STATE OF NEW HAMPSHIRE

BEFORE THE

NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
2010 LEAST COST INTEGRATED RESOURCE PLAN

DOCKET NO. DE 10-261

REBUTTAL TESTIMONY OF
TERRANCE J. LARGE

OCTOBER 26, 2011

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I. Introduction

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

A. My name is Terrance J. Large. My business address is PSNH Energy Park, 780 North Commercial Street, Manchester, New Hampshire. I am Director- Business Planning and Customer Support Services for Public Service Company of New Hampshire ("PSNH" or the "Company").

Q. What are your principal areas of responsibility in your position as Director- Business Planning and Customer Support Services?

A. In this capacity, I am responsible for overseeing business and strategic planning, conservation and load management programs, economic development, load forecasting, supplemental energy sources, and ISO-New England reporting activities at PSNH.

Q. What is your role relative to the Company's Least Cost Integrated Resource Plan?

A. I was directly responsible for the development of the Least Cost Integrated Resource Plan ("LCIRP") and also oversaw the development of the Newington Continued Unit Operation (the "Newington CUO") study submitted with the LCIRP.

Q. Have you previously testified before the Commission?

A. Yes. I have testified on a number of occasions before the Commission.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to provide an overview of the Company's rebuttal to the pre-filed direct testimonies in this docket of George R. McCluskey and Edward C. Arnold on behalf of the Staff, Kenneth E. Traum on behalf of the Office of Consumer Advocate (OCA), Michael E. Hachey on behalf of TransCanada, Douglas Hurley on behalf of CLF, and Dr. Ranajit Sahu on behalf of Sierra Club. In addition, I will address a number of specific issues raised by Staff, OCA and the intervenors, including (1) the requirements governing PSNH's LCIRP and why PSNH's LCIRP is adequate and consistent with all applicable legal requirements; (2) why targeted energy efficiency projects by the Company have not been implemented to date given the Company's recent load growth experience; (3) criticisms of the Newington CUO study and why the Commission should reject those criticisms and rely on the results of the Newington CUO as reasonable determination of the costs and value of continuing the ownership and operation of that plant; and (4) why, contrary to Staff's assertion otherwise, the Company would be entitled to sunk investment cost recovery associated with retirement of any of its generation assets.

Q. How is the Company's rebuttal testimony organized?

A. In addition to my testimony, the Company is submitting rebuttal testimony of Richard L. Levitan and Dr. Richard L. Carlson of Levitan & Associates, Inc. ("LAI") who will address the criticisms of the Newington CUO, and William H. Smagula and Elizabeth H. Tillotson, who will address claims by OCA and others that the LCIRP did not address "reasonably foreseeable" proposed environmental regulations as well as criticisms of certain modeling assumptions in the Newington CUO. PSNH anticipates offering panels of witnesses based on topical areas for cross-examination.

II. Requirements Governing PSNH's LCIRP

Q. OCA concludes that the Company's LCIRP is "lacking in several areas" and that as a result, the Commission should find that it is inadequate. Do you agree with the OCA's assessment?

A. No, I do not. In order to properly evaluate the OCA's conclusion that the LCIRP is inadequate, the Commission must first consider the requirements which govern the Company's LCIRP.

RSA 378:38 governs the content of any LCIRP submitted to the Commission. It requires that a utility's plan include the following:

- A forecast of future electrical demand for the utility's service area;
- An assessment of demand-side energy management programs, including conservation, efficiency improvement, and load management programs.
- An assessment of supply options.
- An assessment of transmission requirements.

- Provision for diversity of supply sources.
- Integration of demand-side and supply-side options.
- An assessment of plan integration and impact on state compliance with the Clean Air Act Amendments of 1990.
- An assessment of plan integration and impact on state compliance with the National Energy Policy Act of 1992.
- An assessment of the plan's long-and short-term environmental, economic and energy price and supply impact on the state.

PSNH's LCIRP is organized in the same sequence as these requirements, thereby making it easier for the Commission to determine whether PSNH addressed the required subject matter areas.

Q. Are there any other requirements applicable to the Company's LCIRP?

A. Yes. In Orders No. 24,695 and 24,945, the Commission made specific rulings as to the content of PSNH's LCIRP. In particular, Order 24,945, which approved the Company's last LCIRP, contained a number of specific requirements regarding the content of the LCIRP that is the subject of this docket. Order 24,945 at 13-16. Thus, when considering the OCA's claims and those of other parties that the Company's planning process was inadequate, those claims must be measured against the legal requirements governing the LCIRP process.

Q. Is PSNH's LCIRP adequate and compliant with the law?

A. Yes, the Company has met all of the legal requirements governing its LCIRP. The Company's filing addresses each of the filing requirements as well as all of the specific directives of Order 24,945. I think it is important to point out that the Company negotiated a partial settlement agreement in its last LCIRP docket. That settlement agreement contained ten specific requirements regarding the content of this LCIRP, all of which the Company has addressed.

