PUBLIC SERVICE COMPANY OF NEW MEXICO (PNM)

Determination and Posting Of
Total Transmission Capability (TTC) &
Available Transmission Capability (ATC)
On The
Open Access Same-Time Information System (OASIS)

Prepared By:
Power Operations and Transmission Development and Contracts Departments

March 2004
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PNM’s TTC/ATC Determination document
1. Basic TTC/ATC/CBM/TRM Determination Methodology

PNM transmission paths posted on OASIS include presently rated paths demonstrated to be of commercial interest to PNM's wholesale merchant function and other third parties. PNM’s transmission rights on transmission paths operated by other utilities are included in PNM’s OASIS postings.

Total Transfer Capability (TTC) for PNM paths have been determined by either equipment ratings, operating studies for constrained paths, or by the maximum generation export capability for paths that have limited resources and are flow limited. A transmission path may consist of several transmission elements that define the path. Paths may have multiple Points of Receipt (POR) and Points of Delivery (POD) and, these are described for each path within Section 2.0 (PNM Transmission Paths). Path ratings and committed uses are continuously updated as necessary to ensure for the proper determination of TTC/ATC.

TTC is defined for system conditions where all transmission facilities are in-service including all voltage controlling equipment, in order to provide maximum import capability. System conditions which effect TTC such as load power factor and resource configurations typical for the posting period were used to define the base conditions. Certain generation resources internal to certain paths may be re-dispatched to increase TTC when necessary to ensure transmission limits are not exceeded. TTC may also be defined for selected transmission element outage conditions for paths consisting of more than one transmission element in order to pre-determine the approximate level of curtailments that may be required in such a contingency.

The terms Capacity Benefit Margin (CBM) and Transmission Reliability Margin (TRM) are used in PNM’s ATC determination as defined in the "Available Transfer Capability Definitions and Determination" - National Electric Reliability Council Report dated, June 1996 (NERC ATC Report). The June 2001 “Determination of Available Transfer Capability within the Western Interconnection” document ("WI Report") also provides information and guidance on the use of CBM and TRM and defines these terms within the five Committed Uses (CU1-CU5) outlined in that document. PNM’s CBM and TRM Methodology, Computation, and specific Path Reservation are more fully described in Appendices A of this document.

The terms “firm” and “non-firm” have been replaced by the NERC terminology with the more definitive provisions for recallability as set forth in the NERC ATC Report. The NERC report states that because the "old terms are used somewhat loosely within the electric industry, confusion often exists when these terms are used to characterize the basic nature of transmission services". Non-Recallable transmission service is only curtailable on a pro-rata basis or as otherwise indicated in existing contracts or tariffs with all or specified transmission customers when constraints reduce the capability of the transmission system. Recallable transmission service is immediately curtailable upon notification for any reason including economics.

The five Committed Uses implemented by PNM and in accordance with the WI Report are listed below.

- CU1 - Native load uses as defined in Section 6.3.3 of the WI Report include Reservations for Native load Growth, Loss of Native Load, Native Load Ancillary Services and Native Load Forecasts. Another CU1 use required by PNM on the FOURCORNE/SJ345 to WNM/ABQ Paths are TRM requirements to transmit operating reserves, as defined in Section 6.3.4 of the WI Report and described more thoroughly in Appendix A.

Other CU1 uses as defined in Section 6.3.3 and 6.3.4 of the WI Report, which are not utilized by PNM at this time, Reservations Beyond Reliability-Based Needs and Reservations of Transmission
for Purposes Other than Energy Delivery.

- CU2 - Prudent Reserve as defined in the WI Report in Section 6.3.2 includes load forecast uncertainty and TRM. PNM reserves TRM on the SJ345-GREENLEE345-HIDALGO345-LUNA345-LUNA115-MIMBRES115 Paths for the purposes of providing load following to accommodate PNM’s area control commitment in southern New Mexico and is described more thoroughly in Appendix A.

- CU3 – Existing commitments for purchases/exchanges/deliveries/sales.

- CU4 – Existing commitments for transmission service.

- CU5 – Other Pending Transmission Uses (Good faith requests, Transmission requests under study, or transmission requests unconfirmed by the customer) This document does not reflect CU5 transmission uses.

The concept of net scheduling as described in the WECC Reliability Criteria Part III-Minimum Operating Reliability Criteria and WI report are used in this report.

PNM’s Application Guide for ATC determination is shown on the following page for the operating and planning horizons. The difference between the two horizons is in terms of RATC as defined in the guide. The operating horizon concern is with actual scheduled service and the planning horizon concern is with reserved service. Net scheduling is addressed in the guide. The table in the guide defines the acronyms used in the NERC ATC and WI Reports.
PNM’s Application Guide for ATC Determination

### Definitions Table:

<table>
<thead>
<tr>
<th></th>
<th>Transfer Capabilities</th>
<th>Transmission Services</th>
<th>Committed Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>TTC – Total Transfer Capability</td>
<td>NRES – Non-Recallable Reserved</td>
<td>CU1 – Native Load/TRM</td>
<td></td>
</tr>
<tr>
<td>ATC – Available Transfer Capability</td>
<td>NSCH – Non-Recallable Scheduled</td>
<td>CU2 – Prudent Reserves</td>
<td></td>
</tr>
<tr>
<td>RATC – Recallable ATC (Non-Firm)</td>
<td>RRES – Recallable Reserved</td>
<td>CU3 – Existing Commitments for Exchanges/Purchases/Deliveries/Sales</td>
<td></td>
</tr>
<tr>
<td>NATC – Non-Recallable ATC (Firm)</td>
<td>RSCH – Recallable Scheduled</td>
<td>CU4 – Existing Commitments for Transmission Service</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CU5 – Other Pending Uses</td>
</tr>
</tbody>
</table>

#### TTC Planning & Operating Horizons

- **NATC** = TTC - CU2 - (NRES CU1, 3-5)
- **Planning Horizon**
  - RATC = TTC - NRES CU1, 3-5 - RRES CU3-5 + RRES CU3-5* or
  - RATC = NATC + CU2 - RRES CU3-5 + RRES CU3-5*
- **Operating Horizon**
  - RATC = TTC - NSCH CU1, 3-5 - RSCH CU3-5 + RSCH CU3-5* or
  - RATC = NATC + CU2 + unscheduled NRES CU1, 3-5 - RSCH CU3-5 + RSCH CU3-5*

#### Constraints:

1. \( NSCH < NRES < TTC - CU2 \)
2. Net Schedules - RATC in one direction on a path may exceed the path’s TTC, so long as the net schedules on that path do not exceed TTC in either direction. Those schedules that cause RATC to exceed TTC must be Recallable. (Net scheduling may not be applied to paths where rights are unidirectional or the next contingency may cause criteria violations or induce voltage instability)

#### Example:

<table>
<thead>
<tr>
<th>Direction 1</th>
<th>Direction 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>TTC Direction 1 = 1000</td>
<td>TTC Direction 2 = 1000</td>
</tr>
<tr>
<td>NRES = 1000</td>
<td>NRES = 500</td>
</tr>
<tr>
<td>RRES = 0</td>
<td>RRES = 1500</td>
</tr>
<tr>
<td>RATC = 1000 - 1000 - 0 + 1500 = + 1500</td>
<td>RATC = 1000 - 500 -1500 + 0 = -1000</td>
</tr>
</tbody>
</table>

- **NET Schedules Direction 1**: \( 1000 + 0 - 500 - 1500 = -1000 \) must be \( \leq \) TTC in Direction 1
- **NET Schedules Direction 2**: \( 500 + 1500 -1000 -0 = +1000 \) must be \( \leq \) TTC in Direction 2
2. PNM Transmission Paths (Descriptions & Determinations)

2.1 Transmission Path Diagram

Public Service Company of New Mexico Transmission Paths
# Total Transfer Capability (TTC) Summary Table

