

**SPP TLR 5 Investigation Report
Flowgate 6007
(Gentleman – Red Willow 345 kV)
(GENTLMREDWIL)
TLR Level 5: July 13, 2009
Report Issued: August 10, 2009**

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 6007 on July 13, 2009. Flowgate 6007 is an SPP flowgate. This flowgate is used to monitor and control voltage and loading on several facilities in the area. The Level 5 TLR was in effect from 10:00 until 16:00 CST on July 13, 2009. Projected flows on the Gentleman – Red Willow 345 kV line were expected to exceed the SOL.

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

The rating of this flowgate is determined by periodic review by NPPD depending upon current and anticipated system conditions. At the time the Level 5A TLR was issued, the Limiting Element was rated at 485 MVA. Flow on the Limiting Element was 418 MVA.

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

TLRs levels, timing and relief requested amounts are shown in the Event History and NERC TLR Log on pages 3-7.

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.

Non-firm transactions had already been curtailed due to TLR action. The TLR was escalated to a Level 5 in order to curtail firm transactions and firm market flow.

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 page 8. Times in the RC Log are CST.

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 9.

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 system flows. Reconfiguration is sometimes a viable companion to TLR on this flowgate. However, it was not available at the time of this TLR.

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. Firm and non-firm Market Flow were reduced on the flowgate as reported in the TLR Event History and NERC TLR Log on pages 3-7.

TLR Event History

6007 - GENTLMN3 345 REDWILO3 345 1

Status	TLR Level	TLR Date (CST)	TLR Confirm Time (CST)	Run Time (CST)	Requested Relief	Remaining Relief	Relief Provided	Total Cuts	
								Tags	MW
SUPERSEDED	1	07/13/2009 02:30	07/13/2009 02:21	07/13/2009 02:20:40	0.0	0.0	0.0	0	0
SUPERSEDED	1	07/13/2009 05:40	07/13/2009 05:29	07/13/2009 05:29:09	0.0	0.0	0.0	0	0
SUPERSEDED	1	07/13/2009 07:40	07/13/2009 07:27	07/13/2009 07:27:27	0.0	0.0	0.0	0	0
SUPERSEDED	3A	07/13/2009 08:00	07/13/2009 07:38	07/13/2009 07:37:54	0.0	0.0	0.0	0	0
SUPERSEDED	3A	07/13/2009 09:00	07/13/2009 08:27	07/13/2009 08:27:07	0.0	0.0	0.0	0	0
SUPERSEDED	5A	07/13/2009 10:00	07/13/2009 09:28	07/13/2009 09:27:53	0.0	0.0	66.1	9	506
SUPERSEDED	5A	07/13/2009 11:00	07/13/2009 10:29	07/13/2009 10:28:55	0.0	0.0	81.4	10	700
SUPERSEDED	5A	07/13/2009 12:00	07/13/2009 11:29	07/13/2009 11:29:03	0.0	0.0	71.5	11	575
SUPERSEDED	5A	07/13/2009 13:00	07/13/2009 12:26	07/13/2009 12:26:23	0.0	0.0	71.8	10	580
SUPERSEDED	5A	07/13/2009 14:00	07/13/2009 13:28	07/13/2009 13:28:26	0.0	0.0	70.6	10	565
SUPERSEDED	5A	07/13/2009 15:00	07/13/2009 14:27	07/13/2009 14:27:30	0.0	0.0	65.9	8	500
SUPERSEDED	3A	07/13/2009 16:00	07/13/2009 15:27	07/13/2009 15:27:07	0.0	0.0	0.0	0	0
SUPERSEDED	3A	07/13/2009 17:00	07/13/2009 16:28	07/13/2009 16:27:39	0.0	0.0	0.0	0	0
SUPERSEDED	3A	07/13/2009 18:00	07/13/2009 17:30	07/13/2009 17:29:38	8.0	0.0	8.0	3	100
SUPERSEDED	3A	07/13/2009 19:00	07/13/2009 18:28	07/13/2009 18:27:16	10.0	0.0	10.4	8	87
SUPERSEDED	3A	07/13/2009 20:00	07/13/2009 19:28	07/13/2009 19:28:15	8.0	0.0	8.4	8	72
SUPERSEDED	3A	07/13/2009 21:00	07/13/2009 20:30	07/13/2009 20:29:36	14.0	0.0	14.0	3	77
SUPERSEDED	3A	07/13/2009 22:00	07/13/2009 21:39	07/13/2009 21:38:49	48.0	0.0	48.0	6	152
SUPERSEDED	3A	07/13/2009 23:00	07/13/2009 22:36	07/13/2009 22:36:14	22.0	0.0	22.0	4	139
SUPERSEDED	3A	07/14/2009 00:00	07/13/2009 23:37	07/13/2009 23:36:17	67.0	0.0	67.1	5	189
SUPERSEDED	1	07/14/2009 00:00	07/13/2009 23:59	07/13/2009 23:59:07	0.0	0.0	0.0	0	0
TERMINATED	0	07/14/2009 02:25	07/14/2009 02:14	07/14/2009 02:14:30	0.0	0.0	0.0	0	0