Despite the fact that the Company filed a LCIRP and Newington CUO study that is consistent with all of those requirements, the OCA, Staff and intervenors find fault with the Company's LCIRP claiming that the Company should have made different judgments on various issues addressed in the LCIRP. My testimony, as well as the testimony of the other Company rebuttal witnesses, addresses many of these issues in detail, explaining why the Company made the judgments that it did. For example, Mr. Smagula and Ms. Tillotson explain in detail based on their many years of professional experience overseeing the Company's generation units why the Company does not consider certain proposed environmental regulations cited by OCA and others as "reasonably foreseeable" for purposes of least cost planning. Just because OCA and others have a different view of the likelihood that certain proposals may become reality does not render the Company's planning process legally inadequate.

Q. Did PSNH include any additional information in addition to the requirements of RSA 378:38?

A. Yes. PSNH also submitted a Continued Unit Operation (CUO) study for Newington Station as required by Commission Order No. 25,061. That order, which was issued in the context of the Company's 2010 Default Energy Service Rate, required that the Company "conduct a study of the costs of continuing the ownership and operation of the plant." Order 25,061 at 31.

Q. Did PSNH comply with the Order?

A. Yes we did. As explained below and in LAI's rebuttal testimony, the Newington CUO is in full compliance with the Commission's directive, and should be accepted by the Commission as a reasonable determination of the Company's costs and value to customers of continued ownership and operation of that plant.

Q. What are the general criticisms of PSNH's LCIRP as it relates to the adequacy of the filing?

A. OCA asserts that PSNH's long-term planning process is inadequate because it does not take into account potential changes in environmental regulations on the cost of operating the Company's generating units; that the Company ignored these costs as part of its evaluation; that the Newington CUO did not accurately model the real world dispatch and costs of the Station; and that the CUO did not evaluate the impact on default service customers of the continuing ownership of Newington compared to retirement or divestiture.

Q. Do you agree with OCA's conclusion that the LCIRP is inadequate due to the lack of inclusion of potential changes in environmental regulations?

A. No. I think it is important for the Commission to keep in mind that the LCIRP represents a "snapshot" of PSNH's planning process based on information available at the time the LCIRP was filed. As explained by Mr. Smagula and Ms. Tillotson, the regulatory environment in which PSNH operates is constantly changing, and it is important that the Company make assessments about whether any proposed change at any given time will require that the Company conduct business differently. As Mr. Smagula and Ms. Tillotson explain, the Company has a long history of making these very assessments, and the mere fact that an environmental regulation has been proposed does not mean that the regulation will actually be imposed. Simply put, the Company's view of what is "reasonably foreseeable" is a factual determination that it makes every day using professional judgment. The LCIRP must be evaluated based on the information available at the time the filing was made. This is consistent with the Commission's order on rehearing in the Company's last LCIRP, in which it stated "[a] CUO evaluating retirement as an option would be required for any power plant, including Merrimack, ***<u>if at the time of the preparation of the LCIRP</u>*** (and in general as part of their ongoing planning process) PSNH was anticipating 'the investment of significant sums to meet new emissions standards and/or enhance or maintain plant performance.'" Order 24,966 at 7 (emphasis added). Mr. Smagula and Ms. Tillotson explain in detail in their testimony that the Company understood fully the environmental landscape in the summer of 2010. With that understanding, they did not anticipate that any of the proposed regulations referred to by The Sierra Club or others in this docket would result in the investment of significant sums to meet new emissions standards or enhance or maintain plant performance. Therefore, there may be a difference of opinion between what PSNH perceived the regulatory climate to be in the summer of 2010 and what intervenors expect to happen after they filed their testimonies in July, 2011.

Q. Doesn't it make sense to change one's plans as circumstances change?

A. Yes, it does to a certain extent, but that doesn't mean that the LCIRP should be continually revised or evaluated using updated information that becomes available only after the filing is made. If PSNH were to attempt to revise the LCIRP every time there was a change in assumptions or external factors, we would be constantly updating our analyses and would never be in a position to actually implement any plans. The Commission should view PSNH's September 30, 2010 LCIRP in that correct context – it is a planning document, not a decision-making document. PSNH will change its plans as circumstances change, and such changes may not be precisely in conformance with the LCIRP on file with the Commission because the document becomes dated as time progresses.

Q. Please comment on OCA's criticism that the Newington CUO did not evaluate the impact on default service customers of the continuing ownership of Newington compared to retirement or divestiture (see OCA testimony page 2, lines 9-12).

