

NTTG 2018-2019 Stressed Conditions and Change Case Matrix Stakeholder Comments and NTTG Response

Commenter Contact Information		NTTG Tracking Information		
Date: August 24, 2018				
Name: Justin Bieber		Committee Assignment: Planning Committee		
Organization: Utah Association of Energy Users (UAE)				
Comments		NTTG Responses		
Slide Number	Comment	ID#	Response Date	Response & Incorporated Changes (if any) (Stressed Condition, Change Case, etc.)
2	<p>The NTTG Technical Work Group (TWG) has added 3 additional stressed conditions to study. This represents 50% more stress cases than were identified in the approved NTTG 2018-2019 Biennial Study Plan (Study Plan), and the 2016-2017 Final NTTG Regional Transmission Plan (2016-2017 RTP).</p> <p>Please provide the justification for including these additional new stress conditions in the study plan.</p> <p>UAE is concerned that these new study cases may result in analyses that are overly conservative or represent system conditions that are very infrequent and easily mitigated through typical utility best practices, that do not require new transmission.</p> <p>UAE is also concerned that these additional stress cases will consume limited time and resources that could otherwise be spent on different analyses, such as evaluating change case matrices (as discussed below), that would provide more information and value to the NTTG planning process.</p>	1.	9/06/18	<p>NTTG is charged with performing Transmission Reliability Analysis that is consistent with the requirements of its Transmission Providers Attachment K. NTTG's reliability analysis is to use well founded reliability assessment techniques to assess the bulk transmission reliability and security during a variety of generation dispatch and outage conditions. These additional stressed cases are a part of NTTG's efforts to provide a good assessment of the reliability of the bulk electric transmission system. Fully compliant analysis calls on identifying all violations no matter how small the impacts might be.</p> <p>See responses 4, 6, and 7 below for the additional cases.</p>
2	<p>UAE's understanding of the process to develop the stressed conditions is that the TWG runs a production cost model (PCM) simulation, based on the WECC 2028 Anchor Data Set, which includes planned projects identified in the prior Regional Transmission Plan (pRTP). UAE is concerned that this methodology of including planned projects in the PCM simulation results in a PCM optimization that utilizes transmission capacity on those planned transmission projects.</p>	2.	9/06/18	<p>NTTG does not question the firm requirements of its data submitters.</p> <p>TWG has performed a PCM run on the Null case. It identifies a number of Dump energy hours where firm resources could not be accommodated consistent with results in powerflow studies TWG performs.</p>

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	<p>This would necessarily drive results that require those same planned projects to maintain reliability.</p> <p>In other words, the methodology is potentially flawed because the assumptions for planned transmission projects to be included in the PCM simulation would result in stress conditions that require those same projects for reliability. UAE understands that other utilities, such as Bonneville Power Administration, start with a data set that only includes projects that are currently in-service, then identifies reliability violations, and then evaluates which transmission solutions could mitigate those violations.</p> <p>Please explain why the TWG chooses to include planned projects in the PCM simulations that it uses to develop stress conditions in the study plan, rather than performing PCM simulations with only in-service projects.</p>			<p>There are many ways to perform these type of studies. TWG disagrees that its method is flawed, it simply is a different way and NTTG believes to be more efficient way to make a valid assessment of the non-committed transmission projects.</p> <p>Using the Null case PCM run to extract the stressed conditions would not be consistent with regional Attachment K obligations and the Null case would plan for a system (with curtailments "baked-in") that does not satisfy the 10 year out Firm Transmission Requirements of the Transmission Providers.</p>
6	<p>The TWG indicates that Case D - High B2H Export seed case is "not terribly stressed, will require tuning or selecting a new hour." If this condition is not stressed, UAE believes that it should be eliminated from the study plan, rather than tuned to create stress on the system. This would free up limited time and resources to perform other more valuable analyses.</p>	3.	9/06/18	<p>TWG agrees and has decided to not perform any studies on the extracted hour specified in Case D since it would not likely provide any informative results.</p>
28	<p>Please explain why the TWG selected this new stress condition Case G - High Borah West. How frequently does the TWG expect this condition, or a similar condition to occur (i.e. how many hours in the PCM simulation did this condition or more extreme Borah West flows occur)?</p>	4.	9/06/18	<p>Flows above the current rating of 2557 MW were observed in the PCM run. Case G was selected to test a condition that exceeds the present 2557 MW rating.</p> <p>The frequency of occurrence shouldn't be the driver whether or not that condition should be studied. The driver should be</p>

