

SPP TLR 5 Investigation Report
Flowgate 5354
(Randall – Palo Duro 115 kV for loss of Amarillo – Swisher 230 kV)
(RANPALAMASWI)
TLR Level 5: April 3-4, 2010
Report Issued: April 16, 2010

1. Description of purpose/cause of hold/curtailment.

This report is submitted in accordance with the NERC Transmission Loading Relief Investigation Procedure for the Level 5 TLR event that occurred on Flowgate 5354 on April 3-4, 2010. Flowgate 5354 is an SPP flowgate. The flowgate was created in response to a request from the Balancing Authority due to an equipment rating decrease which in turn caused thermal loading concerns. The Level 5 TLR was in effect from 6:15 CST on April 3 until 9:35 CST on April 4, 2010. North – South loading in the SPS region caused the projected post-contingent flows on the Randall – Palo Duro 115 kV line to exceed the SOL.

2. Facility/flowgate limitations and flows at the time the TLR was initiated.

At the time the initial Level 5B TLR was issued, the Limiting Element was rated at 109 MVA. Flow on the Limiting Element was 59 MVA. Flow on the Contingent Element was 215 MVA. The LODF was approximately 22%. Post-contingent flow on the Limiting Element was approximately 106 MVA.

3. TLR levels, timing, and relief requested amounts.

TLR levels, timing and relief requested amounts are shown in the Event History and NERC TLR Log on pages 3-11.

4. Transmission and generation outages or changes from prediction that may have contributed.

There were no unplanned outages that contributed to this TLR.

5. Procedures implemented prior to hold/curtailment.

There were no non-firm transactions or market flows impacting the flowgate by more than 5% prior to the level 5 TLR. The TLR was escalated to a Level 5 in order to curtail firm transactions and firm market flow to relieve loading.

6. The initial investigation shall compare all transaction curtailment lists as generated by the IDC with the list of transactions flowing as determined by the IDC (Whole Transaction Lists) both before and after curtailment. The reasons for any transactions that were excluded from curtailment shall be provided. For those transactions not curtailed, the Reliability Authority will identify those entities and any affiliation with said entities.

There were no known transactions excluded from curtailment for this TLR.

7. List of known transactions not in the IDC with Transaction Contribution Factors greater than the curtailment threshold and actions taken to curtail such transactions.

There were no known transactions not in the IDC.

8. Excerpts from the RA Operations Log containing information relevant to the TLR event.

Information was provided to Reliability Coordinators through the IDC and the RCIS. Also the SPP Reliability Coordinators logged information describing the actions taken at each issuance of the TLR, see pages 12-13. Times in the RC Log are CDT.

9. Flowgate limitations as identified by security analysis processes conducted by the Reliability Authority for the day prior to the TLR event.

The next day study process did not indicate an issue with this flowgate based upon conditions at the time of the daily peak.

10. State Estimator snapshots and security analysis, including any contingency analysis or stability analysis, along with any other recorded data indicating need for TLR.

The SPP Reliability Coordinator was monitoring their state estimator, RTCA and RTLODF applications for current flowgate loading and other potential issues during this time. eDNA data historian recorded all line flows before, during and after the Level 5 TLR event, see page 14.

11. ATC limitations before, during, and after the TLR event.

SPP Tariff Administration grants transmission service using an AFC process. This process evaluates each transmission request on a case by case basis. SPP Tariff Administration was not granting any transmission requests that impacted the congested flowgate by 3 % or greater at the time of the Level 5 TLR.

12. Description of actions taken to avoid future hold/curtailments.

This TLR was caused by a combination of generation patterns, load, and North to South loading on the transmission system in the SPS region. The facility derating also contributed to the need for the TLR. This facility has been in TLR frequently since the derate in October 2008. Loading sometimes requires escalating to a Level 5 TLR in order to obtain sufficient relief to reduce overloads. A reconfiguration option that had been used to relieve loading during 2009 had been rescinded by SPS due to reduced loading in the area. Loading increases in the area revived the previous constraint. The reconfiguration option was re-established a few days following this event.

13. Provide IDC generated Congestion Management Reports showing transaction curtailment list and Control Area NNL (network and native load) curtailment responsibility.

Congestion Management Reports for each issuance of the TLR have been reviewed and are archived in the IDC. These screen shots have not been included to reduce the size of this report.

