THE STATE OF NEW HAMPSHIRE
BEFORE THE
NEW HAMPSHIRE
PUBLIC UTILITIES COMMISSION

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PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

2010 Least Cost Integrated Resource Plan

PREFILED TESTIMONY OF MICHAEL E. HACHEY ON BEHALF OF TRANSCANADA POWER MARKETING LTD. AND TRANSCANADA HYDRO NORTHEAST INC.

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Background and Qualifications

Q. Please state your name and business address.

A. My name is Michael E. Hachey. My business address is 110 Turnpike Road – Suite 203, Westborough, MA 01581-2863.

Q. Who is your current employer and what positions do you hold?

A. I am an officer of TransCanada Power Marketing Ltd. and TransCanada Hydro Northeast Inc. (together, "TransCanada"). In my current position I am Vice-President Regulatory Affairs and Compliance.

Q. What is your background and what are your qualifications?

A. I have a Bachelor of Science in Electrical Engineering and a Master of Engineering Degree in Electric Power Engineering from Rensselaer Polytechnic Institute. I have over 30 years experience in the electric power industry, including 11 years with TransCanada. I was previously employed by New England Power Company for 21 years. I have participated in

proceedings before the New Hampshire Public Utilities Commission, the Federal Energy Regulatory Commission, and other state regulatory commissions. In my current position I am responsible for government and regulatory affairs, retail marketing, and property taxes.

Q. Please explain what TransCanada does.

A. TransCanada is a competitive supplier of electricity in the Northeast United States and is a licensed electric retail supplier in the states of New Hampshire, Massachusetts, Rhode Island, Connecticut, Maine and New York. TransCanada Power Marketing Ltd. and TransCanada Hydro Northeast Inc. are indirect wholly owned subsidiaries of TransCanada Corporation, a leader in the responsible development and reliable operation of North American energy infrastructure, with a network of more than 36,500 miles of pipeline facilities and approximately 355 billion cubic feet of gas storage capacity. As a growing independent power producer, TransCanada Corporation, through its subsidiaries, owns, controls or is developing approximately 10,900 megawatts of power generation in Canada and the United States.

Purpose of Testimony

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to provide a review of the Newington Station Continuing Unit Operations Study provided by Levitan & Associates, Inc.

Q. What is your principal conclusion after having reviewed the study?

A. My principal conclusion is that the study must be redone by an analytical firm that is completely independent of PSNH. The study must be performed in such a way that the assumptions and methodology of the study are chosen based on the analytical firm's best judgment, with perhaps several alternative cases chosen by staff, OCA, interveners and PSNH.

Q. Why do you believe this is necessary?

A. I believe this is necessary because the Levitan study has been performed in a manner that has led to significant and egregious mistakes, and reflects assumptions that have created biased results in favor of PSNH's desired outcome: a determination that Newington Station is now and continues in the future to be economic for PSNH's customers.

Q. Have you reached any preliminary conclusions based on your review?

A. Yes. On a preliminary basis, it appears to me that operating Newington Station has negative net value to PSNH customers. Significant customer savings can be obtained by retiring Newington Station.

Q. Can you provide more detail?

A. Yes, absolutely. My estimated value of Newington Station for a case in which Newington continues to run is as follows:

Energy benefits	$0
Capacity benefits	$75 million [Exhibit MEH-2]
Fixed costs to go	($80.4 million) [Levitan]
Net customer value	($5.4 million)

My estimated value of Newington Station for a case in which Newington retires, and the Commission determines that PSNH continues to earn a return on the retired facility is as follows:

Energy benefits	$0
Capacity benefits	$25 million [Exhibit MEH-2]
Fixed costs to go	$0
Net customer value	$25 million

My estimated value of Newington Station for a case in which Newington retires, and the Commission determines that PSNH *cannot* earn a return on the retired facility is as follows:

Energy benefits	$0
Capacity benefits	$25 million [Exhibit MEH-2]
Fixed costs to go	$0
Savings on return	$10 million [Levitan]
Net customer value	$35 million

It is important to note that these value estimates require more detailed analysis as recommended in my testimony; however, the remainder of my testimony summarizes the source and logic of these estimates.

Q. How did you conduct your analysis?

A. On my first examination of the study, I reviewed the net energy benefits of Newington's operation. I examined historical net energy benefits, net energy benefits assumed by PSNH in its ES rate case, and net energy benefits projected by Levitan.

