PUBLIC SERVICE COMPANY OF NEW MEXICO

Available Transfer Capability Implementation Document

(ATCID)

Rev 0

Effective Date: April 1, 2011

Transmission/Distribution Planning and Contracts Department

Table of Contents

1 Introduction

North American Electric Reliability Corporation (NERC) Standard MOD-001 requires Transmission Service Providers (TSP) to prepare an Available Transfer Capability Implementation Document (ATCID) which describes how the selected NERC Standard MOD-001 ATC calculation methodologies are implemented by the TSP. This document constitutes the ACTID developed by Public Service Company of New Mexico (PNM). MOD-001 requires that the Transmission Service Provider prepare and keep current an ATCID that includes processes, procedures and assumptions used in determining Available Transfer Capability (ATC). For PNM, additional requirements in MOD-029 (Rated System Path Methodology) are also covered in the ACTID.

2 Responsible Department

PNM's New Mexico Engineering and Operations department is responsible for calculating the Available Transfer Capability (ATC). The contact for PNM's ATC information is available on OASIS (http://www.oatioasis.com/pnm/index.html) in the ATC Information folder.

3 Determining ATC

R1. Each Transmission Operator shall select one of the methodologies[1] listed below for calculating Available Transfer Capability (ATC) or Available Flowgate Capability (AFC) for each ATC Path per time period identified in R2 for those Facilities within its Transmission operating area:

- *The Area Interchange Methodology, as described in MOD-028*
- *The Rated System Path Methodology, as described in MOD-029*
- *The Flowgate Methodology, as described in MOD-030*

PNM uses the Rated System Path Methodology (MOD-029) identified in MOD-001 R1 to establish TTC and ATC on ATC Paths. PNM is currently not using the Area Interchange Methodology (MOD-028) or the Flowgate Methodology (MOD-030) identified in MOD-001 R1. The Rated System Path Methodology is utilized to calculate ATC for each time period identified in MOD-001 R2.

R3. Each Transmission Service Provider shall prepare and keep current an Available Transfer Capability Implementation Document (ATCID) that includes, at a minimum, the following information:

3.1 Implementation of MOD-029 Methodology

R3.1. Information describing how the selected methodology (or methodologies) has been implemented, in such detail that, given the same information used by the Transmission Service Provider, the results of the ATC or AFC calculations can be validated.

3.1.1 Firm and Non-firm ATC Algorithm

MOD-029 R7 specifies that the following algorithm shall be utilized when determining Firm ATC for an ATC Path:

[1] All ATC Paths do not have to use the same methodology and no particular ATC Path must use the same methodology for all time periods.

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

Where:

ATC_F *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_F *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.*

$Postbacks_F$ *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.*

$counterflows_F$ *are adjustments to firm Available Transfer Capability as determined by the Transmission Service Provider and specified in their ATCID.*

MOD-029 R8 further specifies that Non-Firm ATC shall be determined from the following algorithm;

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

Where:

ATC_{NF} *is the non-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_F *is the sum of existing firm commitments for the ATC Path during that period.*

ETC_{NF} *is the sum of existing non-firm commitments for the ATC Path during that period.*

CBM_S *is the Capacity Benefit Margin for the ATC Path that has been scheduled during that period.*

TRM_U *is the Transmission Reliability Margin for the ATC Path that has not been released for sale (unreleased) as non-firm capacity by the Transmission Service Provider during that period.*

$Postbacks_{NF}$ *are changes to non-firm Available Transfer Capability due to a change in the use of Transmission Service for that period, as defined in Business Practices.*

$counterflows_{NF}$ *are adjustments to non-firm Available Transfer Capability as determined by the Transmission Service Provider and specified in its ATCID.*

PNM relies on Open Access Technology International, Incorporated's (OATI) webTrans TTC/ATC Management Module ("TTC/ATC Module") for the calculation of ATC from the components of the equations above. The data utilized in the ATC equation is manually or automatically entered into the TTC/ATC Module database or automatically transferred from

related system databases for transmission reservations (webOASIS –" reservation system") and electronically processed schedules (webTag –" e-Tag system"). TTC, TRM and certain ETC values are determined from off-line studies, contracts or other information and uploaded to the TTC/ATC Module databases.