<table>
<thead>
<tr>
<th>PATH</th>
<th>Reference Direction</th>
<th>Reverse Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MW</td>
<td>MW</td>
</tr>
<tr>
<td></td>
<td>Determined By</td>
<td>Determined By</td>
</tr>
<tr>
<td>FOURCORNE/SJ345 – WNM/ABQ</td>
<td>Variable* Study</td>
<td>1182 Generation/Contract</td>
</tr>
<tr>
<td>SJ345/ WNM/ABQ - NEA</td>
<td>Variable* Study</td>
<td>64 Generation</td>
</tr>
<tr>
<td>TAI BAN – BW230</td>
<td>200 Equipment</td>
<td>200 Equipment</td>
</tr>
<tr>
<td>ABQ-TAIBAN</td>
<td>200 Equipment</td>
<td>400 Equipment/Generation</td>
</tr>
<tr>
<td>ABQ – EPE</td>
<td>25 Contract</td>
<td>25** Contract</td>
</tr>
<tr>
<td>SJ345 – FOURCORNE345</td>
<td>299 Equipment</td>
<td>299 Equipment</td>
</tr>
<tr>
<td>FOURCORNE – GAL</td>
<td>107 Equipment</td>
<td>100 Equipment</td>
</tr>
<tr>
<td>SJ345 – SPRINGER345/CORONADO500</td>
<td>100 Contract</td>
<td>100 Contract</td>
</tr>
<tr>
<td>SJ345 – GREENLEE345</td>
<td>63 Contract</td>
<td>50 Contract</td>
</tr>
<tr>
<td>SHIPROCK345 – FOURCORNE345</td>
<td>239 Contract</td>
<td>239 Contract</td>
</tr>
<tr>
<td>SJ345 – SHIPROCK345</td>
<td>269 Contract</td>
<td>269 Contract</td>
</tr>
<tr>
<td>GREENLEE345 – HIDALGO345</td>
<td>50 Contract</td>
<td>150 Contract</td>
</tr>
<tr>
<td>PALOVERDE500 --- East</td>
<td>652 Contract</td>
<td>0 Contract</td>
</tr>
<tr>
<td>(WESTWING500, KYRENE500 &amp; JOJOBA500)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WESTWING500 – FOURCORNE345</td>
<td>264 Contract</td>
<td>0 Contract</td>
</tr>
<tr>
<td>FOURCORNE345 – FOURCORNE230</td>
<td>156 Contract</td>
<td>0 Contract</td>
</tr>
<tr>
<td>DELTA – WNM/ABQ</td>
<td>139 Contract</td>
<td>0 Contract</td>
</tr>
<tr>
<td>REEVES – WNM/ABQ</td>
<td>154 Contract</td>
<td>0 Contract</td>
</tr>
<tr>
<td>VAL115 – NEA</td>
<td>20 Generation</td>
<td>0 No Loads to Service</td>
</tr>
<tr>
<td>HIDALGO345-LUNA345</td>
<td>189 Contract</td>
<td>189 Contract</td>
</tr>
<tr>
<td>LUNA345-LUNA115</td>
<td>200 Equipment</td>
<td>200 Equipment</td>
</tr>
<tr>
<td>LUNA115 – MIMBRES115</td>
<td>65 Contract/Equipment</td>
<td>65 Contract/Equipment</td>
</tr>
<tr>
<td>LUNA115 – MD#1-115</td>
<td>65 Contract/Equipment</td>
<td>65 Contract/Equipment</td>
</tr>
<tr>
<td>MIMBRES115-EPE</td>
<td>56 Contract/Equipment</td>
<td>56 Contract/Equipment</td>
</tr>
</tbody>
</table>

*Variable refers to the dynamic nature of these paths’ TTC due to seasonal or system configuration parameters including capacitors, reactors, and generation resources. Refer to the referenced studies noted in the path descriptions of Section 2.0 for the equations or tables used to determine import capabilities.*

PNM’s TTC/ATC Determination document

Page No. 6
2.2 FOURCORNE/SJ345 - WNM/ABQ Path

FOURCORNE/SJ345 to WNM/ABQ Direction

Points of Receipt:  
Four Corners 230 kV Bus  
Four Corners 345 kV Bus  
McKinley 345 kV Bus  
San Juan 345 kV Bus  
Shiprock 345 kV Bus

Points of Delivery:  
Ambrosia 230 kV Bus  
BA 115 kV Bus  
West Mesa 345 kV Bus  
West Mesa 115 kV Bus  
Yah-Ta-Hey 115 kV Bus

TTC Determination

This path is operated by a set of real-time nomogram and dynamic adjustment equations that are incorporated into PNM’s Energy Management System (EMS). Path 48 (also known as NM2) is comprised of the following transmission elements:

- San Juan-Ojo 345 kV measured at San Juan 345 kV;
- San Juan-BA 345 kV measured at San Juan 345 kV;
- Four Corners-West Mesa 345 kV measured at Four Corners 345 kV;
- Bisti-Ambrosia 230 kV measured at Bisti 230 kV;
- McKinley-YahTaHey 345/115 kV transformer measured at McKinley 345 kV;

less the flows on the following lines:
- West Mesa-Arroyo 345 kV measured at West Mesa 345 kV;
- Belen-Bernardo 115 kV measured at Belen 115 kV;

Normal system operations reflect the system condition with All-Lines-In-Service (ALIS). Under this condition, with all other devices used to control voltage available, the system is adjusted to operate at its maximum levels. The variables affecting the system limits (dynamic adjustments) of the New Mexico system are fixed at an initial level for nomogram development.

The criteria used in the development of the ALIS nomogram and the dynamic adjustments are thermal limitations of transmission equipment, voltage levels, voltage drops, and voltage stability on the most critical buses following the most critical contingencies in the northern New Mexico system. The voltage stability limit is defined as the NM2 MW value at 0 MVAR margin for V-Q analysis or 0 MW margin for P-V analysis divided by 1.05 in order to comply with the WECC 5% voltage stability margin as defined in the WECC Voltage Stability Criteria, Undervoltage Load Shedding Strategy and Reactive Reserve Monitoring Methodology Final Report.

PNM’s TTC/ATC Determination document
After the initial ALIS nomogram is developed, variables affecting the system limits are varied to obtain dynamic adjustment equations which enable the operator to determine what the system limits are when these variables are changed from the basic nomogram.

The dynamic adjustments account for changes in the system configuration from those defined on the ALIS nomogram by increasing or decreasing the NM2 limit. Each adjustment is defined and explained below.

- **Northern New Mexico Capacitor and Reactor Adjustments:** There are nine capacitors and five reactors that are switched on a daily basis for voltage control. System operators switch the reactors off and the capacitors on for heavy load and vice-versa for light load. The dynamic adjustment equations take into account all of the on/off configurations of these reactors and capacitors and therefore reflect the changing voltage and load conditions in the northern New Mexico system.

- **Albuquerque MVAr Consumption Adjustment:** The dynamic adjustment equations also take into account the total MVAr consumption in the Albuquerque area. Therefore, this adjustment reflects the seasonal and time-of-day changes due to differing load characteristics in the Albuquerque area, which is the largest load center in northern New Mexico.

- **ETA SVC Adjustment:** Los Alamos County has an SVC with a Qmin of –46 MVAr and a Qmax of 135 MVAr. The dynamic adjustment equations take into account the on/off status of this SVC which further accounts for the changing voltage and load conditions in the northern New Mexico system.

- **Rio Puerco Series Capacitor Adjustment:** The on/off status of the series capacitors installed at Rio Puerco for the Four Corners-West Mesa 345 kV and San Juan-BA 345 kV lines is also taken into account by the dynamic adjustment equations, again accounting for changing voltage and load conditions in the northern New Mexico system.

- **Albuquerque area generation:** The dynamic adjustment equations take into account the on/off status and generating levels of all three generating units at Reeves and the generating unit at Delta. So, the dynamic adjustments also take into account the seasonal and time-of-day changes in the load and generation status in the northern New Mexico area.

- **PEGS Generation Adjustment:** Tri-State Generation & Transmission Association’s (Tri-State) PEGS generating unit’s on/off status and generating level is also taken into account, which also reflects the seasonal and time-of-day changes in the load and generation status in the northern New Mexico area. This adjustment affects both the voltage stability limit and the thermal limit.

- **Blackwater/Taiban Schedule Adjustment:** The dynamic adjustment equations also take into account the schedule through the AC/DC/AC converter station at Blackwater and Taiban Mesa wind farm output, which again reflects the seasonal and time-of-day changes in the load and generation status in the northern New Mexico area. This adjustment affects both the voltage stability limit and the thermal limit.

- **Southern New Mexico Reactor Adjustment:** The effects on the northern system of the on/off status of the ten reactors in southern New Mexico that are switched on a daily basis for voltage control are also taken into account by the dynamic adjustment equations, which further reflects the changing voltage and load conditions of the northern New Mexico system as affected by the southern New Mexico system voltage and load conditions.
• **Phase Shifter Status:** The real power flow on the transmission line interconnecting the northern New Mexico and southern New Mexico areas, the West Mesa-Arroyo 345 kV line, is controlled by a phase shifting transformer (PST). The dynamic adjustment equations take into account the amount of real power flowing over this PST and therefore account for the real power interaction between the northern and southern New Mexico systems. This adjustment affects both the voltage stability limit and the thermal limit.

• **SNMI Operating Point Adjustment:** The dynamic adjustment equations also take into account the southern New Mexico import operating point, which further accounts for the interaction between the northern and southern New Mexico systems.