14. Re-dispatch actions taken.

SPP EIS Market redispatch was implemented during the entire TLR event. Non-firm Market Flow was reduced on the flowgate as reported in the TLR Event History and NERC TLR Log on pages 3-11.

TLR Event History

5354 - RANPALAMASWI

Status	TLR Level	TLR Date	TLR Confirm Time	Run Time	Requested Relief	Remaining Relief	Relief Provided	Total Cuts	
								Tags	MW
SUPERSEDED	3B	04/03/2010 05:30	04/03/2010 05:20	04/03/2010 05:20:34	25.0	37.0	0.0	0	0
SUPERSEDED	5B	04/03/2010 06:15	04/03/2010 06:05	04/03/2010 06:04:47	25.0	0.0	25.0	0	0
SUPERSEDED	5A	04/03/2010 08:00	04/03/2010 07:35	04/03/2010 07:35:22	30.0	0.0	30.0	0	0
SUPERSEDED	5A	04/03/2010 09:00	04/03/2010 08:27	04/03/2010 08:27:09	30.0	0.0	30.0	0	0
SUPERSEDED	5A	04/03/2010 10:00	04/03/2010 09:36	04/03/2010 09:35:48	40.0	0.0	40.0	0	0
SUPERSEDED	5A	04/03/2010 11:00	04/03/2010 10:28	04/03/2010 10:27:36	40.0	0.0	40.0	0	0
SUPERSEDED	5A	04/03/2010 12:00	04/03/2010 11:28	04/03/2010 11:27:40	52.0	0.0	52.0	0	0
SUPERSEDED	5A	04/03/2010 13:00	04/03/2010 12:31	04/03/2010 12:31:03	59.0	0.0	59.0	0	0
SUPERSEDED	5A	04/03/2010 14:00	04/03/2010 13:29	04/03/2010 13:28:51	54.0	0.0	54.0	0	0
SUPERSEDED	5A	04/03/2010 15:00	04/03/2010 14:27	04/03/2010 14:26:58	60.0	0.0	60.0	0	0
SUPERSEDED	5A	04/03/2010 16:00	04/03/2010 15:28	04/03/2010 15:27:57	56.0	0.0	56.0	0	0
SUPERSEDED	5A	04/03/2010 17:00	04/03/2010 16:28	04/03/2010 16:27:58	59.0	0.0	59.0	0	0
SUPERSEDED	5A	04/03/2010 18:00	04/03/2010 17:30	04/03/2010 17:29:36	47.0	0.0	47.0	0	0
SUPERSEDED	5A	04/03/2010 19:00	04/03/2010 18:30	04/03/2010 18:30:21	52.0	0.0	52.0	0	0
SUPERSEDED	5A	04/03/2010 20:00	04/03/2010 19:30	04/03/2010 19:30:06	56.0	0.0	56.0	0	0
SUPERSEDED	5A	04/03/2010 21:00	04/03/2010 20:31	04/03/2010 20:30:49	54.0	0.0	54.0	0	0
SUPERSEDED	5A	04/03/2010 22:00	04/03/2010 21:30	04/03/2010 21:29:56	61.0	0.0	61.0	0	0
SUPERSEDED	5A	04/03/2010 23:00	04/03/2010 22:30	04/03/2010 22:29:55	35.0	0.0	35.0	0	0
SUPERSEDED	5A	04/04/2010 00:00	04/03/2010 23:29	04/03/2010 23:28:38	41.0	0.0	41.0	0	0
SUPERSEDED	5A	04/04/2010 01:00	04/04/2010 00:31	04/04/2010 00:30:55	30.0	0.0	30.0	0	0
SUPERSEDED	5A	04/04/2010 02:00	04/04/2010 01:30	04/04/2010 01:30:12	34.0	0.0	34.0	0	0
SUPERSEDED	5A	04/04/2010 03:00	04/04/2010 02:30	04/04/2010 02:29:53	34.0	0.0	34.0	0	0
SUPERSEDED	5A	04/04/2010 04:00	04/04/2010 03:32	04/04/2010 03:31:40	38.0	0.0	38.0	0	0
SUPERSEDED	5A	04/04/2010 05:00	04/04/2010 04:28	04/04/2010 04:28:16	44.0	0.0	44.0	0	0
SUPERSEDED	5A	04/04/2010 06:00	04/04/2010 05:28	04/04/2010 05:28:22	30.0	0.0	30.0	0	0
SUPERSEDED	5A	04/04/2010 07:00	04/04/2010 06:27	04/04/2010 06:27:13	10.0	0.0	10.0	0	0
SUPERSEDED	5A	04/04/2010 08:00	04/04/2010 07:28	04/04/2010 07:28:22	10.0	0.0	10.0	0	0
SUPERSEDED	5A	04/04/2010 09:00	04/04/2010 08:30	04/04/2010 08:29:42	10.0	0.0	10.0	0	0
TERMINATED	0	04/04/2010 09:35	04/04/2010 09:24	04/04/2010 09:24:29	0.0	0.0	0.0	0	0