The determination of the components of the ATC algorithm is discussed next.

3.1.2 Determination of TTC

TTC for an ATC path is determined primarily by off-line system studies utilizing powerflow and stability analysis. In selected cases, the off-line studies may be supplemented with short-term or real-time adjustments to TTC if information has been developed quantifying the impact of specific resource dispatch, reactive device status, load power factor or simultaneous interactions.

The studies establishing the TTC for a path will be reviewed annually to determine if updates are warranted. The need for updates would typically be tied to a significant system modification like a new interconnected resource, transmission topology modifications or changes in forecast load or a combination of these items.

(MOD-29- R8) PNM will create an ATC Path specific TTC study report ("TTC study report") for the system studies using the Rated System Path Methodology (MOD-029). The TTC study reports will describes the steps taken including the contingencies and assumptions used when determining the TTC and the results of the study. The transmission models used by PNM for the studies as well as the steps taken to implement the methodology are discussed next, however, the modeling assumptions that are specific to an ATC Path or clarification or variances from the more general methodology below will be document in the TTC study report for the ATC Path. As a result, the TTC study reports provide additional details to the information contained in this ACTID on a path specific basis. PNM also documents certain other path specific information like long-term ETC in the TTC study reports.

3.1.2.1 Transmission Model

<u>(MOD-029 R1)</u>

PNM uses near-term powerflow cases from the WECC base case library as the starting point for the model used in performing the Rated System Path Methodology studies.

The specific WECC case or cases used in the TTC studies and modifications to the starting WECC case are documented in the TTC study reports for each ATC Path. (MOD-029 R1.1) The model will utilize data and assumptions that are consistent with the time period being studied and that meet the following criteria:

1) (MOD-029 R1.1.1) The detail level of the model is based on the following:

    a) The PNM system is part of the New Mexico area in the WECC model and models all facilities at 46 kV and above. The New Mexico powerflow area is developed around the boundaries of the PNM Balancing Authority area and includes the electric systems of City of Gallup, NTUA, Sandia/KAFB, Los Alamos County, and Tri-State's New Mexico system. PNM Balancing Authority loads that are not included in the New Mexico powerflow area include the City of Aztec, New Mexico load included in the WAPA DSW Balancing Authority area and the Navapache Electric Cooperative loads which are included the Arizona Balancing Authority area.

    b) All areas outside of the New Mexico powerflow area are modeled in the same level of detail as submitted to WECC for development of the base case. This results in a detailed

model that includes the PNM Balancing Authority area and contiguous surrounding Balancing Authority areas. PNM does not create equivalent representations of any areas within the WECC.

c) The PNM transmission system includes an asynchronous tie to the Southwest Power Pool transmission system in the eastern grid. As with other asynchronous ties within the WECC model, the interchange with the eastern grid is modeled as a simple positive or negative injection depending on the specific interchange assumptions for the model.

2) (MOD-029 R1.1.2) All transmission system elements that are expected to be in operation during the 13 month Operations Planning Horizon are modeled in-service for normal system conditions.

3) (MOD-029 R1.1.3) All generators within the PNM area greater than 20 MVA at the point of interconnection are included in the model.

4) (MOD-029 R1.1.4) The PNM transmission system does not include any phase-shifting transformers, however, the 345 kV transmission line between PNM and the El Paso Electric Company transmission system in central New Mexico has a phase-shifting transformer that is modeled to regulate a specific flow between the two systems. The modeled flow in a given case will be dependent on the loads and resource scenario as defined by the case objectives or required for stressing a path in the TTC analysis. The model for phase-shifting transformers on other transmission provider systems that tie to New Mexico are left unchanged from the data submitted to NERC unless specifically noted in the TTC study report for a specific ATC Path. In a limited number of studies PNM may adjust the flow on the WAPA RM area phase-shifting transformers at San Juan or Shiprock for stressing purposes.

5) (MOD-029 R1.1.5) PNM incorporates the latest available load forecast in the New Mexico powerflow area data including the latest forecasts provided by other transmission providers within the New Mexico area. The forecast load for Balancing Authorities outside the PNM Balancing Authority is modeled at the level in the starting WECC base case.