A. At the outset, I must note that the Commission has previously ruled that "[w]e agree with PSNH that it should not be required to evaluate the costs and benefits of divestiture in the context of its LCIRP, inasmuch as the legislature created RSA 369-B:3-a to deal specifically with divestiture of PSNH generation assets." Order 24,695 at 25-26. In the Company's last LCIRP, which the Commission found was adequate and approved in Order 24,945, the Commission again addressed the issue of divestiture and whether it should be addressed in the LCIRP. There, the Commission ruled that "we will require PSNH to include in future LCIRPs an economic analysis of retirement for any unit in which the alternative is the investment of significant sums to meet new emissions standards and/or enhance or maintain plant performance. PSNH will not, however, be required to include an analysis of divestiture in its next LCIRP as set forth in Order No. 24,695." Order 24,945 at 16 (emphasis added). This portion of the order was affirmed on rehearing, where the Commission expressly rejected OCA's view that a study of divestiture was required:

> As to the timing of a Merrimack CUO, the OCA concludes from the discussion on p. 16 of Order No. 24,945 that such a study would not be performed until 2012. That conclusion is a misreading of the order and conflates the requirement for economic analyses in future LCIRPs of "retirement for any unit in which the alternative is the investment of significant sums to meet new emissions standards and/or enhance or maintain plant performance" (which begins with the next LCIRP in 2010) and the requirement for an analysis of **divestiture**, or sale of power plants, which is not required in the next LCIRP.

Order 24,966 at 6-7 (emphasis in the original).

Nonetheless, OCA chooses to ignore this Commission dictate and claims that the Company's LCIRP is inadequate because the Newington CUO did not address divestiture. At no point in Order 25,061 creating the requirement to file a CUO study did the Commission even address the issue of divesture. OCA reads those words into the Commission's order thereby adopting a position in this docket which is inconsistent with prior Commission rulings. OCA attempts to graft onto the Commission's order directing the performance of the CUO a requirement that the Company examine divestiture of the plant. That strained interpretation of the Commission's order should be rejected. I will address the issue of retirement analysis later in my testimony.

III. <u>Demand-Side Management</u>

Q. Were there any criticisms of PSNH's LCIRP as it relates to Demand Side Management?

A. There were two areas of concern raised. The first is Staff's concern (*see* page 38 of Staff's testimony) that it has become more costly to achieve declining energy efficiency savings. The second is OCA's contention that the Company is not using energy efficiency as a means of deferring capital projects. (*See* OCA Testimony at page 16.)

Q. In its testimony (page 38) filed July 27, 2011, Staff expresses the concern that the Company's filing does not address the question of why it has become more costly to achieve declining energy efficiency savings in the Market Potential Scenario. Please comment on Staff's concern.

A. In Section IV. B.2 of the Company's filing (page 55), several factors are identified which account for the cost and savings trends discussed in Staff's testimony. In its response to TS-02A, Q-TECH-001, the Company summarized the reasons for the Market Potential scenario trends in program expenditures and savings for the residential class:

> *The primary factor that accounts for the reduction in savings relative to program expenditures is the phase-out of retail compact fluorescent lamp rebates. This represents an annual reduction of $238,377 in 2015 relative to 2011, but the corresponding reduction in annual savings is 10,686 MWh. Other measures are much less cost-effective, in terms of rebate per kWh saved, than these products. Program costs per kWh are generally expected to increase and, in some cases, customer incentives were assumed to increase in order to increase annual participation. Increased residential retrofit and new construction program expenditures result in increased electric and non-electric savings. Non-electric savings represent a significant portion of total savings in these programs.*

The retail CFL rebates average $0.022 per annual kWh saved. As these rebates were phased out, retail LED and lighting control rebates were ramped up in the Market Potential scenario – with attendant higher costs and significantly lower savings. Specifically, the LED and lighting control rebates average $0.33 per annual kWh saved while providing only 6.8% of the CFL savings per rebate. In addition to the LED and lighting control rebates, an amount equal to the phased out CFL rebates was budgeted for residential promotional and educational activities, with no associated incremental savings. Taking this into account results in an average cost of $0.50 per annual kWh saved while providing only 4.4% of the CFL savings per rebate.

To reiterate the points elaborated in the filing and the response cited above, the key factors are:

1. Phase-out of highly cost-effective retail CFL rebates.
2. Increase in installation of measures with higher rebates per kWh saved than CFL rebates.
3. Increased program implementation costs and rebates per participant to achieve higher participation levels. Customer rebates were increased to 50% of the incremental measure cost, consistent with the GDS study assumption.
4. Increased expenditures to obtain non-electric savings.
5. Increased budget for promotional and educational activities, with no corresponding increase in program energy savings.

