

## **ATTACHMENT C**

### **Methodology to Assess Available Transmission Capability**

This methodology is excerpted from the report "Determination of Available Transfer Capability within the Western Interconnection," adopted by the Colorado Coordinated Planning Group, Northwest Regional Transmission Association, Southwest Regional Transmission Association, Western Regional Transmission Association and Western Systems Coordinating Council in March 1997. WECC, as the successor organization to the Southwest Regional Transmission Association, Western Regional Transmission Association and Western Systems Coordinating Council, adopted the report in June 2001. SRP is a member of the WECC.

In assessing the Available Transmission Capability (ATC) of its transmission system capacity to fulfill new requests for transmission service, SRP shall use a 10 year planning horizon and may exclude transmission capacity needed to meet the forecasted loads of its Native Load customers, contractual obligations of any existing or new firm transmission service agreements, contractual obligations of current or new agreements for sales of firm power and energy to third parties, and pending applications for firm Point-To-Point and Network Integration Transmission Services.

#### **1. Determination of ATC**

The process for determining ATC should be reasonable, auditable and supportable. It consists of three steps: (1) the determination of Total Transfer Capability (TTC), (2) the allocation of TTC between Rights Holders, and (3) the determination of each transmission Rights Holder's Committed Uses. ATC is then determined by subtracting Committed Uses from allocated TTC.

$ATC = TTC \text{ (allocated)} - \text{Committed Uses}$

Using NERC ATC terminology,

$\text{Committed Uses} = \text{TRM} + \text{Existing Transmission Commitments (including CBM)}$

Where TRM = Transmission Reliability Margin

CBM = Capacity Benefit Margin

"Committed Uses" is described in Section 1.3 in terms of the six RTG categories of Committed Uses, NERC TRM, Existing Transmission Commitments and CBM.

For information on the determination of ATC and the related operating and planning relationships, refer to the NERC document, "Available Transfer Capability - Definitions and Determination" (June 1996), specifically the sections entitled "Determination of Available Transfer Capability," page 15, "Commercial Components of Available Transfer Capability," pages 15 to 18, and "Recallable and Non-recallable Relationships and Priorities," pages 18 to 21.

#### **1.1 Determination of Total Transfer Capability (TTC)**

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 path rating. Within the Western Interconnection, a wide area approach is used to determine TTC on a path basis using the Rated System Path method discussion in WECC's "Procedures for Regional Planning Project

Review and Rating Transmission Facilities” (March 1995) and NERC’s “Report on Available Transfer Capability Definitions and Determination” (June 1996). The determination of TTC is required to conform to WECC’s “Procedures for Regional Planning Project Review, Project Rating , and Progress Reports” (March 1995, Revised April 2005) and WECC’s “Minimum Operating Reliability Criteria”. If a Rights Holder (Transmission Provider) chooses not to obtain a WECC Accepted Rating, it still must conform to the rating methods defined in these documents. Specific system operating conditions (system topology, load/generation patterns, simultaneous path loadings, and facility outages) may require that TTC or TRM be adjusted to maintain system reliability.

TTC may sometimes be better defined by a nomogram or set of nomograms than by a single number, particularly when determining TTC values for two or more parallel paths. Where the simultaneous transfer capabilities of paths are limited by the interactions of flows on paths, the Rights Holder (Transmission Provider) should make this known 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 Rights Holder may post non-simultaneous TTC and describe on the OASIS the nomogram and associated curtailment conditions. In either case, Non-recallable ATC should be based on the best estimate of the simultaneous capability of the path during the period posted.

### 1.2 Allocation of TTC

When multiple ownership of transmission rights exists on a path or parallel paths, it is necessary to reach agreement on the allocation of transmission rights in order to determine and report ATC.<sup>1</sup> A single TTC number, appropriate for the actual or projected condition of the transmission system, will be agreed upon for the path and this TTC will then be allocated between the Rights Holders, to yield each Rights Holder’s share of the path’s TTC for the ATC posting period.

If the multiple Rights Holders can’t come to an agreement amongst themselves, the WECC provides a dispute resolution forum through which path rating and allocation issues may be addressed.