6) (MOD-029 R1.1.6) PNM incorporates transmission facility additions and retirements expected for the time period under study. Relevant additions and retirements will be noted in the TTC study report for a specific ATC Path.

7) (MOD-029 R1.1.7) PNM incorporates generation facility additions and retirements expected for the time period under study. Relevant additions and retirements will be noted in the TTC study report for a specific ATC Path.

8) (MOD-029 R1.1.8) PNM incorporates Special Protection System (SPS) models for existing SPS and for projected SPS that will be implemented within the Operations Planning Horizon. SPS schemes that influence the TTC results will be noted in the TTC study report for a specific ATC Path.

9) (MOD-029 R1.1.9) PNM models series compensation on its San Juan-BA 345 kV line and Four Corners-West Mesa 345 kV line at 34% which is the expected operating level under normal conditions. Series compensation on surrounding transmission systems is modeled at the level in the starting WECC base case unless noted in the TTC study report for a specific ATC Path.

10) (MOD-029 R1.1.10) Other modeling requirements or criteria that are utilized for the study of a specific ATC Path will be noted in the TTC study report.

11) (MOD-029 R1.2) PNM models Facility Ratings as provided by the Transmission Owner and Generator Owner for facilities within the New Mexico powerflow area. Facility Ratings in adjacent and all other WECC areas are modeled as input to the starting WECC base case.

3.1.2.2 Steps in Determining TTC

(MOD-029 R2.1) The Rated System Path Methodology determines TTC for an ATC Path from the highest simulated flow, on a non-simultaneous basis, from the ATC Path POR to the ATC Path POD that can be obtained without violating WECC and NERC reliability criteria. Except where otherwise specified within NERC Reliability Standard MOD-029-1, base case generation and load levels within the updated power flow model are adjusted to determine the TTC that can be simulated on the ATC Path while at the same time satisfying all planning criteria contingencies as follows:

> When modeling normal conditions, all Transmission Elements will be modeled at or below 100% of their continuous rating.
>
> When modeling contingencies the system shall demonstrate transient, dynamic and voltage stability, with no Transmission Element modeled above its Emergency Rating. The contingencies expected to most limit the transfers on a specific ATC path are noted in the TTC study report for the path.
>
> Uncontrolled separation shall not occur.

If a reliability limit can be found in the simulation, the TTC on the ATC Path is set to the simulated flow corresponding to the reliability limit. A reliability limit is determined if a contingency results in violation of (1) a Facility Rating or SOL on the ATC Path being rated or (2) an outage of any element of the ATC Path being rated results in a criteria violation on any part of the system. If a reliability limit is not found in the simulation, the TTC is set to either (1) the simulated flow or (2) an amount consistent with practices used in the past (typically the Facility Ratings of the Transmission Elements that make up the ATC Path)[2].

The loads and resources adjusted for stressing are specific for each ATC Path study. Generation dispatch is varied within the maximum and minimum unit limits to stress the path while still maintaining an acceptable voltage profile in the study base cases. Load adjustments are limited to reasonable minimum levels for the season and time of day represented by the case dispatch. Maximum load levels are limited to potential maximums that may include extreme weather events within the Operations Planning Horizon. In addition to load and resource variations, PNM may modify phase-shifting transformer flows or flows on the asynchronous tie with the eastern grid if the adjustments represent reasonable operating conditions that increase stress on the path under study. The specific load, resource or other adjustments will be noted in the TTC study report for the applicable ATC Path.

The scope of TTC studies will focus primarily on N-0 and N-1 powerflow contingency analysis. The degree of analysis included for N-2 contingencies, extreme contingencies or for dynamic or voltage stability will be based on the need for this additional analysis as determined from PNM's annual 10-Year Plan analysis and other recent studies of the PNM transmission system. N-2 contingencies and any dynamic or voltage stability analysis along with the rational for the scope

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[2] NERC March 4, 2011 letter delaying implementation of MOD-029-01 Requirement 2, Sub-requirement 2.1. In the letter, NERC suggests (but does not require) that entities calculate the TTC of "Flow Limited" paths consistent with practices used in the past (such as using the path thermal rating) with the expectation that the path is demonstrably "Flow Limited".

of analysis needed for the TTC determination will be discussed in the ATC Path specific TTC study report.