These scenario planning assumptions were designed to provide a reasonable estimate of achievable savings, given the inherent uncertainties regarding post-EISA market conditions (see the response to the following question), levels of rebates required to increase program participation and the difficulty with attribution of savings to budgeted promotional/educational activities. (*See* the response to Staff-01 Q-Staff-019: "As discussed on pages 51 and 53, it is difficult to quantify the impact of marketing on penetration levels with the precision required to establish program savings goals. Therefore the Company adopted a conservative approach to the analysis in its exclusion of incremental savings attributable to marketing efforts.")

Q. In its response to PSNH 1-49 (Attachment TJL-1), Staff states that the question regarding post-EISA baseline efficiency implies that "there is some dispute about whether CFLs will be significantly more efficient than incandescent lamps that comply with the Energy Independence and Security Act (EISA) standard". Please comment on this inference.

A. The question raised is not whether CFLs are more efficient than compliant incandescent lamps, but whether the appropriate post-EISA baseline is CFLs or compliant incandescent lamps. The "baseline" refers to expected purchasing behavior if no program rebates were available to consumers of lighting products. If the appropriate baseline technology is the CFL, then there would be no potential to realize additional program savings through the displacement of compliant incandescent lamps by CFLs, as implied in Staff's testimony (page 35), because consumers would prefer to purchase CFLs, even with no rebate. The purpose of PSNH 1-49 was to determine the basis for Staff's assumption that the post-EISA baseline should be compliant incandescents, as implied by the statement in Staff's testimony that "the Market Potential scenario does not reflect the savings associated with the displacement of these more efficient incandescent lamps by CFLs". In its Market Potential scenario analysis, the Company utilized instead the assumption that the post-EISA baseline technology is CFLs and not compliant incandescent lamps. Due to the uncertainty surrounding post-EISA consumer preferences, it was deemed prudent to adopt the more conservative assumption that, given an informed choice between a marginally more expensive CFL with substantially higher efficiency and lamp life and a minimally compliant incandescent lamp, consumers would be inclined to prefer the CFL.

Q. How do you respond to OCA's contention "…that prudent planning would recognize the targeted use of SBC funds as another important tool to avoid additional capital investments that may result in savings to ratepayers. However, PSNH has failed to use this opportunity, instead only using 'traditional solutions.'"

A. I must note that the Company's energy efficiency programs are currently regulated by the Commission and cannot be implemented without the Commission's review and approval. Most recently, the Company has obtained approval for its energy efficiency programs offered for the 2011 and 2012 calendar years. *See* Order 25,189 in DE 10-188.

In response to discovery request from OCA set 1, question 23 (Attachment TJL-2) which inquired

> "…how (does) PSNH incorporate targeted load control and/or targeted energy efficiency into its decisions on whether or not a Planning Area requires additional capital investments due to projected load growth,"

the Company indicated that

> "Until very recently, PSNH was prohibited by law from using SBC funds to target specific areas with load control and/or energy efficiency…Regarding the planning for additional capital investments in a particular Planning Area, PSNH is relying on traditional solutions to keep the system reliable and secure…"

As this response reflects, the Company currently relies on traditional solutions to ensure system reliability and security. However, the Company has taken steps to enhance its use of "traditional solutions" by implementing a formal procedure to review transmission and distribution projects for the possible application of conservation and load management measures to avoid or defer capital investments and to minimize costs to customers. Under this process, PSNH's Field Engineering & Operations department identifies a geographical target area of concern, the associated MW savings that need to be achieved, and the expected time frame over which the MW savings must be aggregated. Once a proposed target area has been identified, a study would be conducted to determine market size, customer mix, previous efficiency program implementation, and the efficiency budget required to achieve the needed savings. In addition, other factors which could impact load in the target area would also be examined (e.g. the target area economy and customers' willingness to initiate needed projects, planned PV installations, load response program impacts, emergency generation, etc.).

If a study were to determine that implementation of conservation and load management measures is a feasible approach to achieving the needed MW savings, the Company would seek Commission approval for the use of System Benefits Charge (SBC) funds for the project in accordance with RSA 374-F:4.VIII(e). Therefore, the OCA's conclusion that PSNH has failed to use this opportunity is not correct. A correct conclusion is that PSNH has not found a situation where implementation of conservation and load management is more feasible than making capital investment.

In summary, the Company does have a process in place to address the concern raised in the OCA's testimony regarding the targeted use of SBC funds to avoid or defer capital investments. While we have taken steps to prepare for targeted area studies, to date we have not had the load growth to warrant such a study. It is for this reason that in our response to the OCA's data request, we emphasized our reliance on traditional solutions with which we have many years of experience, rather than discuss a process which is as yet untried.

IV. Newington CUO Study

Q. What are the general criticisms of PSNH's Newington CUO study?

A. Summarized below is a list of criticisms related to the Newington CUO study. Each criticism will be addressed in either my testimony, testimony sponsored by LAI, or Mr. Smagula's and Ms. Tillotson's testimony.

