

**Transmission Service Request
System Impact Study Report**

Completed for
**PacifiCorp Merchant
("Transmission Customer")**

Proposed Transmission
**Network Resource Designation
Lakeside II - 636 MW**

December 2008

1.0 Description

The Transmission Customer has requested network resource designation for a planned 636 MW generating facility to be located adjacent, and on the north side of the existing Lake Side Power Plant located near the intersection of W200 W. and North Proctor Road in Vineyard, Utah. The proposed point of receipt is at a new 345 kV substation on the Camp Williams to Spanish Fork 345 kV transmission line.

Queue	OASIS AREF	Completed Request Received	Type of Service	POR	POD	MW	Start	End
949	495604	6/4/08	NT	Dynamo	Utah Network Load	636	6/1/12	6/1/28

2.0 Study Assumptions

- The Combined Generation and Long Term Firm Request Queue, including active requests which impact the Transmission Customer's queue request, is attached in Appendix 1. Service requests with the earliest date upon which a completed application was received have the highest priority. Transmission service on the existing transmission system or on new transmission lines will be granted to the highest priority requests first.
- The new double circuit 345 kV line from Camp Williams to 90th South is in service.
- The Camp Williams Static VAr Compensator (SVC) and Mona 200 MVar capacitor are in service.

3.0 Discussion

Power flow study work has shown that in order to deliver 636 MW of additional power from the POR to network load on a firm basis, a connection to the 345 kV system is required with no connection to the local 138 kV system. The following modifications have been identified:

- The proposed facility will be interconnected by an approximately 0.2 mile long loop-in of the Camp Williams-Spanish Fork 345 kV line to a new Lakeside II 345 kV substation. In addition, the Camp Williams-Emercy 345 kV line will be looped into the Spanish Fork substation, and approximately 9.6 mile long Spanish Fork-Tanner 138 kV line will be rebuilt with a single 1272 ACCC (or equivalent) conductor per phase. With these improvements, generator tripping of Lakeside II will be required for N-2 outages of the double circuit 345 kV line south from Camp Williams towards Lakeside and Spanish Fork.
- If generator tripping is not deemed acceptable, the addition of a new, approximately 14-miles long 345 kV line from Lakeside to Camp Williams is recommended. The addition

of this new line will provide greater operational flexibility, lower system losses, increased system reliability and will eliminate the requirement for generator tripping. While the probability of N-2 outage in the 14 miles section of double circuit 345 kV line south of Camp Williams is small, this is a credible NERC category C outage and must be considered for all planning and operation studies.

Once the transmission improvements identified above are in-service, the Lakeside II generating plant can be designated as a network resource

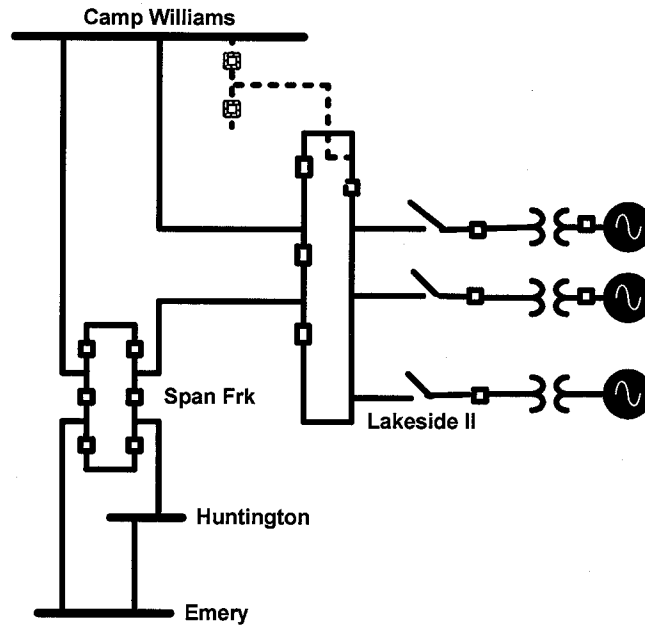


Figure 1

4.0 Plan of Service

Per Section 3.0, in order to provide full network resource integration service for the Lakeside II generating facility, the following facilities are required:

1. Loop the Camp Williams-Spanish Fork 345 kV line into a new Lakeside II 345 kV substation.
2. Loop the Camp Williams-Emery 345 kV line into the Spanish Fork substation.
3. Rebuild the approximately 9.6-mile long Spanish Fork-Tanner 138 kV line with a single 1272 ACCC high temperature conductor (or equivalent) per phase.
4. Installation of a generator tripping scheme that will trip the plant for a simultaneous outage of the Lakeside-Camp Williams and Spanish Fork-Camp Williams 345 kV lines. A specific tripping algorithm will be developed as part of the design process for the scheme.