### 1.3 Determination of Committed Uses

This section describes the principles, practices and methodology for the determination of Committed Uses in terms of the NERC components of TRM, Existing Transmission Commitments and CBM. The relationship is shown between these components and the five components of Committed Uses (CU1 - CU5) contained in WECC protocols. The five categories of Committed Uses are:

1. Native Load Uses (CU1)
2. Prudent Reserves (CU2)
3. Existing Commitments for purchases/exchanges/deliveries/sales (CU3)

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<sup>1</sup>The allocation rules may address allocations for both normal conditions and system outage conditions.

4. Existing Commitments for transmission service (CU4)
5. Other Pending Potential Uses of transfer capability (CU5)

#### 1.3.1 Principles for Determination of Committed Uses

This document adopts a non-prescriptive approach for addressing the determination of Committed Uses. A prescriptive approach based on uniform rules, planning criteria, and assumptions was felt unworkable in the near-term and unnecessary in the long-term. For the same reasons, it was also decided not to develop a list of “safe harbor” assumptions or specific criteria for reasonable assumptions.

The key to the successful implementation of the non-prescriptive approach is development of specific principles, guidelines and reasonableness tests that will be used by transmission Rights Holders in making their assumptions and determinations of Committed Uses and will provide guidance for dispute resolution proceedings.

Under this non-prescriptive approach, Rights Holders will be expected to:

Use reasonable, “good faith” assumptions, consistent with general principles outlined in this document.

Make those assumptions and the underlying justifications for those assumptions available, in accordance with NERC and WECC standards, FERC Order 888 and FERC Order 889.

Justify such assumptions and results, if called upon to do so, in applicable dispute resolution forums, (i.e. FERC 888 tariff process and WECC or other dispute resolution processes).

Adopt assumptions, which are consistent with documented and consistently applied reliability requirements, including WECC Minimum Operating Reliability Criteria, WECC Power Supply

Design Criteria, WECC Reliability Criteria for System Planning, and the Transmission Provider's documented and consistently applied internal reliability criteria.

Apply all assumptions comparably, non-discriminatorily and reasonably. A Rights Holder's assumptions and methodologies, taken as a whole, must be consistently applied and treat all transmission users (including the Rights Holder) in a comparable and non-discriminatory manner.

Use assumptions and methodologies that reasonably maximize the availability of transfer capability for market participants, provided that the outcome meets transmission system reliability requirements and does not impose uncompensated costs of the Rights Holder.

A Rights Holder's assumptions and methodologies for determining ATC must be consistent with the assumptions used by the Rights Holder in other aspects of its business (for example, system planning).

#### 1.3.2 Determination of NERC Transmission Reliability Margin (TRM)

## NERC TRM is a part of RTG Prudent Reserves - (CU2)

In the Western Interconnection methodology, TTC (or non-recallable ATC) reductions associated with TRM may include allowances for unscheduled flow, simultaneous limitations associated with operation under a nomogram, uncertainty in load forecast<sup>2</sup> and unplanned transmission outages (for paths in which contingencies have not already been considered in establishing the path rating). TRM does not include allowances for planned outages and other known transmission conditions, which should be included in the calculation of TTC. The Rights Holder has the option of including the above-described components of TRM in either the determination of TRM or TTC, but not in both. The Rights Holder should make its methodology and assumptions for determination of TRM available upon request.

Allowances for transmission contingencies should not be included in TRM for paths which have had an Accepted Rating established, since contingencies are already included in the determination of the Accepted Rating. A Rights Holder which desires to reduce its risk of prorata curtailment must explicitly request a reservation of additional rights. Such rights cannot be reserved under the auspices of Prudent Reserve or TRM. Where such reserved rights are not scheduled for use, the Rights Holder is required to make such rights available to other transmission service requesters in accordance with FERC Order 888 rules.

Unscheduled flow may be handled in either of two ways, either of which is acceptable, provided that the methodology is applied consistently and non-discriminatorily:

The path can be reserved up to its TTC, without factoring in any estimates of unscheduled flows. In such a case, when unscheduled flows materialize, accommodations and curtailments will be made consistent with the WECC Unscheduled Flow Mitigation Plan.

The path operator, using reasonable, auditable, supportable projections, may subtract sufficient transfer capability from TTC, as a component of TRM to reduce the need to make curtailments associated with projected unscheduled flows.<sup>3</sup> This should be made available as recallable transfer capability in case unscheduled flow is less than anticipated.