08/11/2009 14:09:54 (CST)

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Event Summary

FILE SAVED AS: SWPP_6007_20090713_0230.htm

Incident:	SWPP_6007_20090713_0230	Date:	07/13/2009	Reliability Coordinator:	SWPP
Initial Conditions:	increasing flow				
Flowgate:	6007 - GENTLMN3 345 REDWILO3 345 1	Rating:	485	LODF:	N/A
TLR Direction:	Normal				
Effective StartTime:	07/13/2009 02:30	Effective EndTime:	07/14/2009 02:25	TLR Duration:	23 Hours and 55 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											MW	
Jul 13 02:21	TLR 1	CURRENT		NONE								NONE			NONE				388	N/A	N/A	N/A
Jul 13 05:29	TLR 1	CURRENT		NONE								NONE			NONE				481	N/A	N/A	N/A
Jul 13 07:27	TLR 1	CURRENT		NONE								NONE			NONE				515	N/A	N/A	N/A
Jul 13 07:38	TLR 3A	NEXT	2-NH Total	0 / 1 0 / 1	0 0	0.0 0.0	0 0	0.0 0.0	100 100	7.9 7.9	NONE			ED-2	MISO	0.0	0.0	510	N/A	N/A	N/A	
													ED-6	MISO	0.0	0.0						
													FIRM-7	MISO	0.0	0.0						
														SWPP	0.0	0.0						
													Total		0.0	0.0						
Jul 13 08:27	TLR 3A	NEXT		NONE								NONE			ED-2	MISO	0.0	0.0	445	N/A	N/A	N/A
													ED-6	MISO	0.0	0.0						
													FIRM-7	MISO	0.0	0.0						
														SWPP	0.0	0.0						
													Total		0.0	0.0						
Jul 13 09:28	TLR 5A	NEXT	2-NH 3-ND 6-NN Total	2 / 0 1 / 0 6 / 0 9 / 0	56 50 400 506	4.4 4.0 57.8 66.1	56 50 400 506	4.4 4.0 57.8 66.1	0 0 0 0	0.0 0.0 0.0 0.0	NONE			ED-2	MISO	0.0	0.0	418	N/A	N/A	N/A	
													ED-6	MISO	0.0	0.0						
													FIRM-7	MISO	0.0	0.0						
													FIRM-CREDIT	MISO	0.0	0.0						
													Total		0.0	0.0						
Jul 13 10:29	TLR 5A	NEXT	2-NH 3-ND 6-NN Total	3 / 0 1 / 0 4 / 0 8 / 0	250 50 275 575	19.8 3.9 32.6 56.3	250 50 275 575	19.8 3.9 32.6 56.3	0 0 0 0	0.0 0.0 0.0 0.0	NONE			ED-2	MISO	0.0	0.0	383	N/A	N/A	N/A	
													ED-6	MISO	0.0	0.0						
													FIRM-7	MISO	0.0	0.0						
													FIRM-CREDIT	MISO	0.0	0.0						
													Total		0.0	0.0						