If generator tripping is deemed unacceptable, and to provide greater operational flexibility, reduced system losses, and increased system reliability, a new 14 mile long 345 kV transmission

line from Lakeside to Camp Williams Substation will be required. Permitting and construction of this line could be very difficult in this area and may not be completed by the requested in-service date.

5.0 Cost Estimate

It is estimated that it will cost approximately \$3.5 million to rebuild 9.6 miles of the 138 kV Spanish Fork to Tanner transmission line and approximately \$32 million to construct the 14 mile long 345 kV transmission line from Lakeside to Camp Williams Substation.

6.0 Conclusions

Once the modifications necessary for interconnection identified in the above are complete, the 636 MW Project generation facility can be designated as a network resource.

Appendix 1: PacifiCorp Transmission Queue for Requests Q0943
Combined Generation and Long Term Firm Request Queue (Active Requests)

QUEUE	OASIS AREF	Company	Completed Request Received	Control Area	Type of Request	POR (TSR) / Location of Interconnection (GI)	POD (TSR)	Start Date (TSR) / Commercial Operation (GI)	MW
15			10/11/01	East	GEN	Mona 345kV		05/01/07	550
20			04/30/03	East	GEN	Mona 345kV		05/01/07	280
21			04/30/03	East	GEN	Mona 345kV		03/22/06	245
29a			09/18/03	East	GEN	Goshen 161kV		12/31/05	64.5
29b			09/18/03	East	GEN	Goshen 161kV		11/01/07	90
44			06/03/04	East	ER	Timp - Tri-City Line, 138kV		07/29/07	535-S/567-W
47			10/04/04	East	GEN	Goshen - Rigby Line, 69kV		11/30/07	19.5
52			03/28/05	East	GEN	Terminal Sub Distribution Circuit, 12.47kV		07/20/06	3.2
198	288487		06/27/05	East	NT	BOBR (Resource)	PATHC	11/01/05	20
212	295072		08/04/05	East	NT	PACE (Resource)	PACE	12/31/06	30
59			08/24/05	East	NR	North of Antelope Mine Sub, 230kV		06/01/10	250-S/285-W
60			10/03/05	East	NR	Pavant - Gonder Line, 230kV		12/31/09	200
61			10/03/05	East	NR	Pavant - Gonder Line, 230kV		12/31/09	200
233	304840		10/04/05	East	NT	PACE (Resource)	PACE	12/31/06	30
203	282165		11/23/2005	East	NT	PACE (Resource)	PACE	6/1/2008	98
66			12/05/05	East	NR	Blundell Geothermal Sub		10/19/07	11-S/15-W
274	316764		12/12/05	East	NT	PACE (Resource)	PACE	01/01/05	55
67			12/14/05	East	ER	Blundell Geothermal Sub		11/01/09	41-S/50-W
73			03/27/06	East	GEN	Spanish Fork - Santaquin, 46kV		10/15/07	18.9
310	339258		04/12/06	East	NT	PACE (Resource)	PACE	04/15/06	141
78			04/25/06	East	NR	Mona Substation, 345kV			59
80			05/08/06	East	ER	Birch Creek - Ben Lomond, 230kV		11/01/09	240
89			06/16/06	East	ER	Carbon Wyoming		11/01/09	201
297	326467		06/16/06	East	NT	PACE (Resource)	PACE	06/01/09	265
447	355085		06/20/06	East	NT	PACE (Resource)	PACE	03/01/08	60
90			06/22/06	East	ER	Uinta Long Hollow, 138kV		12/31/07	60
463	363967		08/01/06	East	PTP	MPAC	PACEN	08/15/06	250
93			09/19/06	East	GEN	Tooele, Utah TBD		03/01/08	1
486	374355		9/29/06	East	NT	PACE (Resource)	INT	03/01/08	80
95			10/06/06	East	NR w/ER	Tooele-Dugway line, 48kV		06/30/08	71.4
96			10/09/06	East	NR w/ER	Uinta Long Hollow, 138kV		07/01/08	78.5
100a			11/02/06	East	NR w/ER	Yellowtail-Frannie line, 230kV		12/31/08	99
100b			11/02/06	East	NR w/ER	Yellowtail-Frannie line, 230kV		12/31/09	99
100c			11/02/06	East	NR w/ER	Yellowtail-Frannie line, 230kV		12/31/10	57
107			11/14/06	East	NR	Timp-Tri-City line, 138kV		05/15/07	79/49
111			12/8/06	East	NA	Salt Lake - TBD		12/31/07	0.511
117			01/18/07	East	NR w/ER	Miners-Difficulty Line, 230kV		03/01/08	99
118			01/18/07	East	NR w/ER	Miners-Difficulty Line, 230kV		04/01/08	101
540	393373		1/18/07	East	NT	PACEW (Resource)	PACEW	03/01/08	99
119a			01/29/07	East	NR w/ER	Foot Creek Sub, 230kV		10/31/08	99
119b			01/29/07	East	NR w/ER	Foot Creek Sub, 230kV		10/31/09	88.5