• **Status of Bluewater-West Mesa 115 kV line:** It is assumed that this line will be opened at West Mesa when it reaches its thermal limit. The dynamic adjustments take into account the status of this line, which reflects the changing load conditions in northern New Mexico. This adjustment affects both the voltage stability limit and the thermal limit.

The system limit toggles between a voltage stability limit and a thermal limit, depending on the amount of VAr support in-service. The thermal limit is not seasonal, because it is based on circuit breaker and series capacitor ratings.

TRM is included to cover transfer of PNM operating reserves for resource outages in Northern New Mexico and for regulation in southern New Mexico. This TRM varies with resources that are scheduled. The TRM calculation is more fully described in Appendix A.

TTC determinations are made using the above assumptions and TTC will vary based on resource commitments and system configuration for the time frame of NATC and RATC determinations. Presently the exact determinations for NATC and RATC for hourly, monthly, and yearly periods are determined by use of spreadsheet.

TTC determinations are made in advance of equipment outage conditions and are a function of the same variables as described for peak system conditions. Tables are created as required according to the Operating Procedure, related to a Stipulation and Agreement executed and filed at the FERC by PNM and PNM transmission customers. A table showing the curtailments rights for the time frame of the outage and expected system is developed prior to each major system outage.

**NATC Determination** *(Needs to distinguish between short term and long term NATC)*

NATC = TTC
- PNM projected Northern New Mexico native load/NRES CU1
- Gallup projected load/NRES CU1
- Kirkland projected load/NRES CU1
- Los Alamos County projected network load/NRES CU1
- Tri-State projected network load/NRES CU1
- TRM/CU1 to carry PNM operating reserves for loss of Northern New Mexico resources (see Appendix A).
+ PNM’s resource commitments supplying native load. These include Reeves Generation, Las Vegas gas turbine, Delta Generation, Taiban Mesa Wind Farm, Afton Generation and NRES SPS purchase (operating Horizon only. CU1 above this adder are the actual total CU1 for imports on this path.
- 247 MW Transmission Commitment to WAPA/ NRES CU4
- 186MW Transmission Commitment to EPE, Tri-State, and PNM’s southern load/ NRES CU4
- 30MW Transmission Commitment to NTUA / NRES CU4
- NSCH Export of Internal New Northern Mexico Generation
- Other transmission services/ NRES CU1, 3-5

Note: If NATC < 0, Then NATC = 0. In this event, PNM would re-dispatch generation to meet PNM import deficiencies, if possible.

**RATC Planning Horizon Determination**

RATC = NATC
- RRES/ CU3-5
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

**RATC Operating Horizon Determination**

RATC = NATC
+ unscheduled NRES/ CU1,3-5
- RSCH/ CU3-5
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5
### Example of Annual ATC Firm Not For Official ATC Calculation

#### Draft For Discussion Purposes Only
Projected Northern New Mexico Summer Transmission Requirements for August

<table>
<thead>
<tr>
<th>Year</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNM System Load Total</td>
<td>1616</td>
<td>1649</td>
<td>1722</td>
<td>1785</td>
<td>1870</td>
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<tr>
<td>Albuquerque power factor with out capacitors</td>
<td>0.987</td>
<td>0.987</td>
<td>0.987</td>
<td>0.987</td>
<td>0.987</td>
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</table>

#### PNM NNM Retail Loads

<table>
<thead>
<tr>
<th>Load</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNM Retail Loads</td>
<td>1201</td>
<td>1259</td>
<td>1269</td>
<td>1237</td>
<td>1247</td>
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<tr>
<td>PNM Distribution Losses</td>
<td>70</td>
<td>72</td>
<td>75</td>
<td>76</td>
<td>78</td>
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<tr>
<td>Denning Load</td>
<td>-25</td>
<td>-25</td>
<td>-25</td>
<td>-25</td>
<td>-25</td>
</tr>
<tr>
<td>San Juan Load</td>
<td>-70</td>
<td>-70</td>
<td>-70</td>
<td>-70</td>
<td>-70</td>
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<tr>
<td>Western Credit (Possibly)</td>
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<td>-18</td>
<td>-18</td>
<td>-18</td>
<td>-18</td>
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#### PNM NNM Network Loads

<table>
<thead>
<tr>
<th>Load</th>
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<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
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<tbody>
<tr>
<td>Total NNM Loads (Retail/Network)</td>
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<td>1699</td>
<td>1699</td>
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#### Transmission Losses (1.1%)

<table>
<thead>
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<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total NNM Transmission Load</td>
<td>2134</td>
<td>2174</td>
<td>2267</td>
<td>2322</td>
<td>2383</td>
</tr>
</tbody>
</table>

#### PROJECTED NORTHERN NEW MEXICO SUMMER TRANSMISSION CAPABILITY

<table>
<thead>
<tr>
<th>Year</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
</table>
| PNM Load-Side Resources:
  | BFE Purchase (95% Allow) | 200 | 200 | 150 | 150 | 150 |
  | ASG Power (max 30 mwh) | 30 | 30 | 30 | 30 | 30 |
  | EPEC (80% Pst Flow) | 165 | 165 | 165 | 165 | 165 |
| SNM Load-Side Resources:
  | ERE Contingent Unit Surplus | 0 | 0 | 0 | 0 | 0 |
  | Alfou (max 41 mwh) | 0 | 0 | 0 | 0 | 0 |

#### Total NNM Imports

<table>
<thead>
<tr>
<th>Year</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
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<td>1680</td>
<td>1623</td>
<td>1856</td>
<td>1872</td>
<td>1893</td>
</tr>
</tbody>
</table>

#### Calculate NNM Transmission Capability (TTC):

<table>
<thead>
<tr>
<th>Year</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
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#### Thermal Adjustment to Trans Capability

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#### Planning Assumptions

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### PNM’s TTC/ATC Determination document

Page No. 11
WNM/ABQ to FOURCORNE/SJ345 Direction

Points of Receipt:  
- Ambrosia 230 kV Bus  
- BA 115 kV Bus  
- West Mesa 345 kV Bus  
- West Mesa 115 kV Bus  
- Yah-Ta-Hey 115 kV Bus

Points of Delivery:  
- Four Corners 230 kV Bus  
- Four Corners 345 kV Bus  
- McKinley 345 kV Bus  
- San Juan 345 kV Bus  
- Shiprock 345 kV Bus

TTC Determination

TTC has not been defined and ATC is generally not an issue in this direction since this is counter to normal path flow, except for generation in the vicinity of Ambrosia. Generation on the eastern side of this path and the flows through this path to southern New Mexico were used to determine the maximum flow for this direction. The rating on this path required no study since outages under maximum flows in this direction would not cause any transmission reliability criteria for the region to be violated. Variations in generation and flow through to the southern system do have an impact on TTC in the opposite direction. A ATC value equal to the practical limit of usage in this direction was derived as follows:

\[
\text{ATC} = 245 \text{ MW Prewitt Escalante Generating Station} + 154 \text{ MW Reeves Generating Station} + 139 \text{ MW Delta Generating Station} + 39 \text{ MW El Paso Contingent} + 20 \text{ MW Las Vegas Combustion Turbine} + 18 \text{ MW Los Alamos County TA3 Generation} + 16 \text{ MW Los Alamos County Abiquiu Generation} + 10 \text{ MW Los Alamos County El Vado Generation} + 200 \text{ MW Blackwater Converter} + 200 \text{ MW Taiban Mesa Wind Farm} + 141 \text{ MW Afton} + 200 \text{ MW Blackwater Converter} + 200 \text{ MW Taiban Mesa Wind Farm} + 141 \text{ MW Afton} = 1182 \text{ MW}
\]

NATC Determination

\[
\text{NATC} = \text{TTC} - \text{Other transmission services/ NRES CU1, 3-5}
\]

RATC Planning Horizon Determination

\[
\text{RATC} = \text{NATC} - \text{RRES Export of internal Northern New Mexico generation/ CU3-5} + \text{RRES in reverse direction on this path for net scheduling utilization/ CU3-5}
\]

---

1 No studies have been performed. This value is an estimate that could be achieved on the transmission path.
RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES/ CU1, 3-5
- RSCH Export of internal Northern New Mexico generation/ CU3-5
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5
2.3 SJ345/WNM/ABQ - NEA Path

SJ345/WNM/ABQ - NEA Direction

Points of Receipt:  
- BA 115 kV Bus
- West Mesa 115 kV Bus
- West Mesa 345 kV Bus
- San Juan 345 kV Bus

Points of Delivery:  
- ETA 115 kV Bus
- Norton 115 kV Bus
- Ojo 345 kV Bus

TTC Determination

TTC determinations are based upon "Joint PNM/LA Pool/Plains Northeastern Area Operating Study" (Joint Study). The Joint Study presents nomograms/tables for Northern Area Sum (NAS) imports versus Los Alamos County Imports (LACI) for specified generator output, NAS & LACI load power factors, and winter and summer load distributions. Changes to these conditions called Limit Adjustments effect the NAS limit, which represents TTC for this path. Limit Adjustments are only applicable to the ALIS nomograms/tables. The Nomograms/tables of the Joint Report were used to determine TTC for ALIS and outage conditions. The Limit Adjustments used in determination of this path’s TTC is defined below using the acronyms defined in the Joint Study.

