



Long Term Available Transfer Capability Management Tool (LTAMT)

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What is the LTAMT?

- A new application to manage Long Term Available AFC and ATC inventory.
 - Resides in Commercial Business Support Application (CBSA)
 - Used to manage CONFIRMED LT TSRs only (not queued)
- The LTAMT calculates:
 - AFC Final Combined Equation
 - ATC
 - Available Substation Capacity
 - Deferral Impacts and Deferral Number
 - Contract Accounting ETC for the Final Combined AFC
 - Wind On and Wind Off Weighted FCRPS PUF
 - Generation Allocation and Allocation vs. Nameplate Report
 - Head of Inerties Report (AC/DC)

Organizational Goals

- The LTAMT is a foundational project helping us achieve several goals:
 - Using standard processes to become more efficient and effective
 - Repeatable processes supported by centralized business systems,
 - Standard tools to plan and execute business processes (e.g. moving away from manual processes reduces business risk and creates repeatable and consistent processes)
 - Critical knowledge is centralized and accessible
 - Logical, streamlined process that can be foundational for further uses (i.e. integrate with Planning data, forecast data etc.)
 - Being transparent by using consistent and repeatable reservation processes
 - Systematic and reproducible business results
 - Sound work flow structures that support effective exchange of information between interdependent groups/work functions (better ability to meet regulatory and compliance requirements)
 - Provide high quality customer experience

Before the LTAMT

- **Long Term Available Transmission Capacity (ATC) inventory was calculated for over 8 years using linked spreadsheets (approximately 38):**
 - 1 Final Combined AFC/In Between Fixes Workbook
 - 4 Mastersheets and 4 Grand Sums Workbooks
 - 16 Intertie, External Interconnection, ATC Path Sheets
 - 1 Deferral Queue Sheet
 - 11 Substation Tracking Sheets
 - 1 Newpoint Tracking Sheet

- **Limitations of using a large number of linked spreadsheets to manage ATC and AFC**
 - Data Risks:
 - Increased risk of data entry errors due to large volume of manual work
 - Excel system limits at maximum capacity which has caused data corruption problems
 - Inefficiencies:
 - Proper accounting in spreadsheets require extensive time, training, and double checking by staff
 - Data entry preparation for a long term basecase currently takes two staff members at least 120 hours each
 - Static Information:
 - Some of the data modeling is static and not representative of the current system topology
 - Changes to system topology (ex. Adding of flowgates) are not easy to implement
 - Inhibits the integration of technologies between departments using interrelated data

LTAMT Benefits

	Spreadsheets	LTAMT
TSR Processing	Multiple locations with numerous spreadsheets to access and input TSR information	Single display for TSR's attributes such as MWs, POR/POD or Source/POR and calculation characteristics
Basecases	Labor intensive preparation work to update PTDFs, NT Load Forecasts, incorporate contract updates and add any new assumptions	<p>Improved efficiency by reducing Reservation Desk preparation work from at least 3 weeks using 2-4 FTEs to a few hours using 1 FTE</p> <p>Easy imports of basecase data versus manually entering data</p> <p>Provides the ability to run more frequent basecases</p>
AFC Commitments	One-time calculation of TSR flowgate impacts of TSRs confirmed between the annual base case	Dynamic updating of flowgate impacts; commitment calculations are updated when the PTDFs are updated, ensuring consistency of the system model

LTAMT Benefits *(continued)*

	Spreadsheets	LTAMT
Demand Modeling	<p>Manual data entry</p> <p>Numerous spreadsheets, data and formulas to maintain</p> <p>Contracts with TSR demands exceeding rights were modeled differently which is inconsistent with the ATC Methodology and impossible to create a standard training method.</p>	<p>Automated calculations for:</p> <p>Application of the NT Load Forecasts</p> <p>Wind Off and Wind On information</p> <p>PTP commitments in the Allocation vs. Nameplate report</p> <p>Non-Federal Resource demand that offsets Federal demand</p> <p>Consistently modeling contracts where TSR demands exceed rights</p>
Generators	<p>About a month of manual work to add or remove generators and update macros in 8 spreadsheets. Requires IT resource availability to work with Reservation Desk.</p>	<p>Reservation Desk can instantly add or remove generators</p>

LTAMT Benefits *(continued)*

	Spreadsheets	LTAMT
Power Transfer Distribution Factor	<p>Manual entry of PTDF's into the spreadsheets (about 145,000 cells for PTDF entry) – 2 FTE enter and check work over a couple weeks</p> <p>Could not use multiple PTDFs in the spreadsheets</p>	<p>Takes only a few minutes to import PTDFs – 1 FTE</p> <p>Multiple PTDFs may be used over the Long Term Horizon, which provides more flexibility in our decision making, strategy and planning.</p>
Subgrid Analysis	<p>Planning often requests reservations from specific areas to better understand subgrid constraints</p> <p>Subgrid constraints not transparent to Planning or to BPA customers</p> <p>Some information to Planning was a manually generated report by the Res Desk.</p>	<p>Reservation Desk and Planning worked together to create a crosswalk mapping of translating some Subgrid constraints from network buses to Source/POR combinations</p> <p>Limits can be defined by the Source/POR combinations. As TSRs with the Source/POR combinations enter the system, they automatically get reflected as a commitment.</p> <p>Planning can now view to these constraints on their own to further study the system.</p>
Data Imports	<p>Weeks of hand entry i.e.</p> <p>NT Load Forecast (~30,000 cells for hand entry) – 2 FTE entering and checking the work</p> <p>PUF Factors (~145,000 cells for hand entry) – 2 FTE entering and checking the work</p>	<p>Imports uploaded by 1 FTE in a few minutes i.e.</p> <p>External Intertie Load Forecast , TSR Load Forecast and NT Load Forecast</p> <p>Dispatch Pattern , Must Run, and Westside Generation</p> <p>External and Flowgate ATC/AFC Adjustments, Planning ATC, PUF Factors, and PUF Normalization Factors</p>

Release Plan

- 12/11/12 LTAMT Released to Production
- 12/31/12 Finalize LTAMT Testing
- 1/8/13 TS Manager Meeting
- 1/10/13 BPA Connections Article
- 1/15/13 BPA Brown Bag Lunch Demo of LTAMT
- 1/17/13 Customer Conference Call
- 1/29/13 OASIS Posting and Go Live!

Questions or Comments