120			02/08/07	East	NA	TBD		02/01/07	0.65
123			03/05/07	East	NR	Near Glenrock Mine 34.5kV		03/01/08	99
126			03/05/07	East	NR	Near Glenrock Mine 230kV		03/01/08	297
128			03/13/07	East	NR w/ER	Near Cove Fort sub, 138kV		11/01/09	150
129			03/30/07	East	N/A	Near site on 12kV system		08/01/08	4.5
130			04/28/07	East	NR w/ER	Miners-Difficulty Line, 230kV		10/01/11	300
635	412872		05/04/07	East	NT	GSHN (Resource)	GSHN	09/30/08	90
637	412890		5/4/07	East	PTP	PACEW	MDWP	01/01/13	100
638	412893		5/4/07	East	PTP	PACEW	BOBR	01/01/13	100
639	412896		5/4/07	East	PTP	PACEW	PACE	01/01/13	100
640	412899		5/4/07	East	PTP	PACEW	PACE	01/01/13	100
641	412902		5/4/07	East	PTP	PACEW	PACE	01/01/13	100
642	412905		5/4/07	East	PTP	PACEW	PACE	01/01/13	100
643	412908		5/4/07	East	PTP	PACEW	BOBR	01/01/13	100
644	412911		5/4/07	East	PTP	DJ	MDWP	01/01/13	100
132			05/07/07	East	NR w/ER	Miners-Difficulty Line, 230kV		10/01/12	361
646	413567		5/8/07	East	PTP	PACEW	MDWP	01/01/13	100
647	413571		5/8/07	East	PTP	PACEW	MDWP	01/01/13	100
648	413576		5/8/07	East	PTP	PACEW	MPAC	01/01/13	100
649	413580		5/8/07	East	PTP	PACEW	MPAC	01/01/13	100
135			5/22/07	East	NR w/ER	Dave Johnston Plant, 230kV		12/31/11	500
136			5/22/07	East	NR w/ER	Dave Johnston Plant, 230kV		12/31/12	500
137			5/22/07	East	NR w/ER	Dave Johnston Plant, 230kV		12/31/13	1000
138			5/22/07	East	N/A	Green River 12 circuit, 12.5kV		12/31/07	0.475
139			5/25/07	East	N/A	University Substation, 46kV		12/01/07	7.6
682	418723		6/5/07	East	NT	PACE (Resource)	PACE	07/10/07	1
142			6/22/2007	East	NR w/ER	Muddy Creek Switching on Long Hollow-Naughton line, 138kV		12/31/2009	98.7
143			6/22/2007	East	NR w/ER	Muddy Creek Switching on Long Hollow-Naughton line, 138kV		12/31/2009	79.8
144			6/25/2007	East	N/A	TBD		TBD	1.5
150			7/13/07	East	N/A	TBD		3/1/2008	0.85
152			7/30/07	East	NR w/ER	TBD (Lincoln County, WY)		12/31/11	500
153			8/8/07	East	NR w/ER	Dave Johnston-Yellowcake Line, 230-kV		12/31/09	253
154			8/10/07	East	N/A	Goshen-Ucon Line, 69-kV		12/31/09	10
752	432805		8/20/07	East	NT	PACEW	PACEW	03/01/08	99
181			9/4/2007	East	N/A	US Highway 191 #MM68 Boulder Way in Boulder, Wyoming		TBD	0.05
182			9/28/2007	East	N/A	Thermo Hot Springs, West of Minersville in Beaver County, Utah		9/30/2008	10
772	444572		10/8/07	East	NT	PACEW	PACEW	08/01/08	99
185			10/12/2007	East	N/A	3474 N. 3rd Street		11/28/2007	0.03
166			10/15/2007	East	NR w/ER	PacifiCorp's 230-kV line six (6) miles west of Rock Springs, WY.		12/31/2009	79.5
171			11/8/2007	East	N/A	Near Casper Wyoming.		TBD	19.5
172a			11/19/07	East	NE w/ER	TBD		06/01/12	150
172b			11/19/07	East	NE w/ER	TBD		04/01/13	150
173			11/20/07	East	NE w/ER	Approx. 13 miles south of Bridger Wind Station		06/01/12	150
175			12/7/07	East	NE w/ER	Craven Creek to Chappel Creek 230 kV		9/31/11	250
802	460514		12/26/07	East	NT	PACE	PACE (Load)	1/1/2008	70
803	460515		12/26/07	East	NT	PACE	PACE (Load)	1/1/2008	136
804	460516		12/26/07	East	NT	PACE	PACE (Load)	1/1/2008	142
177			12/27/07	East	NE w/ER	Near PacifiCorp's Proposed Aeolus Station		10/01/14	600
179			1/7/08	East	NE w/ER	Near Spence 230 kV Substation		03/01/10	99

