NORTHERN TIER TRANSMISSION GROUP

Description of Meeting:	**NTTG Planning Committee**
Meeting Date:	**June 14, 2017**
Meeting Notes Prepared By:	**Amy Wachsnicht**
Approved for Posting:	**August 9, 2017**

1. **Agenda:**
   a. Welcome and Agenda Review
   b. Approve May 10, 2017 NTTG Planning Committee Meeting Notes
   c. NTTG Regional Transmission Plan Update
      i. NTTG Quarter 6 Analysis Study Results
      ii. Revisions to the NTTG Draft Regional Transmission Plan
   d. Interregional Coordination
      i. CAISO Out of State 50% Import Study Update
      ii. ADS WPR Data Coordination Update
   e. Round Table/Other Business
      i. Stakeholder Comments
      ii. Upcoming Meetings

2. **Discussions & Decisions:**

Decision: Approve May 10, 2017 NTTG Planning Committee Meeting Notes

- Following roll call, it was noted that quorum requirements were met in both Class 1 and Class 3, but not met in Class 2. With quorum met in Class 1 and one other Class, approval of the past meeting notes could move forward.
- With a motion by William Schubert and seconded by Michael Manarovici, the May 10th NTTG Planning Committee meeting notes were **approved** for posting in Class 1 & Class 3.

Discussion: NTTG Regional Transmission Plan Update – NTTG Quarter 6 Analysis Study Results

- Ron Schellberg reviewed the updated data received from the transmission providers during the Quarter 5 updated submittal window. NTTG did not receive any Economic Study Requests.
- After reviewing the data submitted, NTTG's Technical Workgroup (TWG) determined it was necessary to update the 2016-2017 Study Plan to reflect the revised Quarter 5 data submittals. The TWG also recommended to test the Draft Regional Transmission Plan (DRTP) with the additional wind resources submitted, review the Quarter 5 Wyoming wind profile, and select a new production level to test the performance of the DRTP. The TWG also looked to see if there were necessary changes to the DRTP as well as preform an evaluation of the loss calculation using Production Cost Modeling (PCM) versus power flow.
- Ron Schellberg presented a chronological wind profile graph showing the difference between the Quarters 3 & 4 and Quarter 6 studies performed (Slide 5).
  - With regards to the chronological wind profile, it was asked if it was relative or absolute and if the 2,450 MWh max was based on the data provided from NREL.
    - Ron Schellberg indicated the 2,450 MWh was also from the planned conditions in Wyoming and is the capacity of the wind projects. The TWG used the duration curve to select a production level that would be reasonable to analyze the simultaneous dispatch in Wyoming.
- The TWG tested the performance of the DRTP at 2,175 MW in a number of different conditions, Case A (Heavy Summer), Case B (Heavy Winter), Case E (Tot2) and Case F (High Wind), because of the different load profiles in the cases. In addition to the four cases, the TWG checked a number of change cases leading up to the DRTP configuration.

- Heat Maps were presented showing the results of the change cases listed above during the Quarter 6 analysis (Slides 7-10). Ron Schellberg indicated, "q6" was appended to the revised case name to indicate the different study condition. The green areas on the maps indicate local service performance issue.
- The heat map showing the null case (Slide 11) did not have the entire 2,175 MW represented due to the fact the case would not solve above 1,800 MW. This is an indication the current transmission system is inadequate to accommodate that level of resources.
    - The heat maps (Slides 12-14) that followed showed the results of the cases when adding in the transmission projects Boardman to Hemmingway, Antelope and Energy Gateway.
- In conclusion, the DRTP continued to perform well at the 2,175 MW level and there was no need to add additional projects or segments and no segments appeared to be redundant. Therefore, the recommendation is no change to the DRTP configuration.
- In Quarter 6, the TWG also performed a loss analysis comparing power flow versus PCM and found the PCM loss calculation was reasonable for a specific hour. There were differences between power flow and PCM; however, overall the total losses were reasonable.
    - Based on the results, the TWG felt it would be reasonable to consider using PCM in the future for the loss metric calculation.

