Short-Term Available Transfer Capability (ST ATC) Project Update
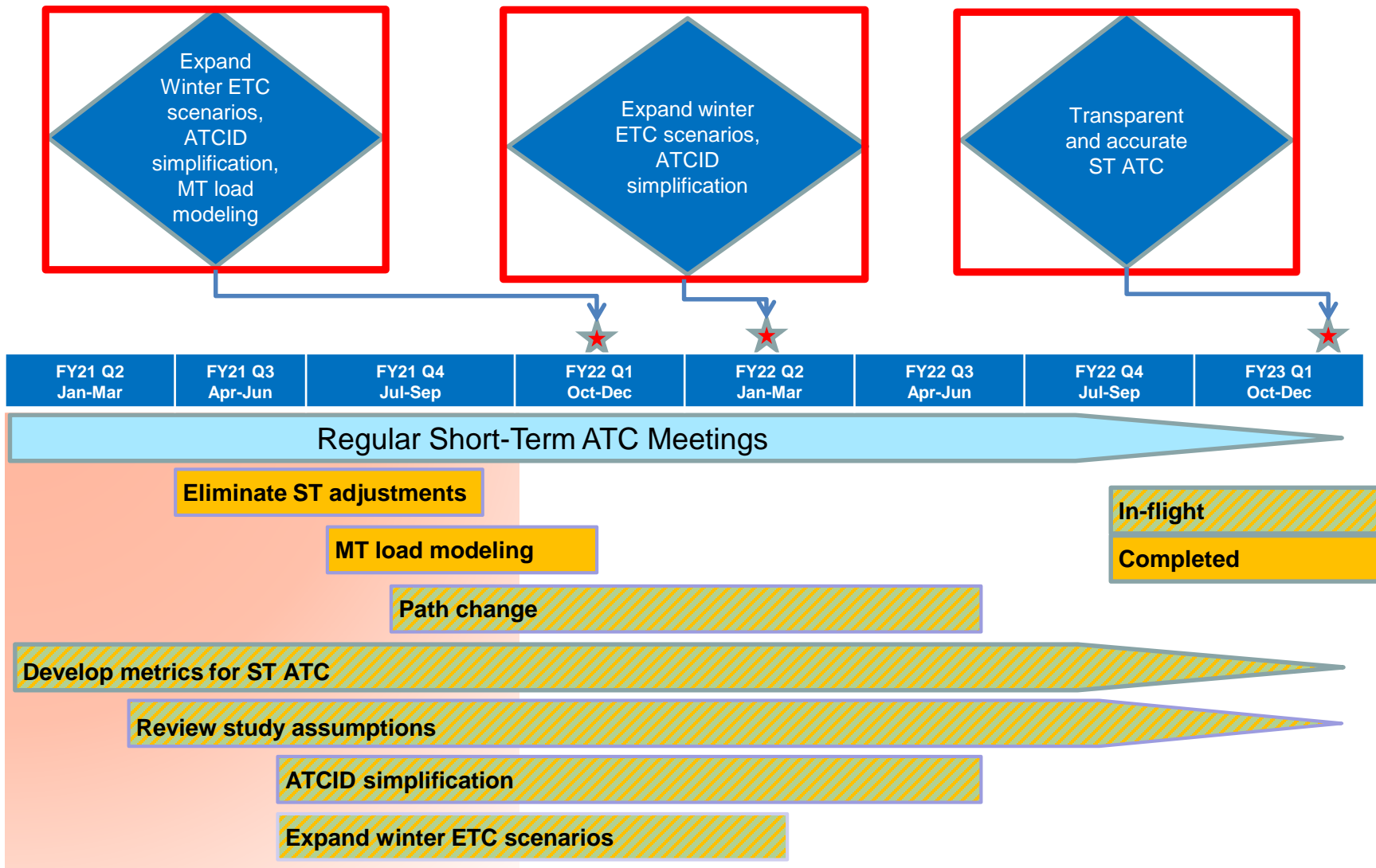
October 26, 2021