- The generation resource configuration used to determine the ALIS NAS capabilities determined with the TA-3, Abiquiu, El Vado, and Las Vegas units off.

- The generation resource configuration used to determine the line initially out-of-service outage NAS capabilities were determined with the TA-3 off, Abiquiu at 15 MW, El Vado at 9 MW, and Las Vegas off.

- Los Alamos Load Power Factor (LLPF) and Northern Area Load Power Factor (NLPF) were held at 1.0 pu in both All Lines In Service) ALIS and outage limits

- Winter load distribution adjustment of -10 MW was used for both ALIS and outage limits

Note that Non-Recallable and Recallable schedules from the San Juan 345 kV station to NEA are a component of the FOURCORNE/SJ345 - WNM/ABQ path and may only be reserved or scheduled when Non-Recallable and/or Recallable ATC, as applicable, is available on that path.

1. ALIS Condition

\[
TTC = 320 \text{ MW Summer} \\
= 310 \text{ MW Winter}
\]
2. San Juan-Ojo (OJ) 345 kV Line Out-of-Service

   TTC = 135 MW Summer
   = 125 MW Winter

3. Norton - BA (NB) 345 kV Line Out-of-Service

   TTC = 186 MW Summer
   = 176 MW Winter

An emergency operating procedure allows this path to be operated beyond the stated TTC.

**NATC Determination**

NATC = TTC
- Projected PNM/LAC/Plains NEA Imports / NRES CU1
- Other transmission services/ NRES CU1, 3-5

Note: If NATC < 0, Then NATC = 0. NATC used in RATC determinations are the values prior to being set to zero.

**RATC Planning Horizon Determination**

RATC = NATC
- RRES/ CU3-5

**RATC Operating Horizon Determination**

RATC = NATC
+ unscheduled NRES/ CU1, 3-5
- RSCH/ CU3-5
**NEA – SJ345/WNM/ABQ Direction**

Points of Receipt:  
- ETA 115 kV Bus  
- Norton 115 kV Bus  
- Ojo 345 kV Bus

Points of Delivery:  
- BA 115 kV Bus  
- West Mesa 115 kV Bus  
- West Mesa 345 kV Bus  
- San Juan 345 kV Bus

**TTC Determination**

TTC has not been defined and ATC is generally not an issue in this direction since this is counter to normal path flow. Generation on the eastern side of this path was used to determine the maximum flow for this direction. Ratings on this path have not been established since transmission requests in this direction are not expected at this time. A TTC value equal to the practical limit on usage in this direction was derived as follows:

\[ \text{ATC} = 20 \text{ MW Las Vegas Combustion Turbine} + 18 \text{ MW Los Alamos County TA3 Generation} + 16 \text{ MW Los Alamos County Abiquiu Generation} + 10 \text{ MW Los Alamos County El Vado Generation} = 64 \text{ MW} \]

Net Scheduling is precluded on this path.

**NATC Determination**

\[ \text{NATC} = \text{TTC} - \text{Other transmission services/ NRES CU1, 3-5} \]

**RATC Planning Horizon Determination**

\[ \text{RATC} = \text{NATC} + \text{RRES/ CU3-5} \]

**RATC Operating Horizon Determination**

\[ \text{RATC} = \text{NATC} + \text{unscheduled NRES/ CU1, 3-5} - \text{RSCH/ CU3-5} \]
2.4 TAIBAN – BW230 Path

TAIBAN to BW230 Direction

Points of Receipt: Taiban Mesa 345 kV Bus

Points of Delivery: Blackwater 230 kV Bus

TTC Determination

TTC is limited by the 200 MW continuous rated capacity of the Blackwater HVDC converter in either direction. TTC is zero if the Blackwater HVDC converter, or if either the BA - Taiban Mesa or Taiban - Blackwater 345 kV transmission lines are out-of-service. Note that schedules on the path that originate at San Juan or Four Corners, the FOURCORNE/SJ345 - WNM/ABQ path are components of the complete path required to transfer power from Four Corners to Blackwater.

TTC = 200

NATC Determination

NATC = TTC
- Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU3-5
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU1, 3-5
- RSCH / CU3-5
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5
BW230 to TAIBAN Direction

Points of Receipt: Blackwater 230 kV Bus
Points of Delivery: Taiban Mesa 345 kV Bus

**TTC Determination**

TTC is limited by the 200 MW continuous rated capacity of the Blackwater HVDC converter. TTC is zero if the Blackwater HVDC converter, or if either the BA - Taiban Mesa or Taiban - Blackwater 345 kV transmission line are out-of-service.

TTC = 200

**NATC Determination**

NATC = TTC
- PNM 200 MW Contracted Purchase from SPS (decreases over time according to contract) / NRES CU3
- Other transmission services / NRES CU1, 3-5

**RATC Planning Horizon Determination**

RATC = NATC
- RRES / CU3-5
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

**RATC Operating Horizon Determination**

RATC = NATC
+ Unscheduled portion of PNM Contracted Purchase from SPS NRES / CU1, 3-5
-RSCH / CU3-5
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5
2.5 ABQ – EPE (Dona Ana/Las Cruces/Picacho) Path

ABQ to EPE Direction

Points of Receipt:  West Mesa 115 kV Bus
                   West Mesa 345 kV Bus (PNM)

Points of Delivery:  EPE/Tri-State/PNM 115 kV common bus (Picacho/Dona Ana/Las Cruces)
                     West Mesa 345 kV Bus (EPE)

TTC Determination

TTC is limited to PNM's 25 MW of firm transmission rights from El Paso Electric Company (EPE).

TTC = 25

Net Scheduling is precluded on this path.

NATC Determination

NATC = TTC
- 25 MW PNM Projected native Deming load / NRES CU1
- Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC- RRES / CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU1, 3-5
- RSCH / CU3-5
EPE to ABQ Direction

Points of Receipt:  EPE/Tri-State/PNM 115 kV common bus (Picacho/Dona Ana/Las Cruces)
                  West Mesa 345 kV Bus (EPE)

Points of Delivery: West Mesa 115 kV Bus (PNM)
                   West Mesa 345 kV Bus (PNM)

TTC Determination

TTC is limited to PNM's 25 MW of firm transmission rights from EPE.

TTC = 25

Currently PNM employs its contractual rights in the north to south direction.

Net Scheduling is precluded on this path.

NATC Determination

NATC = TTC
- Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU1, 3-5
- RSCH / CU3-5
2.6 SJ345 – FOURCORNE Path

SJ345 to FOURCORNE Direction

Points of Receipt: San Juan 345 kV Bus
Points of Delivery: Four Corners 345 kV Bus
Four Corners 230 kV Bus

TTC Determination
TTC is equal to the rated maximum capacity of the San Juan-Four Corners (FC) 345 kV transmission line, which is 1195 MVA. The limiting equipment is the line conductor. PNM has a 25% bi-directional share in this line capacity.

TTC = 299 MW

NATC Determination

NATC = TTC
- 50 MW Transmission Commitment to Anaheim/ NRES CU4
- 36 MW Transmission Commitment to UAMPS/ NRES CU4
- Other transmission services/ NRES CU3-5

Note: If NATC < 0, Then NATC = 0. NATC used in RATC determinations are the values prior to being set to zero.

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU1, 3-5
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU1, 3-5
- RSCH / CU3-5
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5
FOURCORNE to SJ345 Direction

Points of Receipt:    Four Corners 345 kV Bus
                     Four Corners 230 kV Bus

Points of Delivery:  San Juan 345 kV Bus

**TTC Determination**

TTC is equal to rated maximum capacity of the San Juan-Four Corners 345 kV transmission line, which is 1195 MVA. The limiting equipment is the line conductor. PNM has a 25% bi-directional share in this line capacity.

TTC = 299 MW

**NATC Determination**

NATC = TTC
- Other transmission services/ NRES CU3-5

Note: If NATC < 0, Then NATC = 0. NATC used in RATC Determinations are the values prior to being set to zero.