- OCA and TransCanada stated that the Newington CUO was not performed independently and therefore should not be accepted. This will be addressed in both my testimony and the testimony of LAI.
- Staff, OCA and TransCanada assert that the assumptions used in the Newington CUO study were flawed and did not model real world dispatch and costs of the station and did not factor in the impact of Northern Pass. The erroneous assertion that the study is flawed and does not model real world dispatch is addressed in my testimony below. The data inputs and assumptions will be addressed in the testimony of Mr. Smagula and Ms. Tillotson. The exclusion of the Northern Pass Project will be discussed in my testimony as well as the LAI testimony.

- OCA stated in its testimony that PSNH should competitively bid its fuel source needs for Newington Station instead of using Emera in a sole source arrangement. Mr. Smagula and Ms. Tillotson will address this in their testimony as well as how PSNH purchases natural gas, intraday premiums, etc.
- Staff provided comments on the process/modeling approach used to evaluate the Newington CUO study, the lack of access to the physical Real Option Value models and the input data used to prepare the Newington CUO study. These items will be addressed in the LAI testimony.
- OCA questioned the validity of the model (*see* OCA testimony, page 28, lines 1-8) stating that the 2011 Energy Service Rate filing produced a different net energy revenue value than that produced in the Newington CUO model developed by LAI. This will be addressed in my testimony below.
- Staff claimed that LAI declined to revise the model to account for higher start-up fuel costs because the result would be unlikely to affect the overall conclusion (*see* Staff testimony, page 20, lines 1-10). This will be addressed in my testimony below.
- Staff and TransCanada filed supplemental testimony addressing the results of the study performed by Charles River Associates to determine the impact of the Northern Pass Transmission project on the ISO-New England market prices. I will address the purpose of this study and respond to Staff's and TransCanada's view of those study results.

Q. What is PSNH's response to the criticism that the Newington CUO study was not performed independently and therefore should not be accepted?

A. PSNH completely disagrees with that characterization. The Newington CUO complied in all respects with the Commission's directive in Order 25,061. At no time did the Commission order that someone other than the Company select and retain an expert to conduct the study. In addition, PSNH conducted a formal Request for Proposal (RFP) seeking an independent party to assist with the development of a model to quantify the value that Newington Station provides to customers. Following this process, PSNH selected LAI because of its knowledge of the New England energy and capacity markets and its modeling expertise. Therefore, OCA's and TransCanada's criticisms calling for greater independence are entirely without merit and should be ignored.

Q. Does PSNH agree with Staff, OCA and TransCanada's criticisms that the assumptions used in the Newington CUO study were flawed and did not model real world dispatch and costs of Newington Station?

A. No, PSNH does not agree with the assertion that the assumptions were flawed. PSNH hired LAI to develop a model to quantify all of the value associated with Newington Station, including the "hedge" value associated with PSNH's ownership of the physical asset. In order to perform its analysis, LAI required input from PSNH as to how PSNH operates the unit on a daily basis as well as cost and operating specific information that is not publically available. Using the information provided by PSNH, LAI developed a model to simulate how the unit would run given perfect information in order to quantify the value that Newington Station provides to customers. PSNH as the owner and operator of the Station has the best information about the Station's operations and used its knowledge of the improvements that have been made to the Station in recent years as well as initiatives currently underway to provide more value to customers. Any "independent consultant" would or should rely on the same information supplied by PSNH to LAI.

Q. Please address the OCA's assertion that incorrect labor costs were used in the LAI model (*see* OCA testimony page 30, line 1).

A. OCA claims that fixed O&M, depreciation expenses, and return on existing plant are not included in the LAI model and thus the model does not adequately analyze the costs and benefits of Newington Station to customers. PSNH disagrees with OCA on this matter. With respect to fixed O&M, PSNH addressed this specific issue in data response OCA set 1, question 65 (Attachment TJL-3). PSNH believes that the number developed specifically for Newington Station at the time the Newington CUO was developed is an accurate reflection of Newington Station's going-forward fixed O&M costs based on the actual performance over the past three years, and labor-related reductions that have been made in recent years.

Q. Please comment on Staff's and OCA's contentions that incorrect capital expenditures were utilized in LAI's model.

A. Both Staff and OCA maintain that the capital expenditures of $500,000 annually at Newington Station as used in LAI's model are understated. They base their conclusions on PSNH's responses to discovery requests seeking historical information on capital expenditures at the plant. They contend that since historical capital expenditures have averaged in excess of $500,000 annually, the forecasted amount used in LAI's model is understated.