Discussion: NTTG Regional Transmission Plan Update – Revisions to the NTTG Draft Regional Transmission Plan

- William Schubert reviewed the Quarter 5 activities:
    - Public stakeholder comment period on the DRTP. Comments were received, addressed and incorporated as appropriate.
    - Opportunity for transmission providers to submit any updated loads and/or resources. Updated loads and resources were submitted.
    - Opportunity for stakeholders to submit any Economic Study Requests. None were received.
    - Public Policy Consideration analysis was done and reported and stakeholder comments were incorporated.
- Based on the updated load and resources received in Quarter 5, the TWG preformed additional analysis updating the DRTP as well as include additional detail around the updated loads and resources, transmission additions, transmission service requests, ATC and needs driven by public policy.
- William Schubert walked through the changes made and incorporated into the Draft Final Regional Transmission Plan (DFRTP):
    - Additional detail was added to the Executive Summary around when the different iterations of the report are completed and addressing stakeholder comments on the Wyoming wind.
    - The load forecast and resource submissions tables were updated with the Quarter 5 submittals with additional language addressing the Wyoming wind.
    - The transmission service obligations and ATC tables were also updated. An explanation of transmission needs driven by Public Policy Requests (PPR) was added to address the definition of PPR and how they are considered.
    - Under the section "Study Methodology" an explanation of the wind profile for Wyoming was added. The heat maps were updated with the results of the additional Quarter 6 analysis.
    - Language was added to the sections, lessons learned Quarter 1 through Quarter 4, robustness testing, Public Policy Consideration study, cost allocation evaluation and the loss analysis using PCM versus power flow.
    - The Public Policy Consideration study report was added as an appendix.

- Sharon Helms took the opportunity to remind attendees that the DFRTP is posted on the NTTG website, and NTTG will be doing a detailed walk through of the changes at the next stakeholder meeting on June 29th. Following that, NTTG will have a public comment period.

Discussion: Interregional Coordination – CAISO Out-of-State 50% Import Study Update

- Sushant Brave with the CAISO indicated that one of the main reasons for giving this presentation is that interregional coordination has been a factor for the CAISO's preparation for this study.
- Over the past two years, the CAISO has conducted special studies. Last year they performed a 50% contained in state and out-of-state RPS portfolio assessment. The main focus of the out-of-state assessment was to evaluate the impact on California transmission and did not focus on whether or not the resources can get to California.
    - Stakeholder feedback indicated a need to look at the external system, which would give directional information to developers and project sponsors, and to look at the scheduling capability and availability, which was not captured in previous studies.
    - As part of looking at the system outside of California, the CAISO concluded modeling refinements and ATC assessments were needed as well as a look beyond reliability issues to see if there is enough availability to get the resources to California.
- The objectives of the out-of-state study are to refine the resources and topology modeling, ATC assessment to deliver wind to California, identify any transmission constraints outside of California, and evaluate the interregional transmission projects (ITP) submitted to see if any of the ITPs can mitigate any identified issues.
- In order to conduct the study, the CAISO is looking at what resource and transmission modeling refinements are needed. Once that is completed, the CAISO will run PCM and power flow simulations to capture the reliability impacts.
- The CAISO started with last year's 50% study case due to the fact the resources are already modeled. Then looked at the latest ADS information as well as NTTG's study plan dated May 29, 2017 and WestConnect's regional study plan for the 2016-2017 planning cycle.
- With regards to the resource modeling refinement, the biggest change identified was the additional 1,100 MW of incremental wind generation in Wyoming.
    - The CAISO will not be modeling several generators from WestConnect's models and the proposed generator ties between Antelope and Borah and Goshen 345 kV, as they are either inconsistent with the accepted CAISO modeling practice and methodology or developed in a viable timeframe for conducting the assessment.
- Transmission modeling refinements in the base case include the Energy Gateway facilities NTTG has determined to be committed as well as several WestConnect facilities in New Mexico, Arizona and WAPA.
    - Based on input from NTTG, the CAISO will consider the segments of Energy Gateway that were determined to be non-committed in the base case.
- The PCM simulations will be looking at information around curtailment of the out-of-state resources and transmission constraints outside of California. Specific stressed hours will be selected to model in the power flow cases. The four ITPs will then be evaluated to see the impacts on the congestion results.
- Power flow and stability studies will be performed to identify any reliability issues not captured in the PCM simulation.
- The CAISO will also do an ATC assessment in order to see if resources can be delivered to a California BAA.
- With regards to the timeline for completing the study, the CAISO is aiming to have the study results completed by the middle of September to present to stakeholders during the September Stakeholder meeting.