Q. What are net energy benefits?

A. Net energy benefits are Newington's energy market revenues less cost of fuel and production-related costs such as emissions credits.

Q. What was the outcome of your review?

A. The outcome is shown in exhibit MEH-1 which is entirely derived from data in the Levitan report. In 2004, Newington benefited from oil prices that were lower than natural gas prices and achieved positive benefits. From 2005 to 2009, however, Newington incurred significant negative net energy benefits. In 2010, Newington achieved a small gain.

But beginning in 2011, Levitan projected that Newington would inexplicably achieve net energy benefits between $15 Million and $20 Million each year. Yet, at the same time, in its 2011 ES rate case, PSNH projected only $1 Million net energy benefit for Newington's 2011 operation. Levitan's projection was 1,400% higher!

Q. What explanation did Levitan or PSNH have for the significant increase in Newington's net energy benefits versus historic values?

A. Levitan and PSNH offered no explanation in the report nor did either entity appear to recognize the dramatic performance change between historic values and Levitan's projected values.

Q. Did Levitan ultimately detect an error in its report?

A. Yes, after pointed questioning in discovery and following further "skepticism" by TransCanada (as noted in the response to the Second Round of data requests, Q-STAFF-015 dated April 29, 2011) during the technical conference in this proceeding, Levitan reduced its cumulative present value of projected net energy benefits for Newington from $122 Million to $41 Million. In other words, the initial Levitan results were originally overstated by 200%.

Q. Based on these revisions and your review of Levitan's analysis, what is your assessment of the Newington net energy benefits over the study period?

A. My assessment is that the net energy benefits are likely zero. While recent annual values have been millions of dollars negative, I would expect that the attention now focused on station operation will likely lead to improved cost management that we expect will be ordered by the Commission. Nonetheless, based on projected fuel costs and Newington's high heat rate,

coupled with the effect of lower cost resources coming online (explained below), net energy benefits will likely be zero. Operating a generating unit strongly negative is inexcusable.

Q. Now that the error is corrected, why does the issue remain important?

A. Aside from the fact that there is no reason to believe the Levitan analysis is correct now, the fact that an "error" of this magnitude was made, and remained undetected, is troubling. It suggests that neither PSNH nor Levitan performed an elementary check of the Levitan study's results. TransCanada broadcast a clear path of concern in its first round of data requests, yet neither Levitan nor PSNH chose to sanity check the study results. In fact, when specifically asked by TransCanada if it would achieve the net energy benefits projected by Levitan, PSNH stated "PSNH believes the Newington study represents the expected value of Newington to customers." (PSNH Response to TransCanada Data Request Q-TC-021 dated January 27, 2011.)

PSNH and Levitan should have examined recent history as a guide to whether Levitan's forecasted benefits were realizable from experience. Further, PSNH and Levitan should have examined NEPOOL market heat rates and compared these with Newington's very high 11,000 BTU/kWh heat rate as an indicator that Newington's net energy benefits were unrealistic.

Because the Levitan analysis is overly complicated and opaque, these failings by PSNH and Levitan become more important. The Levitan analysis would simply not pass muster in an ordinary management presentation because the detailed results of any of the 250 scenarios claimed to have been performed are not available for examination. PSNH and Levitan should have begun with a simple scenario—much as was done for the Northern Pass analysis performed by Charles River Associates—and presented the results. For example, see CRA's study entitled

"LMP and Congestion Impacts of Northern Pass Transmission Project", dated December 7, 2010, a copy of which was attached to TransCanada's Motion to Compel filed in this docket on June 28, 2011. Alternative scenarios could have been run, and case appropriate weighting performed on each run, if desired, for a composite solution.

Q. What is the negative consequence of the methodology chosen by PSNH/Levitan?

A. The negative consequence is, as I've previously stated, that the study is opaque and the results are not readily reviewable. In this case, nothing could be clearer–the initial results were wrong by 200% and neither PSNH nor Levitan detected the mistake.

Q. Can you cite additional information that supports your principal conclusion that Newington Station has a negative net value for PSNH customers?

A. Yes, I can. I would now direct attention to the capacity forecast analysis prepared by Levitan. First, Levitan has been inconsistent in the methodology used in this analysis in a manner that significantly benefits the economics of Newington Station.