(MOD-029 R2.2) A significant number of paths may be limited to determination of TTC in only one direction due to prevailing flows that are predominantly in one direction. For ATC Paths with the POR and POD defined in the non-prevailing direction, it may not be possible to show physical flow from the POR to the POD or show only limited flow from the POR and POD preventing determination of a reliability limit. Where it is impossible to actually simulate a reliability-limited flow in a direction counter to prevailing flows (on an alternating current Transmission line), the TTC for the non-prevailing direction is set equal to the TTC in the prevailing direction. If the TTC in the prevailing flow direction is dependent on a Special Protection System (SPS), the TTC for the non-prevailing flow direction is set equal to the greater of the maximum flow that can be simulated in the non-prevailing flow direction or the maximum TTC that can be achieved in the prevailing flow direction without use of a SPS.

(MOD-029 R2.3) For an ATC Path whose capacity is limited by contract, TTC on the ATC Path is set at the lesser of the maximum allowable contract capacity or the TTC as determined above. If TTC is based on a contract limit, PNM will identify the contract limit in the applicable TTC study report for the ATC Path.

(MOD-029 R2.4) For an ATC Path whose TTC varies due to simultaneous interaction with one or more other paths, a nomogram will be developed describing the interaction of the paths and the resulting TTC under specified conditions. Paths with known simultaneous interactions for a specific ATC Path will be identified in the TTC study report for the applicable ATC Paths.

(MOD-029 R2.5) PNM shall identify when the TTC for the ATC Path being studied has an adverse impact on the TTC value of any existing path. This is done by modeling the flow on the path being studied at its proposed TTC level simultaneous with the flow on the existing path at its TTC level while at the same time honoring the reliability criteria outlined above. PNM will identify applicable adverse impacts and include the resolution of this adverse impact in its TTC study report for the ATC Path.

(MOD-029 R2.6) Where multiple ownership of Transmission rights exists on an ATC Path, the TTC will be allocated among the owners for that ATC Path in accordance with the contractual agreement between the owners. The TTC utilized in calculating PNM's ATC posting for the path will be limited to PNM's share of TTC.

(MOD-029 R2.7) PNM does not operate any paths with TTC based on a pre-1994 rating. On jointly owned paths PNM's ATC may be tied to a previously established rating if the Transmission Operator has established the TTC on that basis.

(MOD-029 R2.8) PNM has not established TTC for any ATC Path where three phase fault damping is used to determine stability limits. If this should occur, the TTC study report for the ATC Path will identify the percent used and include justification for use.

(MOD-029 R3) If any System Operating Limit (SOL) for an ATC Path is found to be lower than the TTC determined from the methodology above, the TTC for the ATC Path will be established at the System Operating Limit (SOL).

3.1.3 Determination of ETC

3.1.3.1 Firm and Non-Firm ETC Algorithm

MOD-029 R5 specifies the algorithm PNM will utilize to determine firm ETC for an ATC Path:

$ETC_F = NL_F + NITS_F + GF_F + PTP_F + ROR_F + OS_F$

Where:

NL_F *is the firm capacity set aside to serve peak Native Load forecast commitments for the time period being calculated, to include losses, and Native Load growth, not otherwise included in Transmission Reliability Margin or Capacity Benefit Margin.*

$NITS_F$ *is the firm capacity reserved for Network Integration Transmission Service serving Load, to include losses, and Load growth, not otherwise included in Transmission Reliability Margin or Capacity Benefit Margin.*

GF_F *is the firm capacity set aside for grandfathered Transmission Service and contracts for energy and/or Transmission Service, where executed prior to the effective date of a Transmission Service Provider's Open Access Transmission Tariff or "safe harbor tariff."*

PTP_F *is the firm capacity reserved for confirmed Point-to-Point Transmission Service.*

ROR_F *is the firm capacity reserved for Roll-over rights for contracts granting Transmission Customers the right of first refusal to take or continue to take Transmission Service when the Transmission Customer's Transmission Service contract expires or is eligible for renewal.*

OS_F *is the firm capacity reserved for any other service(s), contract(s), or agreement(s) not specified above using Firm Transmission Service as specified in the ATCID.*

MOD-029 R6 specifies the algorithm PNM will utilize to determine Non-Firm ETC for an ATC Path:

$ETC_{NF} = NITS_{NF} + GF_{NF} + PTP_{NF} + OS_{NF}$

Where:

$NITS_{NF}$ *is the non-firm capacity set aside for Network Integration Transmission Service serving Load (i.e., secondary service), to include losses, and load growth not otherwise included in Transmission Reliability Margin or Capacity Benefit Margin.*

GF_{NF} *is the non-firm capacity set aside for grandfathered Transmission Service and contracts for energy and/or Transmission Service, where executed prior to the effective date of a Transmission Service Provider's Open Access Transmission Tariff or "safe harbor tariff."*

PTP_{NF} *is non-firm capacity reserved for confirmed Point-to-Point Transmission Service.*

OS_{NF} *is the non-firm capacity reserved for any other service(s), contract(s), or agreement(s) not specified above using non-firm transmission service as specified in the ATCID.*

A Native Load obligation is forecast for each time period requiring ATC calculations. Uncertainty around Native Load is included in TRM if risk is considered significant for a specific path.

Firm Capacity reserved for Network Integration Transmission Service (NITS), grandfathered obligations and confirmed Firm Point-to-Point Transmission Service is based on the specific contract or regulatory requirement for firm service or a confirmed point-point transmission reservation.

Long-term (more than one-year) ETC for a specific ATC Path is identified in the TTC study report for the ATC Path. Information on shorter term-commitments is managed through the automated reservation and scheduling systems mentioned earlier.

3.1.4 Determination of CBM and TRM

PNM does not use CBM on any ATC Paths. TRM is used on a limited number of paths. Determination of TRM is discussed in the Transmission Reliability Margin Implementation Document (TRMID). Specific information associated with an ATC Path can be found in the TTC study report for the path. Values for TRM are determined off-line and uploaded to the TTC/ATC Module database as needed for inclusion in the ATC calculations.

3.1.5 Postbacks

Postbacks are automatically included in the determination of non-firm ATC and apply only to the release of commitments in the next hour and day-ahead scheduling periods. If an existing transmission service reservation or TSN is not scheduled the unscheduled capacity will be added as a postback to non-firm ATC.

3.1.6 Counterflow

R3.2. A description of the manner in which the Transmission Service Provider will account for counterflows including:

3.1.6.1 ATC Calculation

R3.2.1 How confirmed Transmission reservations, expected Interchange and internal counterflow are addressed in firm and non-firm ATC or AFC calculations.

PNM accounts for firm counterflow on a limited number of paths where load at some minimum level can be relied on as counterflow to the paths posted direction. In these situations, the counterflow effect will be added to the TTC value posted for the path. Firm counterflow utilized in determining TTC is documented in the TTC study report for a specific ATC Path.

Counterflow as a result of other uses of the transmission system are not currently included in PNM's ATC calculation.

3.1.6.2 Accounting Rational

R3.2.2 A rationale for that accounting specified in R3.2.

Counterflow resulting from firm load can be relied upon to increase the ATC of a path without concerns of the counterflow being interrupted. As a result, the path can be scheduled beyond the physical TTC without actually exceeding the physical TTC. PNM bases the additional ATC on the minimum expected annual load level to insure that the adjustment is not overstated.

Counterflow from scheduled use of the system is generally not under the control of PNM and as a result PNM would be limited to posting non-firm ATC if counterflow schedules are factored into the ATC calculation. This can be done by linking paths in OASIS and the TTC/ATC Module database in a manner that identifies when one posted path is in the opposite direction of another

posted path. PNM has not identified paths where accounting for counterflow on a non-firm basis would result in commercially used ATC and currently does not utilize linked paths in calculating ATC.

3.1.7 ATC Calculation

PNM posts the ATC for each ATC Path through the OASIS system based on the calculations performed by the TTC/ATC Module from the components of the ATC algorithms discussed above. The calculation of ATC is performed and updated results posted whenever a change occurs to an ATC algorithm component in the TTC/ATC Module database. Many inputs for hourly, daily and monthly ATC postings are included through entries made to the reservation and eTag systems Other inputs, as required, are updated daily as part of the day ahead scheduling process and uploaded to the database.

