut Office of Consumer Counsel and the Attorney General of the State of Connecticut	Investigated whether the Seabrook Nuclear Plant w engineered and constructed.
1988-1989	North Carolina Electric Municipal Power Agency	Investigated whether Carolina Power & Light Com prudently managed the design and construction of t nuclear plant. Examined the impact of safety-relate environmental statutes and regulatory requirements construction costs.
1988	Arkansas Public Service Commission	Investigated whether the Grand Gulf nuclear plant prudently designed and constructed.
1988	City of Fayetteville, North Carolina	Investigated whether Carolina Power & Light Com prudently managed the design and construction of t nuclear plant. Examined the impact of safety-relate environmental statutes and regulatory requirements construction costs.
1987	New York State Consumer Protection Board	Reviewed financial incentives proposed by Public S Commission to improve nuclear power plant safety
1986-1987	New Jersey Rate Counsel	Assisted client in a prudence review of the construc schedule of the Hope Creek Nuclear Generating St
1985	Colorado Office of Consumer Counsel	Prepared an engineering review of the performance Vrain Nuclear Plant.
1982-1983	New York State Consumer Protection Board	Represented the Consumer Protection Board in a P Commission proceeding investigating whether the I Unit No. 2 nuclear plant should be completed and arising from that proceeding.
1981-1982	New York State Consumer Protection Board	Prepared an economic and engineering critique of t Reliability Study published by the U.S. Departmen 1981.