Conference Call Summary

NorthWestern Energy Transmission Advisory Committee
March 7, 2013

Field Code Changed

Meeting Participants

This Transmission Advisory Committee (TRANSAC) meeting was conducted via teleconference and the internet site GoTo Meeting.com. Those participating in the meeting included:

Name	Organization
At NWE Offices	
Dan Wheeler	Gaelectric
John Leland	NWE Regional Transmission Planning
Don Bauer	NWE Transmission & Distribution Planning and Capacity West
John Leland	NWE Regional Transmission Planning Group
Kim McClafferty	NWE Regional Transmission Planning Group
Kathleen Bauer	NWE Regional Transmission Planning Group
Chelsea Loomis	NWE Regional Transmission Planning Group
Rikin Shah	NWE Regional Transmission Planning Group
Via Telephone & Internet	
Jon Williamson	PPL Energy Plus (PPL)
John Cummings	PPL
Jamie Stamatson	Montana Consumer Counsel (MCC)
Larry Nordell	MCC
Brian DeKiep	Montana Public Service Commission (MPSC)
Gerald Mueller	Consensus Associates

Standards of Conduct & Anti-Trust Policy

Kathleen Bauer began the meeting by reviewing NWE's standards of conduct and safeguards and antitrust policy. Theses documents are available at the following web address.

http://www.oasis.oati.com/NWMT/NWMTdocs/01-Agenda-03-07-13-TRANSAC.doc

Agenda

The meeting participants reviewed and approved the following agenda:

- Administration
  - Anti-Trust & Standards of Conduct Policies
  - Approve January 24th Meeting Summary
  - Action Item List Update
- Economic Study Requests
  - Gaelectric
  - PPL - minimum
  - PPL - robust
- Action Item List Review
- Suggested Meeting dates for 2013

Administration

January 24, 2013 Meeting Summary - The participants in this meeting made no changes to the summary.

Action Items List Update - Kathleen Bauer stated that there were no uncompleted action items pending for this meeting.

Question - A couple of meetings ago, we discussed installation of reactors at Great Falls as a possible action item. Was this topic addressed?
Answer - This item, listed as action item #32, was noted as completed at the September 20, 2012 meeting. It has been addressed in discussions between NWE and PPL that were separate from TRANSAC meetings. PPL Note: The additional 50 MVAr reactor appears to have been purchased to compensate for the MVARs that MATL will provide to the GF area. The MATL reactor may have no effect on the problem that PPL and NWMT were initially trying to resolve. Thus, the issue should be re-opened at TRANSAC in order to fully investigate the original issue that concerned the TRANSAC group.

NWE Response: The PPL note will not be included in the TRANSAC meeting summary. Repeated NWE's planning studies show that generators in the area are operating within their nameplate limits and agreements. NWE will continue to monitor these machines in future local area planning studies.

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Economic Study Requests

Kim McClafferty initiated the discussion of the economic study requests received by NWE and asked for TRANSAC member feed back about whether the requests are for valid, local transmission studies. Representatives of the entities requesting the studies summarized them.

Gaelectric - Dan Wheeler summarized this request. The request documents are available at the following web address.

http://www.oasis.oati.com/NWMT/NWMTdocs/03a-Gaelectric_ESR_Form_DGW.pdf
http://www.oasis.oati.com/NWMT/NWMTdocs/03b-Gaelectric_ESR_NARRATIVE_Revised.docx

The purpose of this study is to examine possible transmission congestion south of Great Falls as a result of addition of the Montana-Alberta Tie Line (MATL) and possible wind and natural gas-fired generation projects. The study would add 1,500 megawatts (MW) of new generation in phases. Beginning in 2019, 300 MW would be added every three years. The studies would assess the most economic method of mitigating congestion identified on the south of Great Falls transmission path due to the generation additions. Possible mitigation to be examined would include addition of a single 500 kilovolt (kV) line from Great Falls to Townsend or additions of multiple 230 kV lines in the area.

Question - Am I correct that there is currently no congestion on the transmission south of Great Falls?

Answer by John Leland - You are correct. Current studies do not indicate congestion; however, as generation is added in this area, congestion will occur.

Question - Can NWE accommodate new transmission south of Great Falls without affecting transmission rates for existing customers?
Answer - I don't know. Economic studies and local transmission planning studies do not address rate impacts. The purpose of these studies is instead to identify possible congestion and/or reliability problems and ways to mitigate them.

Comment - NWE defined the Mountain States Transmission Intertie (MSTI) project so that it would not impact transmission ratepayers.
Response - A transmission project to mitigate congestion south of Great Falls has not yet been defined.
Kim McClafferty asked those participating in this meeting if the Gaelectric study requests would be valid, local economic studies.

Question - Is NWE limited to conducting two economic studies per planning cycle?
Answer - NWE's Business Practices provide that it will conduct two studies at no charge to the requesters. It may conduct other studies as well, but their requesters will be charged NWE's costs for doing so.