3.1.7.1 Posting Intervals and Update Frequency

R2. Each Transmission Service Provider shall calculate ATC or AFC values as listed below using the methodology or methodologies selected by its Transmission Operator(s):

R2.1. Hourly values for at least the next 48 hours.
R2.2. Daily values for at least the next 31 calendar days.
R2.3. Monthly values for at least the next 12 months (months 2-13).

R8. Each Transmission Service Provider that calculates ATC shall recalculate ATC at a minimum on the following frequency, unless none of the calculated values identified in the ATC equation have changed:

R8.1. Hourly values, once per hour. Transmission Service Providers are allowed up to 175 hours per calendar year during which calculations are not required to be performed, despite a change in a calculated value identified in the ATC equation.
R8.2. Daily values, once per day.
R8.3. Monthly values, once per week.

The database associated with the TTC/ATC Module contains a starting date and time and an ending date and time for all information that contributes to the ATC calculation. This allows hourly, daily and monthly information to be calculated from the same input records. The information passed to OASIS for postings will show hourly ATC for 168 hours beyond the current hour, daily ATC for 31 days beyond the current day and monthly information for 12 months beyond the current month. This results in posting hourly, daily and monthly data that meets or exceeds the 48 hours, 31 days and 13 months, respectively, required by MOD-001. Daily ATC values will be based on the minimum hourly value posted for a given day. Monthly ATC values will be based on the minimum daily value within a given month. Updates to the calculated ATC occur whenever any new information for a path is entered into the TTC/ATC Module database. This ensures that calculated ATC is recalculated in accordance with the minimum frequencies specified in MOD-001 R8 and that posted values represent all current commitments.

For PNM's FOURCORNE/SJ345-WNM/ABQ/NEA Path, revised hourly TTC and TRM data is uploaded following the WECC pre-schedule calendar to insure that the hourly values are based on the most recent estimates. This also occurs for the expected native load and NITS customer forecasts on the path.

3.1.7.2 Handling of Existing Commitments

Point-to-Point reservations are included automatically from OASIS based Transmission Service Requests (TSR) made through the reservation system. PNM assigns TSNs for existing commitments (native load, NITS and pre-888) that are not associated with an OASIS based TSR in order to incorporate the commitments into the TTC/ATC Module database and ETC calculation. The TSNs allow for commitment values to be profiled over time as needed for the recalculation requirements and uploaded to the TTC/ATC Module database for inclusion in the ATC calculation. Hourly profiles of forecast commitments for Native Load and NITS customers are uploaded to the TTC/ATC Module database in the day ahead scheduling process. Other existing commitments not managed through TSRs are less likely to change on a daily and hourly basis and updates to the TTC/ATC Module database are uploaded less frequently. ATC for all affected time periods will automatically be recalculated when updates are made to the TTC/ATC Module database.

The inclusion of existing commitments associated with OASIS based TSRs are automated by coupling the reservation information from the reservation system and the scheduling information from the e-Tag system. This allows for accurate and rapid recalculation of ATC when transmission commitments change due to OASIS based reservation requests and allows for automation of postbacks if a reservation is not scheduled in the day-ahead or hour-a-head scheduling process.

Non-firm existing commitments are composed of non-firm point-to-point transmission reservations made through the OASIS system, secondary service for NITS customers and redirect requests from an existing firm or non-firm point-to-point reservation. All non-firm existing commitments that PNM currently recognizes must be requested through the OASIS system and are, therefore, picked up automatically for inclusion in the ATC calculation.

3.2 Data Received for ATC Calculation

R3.3. The identity of the Transmission Operators and Transmission Service Providers from which the Transmission Service Provider receives data for use in calculating ATC or AFC.

PNM receives data from the following Transmission Operators and Transmission Service Providers for the ATC calculation[3].

- Tri-State Generation and Transmission Inc - Transmission Operator and Transmission Service Provider
- Incorporated County of Los Alamos - Transmission Operator

PNM utilizes load forecast information in determining TTC from all NITS Customers which include the entities listed above as well as:

- Navajo Tribal Utility Authority (registered DP and LSE)
- City of Gallup (registered DP)
- Navopache Electric Cooperative, Inc. (registered DP and LSE)

[3] Based on NERC list of registered entities dated 2/17/2011.