Neither Staff nor OCA conducted any examination in this docket of the amount of capital expenditures PSNH has undertaken in recent years, nor the impact of those capital expenditures on future capital budgets. However, such an analysis was conducted in Docket No. DE 11-094 by Accion Group, Staff's consultant. In that docket, Accion examined the capital expenditures at Newington over the last five years and provided an assessment of PSNH's annual capital budget of $500,000 for Newington Station:

> "PSNH reviewed historic budgets and subtracted large capital maintenance projects required by the historically high operational duty. The net result was a list of capital and contingency projects that averaged less than $500,000 over the historic period. PSNH rounded the forward-looking capital project budget up to $500,000."
>
> "Accion concluded that PSNH approached its revaluation of the Newington budgets in a conservative manner, as PSNH left room in its estimates for actual budget values to be above estimated values determined from historic values. Accion also concluded that PSNH plans to spend sufficient funds for capital replacement and or improvement maintenance projects, and sufficient money for adequate maintenance in order to assure continued operation of its units consistent with good utility practice, and with recognition of unit age and operational duty cycle as required. Such expenditures should result in future reliable and efficient unit operation."

Q. Does PSNH agree with Staff, OCA, and TransCanada's criticism that PSNH should have included the proposed 1,200 MW Northern Pass Transmission line in its analysis of Newington Station?

A. No. At the time the analysis was begun in June 2010, PSNH had concluded that the Northern Pass Transmission ("NPT") line should be excluded because the NPT line had not received the ISO-NE approvals and permits needed for the that project to move forward. On that basis, PSNH instructed LAI to not include NPT in the CUO analysis. Since the filing of the LCIRP, the NPT line still has not yet received the approvals needed to move forward. There are other events that may happen and events that have happened but were not anticipated at the time the study was performed. The likelihood of Cape Wind being built, Vermont Yankee retiring and Salem Harbor retiring despite ISO-New England concluding units 3 and 4 are needed for reliability are all different today than at the time the analysis was prepared. Vermont Yankee and Salem Harbor have about the same combined capacity as NPT and Vermont Yankee's energy output is slightly more than half of NPT's energy output as proposed.

Q. Please clarify the difference between the Newington value shown in the 2011 Energy Service Rate and the Newington CUO study.

A. The Newington CUO study calculates the real option value of Newington by dispatching Newington using numerous possible future oil, gas, and energy market prices, adding capacity value and comparing the sum to Newington's going forward costs. In Energy Service Rate (ES Rate) setting proceedings, Newington is reflected as using a single set of oil, gas and forward energy market prices and these costs, along with its full revenue requirements, are included as part of the effort to set a retail rate. The CUO study recognizes that the future is very uncertain. Moreover, because Newington is an intermediate to peaking resource, the proper technique to factor in uncertainty and determine value over a future time horizon is the real option value approach. The purpose of the ES Rate setting proceedings is to establish a rate for billing Energy Service customers over the next 12 months. *See* the response to data request TC 01, Q-TC-022, included as Attachment TJL-4. The analysis performed to determine the ES rate is not intended to flesh out the value of Newington over time. Thus, while both efforts include Newington in the analysis, their purposes are different and one cannot be used to assess the accuracy of the other. They are equally reasonable for answering the different questions being asked. The same can be said of looking at the value of Newington based on the modeling done by Charles River Associates for the Northern Pass Transmission project. The purpose of that analysis was to quantify how the introduction of additional energy flowing into the ISO-New England region from the NPT project would impact overall energy prices in New England, not to value Newington Station as a stand-alone entity.

Q. Staff and OCA raise a number of issues regarding the modeling approach adopted by LAI and issues associated with access to the LAI model and data contained in it. Do you have any response to those criticisms?

A. Yes. While LAI's testimony responds in detail to many of those points, I want to make it clear to the Commission that the Company made extraordinary efforts to provide Staff and its consultant with direct access to the Company's consultants (LAI), their model and the data contained in it. PSNH was unaware of the requirements defined in the Jacobs Consultancy contract with the Commission (*see* data request PSNH 1-7, included as Attachment TJL-5). In that scope of work, the two major items related to the evaluation of the Newington CUO model included as work items on page 4 were 1) Analysis of LAI model system to point of being able to offer definitive due diligence ("reasonableness") advice and 2) Setup, monitor, and diagnose backcast effort. PSNH was unaware of this backcasting request until late May when the Company was informed via email that it needed to make four full days available for an on-site visit by

Staff and Jacobs to LAI's offices in Boston. Given a short lead-time and constrained dates, PSNH and LAI rearranged schedules; however, some conflicts arose with a few of the selected days. PSNH and LAI provided Staff with alternatives including working over the weekend and preparing model scenario runs in advance to allow for model results to be reviewed rather than preparing and executing the model during our meeting time. In addition, while PSNH requested data files in advance of the initial meeting date to prepare for any requested data runs, the Company did not receive any data files from Staff or its consultant. Therefore, the first meeting was focused mainly on model overview and discussions of the scenarios to be run rather than reviewing and analyzing results. Had data files been provided in advance, PSNH and LAI would have been able to run several alternate scenarios in advance and would have discussed and analyzed the results in the presence of Staff and Jacobs during the initial meeting in Boston.