**RATC Planning Horizon Determination**

RATC = NATC
-RRES / CU1, 3-5
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

**RATC Operating Horizon Determination**

RATC = NATC
+ unscheduled NRES / CU1, 3-5-RSCH / CU3-5
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5
2.7 FOURCORNE – GALLEGOS115 Path

FOUCORNE to GALLEGOS115 Direction

Points of Receipt:  Four Corners 230 kV Bus
Four Corners 345 kV Bus

Points of Delivery:  Gallegos 115 kV Bus

TTC Determination

TTC is equal to 107 MW based on a 100 MVA capacity of the Gallegos 230/115 kV transformer plus the
firm netting of a portion of the projected NAPI load (7 MW). This path interacts with the
FOURNCORNE/SJ345-WNM/ABQ path.

TTC = 107 MW

NATC Determination

NATC = TTC
- 75 MW PNM contractual obligation to NAPI in this direction/ NRES CU1
- Other NRES transmission service / CU1, 3-5

Note: If NATC < 0, Then NATC = 0. NATC used in RATC determinations are the values prior to being set
to zero.

RATC Planning Horizon Determination

RATC = NATC
-RRES / CU3-5
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU1, 3-5-RSCH / CU3-5
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5
GALLEGOS115 to FOURCORNE Direction

Points of Receipt: Gallegos 115 kV Bus

Points of Delivery: Four Corners 230 kV Bus
Four Corners 345 kV Bus

**TTC Determination**

TTC is equal to 100 MW based on a 100 MVA capacity of the Gallegos 230/115 kV transformer.

TTC = 100 MW

**NATC Determination**

NATC = TTC
- PNM Projected native load usage of USBR(NIIP) / NRES CU1
- Other NRES transmission service / CU1, 3-5

Note: If NATC < 0, Then NATC = 0. NATC used in RATC determinations are the values prior to being set to zero.

**RATC Planning Horizon Determination**

RATC = NATC
+ RRES / CU3-5
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

**RATC Operating Horizon Determination**

RATC = NATC
+ unscheduled NRES / CU1, 3-5
-RSCH / CU3-5
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5
2.8 SJ345 – SPRINGER345/CORONADO500 Path

SJ345 to SPRINGER345/CORONADO500 Direction

Points of Receipt: San Juan 345 kV Bus
Points of Delivery: Springerville 345 kV Bus
Coronado 500 kV Bus

TTC Determination

TTC is based upon PNM's ownership based rights in this TEP operated facility. These bi-directional rights provide PNM with 200 MW between San Juan and McKinley. Currently 100 MW of these rights north to south are employed by PNM in the San Juan to McKinley direction. The 100 MW McKinley-Springerville and Springerville-Coronado rights are bi-directional.

TTC = 100

Net Scheduling is precluded on this path.

NATC Determination

NATC = TTC
- 100 MW Transmission Commitment to PNMM/ NRES CU4
- PNM Projected native load usage at McKinley. Transmission service, native load requirements, are covered under the FOURCORNE/SJ345-WNM/ABQ path for McKinley - Yah-Ta-Hey deliveries/ NRES CU1
- Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU1, 3-5
- RSCH / CU3-5
SPRINGER345/CORONADO500 to SJ345 Direction

Points of Receipt: Springerville 345 kV Bus
Coronado 500 kV Bus

Points of Delivery: San Juan 345 kV Bus

**TTC Determination**

TTC is based upon PNM's ownership based rights in this TEP operated facility. PNM has 100 MW of bi-directional rights between Springerville-McKinley and Coronado-Springerville. PNM has 150 MW bi-directional rights between McKinley and San Juan.

TTC = 100

Net Scheduling is precluded on this path.

**NATC Determination**

NATC = TTC

**RATC Planning Horizon Determination**

RATC = NATC
- RRES / CU3-5

**RATC Operating Horizon Determination**

RATC = NATC
+ unscheduled NRES / CU1, 3-5
- RSCH / CU3-5
2.9 SJ345 – GREENLEE345 Path

SJ345 to GREENLEE345 Direction

Points of Receipt: San Juan 345 kV Bus
Points of Delivery: Greenlee 345 kV Bus

**TTC Determination**

TTC is based upon PNM's ownership based rights in this TEP operated facility. These bi-directional rights provide PNM with 50 MW between San Juan and Greenlee, PNM purchases 13 MW in the same direction.

TTC = 63 MW

Net Scheduling is precluded on this path.

**NATC Determination**

NATC = TTC

- 13 MW Transmission Commitment to APPA/ NRES CU4
- 20 MW Transmission Commitment to TNP/ NRES CU4
- 27 MW Transmission Commitment to PNMM/ NRES CU4
- 3 MW TRM/CU2 load following to accommodate PNM’s area control commitment.
- Other transmission services/ NRES CU1, 3-5

Note: If NATC < 0, Then NATC = 0. NATC used in RATC determinations are the values prior to being set to zero.

**RATC Planning Horizon Determination**

RATC = NATC
-RRES / CU3-5

**RATC Operating Horizon Determination**

RATC = NATC
+ unscheduled NRES / CU1, 3-5
-RSCH / CU3-5
GREENLEE345 to SJ345 Direction

Points of Receipt: Greenlee 345 kV Bus
Points of Delivery: San Juan 345 kV Bus

TTC Determination

TTC is based upon PNM’s ownership based rights in this TEP operated facility. These bi-directional rights provide PNM with 50 MW between Greenlee and San Juan. PNM also has rights to make the delivers from Greenlee at Springerville and McKinley 345 kV buses.

TTC = 50 MW

Net Scheduling is precluded on this path.

NATC Determination

NATC = TTC - Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU1, 3-5
- RSCH / CU3-5
2.10 GREENLEE345 – HIDALGO345 Path

GREENLEE to HIDALGO345 Direction

Points of Receipt: Greenlee 345 kV Bus
Points of Delivery: Hidalgo 345 kV Bus

TTC Determination

TTC on this path is 267 MW based on Southwest New Mexico Transmission (SWNMT) Project rights. PNM's contractual rights are 50 MW in this path.

Net Scheduling is precluded on this path.

NATC Determination

NATC = TTC
- 20 MW Transmission Commitment to TNP/ NRES CU4
- 27 MW Transmission Commitment to PNMM/ NRES CU4
- 3 MW TRM/CU2 load following to accommodate PNM’s area control commitment (see Appendix A).
- Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU1, 3-5
- RSCH / CU3-5
HIDALGO345 to GREENLEE345 Direction

Points of Receipt: Hidalgo 345 kV Bus
Points of Delivery: Greenlee 345 kV Bus

TTC Determination

TTC on this path is 500 MW based on SWNMT Project rights. PNM’s ownership rights are 150 MW in this path.

Net Scheduling is precluded on this path.

NATC Determination

NATC = TTC
- Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU3&4
- RSCH / CU3&4
2.11 PALOVERDE500 - East (WESTWING500, KYRENE500 & JOJOBA500) Path

PALOVERDE500 to East Direction

Points of Receipt: Palo Verde 500 kV Bus
Points of Delivery: Westwing 500 kV or 230 kV Bus, Kyrene 500 kV or 230 kV Bus, Jojoba 500 kV Bus

TTC Determination

TTC = 652 MW based upon PNM 9.36% Ownership Share of the Palo Verde East Transmission System (VTS). The VTS is rated at 6970 MW.

Net Scheduling is precluded on this path.

NATC Determination

NATC = TTC
- PNM share of Palo Verde Generation reserved for native load use (274 MW) / NRES CU1
- 40 MW Transmission Commitment to PNMM (6/1-10/1 2003)
- Other NRES transmission service / CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU1, 3-5
- RSCH / CU3-5
WESTWING500/KYRENE500/JOJOBA500 to PALOVERDE500 Direction

PNM has only recallable rights in this direction.
2.12 WESTWING500 – FOURCORNE Path

WESTWING500 to FOURCORNE Direction

Points of Receipt:  Westwing 500 kV Bus

Points of Delivery:  Four Corners 230 kV Bus
Four Corners 345 kV Bus

TTC Determination

TTC = 130 MW contract rights from APS
+ 134 MW contract rights from WAPA
----------
= 264 MW Total

Net Scheduling is precluded on this path.

NATC Determination

NATC = TTC
- Projected PNM share of Palo Verde Generation for native load usage.
- Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ PNM Net Deliveries to Others at Westwing and Kyrene
+ unscheduled NRES / CU1, 3-5
- RSCH / CU3-5

FOURCORNE to WESTWING500 Direction

PNM has no rights in this direction.
2.13 FOURCORN345 - FOURCORN230 Path

FOURCORN345 to FOURCORN230 Direction

Points of Receipt:        Four Corners 345 kV Bus
Points of Delivery:      Four Corners 230 kV Bus

TTC Determination

TTC = 156 MW contract rights from the Four Corner Operating Agreement and as also interpreted by Arizona Public Service, the operating agent for this path.