Agenda

1. ST ATC Grid Mod Project Timeline

2. Completed ST ATC Improvements

3. In-flight ST ATC Improvements

4. Proposed ST ATC Improvements

5. Customer Feedback Requests

6. Wrap up

7. Appendix – ATC Formulas (NERC Time Horizon)

Short-Term ATC Project Timeline

Expand Winter ETC scenarios, ATCID simplification, MT load modeling

Expand winter ETC scenarios, ATCID simplification

Transparent and accurate ST ATC

FY21 Q2 Jan-Mar	FY21 Q3 Apr-Jun	FY21 Q4 Jul-Sep	FY22 Q1 Oct-Dec	FY22 Q2 Jan-Mar	FY22 Q3 Apr-Jun	FY22 Q4 Jul-Sep	FY23 Q1 Oct-Dec

Regular Short-Term ATC Meetings

Eliminate ST adjustments

In-flight

MT load modeling

Completed

Path change

Develop metrics for ST ATC

Review study assumptions

ATCID simplification

Expand winter ETC scenarios

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Completed
ST ATC Improvements

Completed ST ATC Improvement #1

Description: Eliminated the use of ST ATC adjustments to reflect the use of minimum base Existing Transmission Commitment (ETC) in non-firm ATC calculations

1. BPA has been reviewing all our ST ATC adjustments, and eliminating or automating them if possible

2. BPA was using ST ATC adjustments to properly reflect the use of minimum base ETC values in the non-firm ATC calculations, and undertook an effort to automate this process

3. A new NFETC variable was implemented in the ATC software and this variable eliminated the need for these adjustments

4. Change was outlined in a September 13th, 2021 Tech Forum notice and discussed at the September 15th, 2021 CBPI call

5. System change was made on September 29th, 2021

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Completed ST ATC Improvement #2

Description: Expanded the data sources for the Montana load forecasts used in the light load ETC base cases

1. BPA uses the light load ETC cases to set the base ETC for the West of Hatwai path

2. BPA has been using the Montana load forecasts from the WECC light load cases

3. Upon discussing our ETC studies with the study engineers that set our Total Transfer Capability (TTC) limits for West of Hatwai, the ST ATC team determined that we should compare the Montana loads in the WECC light load case with the light load forecasts that are supplied to us by Montana Power

    a. Using the lowest load forecast of the two will allow BPA to best stress the West of Hatwai path and will result in a more appropriate base ETC

Completed ST ATC Improvement #2 (cont.)

4. BPA has started to use this logic for the Montana loads with the winter seasonal light load ETC case

   a. The winter case was implemented to OASIS for the November through February studies on October 20th, 2021

In-flight
ST ATC Improvements
(previously discussed in earlier meetings)

In-flight ST ATC Improvement #1

Description: Update generation data for the Willamette Valley projects

1. Willamette Valley projects include Big Cliff, Cougar, Detroit, Dexter, Foster, Green Peter, Hills Creek, Lookout Point, and Lost Creek

2. BPA is transitioning to a monthly fleet-aggregate lower 10th percentile of Heavy Load Hour block generation forecast from the planning period of record for these projects

    a. This forecast method replaces the seasonal values from the low water year of 2001 previously used in the heavy load base ETC cases

3. This is a needed accuracy improvement, as BPA has had a static, seasonal generation assumption for these projects

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In-flight ST ATC Improvement #1 (cont.)

4. Updates for the November through February heavy load base ETC cases were implemented to OASIS on October 20th, 2021

   a. BPA will complete this improvement in mid-February 2022, when the March case is implemented to OASIS

In-flight ST ATC Improvement #2

Description: Expand **_winter_** heavy load base ETC studies to include Canadian Entitlement Return (CER) off scenarios

1. The additional scenarios assume that CER will not be delivered to Canada in the winter months and are applied to the current cases stressing the Federal hydro zones and toggling the wind on/off

    a. This scenario expansion is driven by usage changes on BPA's system

    b. Improvement allows us to fully account for the firm rights that may be used in these scenarios

    c. The scenarios are already included in spring/summer base ETC studies

2. Updates for the November through February heavy load base ETC cases were implemented to OASIS on October 20th, 2021

    a. BPA will complete this improvement in mid-February 2022, when the March case is implemented to OASIS

In-flight ST ATC Improvement #3

Description: Development of ST ATC metrics

1. The ST ATC project is continuing work on ST ATC metrics

2. The ST ATC team has been primarily focused on metrics surrounding base ETC and TTC data

3. The following slides provide more detail on the work that has occurred over the last several months

In-flight ST ATC Improvement #3 (cont.)

