



Transmission Services

Available Transfer Capability (ATC) and Available Flowgate Capability (AFC) Methodologies for the Planning Time Period, Version ~~7~~⁶

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Table of Contents

1. Purpose	2
2. Definitions	2
3. Introduction	2
4. ATC Methodology for the External Interconnections, Interties and Network Paths	3
5. AFC Methodology for Network Flowgates	3
6. Management of AFC between Annual Planning Baseline Studies	5
7. Modifications to ATC Methodology	5
8. Related Business Practices	6

1. Purpose

The Available Transfer Capability (ATC) and Available Flowgate Capability (AFC) methodologies set forth in this document are Transmission Services' methodologies for calculating ATC on the External Interconnections, Interties and Paths internal to BPA's Network (Network Paths) and calculating AFC on the Flowgate internal to BPA's Network (Network Flowgates) for the Planning Time Period (beyond 13 months). BPA's ATC and AFC Methodologies for the time horizon up to month 13 is provided in the ATC Implementation Document posted on Transmission Services' ATC Methodology website.

2. Definitions

Unless otherwise defined herein, capitalized terms are defined in BPA's Open Access Transmission Tariff (OATT), ~~2010-2012~~ Transmission & Ancillary Service Rate Schedules or successor rate schedules (Rate Schedules), the Business Practices, Federal Energy Regulatory Commission (FERC) Standards and Communication Protocols for OASIS, and/or the North American Electric Reliability Corporation (NERC) Glossary of Terms.

- 2.1 ATC Methodology Margin (AMM): The margin accounting for the portion of differences between Contract Accounting and Planning methodologies for calculating Existing Transmission Commitments (ETC) to address uncertainties between these two methodologies in the Planning Time Period (beyond 13 months).
- 2.2 Planning Time Period: The time horizon beyond 13 months.

3. Introduction

- 3.1 BPA owns the Federal Columbia River Transmission System (FCRTS). Transmission Services provides Transmission Service over the FCRTS under its OATT and other grandfathered contracts.
- 3.2 The FCRTS is used to deliver power between resources and Loads within the Pacific Northwest, and to transmit power between and among the Pacific Northwest region, western Canada and the Pacific Southwest.
- 3.3 The FCRTS is comprised of BPA's main grid network Facilities (Network), including constrained Paths interconnecting with other Transmission Systems (External Interconnections¹); Interties;² delivery Facilities; subgrid Facilities, and generation interconnection Facilities.
- 3.4 BPA calculates ATC for the External Interconnections, Interties, and Network Paths. See the ATC Implementation Document posted on Transmission Services' ATC Methodology website for a map and description of these Paths.

¹ Northern Intertie, Reno-Alturas Transmission System, West of Hatwai, West of Garrison and LaGrande Paths. West of Hatwai is treated as an External Interconnection because its operating characteristics are similar to an External Interconnection and this Flowgate has historically been treated as such.

² Southern Intertie (AC Intertie and DC Intertie) and Montana Intertie.

- 3.5 BPA calculates AFC for the Network Flowgates. See the ATC Implementation Document posted on Transmission Services' ATC Methodology website for a map and description of these Network Flowgates.

4. ATC Methodology for the External Interconnections, Interties and Network Paths

- 4.1 Transmission Services uses the Contract Accounting Methodology, which is posted on Transmission Services' ATC Methodology website, for ATC determinations for Interties, External Interconnections³, and Network Paths during the Planning Time Period using the following algorithm:

$$\text{ATC} = \text{TTC} - \text{Contract Accounting ETC}$$

- 4.2 The ATC Methodology for the period up to the Planning Time Period is described in the ATC Implementation Document, which is posted on Transmission Services' ATC Methodology website.

5. AFC Methodology for Network Flowgates

- 5.1 Transmission Services uses a Combined Planning/Accounting Methodology for the constrained Flowgates internal to the Network (Network Flowgates). The Combined Planning/Accounting Methodology combines a Planning Methodology, referred to as the Power Flow Base Case Methodology, which measures physical power flows on BPA's Network Flowgates with a Contract Accounting Methodology that reflects contractual obligations for Long-Term Firm Transmission Services in the Planning Time Period.
- 5.2 Transmission Services developed its Combined Planning/Accounting Methodology to establish a method that Transmission Services will use to determine baseline AFC values for each Network Flowgate for such needs as System Planning and Transmission marketing.⁴
- 5.3 The following is a step-by-step explanation of how Transmission Services uses the Combined Planning/Accounting Methodology to calculate the baseline AFC for each Network Flowgate for the Planning Time Period:

5.3.1 TFC for Each Network Flowgate

The TFC for each Network Flowgate represents the flowgate capability of the BPA-owned Transmission lines and associated Facilities comprising such Network Flowgate. The description of Transmission Services' determination of TFC is described in the ATC Implementation Document posted on Transmission Services' ATC Methodology website.

³ Northern Intertie, AC Intertie, DC Intertie, West of Garrison, Reno-Alturas Transmission System, West of Hatwai, LaGrande, and Montana Intertie

⁴ Development of the initial ATC Methodology included a series of open customer meetings held in 2003. Revisions to the methodology are developed in accordance with BPA Transmission Services' business practice process, involving customer meetings and review and comment period.

