Transmission Use Committee
ATC Initiative
Proposed Term Definitions

Available Transfer Capability (ATC) - A measure of the transfer capability remaining in the physical transmission network for further commercial activity over and above already committed uses. Mathematically, ATC is defined as the total Total Transfer Capability (TTC) less the Transmission Reliability Margin (TRM), and the sum of the existing transmission commitments (which includes retail customer service) and the Capacity Benefit Margin (CBM).[1]

Total Transfer Capability (TTC) - the amount of electric power that can be transferred over the interconnected transmission network in a reliable manner while meeting all of a specific set of defined pre- and post-contingency system conditions.[2]

Operating Transfer Capability Limit (OTC) - means the maximum value for the most critical system operating parameters(s) which meets: (a) pre-contingency criteria as determined by equipment loading capability and acceptable voltage conditions, (b) transient criteria as determined by equipment loading capability and acceptable voltage conditions, (c) transient performance criteria, and (d) post-contingency loading and voltage criteria.[3]

Discussion on TTC vs. OTC[4]

> Actual power flow and net scheduled power flow over an interconnection or transfer path shall be maintained within OTC Limits. OTC is the maximum amount of actual power that can be transferred over direct or parallel transmission elements comprising an interconnection from one Transmission Operator area to another Transmission Operator area or a transfer path within a Transmission Operator area. The net schedule over an interconnection or transfer path within a Transmission Operator area shall not exceed the OTC, regardless of the prevailing actual power flow on the interconnection or transfer path. OTC limits are typically adjusted on a seasonal basis.
>
> TTC represents the reliability limit of a transmission path at any specified point in time. It is a variable quantity, dependent upon operating conditions in the near term and forecasted conditions in the long term. TTC cannot exceed the OTC. TTC may sometimes be better defined by a nomogram, a set of nomograms, or a

[1] NERC, June, 1996, white paper "Available Transfer Capability Definitions and Determination"
[2] NERC, "Available Transfer Capability Definitions and Determination"
[3] Western Electricity Coordinating Council, Standard TOP-STD-007-0.
[4] Rocky Mountain Operation and Planning Group, June, 2001, "Determination of Available Transfer Capability Within The Western Interconnection"

series of equations than by a single number, particularly when determining TTC values for two or more parallel or interacting paths. Where the simultaneous transfer capabilities of paths are limited by the interactions between paths, the Transmission Provider should make this know on the OASIS. This may be done by posting non-simultaneous TTC and subtracting TRM, where TRM includes the difference between non-simultaneous and simultaneous limits. As an alternative to computing TRM, the Transmission Provider may post non-simultaneous TTC and describe on the OASIS the nomogram and associated curtailment conditions.

Transmission Reliability Margin (TRM) - The amount of transmission transfer capability to provide a reasonable level of assurance that the interconnected transmission network will be secure. TRM accounts for the inherent uncertainty in system conditions and its associated effects on ATC calculations, and the need for operating flexibility to ensure reliable system operation as system conditions change. All transmission system users benefit from the preservation of TRM by transmission providers.[5]

Capacity Benefit Margin (CBM) - The amount of firm transmission transfer capability preserved for Load Serving Entities (LSEs) on the host transmission system where their load is located, to enable access to generation from interconnected systems to meet generation reliability requirements. Preservation of CBM for a LSE allows that entity to reduce its installed generating capacity below what may otherwise have been necessary without interconnections to meet its generation reliability requirements. The transmission capacity preserved as CBM is intended to be used by the LSE only in times of emergency generation deficiencies.[6]

Existing Transmission Commitments (ETC) – Reservations of transmission capacity by network and point-to-point customers. ETC may also include forecasts to secure capacity to accommodate future native load growth and good faith requests for future transmission service.[7]

[5] NERC, June 17, 1999, white paper "Transmission Capability Margins and Their Use in ATC Determination"
[6] NERC, "Transmission Capability Margins and Their Use in ATC Determination"
[7] Rocky Mountain Operation and Planning Group, “Determination of Available Transfer Capability Within The Western Interconnection”