Base ETC metrics

1. Base ETC data has been migrated into a central database

2. Team has designed several base ETC reports and is working on automating them

3. Maximum and minimum base ETC reports

    a. These reports are used to implement the base ETC data to OASIS and are currently manually built

    b. Automation of the reports optimizes our processes

4. Comparison report of base ETCs from current year and prior year

    a. This report allows the team to analyze the differences in base ETCs from year to year and ensure accuracy of our study results

In-flight ST ATC Improvement #3 (cont.)

TTC metrics

1. The ST ATC team has been working on a report to answer the question of "Should BPA be setting TTC based on an All Lines in Service (ALIS) seasonal limit assumption for beyond 2 to 3 weeks out on the flow-based paths?"

2. This report has been designed and is being automated

    a. The report compares the seasonal ALIS TTCs with outage-informed TTCs across each flow-based path

3. Once the report is automated, BPA will be looking at the differences between the seasonal ALIS and outage-informed TTCs to determine next steps for each path

In-flight ST ATC Improvement #4

Description: ATCID streamlining

1. BPA is streamlining its ATCID

2. Effort is driven by BPA's goal of a transparent ATC methodology, and by BPA's challenge of keeping the current ACTID updated as required by NERC Standard MOD-001, Requirement 3

3. BPA has completed Phase I of its ATCID streamlining

    a. 1:1 ATC and flow-based ATC Path sections were consolidated into one

4. Two additional phases remain:

    a. Review the content within the document and eliminate any unnecessary information remaining from BPA's use of NERC Standard MOD-030

    b. Attempt to streamline/simplify the document overall, with a specific focus on the sections that detail firm and non-firm ATC calculations

In-flight ST ATC Improvement #4 (cont.)

5. BPA will meet with customers to go over changes as a result of this effort in advance of their implementation

6. Improvement timelines are driven by a compliance violation mitigation plan that BPA has opened with WECC on NERC Standard MOD-001, Requirement 3

   a. The ATCID needs to be brought into a more transparent and easier to maintain format by May 15th, 2022

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Proposed
ST ATC Improvements

Proposed Improvement #1

Description: Retirement of Paul-Allston path

1. BPA has performed an analysis of the Paul-Allston path and determined that this path can be retired in the long-term and short-term markets without impacting system reliability

2. The retirement of this path will be coordinated between the short-term and long-term markets

3. Customer impacts, when the path is retired:

   a. Path will not be posted in OASIS or referenced in ATC documentation

   b. BPA will no longer calculate long-term or short-term ATC for Paul-Allston

   c. Transmission Service Requests (TSRs) will not require ATC across this path

   d. BPA will not monitor the path for curtailments

Proposed Improvement #1 (cont.)

4. Until the Paul-Allston path is retired, all current processes remain unchanged

5. The process to retire the path has been started but a firm retirement date is unknown at this time

Proposed Improvement #2

Description: Improve the accuracy of ST ATC by amending the demand that customers submit on their long-term Network Integration Transmission Service (NT) TSRs with a Source/Point of Receipt (POR) of FCRPS/BPAPower

1. The ST ATC team has been working to ensure the accuracy of BPA's ST ATC, and has identified a legacy process that is a risk to this effort

2. The risk stems from BPA's request that NT customers submit their long-term TSRs with a Source/POR of FCRPS/BPAPower with a demand of 99999 MW

   a. NT customers are asked to specify their actual forecasted peak MW demand in the comment section of the request

Proposed Improvement #2 (cont.)

3. Even though NT customers are asked to submit these TSRs with a 99999 MW demand, BPA encumbers and authorizes ATC for these TSRs based on the peak MW demand specified in the comment field of the TSRs

    a. Once the TSRs are Confirmed in OASIS, BPA Recalls down the demand of the TSRs from 99999 MW to the peak MW value reflected in the comment field

    b. The TSRs need to be Recalled down to the actual peak MW value, as the ATC impacts for all TSRs are automatically calculated by our ATC software. Requests with a 99999 MW are extremely inflated and not accurate for our management of ST ATC.

4. The manual processes required to manage these TSRs and profile them to reflect a proper demand expose BPA and customers to inaccurate swings in ST ATC

Proposed Improvement #2 (cont.)