- City of Aztec, NM (municipality)
- Kirtland Air Force Base (registered DP) / NNSA Sandia National Labs (registered DP and LSE)

3.3 Data Provided for ATC Calculation

R3.4. The identity of the Transmission Service Providers and Transmission Operators to which it provides data for use in calculating transfer or Flowgate capability.

PNM provides data to the following Transmission Operators and Transmission Service Providers for use in calculating transfer capability:

- None

3.4 Allocation of Transfer Capability

R3.5. A description of the allocation processes listed below that are applicable to the Transmission Service Provider:

- *Processes used to allocate transfer or Flowgate capability among multiple lines or sub-paths within a larger ATC Path or Flowgate.*
- *Processes used to allocate transfer or Flowgate capabilities among multiple owners or users of an ATC Path or Flowgate.*
- *Processes used to allocate transfer or Flowgate capabilities between Transmission Service Providers to address issues such as forward looking congestion management and seams coordination.*

PNM does not currently have situations where transfer capability is allocated among multiple lines or sub-paths of an ATC Path except on the FOURCORNE/SJ345-WNM/ABQ/NEA Path. For the FOURCORNE/SJ345-WNM/ABQ/NEA Path, TTC may be allocated to sub-paths based on the sub-paths MW flow at the calculated TTC. PNM posts virtual paths consisting of multiple ATC Paths as part of PNM's network model on OASIS. These paths provide additional POR and POD combinations by combining in series the ATC Paths identified in the MOD-029 studies. The virtual path ATC is based on the minimum ATC of any ATC Path in the virtual path definition.

PNM does not have any specifically defined processes for allocating transfer capability among multiple owners of an ATC Path other than as specifically defined in the joint ownership agreements or related operating procedures. All joint ownership agreements allocate transfer capability on the basis of contractual rights or percentage of ownership. The details on allocation of PNM's share of TTC on jointly owned paths are included in the TTC study report for an ATC Path.

PNM does not currently have situations where transfer capability is allocated between Transmission Service Providers to address forward looking congestion management and seams coordination.

3.5 Generation and Transmission Outage

R3.6. A description of how generation and transmission outages are considered in transfer or Flowgate capability calculations, including:

R3.6.1 The criteria used to determine when an outage that is in effect part of a day impacts a daily calculation.
R3.6.2 The criteria used to determine when an outage that is in effect part of a month impacts a monthly calculation.
R3.6.3. How outages from other Transmission Service Providers that cannot be mapped to the Transmission model used to calculate transfer or Flowgate capability are addressed.

Planned generation and transmission outages of the system are typically studied in advance to assess the impact an outage may have on a specific path's TTC for the expected conditions during the outage. This provides quantification of the TTC impact and any potential curtailment requirements. Numerous paths also have operator guidelines on TTC impacts for unplanned outages. The affect of outages on the ATC calculation is managed through webTrans. The decrease in TTC on a path from an outage is entered into webTrans which in turn triggers updates to the ATC calculation. Outages are entered based on the known or scheduled start date and time through the estimated restoration date and time.

3.5.1 Outages in Effect for Part of a Day

Outages in effect part of a day will be determined from the starting date and time and ending date and time. For an outage that is in effect part of a day, the hourly ATC will be reduced by the indicated amount for any hours after the start time and any hours prior to the end time. The daily ATC calculation will be set to the minimum hourly ATC for any hour of the day.

3.5.2 Outages in Effect for Part of a Month

Outages in effect for part of a month will be determined from the starting date and time and ending date and time. The daily ATC for any days within the month will be set to the minimum ATC for any hour for the day and the monthly ATC will be set to the minimum daily ATC during the month.

3.5.3 Outages Not Mapped to the Transmission Model

All transmission studies are performed using off-line models with sufficient detail to assess impacts of outages from other Transmission Service Providers within the model. Outages of one Transmission Provider with known impacts on another Transmission Provider or Operator must be communicated sufficiently in advance to allow time for off-line studies to assess TTC and update ATC postings.

4 Version History

REVISION HISTORY LOG Public Service Company of New Mexico Available Transfer Capability Implementation Document (ATCID)				
Rev.	Date	Description	By Initials	Approval Initials
0	04/01/2011	Effective Date	TPD	TPD
1				
2				
3				