Net Scheduling is precluded on this path.

NATC Determination

NATC = TTC
- 125 MW Transmission commitment to PNM for loss of outlet capacity from the Four Corners 345kV bus / NRES CU3
- Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU1, 3-5
- RSCH / CU3-5

FOURCORN230 to FOURCORN345 Direction

PNM has no rights in this direction.
2.14 REEVES - WNM/ABQ Path

REEVES to WNM/ABQ Direction

Points of Receipt: Reeves 115 kV Bus
Points of Delivery: West Mesa 345 kV Bus
B-A 345 kV Bus

TTC Determination

TTC = 154 MW capability based on three Reeves units on line at maximum.

Net Scheduling is precluded on this path.

NATC Determination

NATC = TTC
- Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU1, 3-5
- RSCH / CU3-5

WNM/ABQ to REEVES Direction

TTC = 0 There are no loads to service nor outlet in this direction.
2.15 VAL115 - NEA Path

VAL115 to NEA Direction

Points of Receipt: Valencia 115 kV Bus
 Points of Delivery: Storrie Lake 115 kV Bus
Norton 115 kV Bus

**TTC Determination**

TTC = 15 MW Summer and 20 MW Winter capability based on the Las Vegas gas turbine unit on line at maximum output.

Net Scheduling is precluded on this path.

**NATC Determination**

NATC = TTC
- Other transmission services/ NRES CU1, 3-5

**RATC Planning Horizon Determination**

RATC = NATC
- RRES / CU3-5

**RATC Operating Horizon Determination**

RATC = NATC
+ unscheduled NRES / CU1, 3-5
- RSCH / CU3-5

**NEA to VAL115 Direction**

TTC = 0 There is no delivery point at Valencia to other than PNM loads.
2.16  SJ345 to SHIPROCK345 path

SJ345 to SHIPROCK345 Direction

Point of Receipt:  San Juan 345kV Bus

Point of Delivery:  Shiprock 345kV Bus

**TTC Determination**

TTC is equal to rated maximum capacity of the San Juan-Shiprock (SR) 345 kV transmission line, which is 1075 MVA. The limiting equipment is the conductor between the 230 kV and 345 kV switching station at San Juan. PNM has a 25% bi-directional share in this line capacity.

TTC = 269 MW

**NATC Determination**

NATC = TTC
- 43 MW Transmission Commitment to City of Farmington for deliverance of their San Juan entitlement.
- Other transmission services/ NRES CU 3-5

**RATC Determination**

RATC = NATC
- Other transmission services/ RRES CU 3-5
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

**RATC Operating Horizon Determination**

RATC = NATC
+ unscheduled NRES / CU3-5
- RSCH / CU3-5
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5
SHIPROCK345 TO SJ345 Direction

Point of Receipt: Shiprock 345kV Bus
Point of Delivery: San Juan 345kV Bus

TTC Determination

TTC is equal to rated maximum capacity of the San Juan-Shiprock 345 kV transmission line, which is 1075 MVA. The limiting equipment is the conductor between the 230 kV and 345 kV switching station at San Juan. PNM has a 25% bi-directional share in this line capacity.

TTC = 269 MW

NATC Determination

NATC = TTC
- Other transmission services/ NRES CU 3-5

RATC Determination

RATC = NATC
- Other transmission services/ RRES CU 3-5
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU3-5
- RSCH / CU3-5
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5
2.17 WESTWING500 – PALOVERDE500 path

WESTWING500 to PALOVERDE500 Direction

Point of Receipt: Westwing 500kV Bus

Point of Delivery: Palo Verde 500kV Bus

**TTC Determination**

TTC = 307 MW

Net Scheduling is precluded on this path.

**NATC Determination**

NATC = 0, This path is available on a non-firm basis.

**RATC Determination**

RATC = 100 MW as per TEP’s Transmission Pre-Scheduler.

**RATC Operating Horizon Determination**

RATC may be adjusted daily on a prescheduled basis depending on TEP’s committed transmission usage for the next day, which will be communicated to the PNM Transmission Services Coordinator for posting.
2.18 DELTA - WNM/ABQ Path

DELTA to WNM/ABQ Direction

Points of Receipt: Person 115 kV Bus
Points of Delivery: West Mesa 345 kV Bus
B-A 345 kV Bus

TTC Determination

TTC = 139 MW capability based on Delta unit on line at maximum output.

Net Scheduling is precluded on this path.

NATC Determination

NATC = TTC
- Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU1, 3-5
- RSCH / CU3-5

WNM/ABQ to DELTA Direction

TTC = 0 There are no loads to service nor outlet in this direction.
2.19 Taiban – ABQ Path

TAIBAN to ABQ Direction

Points of Receipt:
- BA 115 kV Bus
- West Mesa 115 kV Bus
- West Mesa 345 kV Bus

Points of Delivery:
- Taiban Mesa 345 kV Bus

TTC Determination

TTC is 400 MW based on all of the Taiban Mesa wind farm turbines on line at maximum output and the continuous rated capacity of the Blackwater HVDC converter. TTC is zero and 200 MW if the BA - Taiban Mesa or Taiban - Blackwater 345 kV transmission lines are out-of-service, respectively.

TTC = 400

NATC Determination

NATC = TTC
- PNM 200 MW Contracted Purchase from SPS (decreases over time according to contract) / NRES CU3
- PNM 200 MW Contracted Purchase from FPLE (wind farm) / NRES CU3
- Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU3-5
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU1, 3-5
- RSCH / CU3-5
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5
ABQ to TAIBAN Direction

Points of Receipt: Blackwater 230 kV Bus
Points of Delivery: BA 115 kV Bus
West Mesa 115 kV Bus
West Mesa 345 kV Bus

TTC Determination

TTC is limited by the 200 MW continuous rated capacity of the Blackwater HVDC converter. TTC is zero if the Blackwater HVDC converter, or if either the BA - Taiban Mesa or Taiban - Blackwater 345 kV transmission lines are out-of-service. Note that schedules on the path that originate at San Juan or Four Corners are components of the FOURCORNE/SJ345 - WNM/ABQ path required to transfer power from Four Corners to Blackwater.

TTC = 200

NATC Determination

NATC = TTC
- Other transmission services / NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU3-5
+ RRES in reverse direction on this path for net scheduling utilization / CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ Unscheduled portion of PNM Contracted Purchase from SPS NRES / CU1, 3-5
- RSCH / CU3-5
+ RSCH in reverse direction on this path for net scheduling utilization / CU3-5
2.20  Hidalgo345 – Luna345 Path

Hidalgo345 to Luna345 Direction

Points of Receipt: Hidalgo 345 kV Bus
Points of Delivery: Luna 345 kV Bus

TTC Determination

TTC on this path is 267 MW based on SWNMT Project ownership rights. PNM’s ownership rights are 189 MW in this path.

Net Scheduling is precluded on this path.

NATC Determination

NATC = TTC
- 52 MW Transmission Commitment to Tri-State for Pyramid Generation/ NRES CU4
- 27 MW Transmission Commitment to PNMM/ NRES CU4
- 3 MW TRM/CU2 load following to accommodate PNM’s area control commitment (see Appendix A).
- Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
-RRES / CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU1, 3-5
-RSCH / CU3-5
LUNA345 to HIDALGO345 Direction

Points of Receipt: Luna 345 kV Bus
Points of Delivery: Hidalgo 345 kV Bus

TTC Determination

TTC on this path is 267 MW based on SWNMT Project ownership rights. PNM’s ownership rights are 189 MW in this path.

Net Scheduling is precluded on this path.

NATC Determination

NATC = TTC
- Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU3&4
- RSCH / CU3&4
2.21  LUNA345 – LUNA115 Path

LUNA345 to LUNA115 Direction

Points of Receipt:  Luna 345 kV Bus
Points of Delivery:  Luna 115 kV Bus

TTC Determination

TTC is equal to 200 MW based on a 200 MVA capacity of the Luna 345/115 kV transformer.

NATC Determination

NATC = TTC
- 75 MW Transmission Obligation to TNMP/ NRES CU4
- 52 MW Transmission Commitment to Tri-State for Pyramid Generation/ NRES CU4
- 27 MW Transmission Commitment to PNMM/ NRES CU4
- 3 MW TRM/CU2 load following to accommodate PNM’s area control commitment (see Appendix A).
- Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU3-5
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU1, 3-5
- RSCH / CU3-5
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5

LUNA115 to LUNA345 Direction

Points of Receipt:  Luna 115 kV Bus
Points of Delivery:  Luna 345 kV Bus

TTC Determination

TTC is equal to 200 MW based on a 200 MVA capacity of the Luna 345/115 kV transformer.