Jul 13 11:29	TLR 5A	NEXT	2-NH 3-ND 6-NN Total	4 / 0 1 / 0 6 / 0 11 / 0	125 50 400 575	10.0 3.9 57.6 71.5	125 50 400 575	10.0 3.9 57.6 71.5	0 0 0 0	0.0 0.0 0.0 0.0	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	MISO SWPP MISO SWPP MISO SWPP MISO SWPP	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	396	N/A	N/A	N/A
Jul 13 12:26	TLR 5A	NEXT	2-NH 3-ND 6-NN Total	3 / 0 1 / 0 6 / 0 10 / 0	130 50 400 580	10.3 3.9 57.6 71.8	130 50 400 580	10.3 3.9 57.6 71.8	0 0 0 0	0.0 0.0 0.0 0.0	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	MISO SWPP MISO SWPP MISO SWPP MISO SWPP	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	381	N/A	N/A	N/A
Jul 13 13:28	TLR 5A	NEXT	2-NH 3-ND 6-NN Total	3 / 0 1 / 0 6 / 0 10 / 0	115 50 400 565	9.2 3.9 57.5 70.6	115 50 400 565	9.2 3.9 57.5 70.6	0 0 0 0	0.0 0.0 0.0 0.0	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	MISO SWPP MISO SWPP MISO SWPP MISO SWPP	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	405	N/A	N/A	N/A
Jul 13 14:27	TLR 5A	NEXT	2-NH 3-ND 6-NN Total	1 / 0 1 / 0 6 / 0 8 / 0	50 50 400 500	4.0 4.0 57.9 65.9	50 50 400 500	4.0 4.0 57.9 65.9	0 0 0 0	0.0 0.0 0.0 0.0	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	MISO SWPP MISO SWPP MISO SWPP MISO SWPP	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	409	N/A	N/A	N/A
Jul 13 15:27	TLR 3A	NEXT	NONE								NONE	ED-2 ED-6 FIRM-7 Total	MISO SWPP MISO SWPP MISO SWPP	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	409	N/A	N/A	N/A
Jul 13 16:28	TLR 3A	NEXT	NONE								NONE	ED-2 ED-6 FIRM-7 Total	MISO SWPP MISO SWPP MISO SWPP	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	413	N/A	N/A	N/A
Jul 13 17:30	TLR 3A	NEXT	2-NH 3-ND Total	2 / 0 1 / 0 3 / 0	51 49 100	4.1 3.9 8.0	51 49 100	4.1 3.9 8.0	0 0 0	0.0 0.0 0.0	NONE	ED-2 ED-6 FIRM-7 Total	MISO SWPP MISO SWPP MISO SWPP	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	420	N/A	N/A	N/A

