

NTTG 2016-2017 Public Policy Consideration Draft Report Stakeholder Comments and NTTG Response

Commenter Contact Information			NTTG Tracking Information		
Date: April 27, 2017					
Name: Chuck Stigers			Committee Assignment: Planning Committee		
Organization: Utility System Efficiencies (USE)					
Comments			NTTG Responses		
PPC Report Section	Page/Line #	Comment	ID#	Response Date	Response & Incorporated Changes (if any) (Section, Page, Table, etc.)
General		Could you tell me how the number 1432 MW came up as the value of the wind generation proposed to replace Generators 1, 2, and 3? As I understand this number it is supposed to be the total net capacity of the units. The total I get is 610 MW for CS1 + CS2 (matches first study total). My understanding is that Pmax for CS3 is 822 MW gross (electrical rated power listed in base cases); however, I also understand that the boiler is normally limited to 805 MW gross (the plants do not operate above this number for sustained periods). With a value of 60 MW for the aux load this would give a net capacity of 745 MW. With that I get a total net capacity for these three units of 1355 MW. It looks like the gross output of unit three (822 MW electric) was added to the net capacities of units 1 and 2.	#1	5/4/17	Thank you for the comment. The Technical Workgroup is not aware of the 1432 MW referenced in the comment. The request specified 1494 MW of wind to replace the three retired Colstrip units. The TWG simply honored the request.
General		When you did the recent study for this scenario did you always keep unit four on at full load in all of your cases?	#2	5/4/17	Yes; unit four was dispatched in all cases, however it was dispatched at approximately 740 MW for all cases.

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Date: April 28, 2017					
Name: Fred Heutte			Committee Assignment: Planning Committee		
Organization: NW Energy Coalition					
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General		NW Energy Coalition is writing to express our appreciation for the work accomplished by NTTG in conducting the Public Policy Consideration study request we submitted jointly with Renewable Northwest, and the presentation and content of the Draft Report. The study has met and exceeded our expectations. In particular, we feel the study accomplishes two things: (1) it addresses important questions concerning the transition of the generation energy mix in Montana, particularly with regard to continued utilization of the existing transmission system in a secure fashion; and (2) it advances the state of the art in transmission planning by demonstrating that the "round trip" capability created by coordinating production cost and power flow analysis can provide important new tools for transmission planning. The addition of dynamics analysis to the existing framework offers a very powerful tool for balanced assessment of economic and reliability aspects of the changing electric power system in the Western Interconnection. .	#3	5/4/17	Thank you for the comment.
General		We also highlight and commend NTTG's willingness not only to conduct the study we requested but also to refine and improve the study approach, particularly the necessary details concerning system conditions such as differing levels of wind production. These details provide a more in-depth view of the issues and opportunities that lie ahead as the energy mix and	#4	5/4/17	Thank you for the comment.

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		transmission utilization change over time. While we continue to support more direct involvement by stakeholders in the NTTG Technical Work Group process, to improve understanding and provide appropriate input for the modeling process, there is no question that the analytical methods chosen have been thorough, balanced and in-depth in this instance.			
2	3	The draft notes, "A RAS to trip the new Broadview wind was assumed to be designed to act faster than the current Colstrip generating complex's Acceleration Trend Relay ("ATR")." It may be helpful to provide a brief general description of the conceptual approach for a RAS as modeled here.	#5	5/4/17	The RAS for the new Broadview wind was intended to mimic the action of the ATR. For 500 kV outages, the ATR makes a decision about how many Colstrip units need to be tripped in order to maintain stability. The assumption is that a new generator on the 500 kV system would have a RAS that acts similarly to the ATR because generation will still need to be tripped for 500 kV outages and that tripping should occur before the ATR acts. In order to coordinate with the ATR, the wind tripping needs to be much faster than the ATR to avoid multiple trips. This coordination has yet to be determined.
3	4	The study modeled a 1494 MW wind farm on the Broadview 500 kV bus at dispatch levels of 0%, 35%, 100%. NTTG, Renewable NW and NWECC discussed this at some length and we agree with this approach. It would be helpful to describe why those levels were chosen.	#6	5/4/17	The three levels of wind dispatch were chosen to reflect the inherent variability in a renewable resource. 0% and 100% were chosen to represent the extreme ends of the output spectrum. 35% was chosen as an acceptable mid-spectrum value; 35% is often used as the default output on a wind facility in WECC base cases.
5	7	The draft states that the production cost model runs showed increases of IPC, PAC and PGE thermal dispatch with the substitution of Montana wind for Colstrip energy, with or without a new gas facility in	#7	5/4/17	Excellent point. When looking at the graph, it does indeed seem to indicate an overall decrease in thermal dispatch. IPC, PAC and PGE all experienced an increase in the thermal dispatch from the base case. NWMT experienced a significant

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		Montana. However, Figure 1 appears to show an overall decrease in thermal dispatch. Further detail on the magnitude of the higher thermal dispatch for IPC, PAC and PGE would be useful.			decrease in thermal dispatch. Altogether, the decrease NWMT saw was large enough to offset the increases in the other utilities. Therefore the NTTG footprint, as a whole, experienced a decrease in thermal dispatch even though three of the four utilities listed experienced an increase. In conclusion, the replacement of coal with wind & wind\gas did not cover the MW lost from the shutdown of the Colstrip units in a one-for-one basis.
Appendix A	10	As discussed during the NTTG Planning Committee and Stakeholder meetings, the extended list of contingencies shown in Appendix A adds considerable strength to the findings of the draft report. It would be informative to add language to the report briefly describing how these contingencies were conducted on an automated basis, and why the careful preparatory work to build up NTTG's "round trip" capability was needed to make this possible.	#8	5/4/17	Proposed language to add to the report, "There was a significant effort undertaken to ensure that the round trip produced a case that was both steady-state and dynamics capable. Additionally, it took numerous person-hours to convert selected steady-state contingencies into dynamics-ready contingencies. Without this effort, the automation of the dynamics analysis would not have been possible."