

**Planning Advisory Committee
Doubletree Hotel – Westborough, MA
December 19, 2019**

Bob Andrew	Eversource
Patrick Boughan	ISO New England Inc.
Cal Bowie*	Eversource
David Burnham	Eversource
Peter Bernard	ISO New England Inc.
Dwayne Basler	Critical Energy Infrastructure
David Burnham	Eversource
Dennis Cakert	Nat. Hydro Assoc.
Dorothy Capra	NESCOE
Digaunto Chaterjee	Eversource
Ray Coxe*	Mosaic Energy Insights for Brookfield
Ben D'Antonio	NESCOE
Avadish Dewal	ISO New England Inc.
Jay Dwyer	ISO New England Inc.
Jeff Fenn	SGC for Emera Maine
Cecil Finger	
Kevin Flynn	ISO New England Inc.
Brian Forshaw*	CMEEC
Bill Fowler	Sigma Consulting
Nicholas Gangi	Eversource
Adam Hickman	AEP
Eric Jacobi	FERC
Steven Judd	ISO New England Inc.
Matt Kakley	ISO New England Inc.
Abby Krich*	Boreas Renewables
Michael Kuser	Michael Kuser
J.P. Kwasie	Anbaric
Marc Lyons*	ISO New England Inc.
Alan McBride	ISO New England Inc.
Bruce McKinnon	Norwood & South Hadley
Chris Malone*	Avangrid
Chris Morin	CMP
Bruce McKinnon	South Hadley & Norwood Municipal Light Depts.
David Norman	Emera
Brent Oberlin*	ISO New England Inc.
Theodore Paradise	Anbaric

Dan Pierpont	CPV
John Porter	NGRID
Hans Presume*	VELCO
Alex Rost	ISO New England Inc.
Jose Rotger*	Cross Sound Cable
Eric Runge*	Day Pitney (NEPOOL Counsel)
Bryan Sanderson*	Anbaric
Carissa Sedlacek	ISO New England Inc.
Patricio Silva	ISO New England Inc.
Chris Soderman	Eversource
Mark Spencer	Jericho Power
Robert Stein	HQ Energy Services
Philip Tatro	EN Engineering
Brian Thomson	MMWEC
Phelps Turner*	CLF
Carol Wendell*	ISO New England Inc.
Peter Wong	ISO New England Inc.

Item 1.0 – Chairs Remarks

Mr. Bernard welcomed the committee and reviewed the days' agenda.

Item 2.0 – Eversource 115 kV Wood Pole and Shield Wire Replacement 2020-2023

Mr. Chris Soderman (Eversource Energy) reviewed their proposed project to replace 115 kV wood poles and shield wire due to asset conditions, obsolete shield wire materials, and structures operating beyond their ratings. Project is expected to run between 2020 and 2023 at a total cost of about \$368 million.

In response to questions, Eversource:

- Noted that this project is additional work scope from new inspections incremental to the projects discussed at yesterday's (December 18, 2019) Reliability Committee meeting.
- Explained that the replacement of existing shield wire with fiber optic cable that also provides communication was not the driver for replacement but was considered because it added virtually no cost to the project.
- Clarified that where small line sections are shown as not included they were included in previous projects. The intent is that this project will cover most of 115-kV PTF needs going out to 2023. Most of the 345-kV needs were addressed previously.
- Explained that only structures that meet the criteria for replacement due to deteriorated asset condition are included. This is not a project intended to replace the whole system.
- Noted that the ISO could update these slides to include previous work done under earlier projects.
- Explained that the replacement structures will be built to today's regulatory standards and be able to accommodate higher weight wire and clarified that only the structures and not the wires are proposed for replacement in this project.
- Assured the Committee that outages would be coordinated to minimize impacts on generation.

Item 3.0 – 2019 Economic Study – Preliminary NESCOE Results

Mr. Patrick Boughan (ISO-NE) reviewed the preliminary results of the NESCOE 2019 Economic Study Request.

In response to questions, the ISO:

- Confirmed that the additional 1000MW in the 2000MW case is incremental to the approximately 1000MW considered to be "in the works" when NESCOE requested the Economic Study and noted that the zero MW and 1000MW cases were not previously discussed with the Committee. The ISO will present the requested 8000 MW case later (because it requires transmission work)].
- Load distribution for this study uses an extension of the CELT Report data and is not unique to this study.