Question - What are the criteria for valid, local studies?
Answer - The study must address transmission of power within NWE's service territory, long-term system operation, and not duplicate an existing study.

TRANSAC Member Advice -No one participating in this meeting disagreed that the Gaelectric study request would be a valid, local study.

PPL - Jon Williamson summarized PPL's two economic study requests, labeled SOGF Minimum and SOGF Robust. The economic study request form and graphic submittals for both projects are found at the following web addresses.

http://www.oasis.oati.com/NWMT/NWMTdocs/04a-PPL-SOGF_Minimum_ESR_Form.xls
http://www.oasis.oati.com/NWMT/NWMTdocs/04b-PPL-NWMT_Minimum_ESR.pdf
http://www.oasis.oati.com/NWMT/NWMTdocs/05a-PPL-SOGF_Robust_ESR_Form.xls
http://www.oasis.oati.com/NWMT/NWMTdocs/05b-PPL-NWMT_Robust_ESR.pdf

The SOGF Minimum study would address congestion on the transmission system south of Great Falls by adding one 230kV transmission line from Great Falls to Three Rivers to Helena to Townsend, potentially using an existing 100 kV line right-of-way. The SOGF Robust study would consider the Great Falls Area and the rest of the NWE transmission system in both the northbound and southbound directions. This project could include a triangle of new 230 kV lines connecting Great Falls to Anaconda, Great Falls to Billings, and Broadview-Billings to Anaconda. The Great Falls to Anaconda and Great Falls to Billings sections could potentially use the existing 100 kV line right-of-way. If necessary, the existing Billings to Anaconda 230 kV line section could be converted to a double circuit line. These studies would be designed to identify and mitigate transmission system congestion and reliability so that existing and future

generation could interconnect with NWE's transmission system and serve loads within NWE's service territory. The new lines would be provided at embedded rates.

Question - Given the assumed added generation, where would the additional power move, out of state?
Answer - New generation totaling several hundred MW, most of which is energy resource interconnection, has recently been added to the NWE system, and more is in the generation interconnection queue. PPL is concerned that generation be able to serve and meet load in compliance with North American Electric Reliability Corporation (NERC) standards. PPL Note: It seems this answer should also contain the important comment made by Mr. Leland who referred to the 674 MW's of new generation NWMT has added in recent years, of which only 50 MW is NRIS with full injection (i.e. scheduling) rights. The remaining 624 MW appears to be ERIS which does not have assured injection rights and can only inject energy onto the grid using "as available" transmission.

NWE Response: Changed Answer to read "New generation totaling several hundred MW, *most of which is energy resource interconnection*, has recently been added…."

Comment - To model an additional 1,500 MW of generation, one would have to increase loads by that amount, reduce existing generation by that amount, or move the power off of NWE's system.
Response by John Leland - Yes, some combination of these three alternatives would be necessary to study adding this amount of new generation.

Question - Are you asking TRANSAC members to recommend two of the three proposed studies, i.e., the Gaelectric study and the two PPL studies?
Answer by John Leland - NWE might cluster two or more of the studies together.

Question - Would the proposed Gaelectric study which adds 1,500 MW of new generation in phases, 300 MW every three years, address the studies proposed by PPL?
Answer by John Leland - There may be an issue in timing between the studies. Gaelectric would not begin adding new generation until 2019.
Answer by Jon Williamson - Given the new generation that has or is about to be added in the Great Falls area, PPL is concerned about reliability issues in the near term.

Comment by John Leland - NWE has conducted four network interconnection studies and posted them on its OASIS. We have discussed them with PPL. The four studies are:
- *Project #7: This study included both the existing system and the addition of senior queue generation projects totaling 280 MW. Transmission system elements overloaded. The mitigation identified was a new 230 kV line from Great Falls to Ovando.*
- *Project #32: In this study, in addition to the 280 MW of generation added in Project #7, 268 MW were added. This study showed the need for the new 230 kV transmission line.*

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- *Project #44: This study added 104 MW and 268 MW, so that the additional generation totaled 372 MW. It found that the new Great Falls to Ovando 230 kV line would have to be located on a different route than the previous two studies. For this study the 230 kV line would be physically close to the existing line so that NWE would have to assume the simultaneous loss of both lines as a credible event.*
- *Project #53: This study added 277 MW in addition to the 268 and the 104 MW in the area, so that the new generation totaled 649 MW. The mitigation identified in this study included a new Great Falls to 3 Rivers 230 kV line in addition to the new Great Falls to Ovando 230 kV line. The total number of the 230 kV lines moving power south out of Great Falls necessary to relieve the congestion was therefore four.*

NWE believes that these four studies address the issues raised in the PPL Minimum and Robust study requests for south of Great Falls.
Response by Jon Williams - These studies were conducted four years ago, PPL believes that the dynamics of the system have changed. We are not sure what generation levels were included in Projects #44 and #53, and if the study generation was run at peak capacity. We believe that the system is now or soon will be congested.