5. Current process: NT customers submit their long-term NT TSRs with a Source/POR of FCRPS/BPAPower with 99999 MW in the MW field of the TSR

    a. Customers list their peak MW demand in the comment field of the TSRs

6. Proposed process: NT customers submit their long-term NT TSRs with a Source/POR of FCRPS/BPAPower with their peak MW demand forecast in the MW field of the TSR

Proposed Improvement #2 (cont.)

7. Impacts of the proposed process change

    a. This change only impacts how **future long-term NT TSRs with a Source/POR of FCRPS/BPAPower** will be submitted to BPA on OASIS

    b. There are no changes to how requests are evaluated for ATC

    c. There are no changes to existing contracts

    d. There are no changes to future contracts (long-term contracts for the Source/POR of FCRPS/BPA Power will continue to reflect a demand of "Net Requirements")

    e. There are no changes to NT customer rights

        i. The "No Demand" ND suffix allows NT customer schedules to bypass the demand check against the TSR, allowing customers that are Net Requirements to meet their full load obligation

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Proposed Improvement #2 (cont.)

8. Benefits of change

    a. Eliminates manual work by BPA to profile down the TSRs from 99999 MW to the peak MW demand when TSRs are Confirmed in OASIS

    b. Eliminates risk of invalid ST ATC swings that can occur with the manual profiling of these requests

    c. Aligns the process for TSRs with a Source/POR of FCRPS/BPAPower with other NT TSRs, which already have to be submitted at the expected MW demand

9. Proposed implementation date will coincide with the revision to the NT business practice

    a. Process for the business practice revision will be followed as usual

Customer Feedback Requests

Customer Feedback Requests

As BPA continues to work to make its ST ATC methodology and associated ST ATC tools more useful to customers, we'd like customer feedback on the following items:

1. ST Calculators

    a. The ST calculators are available for customers on BPA's website at: https://www.bpa.gov/transmission/Reports/TransmissionAvailability/Pages/default.aspx

    b. These ST calculators deliver an analysis based on ALIS Power Transfer Distribution Factors (PTDFs)

        i. This deviates from the outage-informed PTDFs that are updated on an hourly basis in BPA's ATC software

        ii. Customers may see different impacts between the ST calculators posted on our website and BPA's ATC software when TSRs are submitted

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Customer Feedback Requests

c. Maintenance of the ST calculators is a time-intensive and manual process for BPA

d. Unless customers specify that they want these calculators to be maintained, BPA will plan on discontinuing them

Customer Feedback Requests (cont.)

2. ATC Implementation Document (ATCID)

   a. Are the transmission line components for the flow-based ATC Paths found in Table 2 of the ATCID useful to customers? If not, BPA would like to eliminate this information in future ATCID simplifications

   b. Do customers find the cross-walk between the ETC and ATC formulas and BPA's ATC software variables useful? Example of this information is below. If this information is not being used, BPA would like to either eliminate it or move this information out of the ATCID.

$ETC_F =$	$NITS_F$	+	GF_F	+	PTP_F	+	ROR_F
	↓		↓		↓		↓
	LRES		LRES		LRES		LRES
	+				+		
	SRES				SRES		
	+		+		+		+
	LETC		LETC		LETC		LETC
	-		-		-		-
	SADJ/ETC		SADJ/ETC		SADJ/ETC		SADJ/ETC
	Adjustments		Adjustments		Adjustments		Adjustments

Wrap up

1. BPA will continue to work on the in-flight and proposed ST ATC changes and will update its ATCID prior to implementation of any changes

   a. BPA will communicate additional information and/or implementation dates via Tech Forum

2. Comments on today's update are due by November 9th, 2021

3. Please send Questions/Comments to techforum@bpa.gov, with a copy to your Account Executive

4. As a reminder, BPA will be holding ST ATC Project updates less frequently going forward

   a. Next meeting will be held in May 2022

   b. BPA will schedule additional, topic specific meetings between now and May 2022, if needed (i.e. Phase II of the ATCID simplification)

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Appendix – ATC Formulas (NERC Time Horizon)

The firm ATC formula is:

$$ATC_F = TTC - ETC_F - CBM - TRM + Postbacks_F + Counterflows_F$$

The non-firm ATC formula is:

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

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

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