- Confirmed that the ISO will be looking at spreading out points of injection and resultant interconnection impacts as requested by Anbaric on the schedule laid out in this presentation.
- Noted that heat pump data that NESCOE requested be included only in the 6000MW case has been temporarily included in all cases for this preliminary stage and will be changed in the next stage of the study.
- Clarified that all results for all resources – not just those for wind resources - will be re-run once updated wind profiles become available and confirmed the new profiles will be based on data from the lease areas not NREL sites currently used as proxies. The shift from NREL sites is not expected to have much impact on the results.
- Noted that, while more interconnection analysis will be provided in the next stage of the study it will not be at the level of detail done for actual interconnection requests.
- Discussed and agreed to take back to the ISO a request to further clarify the use of Behind the Meter in this study (specifically the treatment of Settlement Only Generators) given comments yesterday at the Reliability Committee on Operations use of this term to include anything not telemetered.
- Clarified that the stack of resources on Slide 14 of the presentation depicting production by fuel type is not based on economic merit order but on placing sources with fairly constant output (i.e. baseload resources) on the bottom and moving up from there (nuclear plants were modeled as must-run).
- Agreed to consider a comment on the need to model operability in future analyses. An example was offered by a Committee member that a previous study showed shoulder hours with almost no thermal generation. Another Committee member noted that it would be important to clearly identify the assumptions used in any operability study.
- Agreed to take back to the team a request to break out imports by interface in the final report and see how much resource-specific data can be published
- Discussed the role of threshold prices and their role in setting curtailment order, their lack of impact on production cost, and their impact on annual average LMPs. One Committee member requested that the ISO calculate what would happen if all renewable resources' threshold prices were set to -\$10.
- Confirmed that the components of the LMPs used to compare uncongested and congested cases to indicate the level of congestion are not separately identified. The LMPs are nodal and consist of the three components (energy, losses, and congestion). Further discussion of this as deferred to an off-line discussion at the suggestion of the Chair.
- Explained that the SEMA/ RI stability limit was not updated for this study but the ISO believes these injections are similar to historic injections in these locations. It was suggested that the large amount of Distributed Generation proposed for this area might make looking at updating these limits worthwhile. The ISO noted that varying these interface limits is not in the current scope but requests could be made in the 2020 economic study year.
- Explained that the small increase in uplift were likely related to minimum run times for thermal generation being reached because of offshore wind, and much more solar generation. It was noted that the Gridview tool might not fully reflect the complexities of uplift.
- Confirmed that the nuclear units are base loaded for purposes of this study and noted that the Anbaric study would show reduced nuclear output.

- Noted that the model does not recognize dual-fuel units and models them based on their primary fuel.
- Explained that replacement is heavily weighted towards gas-fired generation because oil was never in merit to run in the modeling. There were a few coal units run (especially in the base case) and EE and solar output both increased. The ISO will be looking at some of the potential impact of ESI on these results when we look at the Anbaric request.
- Clarified that the model does not calculate an emission rate directly, the ISO can calculate this and will consider adding it to future presentations.

There was a good deal of discussion about the level of congestion in the zero MW case and the related 1000MW upgrade to a 1500MW interface. As there is a System Impact Study underway the ISO suggested there might be an opportunity to come back and describe where we are on this subject (after the ISO runs the numbers) and show the impact of increases in interface capability. A Committee member pointed out that RFPs and resultant contract specify CNRS interconnection (which would need to go through an overlapping impact test. He encouraged the ISO to address this issue because this does not appear to make sense.

In the discussion of renewable resources spillage being due primarily to over supply rather than congestion and increasing on a non-linear bass, it was suggested that New England Clean Energy Connect ought to be included as a resource and that, if it were to be added the discussion be of clean not renewable resources, as NECC is not a renewable resource.

The ISO is targeting February or March to complete these Economic Study Requests with a final report issued in the second quarter of 2020/

Item 4.0 – 2019 Regional System Plan Summary and Improvements

Ms. Carissa Sedlacek (ISO-NE) provided a summary review of the 2019 Regional System Plan results and discussed potential improvements to be used in the 2021 Regional System Plan.

There were no questions from the committee on this topic.

Respectively submitted

Marc Lyons
Secretary, Planning Advisory Committee