From: Heather Hunt [mailto:heatherhunt@nescoe.com]
Sent: Wednesday, June 05, 2013 2:33 PM
To: Ann Berwick; katie dykes; Welch, Thomas L; Michael Harrington; Elia Germani; Chris Recchia; John Keene; David Cash; ken.kimmell@state.ma.us
Cc: Steven Clarke; Marion Gold; Meredith Hatfield; Ben D'Antonio; Jeff Bentz; Dorothy Capra; Allison Smith; Jason Marshall; Tracy Babbidge; Eric Jacobi
Subject: Info on 1200MW limit/ties

Following our discussion this morning, please find attached a two-page memo that describes the background of and issues associated with the 1200MW limit. As noted, in the outline of the paper, ISO is undertaking a study that looks at increasing the limit at various increments.

Dorothy Capra has spend time on this matter and can answer any questions you may have.

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-------- Original Message --------
Subject: RE: hydro paper and analysis outline for review
From: "Heather Hunt " <heatherhunt@nescoe.com>
Date: Wed, June 05, 2013 9:32 am
To: "Ann Berwick" <Ann.Berwick@state.ma.us>, "katie dykes" <katie.dykes@ct.gov>, "Thomas Welch" <Thomas.L.Welch@maine.gov>, "Michael Harrington" <Michael.Harrington@puc.nh.gov>, "Elia Germani" <egermani@puc.state.ri.us>, "Chris Recchia" <Chris.Recchia@state.vt.us>
Cc: "Steven Clarke" <Steven.Clarke@state.ma.us>, "Marion Gold" <Marion.Gold@energy.ri.gov>, "Meredith Hatfield" <Meredith.Hatfield@nh.gov>, "Ben D'Antonio" <BenDAntonio@nescoe.com>, "Jeff Bentz" <Jeffbentz@nescoe.com>, "Dorothy Capra" <DorothyCapra@nescoe.com>, "Allison Smith" <allisonsmith@nescoe.com>, "Jason Marshall" <jasonmarshall@nescoe.com>

To facilitate the conversation about hydro today at 10:00, the following are some questions (otherwise embedded in the outline document):

1) What is your objective in connection with hydro imports? (e.g., is it to moderate market price fluctuations? Is it to reduce overall consumer costs? Is it to satisfy specific clean energy goals?)

2) Do you have a preference to increase hydro imports through the competitive markets or through of out market procurements? Any thoughts about how you want to frame that direction in the paper? If the states were to move ahead to procure 1200 or 1600 MW of hydro out of market, New England market participants would percieve that as the states moving away from markets and back to a central planning model. Is there any message you want to convey to the market in this paper in this regard?

3) With regard to the analysis, are you satisfied with the Black & Veatch cost/benefit analysis being the main component? If you want something else, what would be helpful and what is the timeframe allowed to undertake further analysis? (Thus far, the paper would be done by end of summer, when the B&V work is done. If we add more analysis, we may need to add more time.)

4) Are you comfortable with the options and pros and cons, rather than a recommendation about a way forward? The information to help you decision-make is consistent with NESCOE's general approach. Are there any options in the outline that you already know are off the table? This would help us focus on the options you want to consider.

5) Do you want to be explicit about not risking interruption of current shareholder-or Canadian-funded transmission project proposals? If states signal willingness to pay for transmission to increase imports, project proponent-funded projects could wait for some RFP that could allow T costs to be included and paid for by ratepayers. Is there any signal you want to send in this paper in that regard?

6) If New England procured, say, 1200MW of new hydro over a new line, it would be subject to the ISO's Minimum Offer Price Rule (MOPR). The bottom line is in that case, most likely that 1200MW of hydro would not count as a capacity resource in the FCM. ISO would then have to fulfill the region's capacity needs with resources other than this new hydro. (This is the MOPR Exemption issue that we lost - states would invest in RPS resources and in hydro resources and ISO would then procure resources to satisfy the region's capacity needs (ICR) and so together, customers would be buying at levels well above ICR.) Do you want to address MOPR and the fact that anything bought by anyone other than ISO would not count toward ICR?

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-------- Original Message --------
Subject: hydro paper and analysis outline for review
From: "Heather Hunt " <heatherhunt@nescoe.com>
Date: Fri, May 31, 2013 10:37 am
To: "Ann Berwick" <Ann.Berwick@state.ma.us>, "katie dykes" <katie.dykes@ct.gov>, "Thomas Welch" <Thomas.L.Welch@maine.gov>, "Michael Harrington" <Michael.Harrington@puc.nh.gov>, "Elia Germani" <egermani@puc.state.ri.us>, "Chris Recchia" <Chris.Recchia@state.vt.us>

Cc: "Steven Clarke" <Steven.Clarke@state.ma.us>, "Marion Gold" <Marion.Gold@energy.ri.gov>

Pursuant to earlier conversations about interest in a paper and analysis related to increasing hydro imports, please find a draft outline attached. At this point, this is being circulated to Managers and a few other officials who have been on hydro-related calls for some threshold policy and/or political feedback. Happy to take some threshold directional feedback, rework the outline and recirculate more broadly.