NATC Determination

NATC = TTC
- Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination
RATC = NATC
- RRES / CU3-5
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

**RATC Operating Horizon Determination**

RATC = NATC
+ unscheduled NRES / CU3&4
- RSCH / CU3&4
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5
2.22 **LUNA115 – MD#1-115 Path**

**LUNA115 to MD#1-115 Direction**

Points of Receipt: Luna 115 kV Bus  
Points of Delivery: MD#1 115 kV Bus

**TTC Determination**

TTC is equal to the rated maximum capacity of the Luna-MD#1 115 kV transmission line, which is currently 131 MVA.

\[ \text{TTC} = 65.5 \text{ MW PNM 50% ownership share of the 131 MVA rating} \]

**NATC Determination**

\[ \text{NATC} = \text{TTC} \]
- 75 MW Transmission Obligation to TNMP/ NRES CU4  
- Other transmission services/ NRES CU1, 3-5

**RATC Planning Horizon Determination**

\[ \text{RATC} = \text{NATC} \]
- RRES / CU3-5  
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

**RATC Operating Horizon Determination**

\[ \text{RATC} = \text{NATC} \]
+ unscheduled NRES / CU1, 3-5  
- RSCH / CU3-5  
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5
**MD#1-115 to LUNA115 Direction**

Points of Receipt: MD#1-115 kV Bus  
Points of Delivery: Luna 115 kV Bus  

**TTC Determination**

TTC is equal to the rated maximum capacity of the Luna-MD#1 115 kV transmission line, which is currently 131 MVA.

TTC = 65.5 MW PNM 50% ownership share of the 131 MVA rating

**NATC Determination**

NATC = TTC  
- Other transmission services/ NRES CU1, 3-5

**RATC Planning Horizon Determination**

RATC = NATC  
- RRES / CU3-5  
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

**RATC Operating Horizon Determination**

RATC = NATC  
+ unscheduled NRES / CU3&4  
- RSCH / CU3&4  
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5
2.23 LUNA115 – MIMBRES115 Path

LUNA115 to MIMBRES115 Direction

Points of Receipt: Luna 115 kV Bus
Points of Delivery: Mimbres 115 kV Bus

TTC Determination

TTC is equal to the rated maximum capacity of the Luna-Mimbres 115 kV transmission line, which is currently 131 MVA.

TTC = 65.5 MW PNM 50% ownership share of the 131 MVA rating

NATC Determination

NATC = TTC
- 52 MW Transmission Commitment to Tri-State for Pyramid Generation/ NRES CU4
- 3 MW TRM/CU2 load following to accommodate PNM’s area control commitment (see Appendix A).
- Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU3-5
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU1, 3-5
- RSCH / CU3-5
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5
MIMBRES115 to LUNA115 Direction

Points of Receipt: Mimbres 115 kV Bus
Points of Delivery: Luna 115 kV Bus

TTC Determination

TTC is equal to the rated maximum capacity of the Luna-Mimbres 115 kV transmission line, which is currently 131 MVA.

TTC = 65.5 MW PNM 50% ownership share of the 131 MVA rating

NATC Determination

NATC = TTC
- Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU3-5
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU3&4
- RSCH / CU3&4
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5
2.24 MIMBRES115 – EPE (Dona Ana/Las Cruces/Picacho) Path

MIMBRES115 to EPE Direction

Points of Receipt: Mimbres 115 kV Bus
Points of Delivery: EPE/Tri-State/PNM 115 kV common Bus (Picacho/Dona Ana/Las Cruces)

TTC Determination

TTC is equal to the rated maximum capacity of the Mimbres-Picacho 115 kV transmission line, which is currently 113 MVA.

TTC = 56.5 MW PNM 50% ownership share of the 113 MVA rating

NATC Determination

NATC = TTC
- 10 MW Transmission Commitment to Tri-State for Pyramid Generation/ NRES CU4
- Other transmission services/ NRES CU1, 3-5

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU3-5
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU1, 3-5
- RSCH / CU3-5
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5

EPE to MIMBRES115 Direction

Points of Receipt: EPE/Tri-State/PNM 115 kV common Bus (Picacho/Dona Ana/Las Cruces)
Points of Delivery: Mimbres 115 kV Bus

TTC Determination

TTC is equal to the rated maximum capacity of the Mimbres-Picacho 115 kV transmission line, which is currently 113 MVA.

TTC = 56.5 MW PNM 50% ownership share of the 113 MVA rating

NATC Determination

NATC = TTC
- 25 MW PNM Projected native Deming load / NRES CU1
- Other transmission services/ NRES CU1, 3-5

**RATC Planning Horizon Determination**

RATC = NATC  
- RRES / CU3-5  
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

**RATC Operating Horizon Determination**

RATC = NATC  
+ unscheduled NRES / CU3&4  
- RSCH / CU3&4  
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5
2.25  **SHIPROCK – FOURCORNE Path**

**SJ345 to FOURCORNE Direction**

Points of Receipt:  Shiprock 345 kV Bus

Points of Delivery:  Four Corners 345 kV Bus
                      Four Corners 230 kV Bus

**TTC Determination**

TTC is equal to the rated maximum capacity of the Shiprock-Four Corners 345 kV transmission line, which is currently 955 MVA. The limiting equipment is a current transformer. PNM has a 25% bi-directional share in this line capacity.

TTC = 239 MW

**NATC Determination**

NATC = TTC
- Other transmission services/ NRES CU3-5

Note: If NATC < 0, Then NATC = 0. NATC used in RATC determinations are the values prior to being set to zero.

**RATC Planning Horizon Determination**

RATC = NATC
-RRES / CU1, 3-5
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

**RATC Operating Horizon Determination**

RATC = NATC
+ unscheduled NRES / CU1, 3-5
-RSCH / CU3-5
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5
FOURCORNE to SJ345 Direction

Points of Receipt:  Four Corners 345 kV Bus
Four Corners 230 kV Bus

Points of Delivery:  Shiprock 345 kV Bus

TTC Determination

TTC is equal to the rated maximum capacity of the Shiprock-Four Corners 345 kV transmission line, which is currently 955 MVA. The limiting equipment is a current transformer. PNM has a 25% bi-directional share in this line capacity.

TTC = 239 MW

NATC Determination

NATC = TTC
- Other transmission services/ NRES CU3-5

Note: If NATC < 0, Then NATC = 0. NATC used in RATC Determinations are the values prior to being set to zero.

RATC Planning Horizon Determination

RATC = NATC
- RRES / CU1, 3-5
+ RRES in reverse direction on this path for net scheduling utilization/ CU3-5

RATC Operating Horizon Determination

RATC = NATC
+ unscheduled NRES / CU1, 3-5-RSCH / CU3-5
+ RSCH in reverse direction on this path for net scheduling utilization/ CU3-5

PNM's TTC/ATC Determination document

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Appendices

A. PNM CBM and TRM Methodology, Computation, and Specific Path Reservation
B. System Map
Appendix A - PNM CBM and TRM Methodology, Computation, and Specific Path Reservations

The CBM and TRM needs of PNM are determined by and calculated by PNM’s reliability function. PNM’s wholesale merchant function is not involved in any way in the process for determination of ATC or the amount of CBM/TRM to incorporate into PNM’s system reliability plans. PNM strictly follows its Standards of Conduct regarding all transmission service requests, as well as the determination of the appropriate level of CBM/TRM for PNM’s system reliability purposes.

Capacity Benefit Margin (CBM)

PNM does not use CBM. As stated in the WI report, if the limitation on the use of TRM to 59 minutes for operating reserve would force a Transmission Provider to set aside unnecessary CBM on the same path as the TRM, the Transmission Provider may utilize the TRM beyond the 59 minutes. This would allow the Transmission Provider to maximize the ATC by not needlessly setting aside twice the amount of transmission (TRM and CBM) than is necessary for reliability.

Transmission Reliability Margin (TRM)

A description of the PNM system is useful for understanding PNM’s TRM requirements.

The majority of PNM’s native load is located generally in central NM in Albuquerque and the surrounding area, and in the cities of Santa Fe, Las Vegas, and Clayton in northern New Mexico. PNM also serves the City of Deming, in southern New Mexico and, at the wholesale level, the City of Gallup, located in western New Mexico.

