



Western Electricity Coordinating Council

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OPERATING TRANSFER CAPABILITY
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BOARD OF DIRECTORS
MEMBER REPRESENTATIVES

Subject: Approved 2006 Summer
OTC Limits

The Operating Transfer Capability (OTC) Policy Committee has approved the recommended Summer 2006 OTC limits for the paths listed in the attached Tables. These OTC limits are documented in the Summer Subregional Study Group Reports that are posted on the WECC Members Area of the website under the OTC Policy Committee folder.

These limits apply to the 2006 Summer operating season starting June 1, 2006, and ending no later than September 30, 2006. Consequently, the interties may be operated at the approved summer limits at any time after midnight on May 31, 2006, when the system is being operated under summer operating conditions studied by the Subregional Study Groups and pending completion of:

- The Operating Procedures Review Group's acceptance of the associated summer operating procedures for each of the interties and those operating procedures (including system monitoring and curtailment responsibilities) being implemented, and
- Operator training and direction required to ensure operation within the established operating limits.

Please call if you have questions.

Sincerely,

Vickie A. VanZandt

VV:cm
attachments

California/Mexico Subregion Summer 2006

Path	Path Number	Rating (MW)	2006 Summer OTC (MW)	2005 Summer OTC (MW)	2006 Spring OTC (MW)
California					
COI (N-S)	66	4800 (N-S)	4800 (N-S)	4800 (N-S)	4800 (N-S)
PDCI (N-S)	65	3100 (N-S)	3100 (N-S)	3100 (N-S)	3100 (N-S)
Midway-Los Banos (S-N)	15	5400 (S-N)	5400 (S-N)	5400 (S-N)	5400 (S-N)
SCIT	N/A	18860	15600*	14800	13300
Midway-Vincent (N-S)	26	3700** (N-S)	4000 (N-S) ***	4000 (N-S)	3700 (N-S)

* The 800 MW increase on SCIT from the 2005 Summer operating season is due to the series capacitor replacement project on East-of-River and the additional voltage support in Southern California.

** Path 26 is rated at 3700 MW in the N-S direction, but is currently in the WECC Three-Phase Rating Process to achieve 4000 MW by Summer 2006.

*** The 300 MW increase from the 2006 Spring operating season was due to the expansion of the existing RAS.

Northwest Subregion

Summer 2006

Path	Path Number	Rating (MW)	2006 Summer OTC (MW)	2005 Summer OTC (MW)	2006 Spring OTC (MW)
COI + NW-Sierra	66	4800 (N-S) 3675 (S-N)	*4800 (N-S) 3675 (S-N)	4800 (N-S) 3675 (S-N)	4800 (N-S) 3675 (S-N)
PDCI	65	3100 (N-S) 3100 (S-N)	*3100 (N-S) 2200 (S-N)	3100 (N-S) 2200 (S-N)	3100 (N-S) 2200 (S-N)
NW-Sierra	76	300 (N-S) 300 (S-N)	*300 (N-S) 300 (S-N)	300 (N-S) 300 (S-N)	300 (N-S) 300 (S-N)
COI + NW-Sierra + PDCI	N/A	7900 (N-S) 6775 (S-N)	7900 (N-S) 5875 (S-N)	7900 (N-S) 5875 (S-N)	7900 (N-S) 5875 (S-N)
NJD	73	Not Rated	*7800 (N-S)	7700 (N-S)	8000 (N-S)
Brownlee East	55	1850 (W-E)	1850 (W-E)	1850 (W-E)	1850 (W-E)
South of Allston	71	Not Rated (N-S)	*3090 (N-S)	2640 (N-S)	2640 (N-S)
Montana-NW	8	2200 (E-W) 1350 (W-E)	*2200 (E-W) 650 -1250 (W-E)	2200 (E-W) 650 -1250 (W-E)	2200 (E-W) 1143 -1257 (W-E)
MT-SE	N/A	Not Rated (N-S) Not Rated (S-N)	600 (N-S) 356-600 (S-N) HL 502-600 (S-N) LL	600 (N-S) 356-600 (S-N) HL 502-600 (S-N) LL	600 (N-S) 402-600 (S-N) HL 431-600 (S-N) LL
West of Hatwai	6	4277 (E-W)	*4065 (E-W)	3960 (E-W)	4090 (E-W)