Q. How has Levitan been inconsistent?

A. Levitan has been inconsistent in that it has differing standards for capacity retirements and capacity additions. Specifically, Levitan has forecast the retirement of over 2,000 Megawatts of NEPOOL capacity, none of which has been proposed by the owners of those generating plants. Levitan has simply imputed the owners' desire to retire the generating units based upon "increasingly strict environmental standards." Contrast this view with Levitan's treatment of capacity from Hydro-Quebec via the proposed Northern Pass line. In this instance, the CEO of Northeast Utilities has unequivocally stated in a document filed with the U.S.

Securities and Exchange Commission, "We know we're going to build Hydro-Quebec." (Northeast Utilities 8-K filing with Securities and Exchange Commission, 11/01/2010.) Yet Levitan selects a raft of excuses why not to include the line's impact in its capacity analysis:

> "The capacity from the proposed new transmission line to Quebec was not included in the analysis due to the fact that the project was only in the proposal stage, a Transmission Service Agreement had not been finalized, and the project had not received the necessary approvals at the time of the filing of the PSNH Least Cost Integrated Resource Plan and Newington Station CUO study." (PSNH Response to TransCanada Data Request Q-TC-019 dated January 27, 2011.)

In PSNH's and Levitan's view, therefore, it's reasonable to assume 2,000 MW of generating unit retirements based on assumptions of future environmental costs, when none of these owners have themselves announced retirement. Further, the Levitan study lacks a complete review of Newington's own potential exposure to future environmental costs compared to those of the assumed 2,000 MW of generation that would be retired in the Levitan report's scenario. Finally, the report implies it's not reasonable to include 1,200 MW of Hydro-Quebec capacity when the CEO of Northeast Utilities himself has flatly declared that the Hydro-Quebec line will be built.

At the very least, Levitan should have included the line's impacts in its low and medium capacity cases. To exclude the line's impacts altogether means the imputed probability of the line's construction is *zero*. This is a nonsensical assumption given the clarity and strength of the CEO's statement and the fact that probability of an interconnection with Hydro-Quebec was

raised and endorsed as far back as 2008 as one of the "New Actions Under Consideration" in the New Hampshire Climate Change Policy Task Force, in which PSNH executive Gary Long was a key participant.

Q. Are there reasons that Northern Pass has a strong likelihood of success?

A. Yes. Ordinarily, projects that provide generation services require bank financing. Banks would require that a creditworthy counterparty exist to pay for the power supplied over a lengthy term. In this case, Hydro-Quebec, with its sole shareholder being the province of Quebec, has the financial strength to provide funding for the line. Northern Pass is therefore invulnerable to ordinary market forces and already has an assured source of financing.

Q. Does the assumption not to include the Northern Pass line only impact Levitan's capacity analysis?

A. No. Transfers on the line will have a significant impact on the energy market as well. In fact, as the CRA study assumed, Hydro-Quebec will want to "maximize the value of the exported energy by scheduling flows on each tie in the hours and locations with the highest realized prices". (Page 19.) Accordingly, an inefficient plant like Newington that will only be dispatched during high priced periods will have its net energy benefits reduced substantially.

Q. What are the results of your capacity analysis?

A. The results are that the capacity value of Newington is not the $111 Million as determined by Levitan, but rather $75 Million.

Q. What are the reasons for the discrepancy?

A. First, Levitan has failed to recognize that New England will likely have excess capacity through the year 2020. Much of the pricing in the period between now and 2020 is

already determined based on market floor pricing. Following that floor price period, however, the excess capacity in New England will mean that pricing will be established by existing generation exiting the market through a process called "dynamic delisting". Existing capacity cannot dynamically delist at any price over $1/kW-mo. Consequently, I have used this $1 price in periods after the termination of floor pricing. Second, Levitan was directed by PSNH to exclude Northern Pass from its analysis. Based on the conviction expressed by the CEO of Northeast Utilities that Northern Pass will be built, and the ready financing for the project by Hydro-Quebec, the capacity that can be imported on the line must be included in the analysis. The results of my analysis are shown in Exhibit MEH-2.

Q. Can you cite further information related to capacity that supports your principal conclusion that Newington Station has a negative net value for PSNH customers?

