

Short-Term Available Transfer Capability (ST ATC) Project Update

June 12, 2024

..



Agenda

1. Completed ST ATC Improvements
2. In-flight ST ATC Improvements
3. Proposed ST ATC Improvements
4. Wrap up
5. Appendix – ATC Formulas (Short-Term Horizon)

Completed ST ATC Improvements



Completed ST ATC Improvement #1

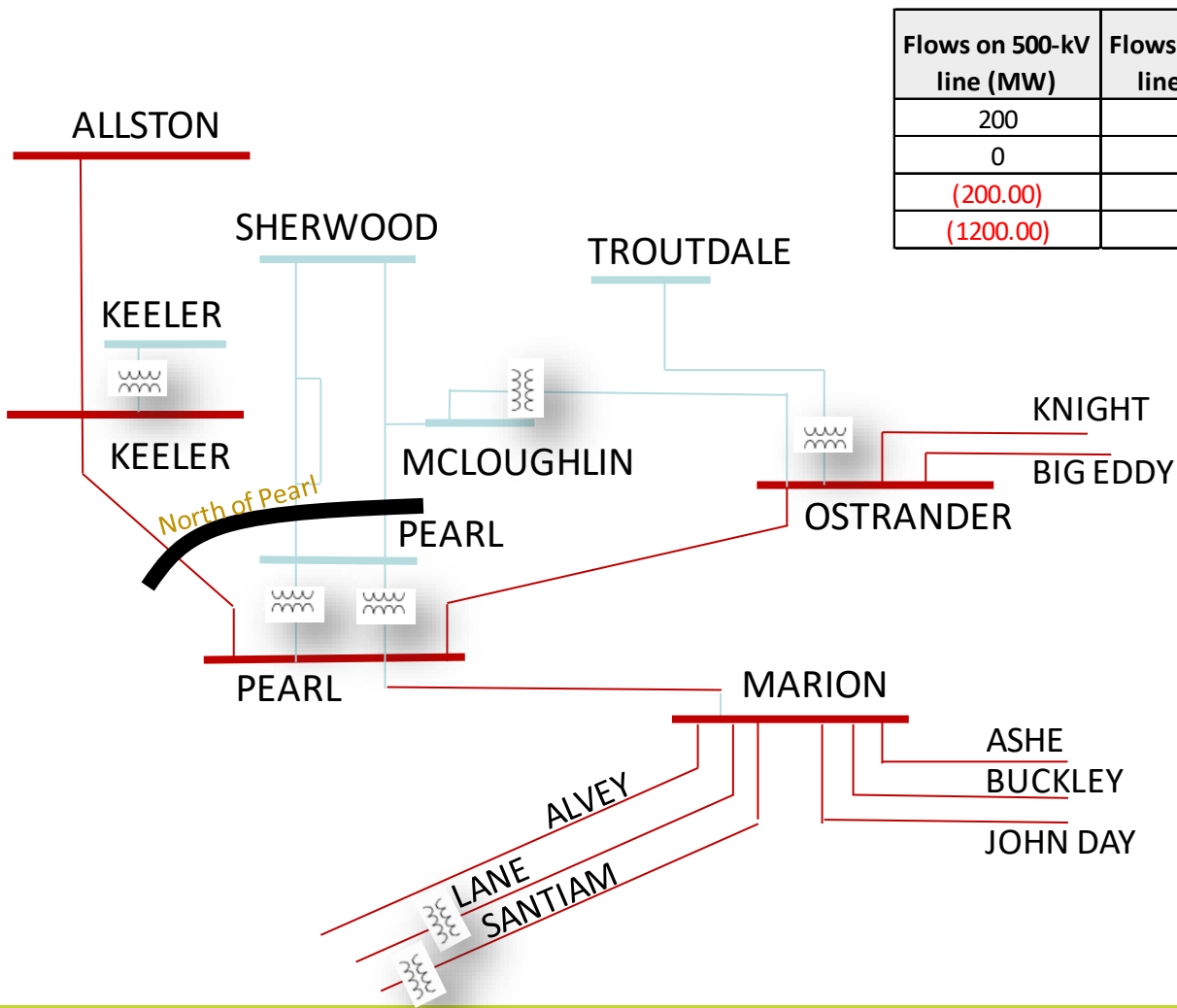
Description: ATC path changes

1. Added the North of Pearl path to manage reliability concerns in the Portland metro area
 - a. The path was added in both the Short-Term (0-13 months) and Planning horizons (beyond 13 months), effective November 1st, 2023
 - b. In the Short-Term (0-13 month) horizon, BPA is calculating and posting ATC for the North of Pearl path, and new Transmission Service Requests (TSRs) are being evaluated for ST ATC on the path
 - c. BPA does not calculate or post ATC across the flow-based paths for the Planning horizon; new long-term TSRs that impact North of Pearl are evaluated via a study process
 - d. BPA began managing congestion across this path on August 11th, 2023

Completed ST ATC Improvement #1 (cont.)