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				whether or not the condition may cause unacceptable reliability performance. See response to #1.
28	<p>Does the Borah West Path rating of 2557 MW assume the null case (i.e. in-service transmission facilities only), or the pRTP* case which includes segments of Gateway West. If it includes segments of Gateway West, please confirm which segments of Gateway West are required to achieve that path rating of 2557 MW. If it does not include the pRTP segments of Gateway West, what is the path rating that does include those segments?</p> <p>*pRTP includes Gateway West without Midpoint-Hemingway #2, Cedar Hill-Midpoint and Populus-Borah.</p>	5.	9/06/18	<p>The existing Borah West Rating is 2557 MW. The Null case transmission topology is consistent with that rating.</p> <p>The Borah West Rating of the pRTP configuration might be approximately 3400 MW. However, no rating studies have been created for this configuration. The rating of the iRTP configuration is likely above 4400 MW, again no studies have been performed to establish this level.</p>
32	<p>Please explain why the TWG selected this new stress condition Case H - Max NTTG Import Case.</p> <p>How frequently does the TWG expect this condition, or a similar more extreme condition to occur?</p> <p>How many hours occurred in the PCM simulation with NTTG imports greater than 6000 MW?</p> <p>How many hours occurred with NTTG imports greater than 5000 MW?</p>	6.	9/06/18	<p>There is currently no NTTG footprint import limit procedures, so any hour is expected to perform acceptably. Any condition that does not perform acceptably would be cause for concern and some remediation. TWG is including Case H because we are not aware that this condition has been studied before.</p> <p>TWG selected this hour, as it observed that Wyoming wind resources were at near zero production and TWG was concerned that this condition may expose performance issues. Prior cycles had not considered the level of coal retirements that are being considered this cycle.</p>
36 - 38	<p>Please explain why the TWG selected this new stress condition Case I - High Aeolus South & West Case.</p> <p>How frequently does the TWG expect this condition, or a similar condition to occur?</p>	7.	9/06/18	<p>TWG observed that there were few selected hours where the Aeolus South path was loaded. An inspection of the case diagrams shows that the thermal dispatch of Case I case is much lower than Case F, for example. The stresses in Wyoming will be different so both cases will be instructive.</p>

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	How many hours in the PCM simulation occurred where Wyoming Wind generated at 96% or greater of the total Wyoming Wind Capacity?			The frequency is approximately 500 Hours (about 3 Weeks) that the TWG expects to exceed this level. However, the frequency of occurrence shouldn't be the driver whether or not that condition should be studied. The driver should be whether or not the condition may cause unacceptable reliability performance. See response to #1.
36 - 38	<p>Attachment 2 of the approved Study Plan indicates that the 2675 MW study level of Wyoming Wind generation is about 90% of the peak capacity, which implies a total Wyoming Wind maximum capacity of ~2972 MW.</p> <p>Case I indicates a 3058 MW Wyoming Wind generation study level at 96% of maximum capacity which implies a total Wyoming Wind maximum capacity of ~3185 MW.</p> <p>What is the maximum capacity of Wyoming Wind in the study resource assumptions?</p> <p>What is the reason for this apparent ~213 MW difference between the levels of Wyoming Wind implied by this stressed condition and the peak Wyoming Wind capacity in the approved Study Plan?</p> <p>Was a new Wyoming Wind resource added or modified since the Study Plan was approved? If so, please identify that specific resource and the reason for its inclusion now.</p>	8.	9/06/18	<p>In reviewing the Q1 Data and the powerflow/PCM data, it was discovered that a few existing and planned wind plants were missing from the study plan appendix analysis. The following changes have been made to the analysis:</p> <ul style="list-style-type: none"> • Added Dunlap Project – 111 MW • Added McFadden Ridge – 29.7 MW • Added Pioneer Wind Project – 85.1 MW • Energy Vision Capacity – 1539 MW (Contract limited to 1311. Exported cases use values limited to 1311 MW) <p>The wind capacity value for the existing and planned units is 3177 MW.</p>
41	The pRTP change case is the only change case where Gateway West is included without the entirety of all of its segments. All of the other change cases include the entire Gateway West as a single project, meaning that even if just a single segment is needed for reliability,	9.	9/06/18	Prior to receiving stakeholder comments, TWG determined that only the iRTP configuration would include all segments of Gateway West. Should performance issues arise where these