Event Summary

FILE SAVED AS: SWPP_5354_20100403_0530.htm

Incident:	SWPP_5354_20100403_0530	Date: 04/03/2010 (CST)	Reliability Coordinator: SWPP
Initial Conditions:	Increased Loading		
Flowgate:	5354 - RANPALAMASWI	Rating: 109	LODF: 22.20%
TLR Direction:	Normal		
Effective StartTime:	04/03/2010 05:30 (CST)	Effective EndTime: 04/04/2010 09:35 (CST)	TLR Duration: 28 Hours and 5 Minutes

TLR Actions

Confirm Time	Level	Effective Hour	Priority	Schedule								NNL Relief			Market Relief				Flow			TLR Action Comments							
				Total Tags Cut / Hold	IDC Cut		RC Cut Acknowledge		Hold		CA	IDC MW	RC Ackn MW	Type	Mkt	IDC MW	RC Ackn MW	Current	Post Cont.	Cont. Flow									
					MW	Relief	MW	Relief	MW	Relief																			
Apr 03 05:20 (CST)	TLR 3B	CURRENT		NONE								NONE			ED-2	SWPP	0.0	0.0	66	119	241	N/A							
		NEXT		NONE								NONE			ED-6	SWPP	2.0	2.0					ED-8	SWPP	0.0	0.0	FIRM-7	SWPP	0.0
Apr 03 06:05 (CST)	TLR 5B	CURRENT		NONE								NONE			ED-2	SWPP	0.0	0.0	59	106	215	N/A							
		NEXT		NONE								NONE			ED-6	SWPP	18.0	18.0					ED-8	SWPP	72.0	72.0	FIRM-7	SWPP	0.0
Apr 03 07:35 (CST)	TLR 5A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	56	101	205	N/A							
				NONE								NONE			ED-6	SWPP	18.0	18.0					FIRM-7	SWPP	12.0	12.0	FIRM-CREDIT	SWPP	0.0
Apr 03 08:27 (CST)	TLR 5A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	57	103	208	N/A							
				NONE								NONE			ED-6	SWPP	15.0	15.0					FIRM-7	SWPP	15.0	15.0	FIRM-CREDIT	SWPP	0.0
Apr 03 09:36 (CST)	TLR 5A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	58	105	215	N/A							
				NONE								NONE			ED-6	SWPP	14.0	14.0					FIRM-7	SWPP	26.0	26.0	FIRM-CREDIT	SWPP	0.0
Apr 03 10:28 (CST)	TLR 5A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	56	101	205	N/A							
				NONE								NONE			ED-6	SWPP	11.0	11.0					FIRM-7	SWPP	29.0	29.0	FIRM-CREDIT	SWPP	0.0

Apr 03 11:28 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 10.0 42.0 0.0 52.0	0.0 10.0 42.0 0.0 52.0	56	102	208	N/A
Apr 03 12:31 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 8.0 51.0 0.0 59.0	0.0 8.0 51.0 0.0 59.0	54	98	199	N/A
Apr 03 13:29 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 8.0 48.0 0.0 54.0	0.0 8.0 48.0 0.0 54.0	54	98	200	N/A
Apr 03 14:27 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 10.0 50.0 0.0 60.0	0.0 10.0 50.0 0.0 60.0	55	100	204	N/A
Apr 03 15:28 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 10.0 48.0 0.0 56.0	0.0 10.0 48.0 0.0 56.0	55	100	207	N/A
Apr 03 16:28 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 8.0 51.0 0.0 59.0	0.0 8.0 51.0 0.0 59.0	53	98	198	N/A
Apr 03 17:30 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 11.0 38.0 0.0 47.0	0.0 11.0 38.0 0.0 47.0	54	99	203	N/A
Apr 03 18:30 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 11.0 41.0 0.0 52.0	0.0 11.0 41.0 0.0 52.0	52	95	198	N/A
Apr 03 19:30 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 12.0 44.0 0.0 56.0	0.0 12.0 44.0 0.0 56.0	53	97	202	N/A
Apr 03 20:31 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 15.0 39.0 0.0 54.0	0.0 15.0 39.0 0.0 54.0	53	98	198	N/A