Northwest Subregion

Summer 2006

Path	Path Number	Rating (MW)	2006 Summer OTC (MW)	2005 Summer OTC (MW)	2006 Spring OTC (MW)
NW-Canada	3	3150 (N-S) 2000 (S-N)	3150 (N-S) 2000 (S-N)	3150 (N-S) 2000 (S-N)	3150 (N-S) 2000 (S-N)
Sierra-Idaho	16	500 (N-S) 360 (S-N)	500 (N-S) 262 (S-N)	500 (N-S) 262 (S-N)	500 (N-S) 262 (S-N)
Sierra-PG&E	24	160 (E-W) 160 (W-E)	105 (E-W) 100 (W-E)	105 (E-W) 100 (W-E)	105 (E-W) 100 (W-E)
Sierra-Utah	32	440 (E-W) 235 (W-E)	370 (E-W) 235 (W-E)	370 (E-W) 235 (W-E)	343 (E-W) 235 (W-E)
Idaho-NW	14	2400 (E-W) 1200 (W-E)	2304 (E-W) 1090 (W-E)	2304 (E-W) 1090 (W-E)	2304 (E-W) 1150 (W-E)
Midpoint-Summer Lake	75	1500 (E-W) 400 (W-E)	1500 (E-W) 400 (W-E)	1500 (E-W) 400 (W-E)	1500 (E-W) 400 (W-E)
Bridger West	19	2200 (E-W)	2200 (E-W)	2200 (E-W)	2200 (E-W)
Borah West	17	2307 (E-W)	2307 (E-W)	2307 (E-W)	2307 (E-W)
Path C	20	1000 (N-S) 1000 (S-N)	820 (N-S) 775-900 (S-N)	820 (N-S) 775-900 (S-N)	820 (N-S) 775-900 (S-N)
Montana-Idaho	18	356 (N-S) 337 (S-N)	356 (N-S) 337 (S-N)	356 (N-S) 337 (S-N)	356 (N-S) 337 (S-N)
Alberta-BC	1	1000 (E-W) 1200 (W-E)	1000 (E-W) 1160 (W-E)	1000 (E-W) 1160 (W-E)	1000 (E-W) 1160 (W-E)

* OTC Studies were performed for the 2006 summer season.

Rocky Mountain Subregion Summer 2006

Path	Path Number	Rating (MW)	2006 Summer OTC (MW)	2005 Summer OTC (MW)	2006 Spring OTC (MW)
Yellowtail – N		510	510	510	510
Yellowtail – S		625	625	625	625
TOT1A	30	650	650	650	650
TOT2A	31	690	690	690	690
TOT3	36	1605	1590	1594	1594
TOT5	39	1680	1680	1680	1680
TOT7	40	890	890	890	890

Southwest Area Subregion Summer 2006

Path	Path Number	Rating (MW)	2006 Summer OTC (MW)	2005 Summer OTC (MW)	2006 Spring OTC (MW)
Four Corners West	22	2325 Nominal (Nomogram)	2325 Nominal (Nomogram)	2325 Nominal (Nomogram)	2325 Nominal (Nomogram)
Cholla-Pinnacle Peak	50	1200	1200	1200	1200
Northern New Mexico	48	1947 See note 1	1947 See note 1	1947 See note 1	1947 See note 1
Southern New Mexico	47	1048 See note 2	1048 See note 2	1048 See note 2	1048 See note 2
East of the River	49	7550	8055	7550	6790

Note 1: PNM has developed independent real-time nomogram equations for Path 48 that is incorporated in their Energy Management System. These nomogram equations utilize metered real-time system conditions (e.g., real/reactive power flows, status of shunt capacitor/reactive, etc.) to determine the Path 48 limits on an one-minute basis. The nomogram equation variables included in the Path 48 calculations are therefore dependent upon system conditions and take into account seasonal and time-of-day variations. Detailed descriptions of the nomogram variables and the methodology that is utilized to determined the nomogram equations for 48 are available upon request.

The extent of the application of dynamic real-time system conditions for use in operating nomograms is quite unique to Path 48 compared to other WECC paths. These dynamic nomograms were developed in a process that identified both independent and dependent variables. When all the significant variables affecting import limits were identified, the dynamic nomogram equations were developed and implemented. Thus, the PNM real-time operating nomogram for Path 48 takes into account all seasonal and time-of-day conditions on the New Mexico system by the use of these real-time variables. These real-time nomogram methodologies have been used since 1988. Because of PNM's unique methodology to determine limits on Path 48, PNM has only performed summer OTC check studies. The OTC Policy Committee has supported PNM's reasoning for only performing summer OTC check cases. PNM operates the system based on the lower of the voltage stability or thermal limit. The maximum simultaneous rating is 1800 MW with the El Paso Electric Phase Shifter controlling the West Mesa – Arroyo line flow to 186 MW, as measured at West Mesa with a maximum non-simultaneous rating of 1947 MW.

Note 2: El Paso Electric Company (EPE) has developed independent real-time nomogram equations for Path 47 that are incorporated in their Energy Management System. These nomogram equations utilize metered real-time system conditions (e.g., real/reactive power flows, status of shunt capacitor/reactive, status of generating units, etc.) to determine the Path 47 limits on a one-minute basis. The nomogram equation variables included in the Path 47 calculations are therefore dependent upon system conditions and take into account seasonal and time-of-day variations. Detailed descriptions of the nomogram variables and methodology that is utilized to determine the nomogram equations for Path 47 are available on the EPE webpage at www.epelectric.com.

The extent of the application of dynamic real-time system conditions for use in operating nomograms used for Path 47 compared to other WECC paths is unique. These dynamic nomograms were developed in a process that identified both independent and dependent variables. When all the significant variables affecting import limits were identified, the dynamic nomogram equations were developed and implemented. Thus, the EPE real-time operating nomogram for Path 47 takes into account all seasonal and time-of-day conditions on the southern New Mexico and EPE systems by the use of these real-time variables. These real-time nomogram methodologies have been used since 1995. Because of EPE's methodology to determined limits on Path 47, EPE has only performed summer OTC check studies. The OTC Policy Committee has supported EPE's reasoning for only performing summer OTC check cases.

EPE operates the system based on the lower of the voltage stability, absolute voltage level or thermal limit. The maximum simultaneous rating is 925 MW (by contract) with a maximum non-simultaneous rating of 1048 MW..