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	<p>the absence of that segment would cause the entire change case to fail to meet reliability needs, and only the entirety of the Gateway West project could mitigate that reliability issue. Given the magnitude of Gateway West and the multi-billion dollar cost estimate, UAE believes that Gateway West needs to be segmented into several smaller sections in order to perform robust testing.</p> <p>More granular segmentation of Gateway West would be ideal, but at a minimum, the change case matrix should include the same variations on Gateway West that were used in the 2016-2017 RTP. Similar to the method in change cases 11-30 where each change case is run with and without B2H, each of the change cases that include Gateway West should also be run with the same configurations that were used in the 2016-2017 RTP.</p> <ol style="list-style-type: none"> Gateway West without Midpoint - Hemingway #2 and Cedar Hill - Midpoint Gateway West without Borah - Midpoint uprate and Populus - Borah Gateway West without Midpoint - Hemingway #2, Cedar Hill - Midpoint, and Populus - Borah Gateway West without Midpoint - Hemingway #2, Cedar Hill - Midpoint, Populus - Cedar Hill - Hemingway, Populus - Borah, and Midpoint - Borah Uprate 			<p>additional segments would be beneficial, they will be added to the change case or an additional change case will be created.</p> <p>Just like last cycle, TWG will review performance of the system and evaluate, via Change Cases, whether the segment is needed or not. .</p> <p>A few notes on the suggested configurations:</p> <ul style="list-style-type: none"> Suggested Configuration “A” is last cycle’s CC21. It was found that for the flows north of Populus, the Populus-Borah segment was not needed. Suggested configuration “B” is last cycle’s CC22, it resulted in Borah West Overloads and did not perform as well as the pRTP. Suggested configuration “C” is the pRTP. Suggested Configuration “D” was considered last Cycle, rejected and not studied because of Borah West performance issues. Those Borah West performance issues are exposed in the Null Case and cases without Gateway West included. <p>Whether TWG performs these same changes cases or not will depend on the results of the various studies.</p>
41	Additionally, UAE understands that the Antelope Projects are driven by a UAMPS interconnection request for a generation project located at the Idaho National Laboratory. Given that the UAMPS requested resource is part of the Study Plan resource assumptions, that would	10.	9/06/18	NTTG will treat all Network Resources (those resources designated to serve Firm load) in a similar manor. NTTG agrees that its studies are not the forum for generation interconnection studies. However the two proposed Antelope

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	indicate that the Antelope facilities required for that interconnection are needed. The NTTG regional planning process is not the appropriate forum to test whether these interconnection driven facilities are required for interconnection, nor is it an efficient use of time and resources that could otherwise be spent on more valuable analyses. Further, the absence of these facilities might cause an otherwise reliable change case to appear unreliable. UAE requests that the Antelope project be removed from the Change Case matrix and included in the base model. This will also free up valuable resources to test the Gateway West project in more granular segments.			transmission lines are currently non-committed bulk electric transmission projects so procedurally NTTG is required to consider them. The change cases involving the Antelope Projects are to demonstrate the need for these lines.
xx	NTTG Planning Committee Meeting Presentation, August 15, 2018 slides 15-17. The TWG presentation shows different coal and gas generation dispatch results based on changes to coal prices. Did the TWG make adjustments to coal prices that are included in the PCM simulation used to develop the stressed conditions? If so, please explain the reason for making these adjustments.	11.	9/06/18	Yes. TWG used the 50% coal price assumption for its selection of cases from the PCM results. Due to capacity factor issues with the Coal Units in the PCM ADS 1.0 case, TWG tested the dispatch of various coal price assumptions. TWG found that the selection of similar stressed hours could be accomplished with either the 70% or 50% assumption. NTTG does not use the economic results from PCM studies to make economic decisions
xx	The TWG indicates that adjustments to coal prices do not result in significantly different dispatch for the selected cases. Please explain why. Do the adjusted coal prices impact the frequency of similar or more extreme stress conditions?	12.	9/06/18	The dispatch changed between the two PCM runs, but because there are 8760 hours to choose from, similar stressed hours can be found in either PCM result.