Please feel free to call (cell always safest) or be in touch electronically with any questions or feedback and of course if you think a conference call would be helpful at this point.

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New England States
Committee on Electricity

To: **NESCOE Managers, Others**
From: **Dorothy Capra**
Date: **June 5, 2013**
Subject: **Background on 1200 MW Operating Limit**

The New England-Hydro Quebec Phase 2 transmission line (Phase 2) was designed at a 2000 MW operating level. However, there is the potential for Phase 2, and all other resources in New England, to be limited as low as 1200 MW due to transmission system conditions in New York. ISO-NE has indicated that the 1200 MW limit is not being triggered as often as it used to be, primarily because economics in NY have changed so that there is less west to east flow. In 2012, most often, Phase 2 operated at about 1400 MW. National Grid has requested an Economic Study to examine the potential savings to New England if this limit were removed.

History

The 1200 MW limit on unit operations in New England originated in negotiations between PJM, NY and NE that occurred when Phase 2 was proposed. The interest in a limit was triggered by the application for a Presidential Permit to operate Phase 2 at 2000 MW (its design rating). This 2000 MW rating exceeded the highest contingency in either PJM or NY. Therefore, there was concern about what would happen operationally if Phase 2 was operated at this high limit and then tripped. There was further concern that the loss of Phase 2 could lead to voltage collapse in NY and/or PJM if Phase 2 was operated at such a high level. The 1200 MW limit was equivalent to the largest source in any of the three control areas at that time. The transmission system was studied and it was determined by the three control areas that imports of energy over Phase 2 over 1200 MWs would be made subject to monitoring of reactive conditions at three interfaces in PJM, three interfaces in western NY and the Central East interface in NY. These interfaces are telemetered and data is sent to the ISO-NE control room.

The original relevant document that contained this procedure was titled "Procedure to Protect for Loss Of Hydro-Quebec Exports." It became effective on January 1, 1991. This was not filed until 2006 but was nevertheless considered a "cooperative protocol." The 1200MW limit is not contained in or referred to in the Presidential Permit.

While not specifically mentioned in the procedure, the procedure can also potentially affect Seabrook, which has a maximum output of 1250MW, Millstone 3,

whose output can be 1260 MW and Mystic 8&9 that together represent a potential large single source contingency of 1600 MW. The procedure was revised in 2006 to minimize its affect on these units and filed at that time. It is currently contained in the transmission tariffs of all three control areas.

What is Needed to Increase the Limit?

Physical Upgrades – At a minimum, there needs to be a static var compensator (SVC) in New York, though it is possible that the problem is broader than that and more upgrades may be needed. An order of magnitude cost for the SVC is about $50 million. The study to identify the related upgrades has not been done.

Tariff Issues & Changes Needed to Benefit New England– Even if transmission upgrades in NY are constructed to solve the issues contributing to the limit, unless changes are made to the NY Transmission Tariff, it is possible that New England will not receive any benefit. In order to increase the single source limit in New England, it is necessary to increase transfer capability in NY across their central/east interface, and then leave the space unfilled so that it can be used for reserves in the event New England has a unit trip. If the extra line capability is used by NYISO, it will no longer provide that reserve capacity for New England and provides no benefit to New England.

Pursuant to FERC policy, transmission rights in RTO regions are financial and not physical. If a firm right holder does not use its rights, the excess capacity is available to anyone on a non-firm basis. This is standard FERC *pro forma*. Parties cannot withhold rights because that could lead to market manipulation. In other words, one cannot buy rights, not use them, and then not let others use them. To encourage the most efficient use of resources, FERC requires unused capacity to be available to anyone on a non-firm basis. It is not possible under the current regulatory construct for NY not to take advantage of this extra capacity, thereby negating all benefit to NE of the upgrades.

Changing this regulatory construct to accommodate an increased transfer capability for Phase 2 would first require an agreement between the control areas. Then, FERC would need to consent to this deviation from its current open access policies and practices.

Who Would Benefit from Raising the Limit?

If the limit were to be raised, there will be impacts on the operation of Mystic 8&9, and Phase 2. Mystic is owned by Constellation. Phase 2 benefits accrue to Hydro Quebec, Phase 2 interconnection rights holders, and marketers who transact over the line.

Finally, National Grid, as the transmission owner that would likely construct the upgrades, would profit from the additional transmission investment.