    - Prior to presenting to stakeholders, the CAISO will be scheduling meetings with the Western Planning Regions towards the end of July to share their initial findings in the PCM simulation and the end of August to share the results of the reliability studies.
- Following the presentation, there was discussion regarding the 1,100 MW of new wind and the associated transmission associated identified in PacifiCorp's IRP. Members of the CAISO indicated that that the base line assumption was to include the 1,100 MW of wind in Wyoming with no associated transmission to identify any issues. However, it was mentioned that adding the wind resource without any transmission would result in the case not solving. One consideration would be to not model the 1,100 MW in one sensitivity case and then model the 1,100 MW with the transmission in another as comparison.
    - As the CAISO runs their studies, they will reach out to NTTG with any questions and share the results.
- It was mentioned when WestConnect did a similar study they found when adding renewable resources for California, it did not go to California but offset local generation. It was asked, in both the PCM and power flow studies what technique would the CAISO be using to make sure the energy goes to the specific location.
    - With regards to PCM, the renewables will be removed from California to check the followability of the generation and scheduling capability. For the power flow analysis, the idea is to add the wind in Wyoming and New Mexico and not reduce the generation in order to stress the system.

Discussion: Interregional Coordination – ADS WPR Data Coordination Update

- Ron Schellberg reminded attendees that the ADS is an effort being undertaken by the four WPRs to create a synchronized power flow case and PCM for the development of a 2028 data set.
- In early April, the WPRs provided Ron Schellberg with approximately 7 power flow cases which have been merged into a single power flow case and is now different than the original 2026 heavy summer case. He has also been working to clean up the PCM in order to align with the power flow case. This way, when a power flow case is exported from the PCM, it is aligned with the current regional transmission plans. This case will then be provide to WECC as a seed case for the development of a 2028 heavy summer MOD-32 compliant power flow case.
- Once the 2028 heavy summer case is completed in December, WECC staff will merge it into the ADS for the WPR to use in the next planning cycle for their studies.
- Ron Schellberg has ran trial exports cleaning up the exported power flow case and will share with the WPR for their review in a few weeks. The WRP are anticipating submitting the seed case to WECC in a month.

Discussion: Round Table/Other Business

- Stakeholder Comments
    - There was none.
- Upcoming Meetings
    - NTTG's Quarter 6 Stakeholder Meeting is scheduled for June 29th starting at 10:30am (Mountain) at the Boise Airport Conference Center. Webinar and phone information will be available for those who are not able to attend in person.
    - The next NTTG Steering Committee meeting will be held on August 2nd in Salt Lake City, UT.

3. Assignments:

Item #	Assignment	Owner	Target Date	Status
1.				

2.				
3.				
4.				

Next Meeting: The next Northern Tier Planning Committee Meeting is scheduled for July 12th at 1PM Pacific.

- Dial: **(626) 425-3121**
- Access Code: **432-608-245**

Attendees:

NTTG Planning Committee Member Representatives		
Membership Class 1		
Jared Ellsworth, Idaho Power	Nathan Powell, Deseret	Scott Waples, Avista Corp
Bill Hosie, TransCanada	Craig Quist, Chair, PacifiCorp	Curt Winterfeld, Citizens Energy
Michael Manarovici, MATL	William Schubert, NorthWestern (Proxy)	
Membership Class 2		
Marshall Empey, UAMPS	Rhett Hurless, Absaroka Energy	
Membership Class 3		
Bob Decker, MT PSC (Proxy)	Steven Goodson, ID PUC	Matt Wiggs, ID OEMR
Morgan Fish, WY PSC	Jennie Jonsson, UT PSC	
Other NTTG Members & Guests		
Philip Augustin, Portland General	Sharon Helms, NTTG	David Smith, TransWest Express
Jamie Austin, PacifiCorp	Fred Heutte, NW Energy Coalition	Mudita Suri, CAISO
Sushant Barave, CAISO	Josh Laurandeau, NorthWestern	Bela Vastag, UT OFC Consumer Services
Rich Bayless, NTTG	Ken Neal, NaturEner	Amy Wachsnicht, NTTG
Gary DeShazo, CAISO	Kishore Patel, PacifiCorp	Dave Walker, WY PSC
Kathleen Fraser, Energy Strategies	Ron Schellberg, NTTG	