PNM’s baseload generation at Palo Verde and Four Corners located outside PNM’s control area as well as PNM’s San Juan Generation located inside PNM’s control area are remote from its loads. This generation is transferred into PNM’s transmission network at Four Corners and delivered to PNM’s loads in Albuquerque, Santa Fe, Las Vegas, and Clayton on the northern New Mexico transmission path. The northern New Mexico transmission path is composed of the 230 kV and 345 kV transmission lines that connect the Four Corners and San Juan generating stations to the NM load centers. Deliveries to Deming in southern NM are accommodated through PNM’s contractual arrangement with El Paso Electric Company (EPE) and ownership and purchased transmission rights PNM has on the western side of New Mexico. PNM provides firm transmission service on its northern New Mexico path either through existing bi-lateral pre-888 transmission contracts or through PNM’s Open Access Transmission Tariff. PNM provides firm transmission service to Western Area Power Administration (Western), PNM Marketing (PNMM), Texas New Mexico Power (TNP), Tri-State Generation & Transmission Association (Tri-State) and EPE. In addition, PNM provides firm transmission service originating from Four Corners to the Navajo Tribal Utility Authority (NTUA) in western New Mexico and provides Network Integration Transmission Service to Tri-State, Los Alamos County (LAC), PNMM (Gallup) and Western (Kirkland). The combination of PNM’s native load requirements and PNM’s firm transmission service commitments result in PNM requiring the commitment of certain loadside generating resources to serve load because transmission capability from the Four Corners area is insufficient to serve the entire load from these remote generation resources. When the northern New Mexico transmission path reaches its limits, all additional load must be served from generators south and east of the Four Corners area, near the load centers.

PNM Northern New Mexico loadside resources consist of gas-fired generation in Albuquerque (Reeves and Delta) and Las Vegas (Las Vegas Gas Turbine), as well as certain capacity available to PNM, by
agreement, from the Rio Grande generating units on the EPE system located near El Paso, Texas. PNM also has an 150MW interruptible purchased-power agreement, a 50MW firm power purchase (through 2005) with SPS that is delivered through PNM’s Blackwater HVDC converter on the east side of the state, and purchases 200 MW from a windfarm at Taiban Mesa beginning July 1, 2003. Both the Blackwater HVDC converter and windfarm are interconnected to a radial 345 kV transmission line. These loadside resources (Reeves, Delta, Las Vegas Gas Turbine, EPE and SPS purchase) are operated during periods when PNM faces transmission constraints and limitations that prevent the importation of additional amounts of its own remote baseload capacity (or potential market resources) from the Four Corners area, which is a significant energy trading hub in the southwest.

The need to be able to withstand an outage or curtailment of any of the load-side resources and replace the generation from remote sources while not exceeding the limits of the transmission system is the basis for PNM’s reservation of transmission capability that PNM considers TRM. The level of the TRM transmission reservation is based on maintaining reliability for all users of the system while replacing power lost from the largest load-side resource used by PNM to serve its native load and fulfill its contractual commitments.

PNM requires transmission capability on its northern New Mexico transmission path to replace the largest hazard among the resources on the load side of the system that may be lost while ensuring that its transmission limits are not exceeded. The amount of transmission reserved for this purpose is dependent on the units that are dispatched to serve load at any given time. PNM reserves TRM based on the impact on its transmission system when specific loadside resources are lost. The transmission system limit can toggle between a voltage stability limit and a thermal limit, depending on the amount of VAr support in-service. As will be described herein, when the system is voltage stability limited there is not necessarily a 1:1 relationship between the generation capacity lost on the load side of PNM’s system and the transmission capability available on the northern New Mexico system to replace the lost generation.

PNM operates and purchases loadside generation resources that affect its TRM reservation (Reeves, Delta and Las Vegas). PNM’s Reeves Station is comprised of three individual gas fired steam units, two with a rated capacity of 44 MW each and a third with a rated capacity of 67 MW. The Delta unit is a 132 MW gas combustion turbine. Because of the configuration of PNM’s northern New Mexico transmission system, the location of Reeves and Delta units (in Albuquerque) results in unit outages having a greater impact on the northern New Mexico transmission path than the generating capacity lost when the system is voltage stability limited. Specifically, an outage of either the Reeves units 1 or 2 (rated at 44 MW each) will result in a transmission impact (reduction) of up to 60 MW on the northern New Mexico path. An outage of Reeves Unit 3 (67 MW) or Delta unit (132 MW) results in a transmission impact (reduction) of up to 92 or 167 MW on the northern New Mexico path, respectively. This impact is a result of the loss of the Reeves or Delta generator ability to provide reactive support that is beneficial to the transmission system limits. Therefore, the loss of either Reeves or Delta unit results in greater than a 1:1 impact on the northern New Mexico path because PNM must replace the lost generation and additional amount of generation that can no longer be imported. For example, rather than reserve 132 MW of TRM for a Delta outage, PNM must reserve 167 MW when the system is voltage stability limited. When the transmission system has sufficient voltage support, then it will be constrained by thermal limitations and the TRM reservation will be 132 MW for this unit outage.

The location of the Las Vegas Gas Turbine does not cause a similar incremental impact on transmission capability when the generation resource is lost. A loss of the Las Vegas Gas Turbine results in an impact of up to 20 MW on the northern New Mexico path.

PNM’s largest loadside resource is its 200 MW purchase (150MW interruptible and 50MW firm) from SPS through the Blackwater HVDC converter and its purchase of 200 MW from a windfarm at Taiban Mesa since both the Blackwater HVDC converter and windfarm are interconnected to a radial 345 kV.
transmission line. However, it is important in this analysis to understand that SPS has the contractual right to interrupt the 150MW purchase by PNM up to 5 percent of the hours in a month. Although this resource is interruptible, the NMPUC decided in Case No. 2146, part of this resource is the equivalent of a network resource in today’s nomenclature and PNM is required to treat it as such. The loss of the Blackwater converter and windfarm when they are operating at their maximum output of 400 MW results in approximately 291 MW of transmission capability being freed up when the transmission system is voltage stability limited. Therefore, if the transmission system is voltage stability limited the TRM requirement is 109 MW or approximately 400 MW if the system is thermally limited.

As PNM described the location of a PNM generating resource could have an impact of more than 1:1 between generating capacity and available transmission capability when the generating resource is lost. A similar situation exists relative to PNM’s obligation to provide transmission support for the reliable operation of Tri-States’ Prewitt Escalante Generating Station (“PEGS”) resource.

Because of the location of PEGS, a loss of the PEGS unit operating at or near full load of 245 MW results in 113 MW or 120 MW of transmission capability being freed up if the system is voltage stability or thermally limited, respectively. As a result, there is only an incremental 132 MW or 125 MW transmission requirement for replacement of 245 MW of the lost PEGS generation if the system is either voltage or thermally limited.

PNM also has certain contractual entitlements to capacity (39 MW) from the Rio Grande units on EPE’s system plus an additional 31 MW associated with the EPE contingent capacity bank. The location of the resources from EPE and the Afton generator results in no impact on PNM’s northern New Mexico path if the Southern New Mexico resource is lost and the Arroyo phase shifter transformer (PST) is not adjusted. PNM’s existing load-side TRM reservation is adequate to encompass the outage of the EPE resources or the Afton generator.

PNM’s TRM is made available for non-firm transmission service sales that are subject to interruption, consistent with the terms of the OATT.

**PNM Use of TRM Related to the Southwest Reserve Sharing Group (SRSG) Agreement**

PNM is a participant in SRSG. For purposes of TRM use, PNM receives replacement reserves at Four Corners or San Juan, where PNM has installed network resources and where PVNGS, another PNM network resource, enters PNM’s contiguous system. Therefore, TRM is not required to receive SRSG reserves since the transmission path used to transfer the SRSG reserves is the same transmission path that is normally used to deliver the lost replacement resource to PNM’s load center.

As to its delivery of SRSG reserves to other parties, PNM has committed to providing generation at Four Corners, San Juan, and Palo Verde Generating Stations, all locations where PNM jointly owns network generation resources with other SRSG signatories. Deliveries at these locations are made at the switchyard to SRSG participants having rights to transact at the switchyard and will not require commitment of otherwise available transmission capability.

**PNM Use of TRM Related to Southern New Mexico**

In southern New Mexico PNM serves the City of Deming and provides firm transmission rights to TNP and PNMM. Deliveries to Deming, TNP and PNMM are accommodated through a PNM contractual agreement combine with EPE (25 MW) and ownership PNM has on the western side of New Mexico (50 MW) for a total of 75 MW of transmission rights. PNM control area contains a total load in southern NM of approximately 300 MW, which includes PNM’s Deming load, Tri-State’s and TNP’s southern NM load.
PNM reserves 3 MW of TRM on the SJ345-GREENLEE345-HIDALGO345-LUNA345-LUNA115-MIMBRES115 path for load following to accommodate PNM’s area control commitment in southern NM.

PNM’s 3 MW of TRM on the San Juan-Greenlee-EPE path is not made available for non-firm service since it used on a real time basis for load following.