180			1/7/08	East	NE w/ER	Near Spence 230 kV Substation		06/01/10	99
181			1/7/08	East	NE w/ER	Near Spence 230 kV Substation		03/01/11	99
182			1/7/08	East	NE w/ER	Near Spence 230 kV Substation		03/01/11	99
183			1/7/08	East	NE w/ER	Near Spence 230 kV Substation		03/01/12	98
184			1/7/08	East	NE w/ER	Miners-Difficulty Line, 230kV		10/01/09	99
185			1/7/08	East	NE w/ER	Miners-Difficulty Line, 230kV		12/31/09	98
186			1/7/08	East	NE w/ER	Miners-Difficulty Line, 230kV		03/01/10	99
814	462551		1/8/08	East	PTP	PACE	REDB	6/1/2012	400
829	464208		1/18/08	East	NT	PACEW (Resource)	PACEW	3/1/2008	99
830	464209		1/18/08	East	NT	PACEW (Resource)	PACEW	3/1/2008	39
831	464233		1/18/08	East	NT	PACEW (Resource)	PACEW	10/1/2009	99
832	464235		1/18/08	East	NT	PACEW (Resource)	PACEW	12/31/2009	98
833	464709		1/18/08	East	NT	PACEW (Resource)	PACEW	6/30/2009	99
834	464713		1/18/08	East	NT	PACEW (Resource)	PACEW	3/1/2010	99
835	464721		1/22/08	East	NT	PACEW (Resource)	PACEW	8/1/2008	20
838	465219		1/24/08	East	NT	PACEW (Resource)	PACEW	9/30/2009	99
839	465221		1/24/08	East	NT	PACEW (Resource)	PACEW	3/1/2010	99
840	465224		1/24/08	East	NT	PACEW (Resource)	PACEW	6/1/2010	99
841	465226		1/24/08	East	NT	PACEW (Resource)	PACEW	3/1/2011	99
191			1/25/08	East	NR w/ER	PAC's 230 kV Platte substation		12/31/11	500
845	468352		2/7/08	East	PTP	PACE	REDB	6/1/2014	400
851	469874		2/14/08	East	PTP	PACE	REDB	6/1/2012	400
198			2/20/08	East	NR	PAC's 230 kV Miners-Platte line near Hanna, WY		12/31/10	100
199			2/20/08	East	NR	PAC's 230 kV Miners-Platte line near Hanna, WY		12/31/11	200
200			2/20/08	East	NR	PAC's 230 kV Miners-Platte line near Hanna, WY		12/31/12	100
201			2/20/08	East	NR	PAC's 230 kV Miners-Platte line near Hanna, WY		12/31/13	100
863	471741		2/25/08	East	NT	PACEW (Resource)	PACEW	1/1/2009	99
864	471743		2/25/08	East	NT	PACEW (Resource)	PACEW	4/1/2010	89
203			2/28/08	East	NR w/ER	PAC's 23-kV Miners-Difficulty Line		09/30/10	99
208			3/14/08	East	NR	20 mi. south of Ft. Smith, MT under PAC's 230 kV line on development		12/31/12	78
209			4/1/08	East	NR w/ER	PacifiCorp's 34.5 kV Foote Creek substation		09/15/10	49.5
210a			4/8/08	East	NR w/ER	PacifiCorp's 34.5 kV Jim Bridger substation		12/31/09	300
210b			4/8/08	East	NR w/ER	PacifiCorp's 34.5 kV Jim Bridger substation		12/31/20	300
214			4/24/08	East	N/A	Boulder, WY		08/21/08	1.98