2. Modified the study methodology for the North of Pearl path to exclude Pearl-Keeler 500-kV line counterflows when calculating the actual flow and Total Transfer Capability (TTC) for the path, effective May 30th, 2024
 - a. North of Pearl includes the lines of Pearl-Keeler #1 500-kV (BPA-owned), Pearl Tap to the McLoughlin-Sherwood #1 230-kV (BPA/PGE jointly owned), and Pearl-Sherwood #1 & #2 230-kV (BPA/PGE jointly owned)
 - b. Counterflows on the Pearl-Keeler 500-kV line can mask congestion on the 230-kV lines during high load scenarios
 - c. Including the Pearl-Keeler 500-kV counterflows in the calculation of the North of Pearl TTC can result in a zero or close to zero TTC on this path
 - d. By excluding these counterflows when calculating the TTC for this path, the TTC for North of Pearl reflects the true S>N limit of the path

Completed ST ATC Improvement #1 (cont.)



Flows on 500-kV line (MW)	Flows on 230-kV lines (MW)	TTC prior to change (MW)	TTC post change (MW)
200	1200	1200	1200
0	1200	1200	1200
(200.00)	1200	1000	1200
(1200.00)	1200	0	1200

Completed ST ATC Improvement #1 (cont.)

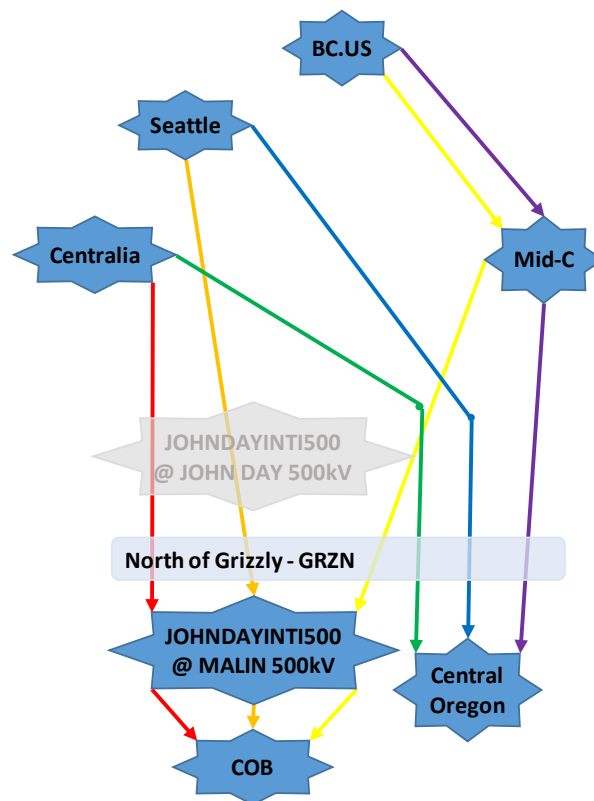
3. Retired the South of Allston S>N path, as BPA's technical studies show that North of Pearl is a more suitable reliability tool for managing congestion in the Portland metro area and greater Willamette Valley-Southwest Washington load pocket, effective February 13th, 2024
 - a. Path was retired in the Short-Term (0-13 month) horizon
 - b. This path did not exist in the Planning (beyond 13 months) horizon
 - c. BPA is no longer calculating and posting ATC for South of Allston S>N, and new TSRs are no longer evaluated for ST ATC on the path
 - d. This path is no longer being used for congestion management
 - e. BPA continues to maintain South of Allston N>S as an ATC path

Completed ST ATC Improvement #1 (cont.)

4. BPA changed the Power Transfer Distribution Factor (PTDF) used to evaluate network TSRs with a Source/Sink of JOHNDAYINTI500 and POR/POD of JOHNDAY from the John Day 500-kV PTDF to the Malin 500-kV PTDF, effective October 18th, 2023
 - a. This change allows BPA to capture the impacts of TSRs flowing over the North of Grizzly path more appropriately, as the John Day 500-kV bus is located north of the North of Grizzly path, while the Malin 500-kV bus is located to the south of the North of Grizzly path
 - b. This change only impacts how TSRs are evaluated – there were no changes to BPA’s curtailment process, as BPA was already using Malin 500-kV PTDFs to perform curtailments on schedules with the JOHNDAYINTI500 Source/Sink and JOHNDAY POR/POD

Completed ST ATC Improvement #1 (cont.)

This visual illustrates the location of the John Day 500-kV and Malin 500-kV busses in relation to the North of Grizzly path:



Completed ST ATC Improvement #2

Description: Updated ST ATC documentation to reflect the retirement of the North American Electric Reliability Corporation (NERC) ATC MOD standards on February 1st, 2024

1. Some ATC requirements were moved to the North American Energy Standards Board (NAESB) Wholesale Electric Quadrant business practice standard 023 (WEQ-023) and some were fully retired
2. BPA's ATC Implementation Document (ATCID) and Transmission Reliability Margin Implementation Document (TRMID) were updated to remove references to the NERC ATC MOD standards, and streamlined to remove language relating to requirements that were fully retired

Completed ST ATC Improvement #2 (cont.)