Jul 13 18:28	TLR 3A	NEXT	2-NH 3-ND 6-NN Total	1 / 0 1 / 0 6 / 0 8 / 0	1 50 36 87	0.1 4.0 6.4 10.4	1 50 36 87	0.1 4.0 6.4 10.4	0 0 0 0	0.0 0.0 0.0 0.0	NONE	ED-2 ED-6 FIRM-7 Total	MISO SWPP MISO SWPP MISO SWPP	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	434	N/A	N/A	N/A	
Jul 13 19:28	TLR 3A	NEXT	2-NH 3-ND 6-NN Total	1 / 1 1 / 0 6 / 0 8 / 1	1 50 21 72	0.1 4.0 4.4 8.4	1 50 21 72	0.1 4.0 4.4 8.4	50 0 0 50	4.1 0.0 0.0 4.1	NONE	ED-2 ED-6 FIRM-7 Total	MISO SWPP MISO SWPP MISO SWPP	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	426	N/A	N/A	N/A	
Jul 13 20:30	TLR 3A	NEXT	2-NH 6-NN Total	1 / 0 2 / 0 3 / 0	50 27 77	4.0 3.1 7.0	50 27 77	4.0 3.1 7.0	0 0 0	0.0 0.0 0.0	NONE	ED-2 ED-6 FIRM-7 Total	MISO SWPP MISO SWPP MISO SWPP	0.0 7.0 0.0 0.0 0.0 0.0 7.0 7.0	0.0 7.0 0.0 0.0 0.0 0.0 7.0 7.0	411	N/A	N/A	N/A	
Jul 13 21:39	TLR 3A	NEXT	NONE								NONE	NONE	ED-2 ED-6 FIRM-7 Total	MISO SWPP MISO SWPP MISO SWPP	0.0 18.0 0.0 13.4 0.0 0.0 31.4 31.4	0.0 18.0 0.0 13.4 0.0 0.0 31.4 31.4	419	N/A	N/A	N/A
Jul 13 22:36	TLR 3A	NEXT	NONE								NONE	NONE	ED-2 ED-6 FIRM-7 Total	MISO SWPP MISO SWPP MISO SWPP	0.0 8.8 0.0 0.0 0.0 0.0 8.8 8.8	0.0 8.8 0.0 0.0 0.0 0.0 8.8 8.8	414	N/A	N/A	N/A
Jul 13 23:37	TLR 3A	NEXT	6-NN Total	3 / 0 3 / 0	39 39	5.2 5.2	39 39	5.2 5.2	0 0	0.0 0.0	NONE	ED-2 ED-6 FIRM-7 Total	MISO SWPP MISO SWPP MISO SWPP	0.0 10.0 0.0 39.9 0.0 0.0 49.9 49.9	0.0 10.0 0.0 39.9 0.0 0.0 49.9 49.9	407	N/A	N/A	N/A	
Jul 13 23:59	TLR 1	CURRENT	NONE								NONE	NONE	NONE				415	N/A	N/A	N/A
Jul 14 02:14	TLR 0	CURRENT	NONE								NONE	NONE	NONE				329	N/A	N/A	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	21	829	829	150
3	9	449	449	0
4	0	0	0	0
5	0	0	0	0
6	51	2398	2398	0
7	0	0	0	0
Total	81	3676	3676	150

TLR Market Flow Totals

Market	Type	Market Relief	
		IDC MW	RC Ackn MW
MISO	ED-2	0.0	0.0
	ED-6	0.0	0.0
	FIRM-7	0.0	0.0
Total MISO		0.0	0.0
SWPP	ED-2	43.8	43.8
	ED-6	53.3	53.3
	FIRM-7	0.0	0.0
Total for SWPP		97.2	97.1
Total		97.2	97.1

	A	B	C	D
144	Reliability Log for July, 13			2009
145	Time	Initials	Comments	
150	0320	RST	Re-issued TLR Level 1 on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007.	
151	0629	MRH	Re-issued TLR Level 1 on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007.	
152	0827	MRH	Re-issued TLR Level 1 on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007.	
153	0837	MRH	Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007, in order to close Redwilo PCB 1110, went to level 3A.	
154	0927	MRH	Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007.	
155	0932	MRH	Called OATI help desk in regards to Tag 77235 Waue-Miso which got held under our TLR Level 3A FG 6007. We are not clear why we even saw this - because we can not see the tag in our SPP OATI scheduling - only IDC. OATI to call back.	
156	1027	MRH	Re-issued TLR Level 5A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007 - for feasibility.	
157	1128	MRH	Re-issued TLR Level 5A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007 - for feasibility.	
158	1229	MRH	Re-issued TLR Level 5A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007 - for feasibility.	
159	1326	MRH	Re-issued TLR Level 5A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007 - for feasibility.	
160	1428	MRH	Re-issued TLR Level 5A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007 - for feasibility.	
161	1527	MRH	Re-issued TLR Level 5A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007 - for feasibility.	
162	1627	MRH	Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007.	
163	1727	MRH	Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007.	
164	1829	RGH	Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007.	
165	1927	RGH	Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007.	
166	2028	RGH	Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007.	
167	2129	RGH	Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007.	
168	2238	RGH	Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007.	
169	2336	RGH	Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007.	
170				
171	Reliability Log for July, 14			2009
172	Time	Initials	Comments	
173	0036	RGH	Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007.	
174	0059	RGH	Re-issued TLR Level 1 on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007.	
175	0314	RGH	Re-issued TLR Level 0 on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007 to close current event. Will re-issue level 1 perr NPPD WKS_WNE Op Guide	
195				
196				

6007 - 7/13/09