5.3.2 Compute the Contract Accounting ETC

The Contract Accounting Methodology evaluates existing Long-Term Firm Transmission contracts, including grandfathered contracts (Formula Power Transmission (FPT), Integration of Resources (IR), other pre-Order 888 agreements), and statutory and treaty obligations; Network Integration (NT); and Point-to-Point (PTP) Service Agreements and maps their contract obligations to each of the Network Flowgates for the Planning Time Period using Power Transfer Distribution Factors (PTDFs). Transmission Services' Contract Accounting Methodology for the Planning Time Period and PTDFs are posted on Transmission Services' ATC Methodology website.

5.3.3 Compute the Planning ETC

Transmission Services computes planning power flows for the months of January, May, June, and August using base case assumptions during its annual planning baseline studies. Transmission Services' Power Flow Base Case Methodology and assumptions are described in the Power Flow Base Case for the Planning Time Period posted on Transmission Services' ATC Methodology website.

5.3.4 Compute the Delta between Contract Accounting ETC and Planning ETC

$\text{Delta} = \text{Contract Accounting ETC} - \text{Planning ETC}$

The Planning ETC for January, May, June, and August is subtracted from the Contract Accounting ETC for the same months to compute the Delta for those months. The Delta, which may be a positive or negative value for each of those months, is used as the delta value for the other months in the corresponding season⁵.

5.3.5 Determine the AMM

AMM is the margin inserted into the final AFC calculation to account for uncertainties in the Planning Time Period. Transmission Services' determination of AMM for each Network Flowgate is posted on the ATC Methodology page of Transmission Services' website.

5.3.6 Calculate Final AFC

$\text{Final AFC} = \text{TFC} - \text{Planning ETC} - \text{AMM}$

AFC values for the Planning Time Period are posted on Transmission Services' OASIS and Transmission Availability website.

⁵ January Delta applies to November - February; May delta applies to April - May; June Delta applies to June only; August Delta applies to July - August. March Delta is the average of the January and May Deltas. October Delta is the average of the August and January Deltas. September Delta is the weighted average of the August and January Deltas, where the weighting is as follows: (0.75 x August Delta); and (0.25 x January Delta).

6. Management of AFC between Annual Planning Baseline Studies

- 6.1 Transmission Services will perform planning power flow studies to update final AFC baseline amounts for the Network Flowgates for the Planning Time Period at least once per year.
- 6.2 In the interim, Long-Term Firm Transmission Service Requests (TSRs) for new Transmission Service will be evaluated by determining the impact the new request has on each Network Flowgate using the Impacts of Long-Term Firm Requests posted on Transmission Services' ATC Methodology website.
- 6.3 A Long-Term Firm TSR will be granted if there is:
 - 6.3.1 Sufficient AFC at each Network Flowgate and sufficient ATC on all Paths for all time periods, including the Planning Time Period as adjusted for higher queued TSRs,
 - 6.3.2 Sufficient *de minimis* capacity on Network Flowgates if the TSR qualifies as having a *de minimis* impact on the Flowgate (See *De Minimis* on Transmission Services' ATC Methodology website for further details), and
 - 6.3.3 No subgrid or local area issue(s) are identified.
- 6.4 Where there is insufficient AFC to grant a Long-Term Firm TSR or there are subgrid or local area issues identified, System Impact or other Studies, as specified by the OATT, would be required.
- 6.5 When a new TSR is granted, the baseline final AFC for each Flowgate (except those with *de minimis* impact) will be decremented by the new transaction's use of the Flowgate.
- 6.6 When the next Long-Term Firm AFC baseline amounts are calculated, any new Long-Term Firm arrangements, including those with *de minimis* impacts, will be included in the planning power flow studies and contract accounting analysis, and incorporated into the final AFC results for each Flowgate.

7. Modifications to ATC Methodology

- 7.1 When modifying the ATC and AFC Methodologies for the Planning Time Period, Transmission Services will provide a notice and comment period for changes to the following items (items not expressly identified, will not be subject to such notice and comment):
 - 7.1.1 The arithmetic formulas described in Steps 5.3.1 through 5.3.6 above used to calculate AFC using the Combined Planning/Accounting Methodology described in this AFC Methodology;
 - 7.1.2 The methodology for determining Load forecasts as described in the Power Flow Base Case for the Planning Time Period;
 - 7.1.3 The generation dispatch levels of Federal hydro projects for NT Load service described in the Contract Accounting Methodology for the Planning Time Period and Power Flow Base Case for the Planning Time Period;

- 7.1.4 The netting assumptions described in the Contract Accounting Methodology for the Planning Time Period.
- 7.2 The ATC Methodology documents described above are posted on Transmission Services' ATC Methodology web page.

8. Related Business Practices

Transmission Services Business Practices are available on its web site at http://transmission.bpa.gov/ts_business_practices/.

ATC Supporting Information and Related Information/Documents are available on Transmission Services' web page at

http://transmission.bpa.gov/business/atc_methodology/