### 1.3.3 Determination of NERC “Existing Transmission Commitments”

This section identifies those items to be included in the determination of “Existing Transmission Commitments”.

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<sup>2</sup> Rights Holders (Transmission Providers) allowances for load forecasts uncertainty may be part of TRM provided that: (1) the allowance is available on a comparable and recallable basis to all Rights Holders, (2) the allowance reduces the exposure to curtailments to all Rights Holders on a prorata basis for unanticipated load, and (3) the allowance does not duplicate consideration of uncertainty within the load forecast itself.

<sup>3</sup> Note: The SWRTA Bylaws specifically permit the exclusion of transmission capacity needed to accommodate unscheduled flows, at levels consistent with the WSCC Unscheduled Flow Mitigation Plan. Making allowances for projected unscheduled flows based on assumptions that are appropriate for the time horizon of the ATC estimate would be consistent with making the best technical estimate of ATC, and would therefore be consistent with the NERC ATC report.

NERC “Existing Transmission Commitments” are included in the following four RTG Committed Use categories:

1. Native Load Uses (CU1)
2. Existing Commitments for Purchases/Exchanges/Sales (CU3)
3. Existing Commitments for Transmission Service (CU4)
4. Other Pending Potential Uses (CU5)

The following address Native Load Uses (CU1):

Reservations for Native Load Growth: Rights Holders may reserve existing transfer capability needed for reasonably forecasted Native Load growth and transmission customer Native Load growth.<sup>4</sup> Transfer Capability reserved for a Rights Holder's load growth must be made available for use by others until the time that it is actually needed by the Rights Holder.

Loss of Native Load: If a customer constituting a portion of a Rights Holder's Native Load is served by another entity for a given period of time and releases the Rights Holder from any obligation to serve for a given period, the Rights Holder shall adjust its Native Load forecast and any associated transmission reservation accordingly. The Rights Holder shall have a reasonable amount of time to adjust the Native Load forecast and any associated transmission reservation after receiving notice from the other entity.

Native Load Forecasts: ATC determination does not presume the existence of sanctioned forecasts by regulatory agencies, although a Rights Holder may use such a sanction in arguing the reasonableness of its determination of Committed Uses. In making reservations for Native Load, Rights Holders must use reasonable assumptions, make available those assumptions and the resulting conclusions, and be able to justify the reasonableness of those assumptions and the resulting conclusions, as well as their consistency with then-current FERC policies, in applicable dispute resolution proceedings.

Ancillary Services (required as a part of Native Load service); Transfer capability should be reserved under Native Load for those ancillary services required to serve Native Load.<sup>5</sup> These include transfer capability required to supply load regulation and frequency response services, reactive supply and voltage control services and energy imbalance services. Ancillary services for Operating Reserves are covered under Section 1.3.4.

Reservations Beyond Reliability-Based Needs: A Rights Holder may reserve ATC for the import of power which is beyond the amount reserved for reliability needs of its Native Load customers, only to the extent permitted under the FERC's Order 888, or the Rights Holder's own

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<sup>4</sup> See Footnote 2.

<sup>5</sup> Reservations must be explicitly forecasted and determined as part of Committed Uses, as either network non-recallable service or point-to-point non-recallable service (depending on whether the user of the service is the load entity or the generation entity, and depending on whether the user of the service is a network customer or a point-to-point customer). Charges for transmission reserved should be consistent with the appropriate tariff.

open access tariff and is otherwise consistent with the Federal Power Act and the FERC's applicable standards and policies then in effect.

The following are "Existing Commitments" Uses (CU3 and CU4):

**Existing Commitments:** Committed Uses associated with existing commitments at the time of the ATC determination are permissible. Determinations for these types of Committed Uses must be made available and are subject to evaluation upon request and in applicable dispute resolution forums.

**Non-Recallable Transmission Reservations for Energy Transactions:** Transfer capability for energy transactions that can reasonably be expected to be consummated, such as expected hydro conditions, can be a Committed Use for the Rights Holder (including an affiliated merchant business) to the extent consistent with the reservation provisions of the approved tariff by purchasing non-recallable Point-To-Point transmission service from available transfer capability. Such transfer capability can be reserved for expected energy transactions, but must be released for recallable uses on a scheduling basis in real-time if unused or as otherwise required in accordance with the reservation priorities provided in the Rights Holder's tariff.

