3.

Analysis of Proposed Facility's Consistency With the Final Connecticut 2014 Integrated Resources Plan, Dated March 17, 2015

Witness: **Danielle Powers**
Tanya Bodell
Andrew J. Bazinet

ANALYSIS OF PROPOSED FACILITY'S CONSISTENCY WITH THE FINAL 2014 INTEGRATED RESOURCES PLAN FOR CONNECTICUT, DATED MARCH 17, 2015

The January 29, 2015 hearing included considerable discussion of the consistency of CPV Towantic's ("CPV") proposed Facility with the draft Integrated Resources Plan for Connecticut issued by the Department of Energy and Environmental Protection ("DEEP" or the "Department") on December 11, 2014. On March 17, 2015, DEEP issued its final Integrated Resources Plan for Connecticut ("IRP"). In this document, CPV highlights statements in the IRP demonstrating that CPV Towantic Energy Center is consistent with and furthers the goals and policies of the IRP and, thereby, provides substantial public benefits to Connecticut and its residents.

CPV adds that Connecticut ratepayers will be shouldering a portion of the region's capacity costs due to the shortage of resources realized in ISO-NE's eighth Forward Capacity Auction (FCA8), that took place in February 2014, for the period June 1, 2017 thru May 31, 2018. The cost of capacity tripled for FCA8. Notably, ISO-NE's ninth Forward Capacity Auction (FCA9) that took place February 2015 procured greater than 1,400 MW of new resources, including the CPV Towantic Energy Center which will now be relied on by Connecticut and the entire New England region to maintain reliability and stabilize capacity costs.

CPV's witnesses can further elaborate on the relationship of the Facility to the IRP and on the resulting public benefits in the upcoming hearing sessions.

Emission and Cost Reductions From Natural Gas Generation

Page ii—"**Replacement of Coal and Oil Generation with Natural Gas Generation Has Lowered Costs And Emissions from Historic Highs**. Air pollution emissions in Connecticut have decreased markedly, as low-cost natural gas-fired generation continues to displace coal and oil-fired generation."

New England Capacity Shortage and Reliability and Economic Benefit of New Generation for Connecticut

Page iii—"**New Power Plant Needs Will Drive Up Capacity Prices for the Region**…. The 2014 IRP projects that Connecticut will continue to have plenty of capacity through 2024, and beyond…. At the regional level, however, the New England capacity surplus is rapidly

dwindling. Beginning in 2017, the region will face a capacity shortage of 143 MW, primarily due to the announced retirement of 4,100 MW of non-gas generation resources and a reduction in capacity imports. "But that slight shortage should only be temporary. More than 1,400 MW of new supply has committed to enter the market by June of 2018, having "cleared" in ISO New England's 9th forward capacity auction (FCA9). Capacity prices for 2018/19 cleared at $9.55/kW-mo (i.e., $8.81/kW-mo in terms of 2014 dollars). Prices could temporarily decrease thereafter, due to the large amount of capacity cleared for 2018/19. However, this IRP projects prices rising to $11/kW-mo (in 2014 dollars) in the long-term, corresponding to the Net cost of New Entry when new generation is needed again. That level of capacity price will contribute 4.0¢/kWh to retail rates, compared to 2.2¢/kWh in 2017/18 and roughly half that in 2014." This shortage is expected to worsen over time…. [C]apacity prices will increase accordingly. Connecticut ratepayers will have to shoulder a portion of the region's capacity costs, which could add to retail generation rates beginning in 2017/18…."

Page vi—"The Department is encouraged that the forward capacity auction conducted in January 2015 attracted and retained more than sufficient supply for 2018/19. If conditions tighten in the future and subsequent auctions do not attract new capacity when needed, DEEP may pursue options within state authority to procure capacity resources to mitigate adverse reliability and economic consequences."

Page 13—"As noted above, past IRPs, including the 2012 IRP, projected sufficient supply throughout the ten-year time horizon. The 2014 IRP foresees a supply shortage much sooner, due primarily to recently-announced generation retirement."

Page 13-14—While resources within Connecticut are expected to be sufficient to meet Connecticut's local sourcing requirement, "Connecticut reliability and generation prices would be as affected as other states if the entire region as a whole had insufficient supply."

Pages 15-16—"In all Market Scenarios examined in this IRP, Connecticut is projected to have sufficient capacity to meet its local resource adequacy requirement under the Transmission Security Analysis through the end of the study period, with a cushion of 1,375 to 2,097 MW in 2024 . . . However, the loss of even one of the units at Millstone could substantially reduce this surplus, with Millstone Unit 2 rated at 870 MW and Millstone Unit 3 rated at 1,210 MW. Under the ISO-NE Transmission Security Analysis, enough resources are already required in Connecticut to cover the *temporary* loss of either of those units. However, a permanent loss of supply of this magnitude could raise resource adequacy concerns for the Connecticut sub-area. This analysis was conducted before the results of FCA9, in which 815 MW committed to enter the market. That additional capacity would provide greater cushion."