PSNH and LAI feel strongly that both companies made accommodations to meet Staff's and Jacobs' requests for an on-site model review and backcasting exercise with two full-day meetings at LAI's office in Boston, and an intermediate conference call/webinar. During these meetings, PSNH and LAI answered all of Staff's and Jacobs' questions on model inputs, design, and sub-component interdependencies and felt that all of the open items had been answered at the conclusion of the final meeting in Boston.

Q. What is PSNH's response to Staff's claim that LAI refused to perform an additional run with higher start fuel costs?

A. PSNH is in complete disagreement with that characterization. At the Technical Session, PSNH commented that there are many assumptions that could be changed within the model and that we were not in the position to keep changing assumptions. Even if this assumption was changed, the end result would still show that Newington Station would produce value for customers. In fact, use of the Monte Carlo simulations run by LAI incorporated many such scenarios. The OCA agreed that it was not the time to introduce additional results.

V. <u>Northern Pass Study Conducted by Charles River Associates</u>

Q. Please comment on the purpose of the study performed by Charles River Associates (CRA) on behalf of Northern Pass.

A. While PSNH did not participate in the development of the CRA Study of NPT, my understanding is that Northeast Utilities hired Charles River Associates to write a report to be filed as part of the Federal Energy Regulatory Commission (FERC) filing for approval of the Northern Pass Transmission (NPT) line. CRA conducted a quantitative, independent assessment of the impacts of the NPT project in terms of providing congestion relief and enhancing system reliability. The assessment conducted analyzed the effect on locational marginal prices ("LMPs") throughout New England and illustrated that the imported power from Hydro Quebec would lower prices on the New England system.

Q. How does the CRA study of NPT affect the results presented in the Newington CUO?

A. The CRA study analyzed the ISO-New England market as a whole and used a production cost simulation model approach to minimize the overall energy supply cost to the region. The Newington CUO study quantifies the real option value that the station provides to customers given market uncertainties. The CRA study chooses only one of many scenarios that could happen, and within the 250 scenarios run for the Newington CUO study, there may be a scenario similar to the CRA analysis. No one should construe that a single point estimate is a good estimate, or a better estimate than the fully developed analysis prepared by LAI. The CRA study presents a limited view of Newington Station, based only upon Newington's historical operating data and not current operational criteria, and therefore the Commission should not use this one possible view as the basis for determining the energy value that Newington provides to customers when LAI has conducted a detailed and full review of Newington's value. Notwithstanding this limited view, PSNH notes that the CRA study still shows that Newington provides energy value to the benefit of PSNH's customers.

VI. <u>Cost Recovery of Retired Generating Assets</u>

Q. Please comment on Staff and OCA's criticism that PSNH did not address the retirement option in its analysis of Newington Station.

A. The Company disagrees with this criticism. In Order 24,945, the Commission held that "we will require PSNH to include in future LCIRPs an economic analysis of retirement for any unit in which the alternative is the investment of significant sums to meet new emissions standards and/or enhance or maintain plant performance." Order 24,945 at

16. The Company did not specifically address retirement of Newington Station in its CUO because that scenario did not meet the threshold articulated by the Commission. Staff interprets the phrase “continued ownership and/or operation” in Commission Order 25,061 to mean a comparison of the benefits to customers of continuing to operate the plant with the benefits to customers of retirement (*see* Staff testimony pages 6-7), including the fixed costs. However, PSNH believes that a continued unit operation study is meant to analyze the incremental ongoing costs of continuing to operate the asset compared to an alternative, which in this case is retirement. The Newington CUO study proved that the incremental ongoing cost of continuing to own and operate the plant provided more value to customers than retirement.

Q. On page 14 of its testimony, Staff takes the position that if the Company retired Newington Station, the Commission has the authority to “adjust the level of fixed cost recovery [for Newington Station] through rates” and that the adjustment “could take many forms including reducing or eliminating the return on the unrecovered balance of past capital expenditures or reducing or eliminating depreciation expense.” Do you agree with Staff’s characterization of this cost recovery issue?