Apr 03 21:30 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 17.0 44.0 0.0 61.0	0.0 17.0 44.0 0.0 61.0	53	98	198	N/A
Apr 03 22:30 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 10.0 25.0 0.0 35.0	0.0 10.0 25.0 0.0 35.0	53	98	198	N/A
Apr 03 23:29 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 12.0 29.0 0.0 41.0	0.0 12.0 29.0 0.0 41.0	52	94	192	N/A
Apr 04 00:31 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 8.0 22.0 0.0 30.0	0.0 8.0 22.0 0.0 30.0	53	98	197	N/A
Apr 04 01:30 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 6.0 28.0 0.0 34.0	0.0 6.0 28.0 0.0 34.0	52	94	190	N/A
Apr 04 02:30 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 6.0 28.0 0.0 34.0	0.0 6.0 28.0 0.0 34.0	52	94	190	N/A
Apr 04 03:32 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 14.0 24.0 0.0 38.0	0.0 14.0 24.0 0.0 38.0	53	98	194	N/A
Apr 04 04:28 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 18.0 26.0 0.0 44.0	0.0 18.0 26.0 0.0 44.0	51	92	185	N/A
Apr 04 05:28 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 17.0 13.0 0.0 30.0	0.0 17.0 13.0 0.0 30.0	53	98	194	N/A
Apr 04 06:27 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 5.0 5.0 0.0 10.0	0.0 5.0 5.0 0.0 10.0	54	97	195	N/A

Apr 04 07:28 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-8 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 1.0 9.0 0.0 10.0	0.0 1.0 9.0 0.0 10.0	55	99	200	N/A
Apr 04 08:30 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-8 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 5.0 5.0 0.0 10.0	0.0 5.0 5.0 0.0 10.0	54	97	198	N/A
Apr 04 09:24 (CST)	TLR 0	CURRENT	NONE	NONE	NONE				49	89	183	N/A

TLR Schedule Totals

Priority	Schedule			
	Total Tags Cut / Hold	IDC Cut MW	RC Cut Acknowledge MW	Hold MW
0	0	0	0	0
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
Total	0	0	0	0

TLR Market Flow Totals

Market	Type	Market Relief	
		IDC MW	RC Ackn MW
SWPP	ED-2	0.0	0.0
	ED-8	300.0	300.0
	FIRM-7	858.0	858.0
Total for SWPP		1158.0	1158.0
Total		1158.0	1158.0

Reliability Log for April, 3			2010
Time	Initials	Comments	Saturday
3/22/10	900	SPS Imports limited to 427 and SPS Exports limited to 385. Due to Elk City-Sweetwater line out.	
0620	MRH	Issued TLR level 3B on RanPalAmaSwi Flgt. 5354, set effective limit at 105	
0704	MRH	Re-issued TLR level 5B on RanPalAmaSwi Flgt. 5354. Loading and Feasibility, Effective limit at 105	
0835	MRH	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
0927	MRH	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
1035	MRH	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
1127	MRH	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
1227	MRH	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
1331	MRH	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
1428	MRH	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
1526	MRH	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
1627	MRH	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
1829	LRG	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
1930	LRG	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
2030	LRG	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
2130	LRG	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
2229	LRG	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
2329	LRG	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	

Reliability Log for April, 4			2010
Time	Initials	Comments	Sunday
3/22/10	900	SPS Imports limited to 427 and SPS Exports limited to 385. Due to Elk City-Sweetwater line out.	
0028	LRG	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
0130	LRG	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
0230	LRG	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
0329	LRG	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
0431	LRG	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
0528	LRG	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
0628	MRH	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
0727	MRH	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
0828	MRH	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
0929	MRH	Re-issued TLR level 5A on RanPalAmaSwi Flgt. 5354. Loading and Feasibility	
1024	MRH	Re-issued TLR level 0 on RanPalAmaSwi Flgt. 5354.	

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— Post Cont. — SOL