A. Yes. Although the methodology of the Levitan study purports to "capture value that typically goes unrecognized when traditional deterministic discounted cash flow (DCF) analysis is performed" (Levitan Report, page 2), the study fails to recognize significant capacity value that can likely be obtained even in station retirement.

Q. What aspect of capacity value was overlooked by the Levitan study?

A. The study overlooked the fact that PSNH has the ability to shed Newington's future capacity obligations in NEPOOL Reconfiguration Auctions. Because of the significant excess capacity in the NEPOOL market, clearing prices in the annual reconfiguration auctions have been much lower than the floor prices in the primary Forward Capacity Auction. This means that even in a retirement case, PSNH would be able to realize significant forward capacity value for Newington.

Q. What is your estimate of Newington capacity value in the retirement case?

A. My estimate of NPV capacity value for Newington in the retirement case, assuming the station's forward obligations are shed in the Reconfiguration Auctions, would be $30 million assuming a $1/kW-mo auction clearing price, or $20 million assuming a $1.50/kW-mo auction clearing price. The $1 price is consistent with the last three reconfiguration auctions for 2011/2012 and 2012/2013.

Q. What is the basis for key assumptions in your analysis?

A. The assumptions are primarily driven by actual data from the first five capacity auctions together with assumptions from the Levitan analysis. Although there are reasons Levitan's retirement assumptions may be excessive, I have used his assumptions to be conservative.

Q. Have you reviewed the Levitan analysis of Capacity Price Suppression Benefits in Section F.6?

A. Yes, I have.

Q. What is your assessment of this analysis?

A. The assessment of some of the region's and the country's leading economists is that the concept of "price suppression benefits" is deeply flawed. The most authoritative work on the subject was filed in FERC Docket ER10-787 by the New England Power Generators Association.

First, price suppression is not regarded as a true benefit at all; rather, it is an economic transfer from generators and demand side providers to ratepayers. Many analyses of this effect blithely ignore the fact that reduced revenues to supply and demand side providers

from various price suppression schemes will have follow-on effects such as increased market exit, delayed market entry, and reduced capital and operational investment in existing generation. As explained in the NEPGA testimony:

> "...in the short run the opportunistic behavior of state-controlled authorities results in existing capacity effectively bearing the excess costs of uneconomic additions of subsidized OOM [Out of Market] capacity. That is, FCM market-clearing prices are depressed, which reduces prices realized by existing resources. This reduction in revenues puts pressure on existing resources to reduce operation and maintenance expenditures, forego needed capital investments, and/or retire prematurely. Moreover, existing capacity resources are effectively stranded in the face of such exactions because they simply cannot be moved to other geographic locations. Indeed, if incumbents' capital were not sunk, the competitive discipline arising from the threat that attempted monopsonization would be met with incumbents simply leaving the market would make strategies of monopsonization fruitless." (Testimony of Joseph P. Kalt, NEPGA Exhibit 6, p.24 of 30, attached to Second Brief of NEPGA dated September 1, 2010.)

Second, price suppression "benefits" are often connected with state-sponsored demand reduction programs where, as here, price suppression is put forth as a further economic justification for the program. Commenting on such thinking, Robert Stoddard of Charles River Associates (coincidentally, Charles River Associates provided the price suppression analysis of Northern Pass in the December 7, 2010 study referred to above) opined:

"It [Demand Reduction Induced Price Effect] should not, however, be used as a rationale for paying Demand Resources prices above market rates, i.e., the subsidization of OOM Demand Resources through state programs. The *direct* "price-based" capacity cost savings are a legitimate value to be considered, as are numerous other direct values of Demand Resources or other specialized supply. But "Capacity DRIPE" is just a fancy term for the exercise of buyer market power, where the benefit to the portfolio exceeds the cost of a particular action." (Testimony of Robert Stoddard, NEPGA Exhibit 9, p.21 of 58, attached to Second Brief of NEPGA dated September 1, 2010.)

Q. So in your view, what weight should the Commission give to the Levitan price suppression analysis?

A. None.

Q. Is there anything else you would like to add?

A. Yes. TransCanada filed a Motion to Compel in this docket on June 28, 2011 seeking an order from the Commission compelling PSNH to provide information from the model runs conducted by CRA for Northeast Utilities in the study cited above. Should the Commission grant the Motion TransCanada would like to reserve the right to supplement this testimony.

Q. Does this complete your testimony?

A. Yes, it does.