A. No. Mr. McCluskey is wrong from both a legal perspective and an accounting perspective. While I am not a lawyer, I am familiar with RSA 369-B:3-a which governs divesture and retirement of the Company’s generation assets. RSA 369-B:3-a states as follows:

> The sale of PSNH fossil and hydro generation assts shall not take place before April 30, 2006. Notwithstanding RSA 374:30, subsequent to April 30, 2006,

> PSNH may divest its generation assets if the commission finds that it is in the economic interest of retail customers of PSNH to do so, and provides for the cost recovery of such divestiture. Prior to any divestiture of its generation assets, PSNH may modify or retire such generation assets if the commission finds that it is in the public interest of retail customers of PSNH to do so, <u>and provides for the cost recovery of such modification or retirement</u>. (emphasis added)

My understanding of this provision is that if the Commission finds that retirement of Newington Station is in the public interest of the Company's retail customers, it must provide a mechanism for PSNH to recover the costs associated with the plant's retirement. This would mean that to the extent there was any net plant balance remaining on PSNH's books for Newington Station, PSNH would be entitled (and the Commission would be obligated to allow) recovery of that balance from PSNH's customers along with a return on that balance, since return is a component of the costs that utilities are allowed to recover. In addition, PSNH would be entitled to recover any costs associated with cost of removal minus any salvage value. While the Commission may alter for good cause the time frame over which PSNH recovers the balance of the plant on PSNH's books, it cannot deny PSNH recovery of a return on that balance, nor can it eliminate recovery of a portion of that balance. That would result in an unconstitutional taking of the Company's property. Therefore, Mr. McCluskey is simply wrong in his assertion that the Commission has the authority to do so.

Mr. McCluskey is also incorrect from an accounting perspective. Once a plant is retired, depreciation expense ceases. Any balance remaining in a plant account becomes a regulatory asset that is amortized and recovered with a return through an appropriate ratemaking mechanism. Therefore, Mr. McCluskey's contention that the Commission can adjust depreciation expense is inapplicable, since depreciation expense on the plant would no longer exist.

Q. Did PSNH ask Mr. McCluskey about the basis of his opinion that the Commission can reduce or eliminate return or depreciation expense on the unrecovered balance of generating assets?

A. Yes. In PSNH's Set 1, Request 17, PSNH asked Mr. McCluskey for the legal basis of his conclusion. In response to that request (Attachment TJL-6), Mr. McCluskey declined to provide any legal basis, but cited the Commission's Order No. 25,256 in which the Commission stated, "if we determine that it is imprudent for PSNH under the circumstances to continue operation of any of its generation units, we can deny recovery of the associated costs through rates pursuant to RSA 369-B:3, IV(b)(1)(A)."

Q. Does Mr. McCluskey's reliance on that order as a basis for denial of recovery of return of and on retired plant have any merit?

A. No, it doesn't. Mr. McCluskey has misapprehended the Commission's order. That order addressed a theoretical situation where the Commission made a finding that continued operation of a plant would be imprudent. Under that circumstance, the Commission's order concludes that it could deny recovery of costs associated with continued operation of the plant. The order does not say anything about recovery of the remaining balance of plant on PSNH's books if the plant is retired. Moreover, the law referenced in the Commission's order pertains to recovery of the prudent cost of providing default service, not to the recovery of the remaining balance of plant under RSA 369-B:3-a. Costs of providing default service are ongoing costs, not costs remaining on PSNH's books following retirement. For these reasons, the order cited by

Mr. McCluskey is inapplicable with respect to recovery of the remaining balance of a plant that is retired.

Q. Would adoption of Mr. McCluskey's position create an issue of equity?

A. Yes, it would. Consider a simple example where a unit's marginal cost is five cents and its depreciation and return is three cents for a total cost of eight cents. Assume also that the market price is seven cents. Under Mr. McCluskey's logic, the unit could be retired, thus saving customers eight cents, and replaced with purchases from the market at seven cents for a net savings of one cent. Under that scenario, adoption of Mr. McCluskey's position would deny the utility recovery of the three cents associated with depreciation and return on the unamortized balance of plant. If this position were adopted, it would create a significant equity issue, since the utility would be at risk for decreases in market prices due to the risk associated with a loss of recovery of the remaining balance of the plant. Essentially, Mr. McCluskey is suggesting that the utility is at risk when market prices are low, yet its cost recovery is limited to the actual cost of providing service when market prices are high. Such a situation results in a dramatic imbalance of risk versus reward since the utility's regulated rate of return clearly would not compensate for the additional risk and is inconsistent with the law.

VII. <u>Conclusion and Recommendation</u>

Q. Please summarize your recommendation to the Commission.

A. PSNH's LCIRP complies with all applicable legal requirements and is adequate. While the Staff and OCA may disagree with some of the judgments made by the Company, that does not render the Company's planning process inadequate. PSNH has complied with the law and Orders previously issued and PSNH requests that the Commission find the LCIRP and Newington CUO study adequate. Additionally, the Newington CUO definitively proves that PSNH's continued ownership and operation will provide value to customers through the 2020 time period.

Q. Does this complete your testimony?

A. Yes, it does.