215			4/29/08	East	N/A	Utah Industrial Depot, Tooele, UT		09/15/08	0.675
216			4/29/08	East	NR w/ER	PacifiCorp's 345-kV Jim Bridger-Kinport line		12/31/10	105
217			5/1/08	East	N/A	Opal, WY		06/30/08	6
218a			5/5/08	East	ER	138 kV transmission line crossing customer's site		12/31/10	110
218b			5/5/08	East	ER	138 kV transmission line crossing customer's site		12/31/11	67.5
219a			5/5/08	East	ER	138 kV transmission line crossing customer's site		12/31/10	100
219b			5/5/08	East	ER	138 kV transmission line crossing customer's site		12/31/11	100
940	488835		5/9/08	East	NT	PACE	PACE (Load)	7/1/2008	1-14
220			5/12/08	East	NR w/ER	3.2 mi. west of the intersection of Rte 95 and I-25 in Glenrock, WY		12/31/09	100.5
222			5/20/08	East	NR w/ER	PacifiCorp's proposed 230 kV Windstar Substation		06/01/11	300
223			5/20/08	East	NR w/ER	PacifiCorp's Terminal substation		06/01/11	300
221a			5/20/08	East	NR w/ER	138 kV line east of project between Thief Creek and Evanston substations		12/31/10	100
221b			5/20/08	East	NR w/ER	138 kV line east of project between Thief Creek and Evanston substations		07/31/11	100
221c			5/20/08	East	NR w/ER	138 kV line east of project between Thief Creek and Evanston substations		12/31/11	100
942	492326		5/21/08	East	NT	PACEW (Resource)	PACEW	6/1/2011	289

943	492327		5/21/08	East	NT	PACE (Resource)	PACE	6/1/2011	289
946	492987		5/23/08	East	NT	PACEW (Resource)	PACEW	8/1/2008	13
947	493092		5/23/08	East	NT	PACE (Resource)	PACE	6/1/2012	316, 562
224a			5/27/08	East	NR w/ER	PacifiCorp's 345 kV Mona substation		06/01/12	0
224b			5/27/08	East	NR w/ER	PacifiCorp's 345 kV Mona substation		06/01/13	0
949	495604	PAC Merchant/Lakeside II	6/4/08	East	NT	PACE (Resource)	PACE	6/1/2012	636
Note: Transmission service requests for network load are removed from combined queue when the request is approved and accepted on OASIS									
Transmission service requests for network resources will remain on combined queue until resource is in service and added to customer's network service agreement									
Transmission service requests for point to point service will remain on combined queue until a service agreement is fully executed									
Transmission service requests that have been withdrawn will be removed from combined queue									
Generation interconnection requests that have been deactivated will be removed from combined queue									