Comment by John Leland - The transmission in the Great Falls area is a radial network, with one path containing multiple lines. The studies just discussed identify the need for new 230 kV lines as generation increases. The generation in the four studies (Projects 7, 32, 44, and 53) in the Great Falls area was run at peak capacity. To conduct the studies, we had to reduce the generation at the Corette and Colstrip Units. NWE Response: ' at capacity' means the same as at peak capacity. No need to change.
Question - What is the impact of adding MATL?
Answer by John Leland - For south bound transmission, MATL doesn't matter.
Question - At what point would adding new generation require new transmission south of Great Falls?
Answer by John Leland - For a 2008 economic study request, we considered the addition of 250 MW and 500 MW of new generation in the Great Falls area. These studies identified the need for new transmission.

Comment - The 2008 economic study also addressed adding 100 MW of new generation.
Response by John Leland - That is correct. I am puzzled, however, by the need to identify a specific year that would trigger new transmission. The local transmission plan assesses transmission system needs five, ten, and fifteen years out. This plan plus the four studies mentioned above plus the 2008 economic study appear to address PPL's study concerns.

Question - Does the local transmission plan under consideration now identify the need for new transmission in the short-term?
Answer by Don Bauer - In the five year time frame, the local plan identified some thermal problems and mitigation measures needed to address them. These measures did not include new transmission lines.

Question - Did the new generation in the current local plan include all generation with signed generation interconnection agreements?

Answer by Don Bauer - No. We included in the base case only existing generation PPL clarification: Mr Bauer stated "it isn't modeled unless it is built and it has a TSR" and new projects that we are confident will be constructed. For example, we did not include new projects with signed generation interconnection agreements that did not also have signed transmission interconnection agreements (PPL question: Does a generator need a transmission service agreement?). However, in the local planning we also analyze uncertainty scenarios. We would be willing to run an uncertainty scenario with generation amounts acceptable to PPL.

NWE Response: NWE is unable to confirm the first suggested statement. However, the comment about 'signed transmission interconnection agreements' most likely should have stated "signed transmission service agreements". Relative to PPL's TSR question, in order for a generator to move power across the NWE network, some form of transmission service agreement is required, firm or non-firm, point to point, designation by a network customer, etc.

Question - Would PPL be charged for conducting the uncertainty scenario?
Answer by Don Bauer - No.

Comment by Jon Williamson - If we can help identify the generation assumptions in an uncertainty scenario to be run for the current local transmission plan study, then this scenario analysis plus the Gaelectric economic study would address our south of Great Falls study concerns.

Comment by John Leland - PPL's Robust economic study request also addresses the system flows northbound ~~from~~ on the South of Great Falls transmission lines~~path~~. ~~-~~Our past studies and the Gaelectric study request do not address northbound issues. NWE is therefore willing to conduct the northbound SOGF economic study.

NWE response: Accept as outlined with further clarification. The other two 'SOGF' in the below paragraphs are also accepted.

PPL Note: Please add that Mr Bauer agreed to work with PPL in the next few weeks to come up with some scenarios designed to identify when congestion will show up on the south of Great Falls transmission system. The focus will be on the time period prior to the 2019 start of the Gaelectric studies.

NWE Response: Mr. Bauer agreed to work with PPL to consider an uncertainty scenario examining south-bound flows in the area. However, after meeting with PPL to discuss the scenarios proposed by PPL, it was determined that the scenarios were transmission service type studies and beyond the scope of the local area planning process. Instead, NWE did conduct an uncertainty scenario using local area study base cases with elevated levels of generation and imports from the north under light load conditions. Results were reported at the July 26, 2013 Transac meeting.

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Question - Under cold weather and low wind conditions, low generation levels in the Great Falls area may reduce the ability to serve load. Would the northbound study consider system constraints caused by weather conditions?
Answer by John Leland - We would be willing to address the assumptions in a northbound SOGF economic study to represent minimum generation levels in the Great Falls area.

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TRANSAC Member Advice - All participants in this meeting agreed that NWE should conduct two local economic studies, the proposed Gaelectric study and the northbound SOGF study requested by PPL.

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Action Item List Review

As a result of this meeting, Don Bauer will work with PPL to define an uncertainty scenario with increased generation in the Great Falls area to analyze the transmission system south of Great Falls for the current local transmission plan.

Next Meeting

The dates of future meetings as listed on the meeting agenda are as follows:
Thursday, April 18, 2013 - Q5 - Uncertainty, Mitigation, Decision Rule
Thursday, July 18, 2013 - Q6 - Results and Recommendations
Thursday, October 17, 2013 - Q7 - Review Draft Two-Year Plan Document
Thursday, December 12, 2013 - Q8 -Public Meeting review and Final Document (possible phone conference)

Disclaimer

Committee members provide advice to NWE as individual professionals; the advice they provide does not bind the agencies or organizations that the members serve.