The following are Other Pending Uses (CU5):

**Good Faith Requests:** Reservations for "Pending Uses" applies to "good faith requests" for transmission service received by a Rights Holder in accordance with applicable FERC or RTG request for service policy.<sup>6</sup>

#### 1.3.4 Determination of NERC Capacity Benefit Margin (CBM)

Reservations required to maintain reliability of service (ancillary services, operating reserves, etc.) in accordance with a tariff's terms and conditions, must be considered Committed Uses. In accordance with the terms and conditions of the Rights Holder's tariff, these reservations may be sold on a recallable basis.

The following are Native Load Uses (CU 1)

**Ancillary Services (Operating Reserves):** Transmission reserved by the control area operator to accommodate operating reserves (spinning and supplemental) can be reserved under CBM for the Rights Holder's ability to transmit the reserves for its own potential resource contingencies or when operating reserves are pooled for the purpose of meeting reliability requirements. In order for these reservations to be deemed reasonable, such operating reserves may not exceed NERC, WECC, applicable pool requirements or individual members' reliability requirements. The associated transmission should be explicitly included in the determination of CBM.

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<sup>6</sup> The methodology used to determine Pending Uses Reservations must be consistent with prudent utility practice, must be clearly documented and consistently followed, must be applied in a non-discriminatory manner, and must be auditable.

**Reservations of Transmission for Purposes Other than Energy Delivery:** In certain cases, a Rights Holder may desire to reserve transmission for purposes other than energy delivery - for example, to provide a path for the import of ancillary services (such as spinning reserves) from another control area; or to allow imports on a different path (in a case where a control area requires a certain amount of unscheduled transfer capability for stability reasons). Similar to reserve sharing arrangements, such reservations are legitimate Committed Uses by a transmission Rights Holder, and may be included under CU1, to the extent that they are associated with meeting Native Load reliability requirements (rather than being economics-driven).

The following are Prudent Reserves Uses (CU2)

Reservations of additional transfer capability for resource contingencies must be based upon reasonable, publicly available assumptions subject to evaluation in applicable dispute resolution proceedings. The methodology for determining the amount of Prudent Reserve must be consistent with prudent utility practice, must be clearly documented and consistently followed, must be applied in a non-discriminatory manner, and must be auditable.

**Generation Patterns and Generation Outages:** Many generation patterns and forced generation outages occur in the power system. These may be considered when determining Committed Uses, to the extent that deductions from ATC associated with these uncertainties use assumptions that are consistent with the planning and service reliability criteria which the Rights Holder uses in serving its customers.<sup>7</sup>

## GLOSSARY

**Accepted Rating:** a path rating obtained through the WECC three-phase rating process that is the recognized and protected maximum capability of the path.

**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.

**Capacity Benefit Margin (CBM):** that amount of transmission transfer capability reserved by load-serving entities to ensure access to generation from interconnected systems to meet generation reliability requirements.

**Committed Uses:** Five committed uses described in the RTG Governing Agreements as described in this document.

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<sup>7</sup> As uncertainty in forecasts diminishes, a Rights Holder must release transmission capacity in a manner that is consistent with prudent utility practice, clearly documented and consistently followed, applied in a non-discriminatory manner, and auditable.

**Native Load:** existing and reasonably-forecasted customer load for which the Rights Holder, by statute, franchise, contract or regulatory policy, has the obligation to plan, construct or operate its system to provide reliable service.

**NERC:** North American Electric Reliability Corporation and successor organizations.

**Prudent Reserve:** the amount of transfer capability set aside for a Rights Holder's reasonable reliability requirements.

**Rights Holder:** an entity holding transfer capability rights through ownership, contractual agreement, or other transmission service arrangement. As used in this document, a Rights Holder may be either a Transmission Provider or a Transmission Customer, as those terms are used in the FERC's pro forma tariff. Some references to Rights Holders may apply only to the Transmission Provider in the context of the provisions of the pro forma tariff.

**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.

**Transmission Reliability Margin (TRM):** that amount of transmission transfer capability necessary to ensure that the interconnected transmission network is secure under a reasonable range of uncertainties in system conditions.

**WECC:** Western Electricity Coordinating Council and successor organizations.