Pages 16-17—"[T]he region will need new generating capacity, increased transmission capability, or demand reductions starting in the summer of 2018. By the summer of 2020, new generation entry, as well as additional demand response, will begin to become economic with approximately 860 MW of new generation and 700 MW of new demand response projected to enter by 2024. These projections were conducted before the recent

results of FCA9 were known. The capacity attracted and retained by that auction provides enough capacity for 2018/19 and likely several years beyond unless existing resources unexpectedly exit."

Page 18—"In the most recent capacity auction (FCA9), capacity prices rose to just under Net CONE given the system shortage caused by retirements in the prior auction (FCA8). At this higher price level, a new combined-cycle generator in Connecticut cleared 725 MW of capacity, which will contribute toward regional resource adequacy needs into the future."

Page 71—"*Impact of alternative scenarios on resource adequacy* …. "Region-wide, the resource adequacy need becomes large in the Tight Supply Market Scenario, rising to 4,000 MW by 2024 (about a third of which is projected to come from new demand response in all years)."

Page 86—For these reasons, Connecticut needs to be prepared for the possibility that regional capacity auctions do not deliver new generation resources when called upon to meet capacity needs. If this possibility were to occur, Connecticut's rates and reliability would be significantly impacted."

Page B-8—List of existing units which have announced their plans to retire soon.

Demand Response and Other Uncertainties

Pages v-vi—"A recent decision from the D.C. Circuit Court of Appeals has created legal uncertainty about whether DR can continue to participate in the ISO-NE wholesale electric markets, and this uncertainty could drive up costs and compromise reliability if it affects DR's participation [in] future capacity auctions."

Page 5—"On the regional and federal levels, regulatory uncertainty is creating disruptive and potentially costly threats to the reliability of the ISO-NE system and the economies of New England. The past year has seen FERC and court decisions that: 1) dramatically affect the role of Demand Response (DR) in the markets …[and] 2) foster substantial uncertainty regarding the states' ability to contract for renewables to meet state mandates (various court decisions)…."

Page 12— Further discussion of the uncertainty as to ability of DR to participate in the forward capacity market ("FCM").

Page 20—"The Department is concerned that ISO-NE's new Performance Incentives program (PI) will introduce substantial and difficult-to-quantify risks that could deter entry (especially of demand resources) while inducing existing resources to retire. The ability of demand response resources to participate in the forward capacity market is further complicated by the recent court decision on FERC Order 745.... The combination of all of the FERC and federal court decisions creates a very uncertain market future with

substantial price and reliability risks for ratepayers that may require coordinated state actions."

Page 85—"The Department is very concerned that the uncertainties raised by the D.C Circuit and other recent judicial actions have the potential to undermine resource adequacy and drive up energy prices in the near term, at a time when the region is also facing retirements of substantial amounts of non-gas resources."

Need for Flexible Generation

Page 20—**"Forecast: Supply and Demand for Flexible Capacity to Meet Operational Needs."**

Page 20—"In order to maintain continuous real-time supply-demand balance, ISO-NE needs to be able to compensate for rapid changes in system conditions by having fast-acting, flexible resources at its disposal."

Page 23—"Natural gas generators have lower emissions and are also very flexible, allowing them to ramp up and down quickly in response to changes in load."

New Generation Projects' Reliability and Economic Benefits

Page 76—"As discussed in Section II, above, the forward capacity auction conducted in 2014 (FCA8) indicated that the New England region will experience a shortfall in generation capacity beginning in 2017. New resources that cleared in FCA9, including a 725 MW combined-cycle plant located in Connecticut, will help the region to meet its reliability needs for 2018. The 2014 IRP projects that resources within Connecticut are expected to be sufficient to meet Connecticut's Local Sourcing Requirement through 2024, although Connecticut generation prices will be affected by regional supply/demand conditions. If the resources cleared in FCA 9 do not come online by the 2018 timeframe, the region will experience a capacity shortfall, which will increase prices for all ratepayers in the region, including Connecticut."

Page 77—"Barring any market failures, the ISO-NE regional capacity market should continue to attract new capacity to supply the existing regional need, which could include generation facilities constructed in Connecticut. However, recent changes in market rules may affect participation in the capacity market among both new and existing generators, and pending litigation is creating significant uncertainty about the ability of demand response resources (DR) to participate in the market as well. For these reasons, the 2014 IRP recommends, in Resource Strategy #2, that DEEP monitor litigation affecting DR, and utilize existing state authority to support DR as a contingency in the event that DR is not able to participate in the wholesale markets. Further, in Resource Strategy #3, the 2014 IRP recommends that DEEP continually monitor the markets and participate in ISO-NE and

FERC proceedings and be prepared to utilize state authority if needed to ensure that resources are adequate to meet Connecticut's electric needs."

Dual Fuel Benefits

Page 39—"Moreover, reliability would worsen if more non-gas capacity retires or if firm fuel arrangements or dual-fuel capabilities are not maintained."

Page 91—"New England's natural gas electric generation fleet faces a high probability of experiencing critical gas shortages on 24 to 34 days every winter by 2020."

Page 96—Solution to the region's winter peak reliability problem include "dual-fuel generation capability" among other options.

Page 102—"In the shorter term, before long-term solutions can be built, DEEP recommends that dual-fuel generation, demand response measures and the seasonal purchase of LNG cargoes be deployed by ISO-NE through the Winter Reliability program."

61872786 v1-022345/0005