3. Minor changes to BPA's ATC Methodology website were made to reflect the retirement of the NERC MODs on February 1st, 2024
 - a. NERC Horizon (0-13 months) was renamed to Short-Term Horizon (0-13 months)
 - b. References to the NERC ATC MODs were removed from the ATC Methodology website
 - c. TTC Study Report Request Form was retired, as this form was associated with NERC MOD-029, R4 and this requirement did not transition into NAESB's WEQ-023
 - d. The Data Request Form posted to the ATC Methodology website was simplified
4. There were no changes to BPA's ATC Methodology as part of this effort

Completed ST ATC Improvement #3

Description: Updated generation data for the Headwater federal hydro projects in the heavy load base Existing Transmission Commitment (ETC) cases

1. The Headwater projects are Libby, Hungry Horse, Dworshak, and Albeni Falls
2. BPA has fully transitioned to using the 90th percentile rate case generation values for these projects in BPA's heavy load base ETC cases
3. BPA phased in this modeling change as monthly base ETC studies were updated, and the effort was completed on February 13th, 2024

Completed ST ATC Improvement #4

Description: Updated the methodology used to balance generation and load in the heavy load base ETC cases

1. BPA updated the load and generation balancing methodology used in the heavy load base ETC cases to better align with data on how generation is reduced in the region
 - a. Generators are aggregated by fuel type, scaled, and reduced based on how each generator participates as part of the whole generation fleet
 - b. Columbia Generating Station is not scaled, as this plant is always modeled on
2. BPA phased in this modeling change as monthly base ETC studies were updated, and the effort was completed on May 15th, 2024

In-flight

ST ATC Improvements

(previously discussed in earlier meetings)



In-flight ST ATC Improvement #1

Description: Determine how to manage the transmission system in the Goldendale area

1. BPA is now referring to this area as Rock Creek-John Day (initially referred to as South of Knight)
2. BPA's Planning studies indicate that a system upgrade is needed to accommodate the new generation being built in this area; BPA is upgrading the system to accommodate this new generation
3. BPA has concluded that a commercial path is not needed at this time
4. If the new generation comes online before system upgrades are completed, BPA will monitor flows on the Rock Creek-John Day 500-kV line and issue curtailments if there is an overload
5. BPA will keep customers informed on the status of this area

In-flight ST ATC Improvement #2

Description: Development of ST ATC metrics

1. BPA is continuing to work on ST ATC metrics development
2. BPA is fine-tuning its report to identify large ST ATC swings
3. BPA is utilizing the report to monitor ST ATC swings during various major ST ATC updates and using the results to fine tune internal processes
4. BPA is also working on tools that would enable it to analyze the reasons behind the swings in a more automated fashion

Proposed ST ATC Improvements



Proposed ST ATC Improvement #1

Description: Consolidate TC-20 network curtailment reports

1. Currently, there are two reports at [Hourly Firm Data Monitoring Evaluation - Bonneville Power Administration \(bpa.gov\)](https://www.bpa.gov/~/media/2019/02/2019-02-01-Hourly-Firm-Data-Monitoring-Evaluation-Report.pdf)
 - a. Historical report for 2008 to February 2019
 - b. Report from February 2019 to current, updated monthly if there are curtailments in the previous month
2. BPA proposes to consolidate the two reports into a single report for network curtailments
 - a. The consolidated report will still be updated monthly
 - b. Formatting will be consistent (e.g. dates as dates, not text)
3. Today, BPA would like to preview the consolidated report and receive customer feedback
4. Updated report is proposed to be posted later this summer

Proposed ST ATC Improvement #2

Description: Implement monthly curtailment report for 1:1 ATC paths

1. BPA has created a draft monthly curtailment report for 1:1 ATC paths
2. Today, BPA would like to preview this new report and receive customer feedback
3. BPA would like to begin posting this new report later this summer

Wrap up

1. Comments on today's update are due by Thursday, June 27th, 2024
2. BPA will continue to work on the outlined in-flight and proposed improvements
3. Please send Questions/Comments to techforum@bpa.gov, with a copy to your Account Executive

Appendix – ATC Formulas (Short-Term Horizon)

The firm ATC formula is:

$$\mathbf{ATC_F = TTC - ETC_F - CBM - TRM + Postbacks_F + Counterflows_F}$$

The non-firm ATC formula is:

$$\mathbf{ATC_{NF} = TTC - ETC_F - ETC_{NF} - CBM_S - TRM_U + Postbacks_{NF} + Counterflows_{NF}}$$

Where:

ATC is the firm Available Transfer Capability for the ATC Path for that period.

TTC is the Total Transfer Capability of the ATC Path for that period.

ETC is the sum of existing firm commitments for the ATC Path during that period.

CBM is the Capacity Benefit Margin for the ATC Path during that period.

TRM is the Transmission Reliability Margin for the ATC Path during that period.

TRM_U is the Transmission Reliability Margin that has not been released for sale as non-firm capacity

Postbacks are changes to firm Available Transfer Capability due to a change in the use of Transmission Service for that period, as defined in Business Practices.

Counterflows are adjustments to firm Available Transfer Capability as determined by the Transmission Service Provider and specified in their ATCID.

F subscript refers to Firm; **NF subscript** refers to Non-Firm; **S subscript** refers to Scheduled