

**SPP TLR 5 Investigation Report**  
**Flowgate TEMP14\_16508**  
**(Sapulpa – Sand Springs 138 kV line for loss of Tulsa – Olympic 138 kV line)**  
**TLR Level 5: August 14, 2010**  
**Report Issued: December 14, 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 16508 on August 14, 2010. Flowgate 16508 is an SPP flowgate. The Level 5 TLR was in effect from 14:00 until 19:00 CST on August 14, 2010. Projected post-contingent flows on the Sapulpa – Sand Springs 138 kV line were expected to exceed the SOL.

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

At the time the Level 5A TLR was issued, the Limiting Element was rated at 188 MVA. Flow on the Limiting Element was 118 MVA. Flow on the Contingent Element was 121 MVA. The LODF was approximately 46%. Post-contingent flow on the Limiting Element was approximately 174 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 3-6.

**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 that impacted the flowgate by more than 5% to relieve the loading. The TLR was escalated to a Level 5 in order to curtail firm transactions and firm market flow to alleviate loading on the flowgate.

**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 7. 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. The Sapulpa – Sand Springs 138 kV line was showing in the RTCA application on July 11, 2010. After confirmation with the Balancing Authority, it was decided to build the temporary flowgate. eDNA data historian recorded all line flows before, during and after the Level 5 TLR event, see page 8.

**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 in the Tulsa area. Loading sometimes requires escalating to a Level 5 TLR in order to obtain sufficient relief to reduce overloads.

**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 3-6.

## Event History

**Issuing RC:** SWPP  
**Flowgate:** 16508 - Temporary 14 - SAPSANTULOLY  
**Event Begin:** 2010-08-14 09:55  
**Event End:** 2010-08-14 21:16  
**Event Duration:** 12 Hours

TLR Level	TLR Date	TLR Confirm Time	Run Time	Requested Relief	Remaining Relief	Relief Provided	Total Cuts	
							Tags	MW
<a href="#">TLR Level 3A</a>	08/14/2010 10:15	08/14/2010 09:55	08/14/2010 09:55:13	0.0	0.0	0.0	0	0
<a href="#">TLR Level 3A</a>	08/14/2010 11:00	08/14/2010 10:28	08/14/2010 10:27:48	7.0	7.0	0.0	0	0
<a href="#">TLR Level 3A</a>	08/14/2010 12:00	08/14/2010 11:28	08/14/2010 11:27:39	0.0	0.0	0.0	0	0
<a href="#">TLR Level 3A</a>	08/14/2010 13:00	08/14/2010 12:29	08/14/2010 12:29:02	0.0	0.0	0.0	0	0
<a href="#">TLR Level 5A</a>	08/14/2010 14:00	08/14/2010 13:28	08/14/2010 13:28:06	0.0	0.0	0.0	0	0
<a href="#">TLR Level 5A</a>	08/14/2010 15:00	08/14/2010 14:28	08/14/2010 14:27:49	0.0	0.0	0.0	0	0
<a href="#">TLR Level 5A</a>	08/14/2010 16:00	08/14/2010 15:28	08/14/2010 15:28:22	0.0	0.0	0.0	0	0
<a href="#">TLR Level 5A</a>	08/14/2010 17:00	08/14/2010 16:28	08/14/2010 16:28:19	0.0	0.0	0.0	0	0
<a href="#">TLR Level 5A</a>	08/14/2010 18:00	08/14/2010 17:32	08/14/2010 17:31:53	0.0	0.0	0.0	0	0
<a href="#">TLR Level 3A</a>	08/14/2010 19:00	08/14/2010 18:34	08/14/2010 18:33:13	12.0	12.0	0.0	0	0
<a href="#">TLR Level 3A</a>	08/14/2010 20:00	08/14/2010 19:38	08/14/2010 19:34:50	0.0	0.0	0.0	0	0
<a href="#">TLR Level 3A</a>	08/14/2010 21:00	08/14/2010 20:37	08/14/2010 20:37:22	0.0	0.0	0.0	0	0
<a href="#">TLR Level 0</a>	08/14/2010 21:25	08/14/2010 21:16	08/14/2010 21:16:02	0.0	0.0	0.0	0	0

## Event Summary

FILE SAVED AS: SWPP\_16508\_20100814\_1015.htm

Incident: SWPP_16508_20100814_1015	Date: 08/14/2010	Reliability Coordinator: SWPP
Initial Conditions: loading		
Flowgate: 16508 - Temporary 14 - SAPSANTULOLY	Rating: 188	LODF: 46.39%
TLR Direction: Normal		
Effective StartTime: 08/14/2010 10:15	Effective EndTime: 08/14/2010 21:25	TLR Duration: 11 Hours and 10 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											
Aug 14 09:55	TLR 3A	NEXT		NONE						NONE			ED-2	SWPP	0.0	0.0	114	171	123	N/A	
												ED-6	SWPP	0.0	0.0						
												FIRM-7	SWPP	0.0	0.0						
												<b>Total</b>			<b>0.0</b>	<b>0.0</b>					
Aug 14 10:28	TLR 3A	NEXT		NONE						NONE			ED-2	SWPP	0.0	0.0	118	175	124	N/A	
												ED-6	SWPP	0.0	0.0						
												FIRM-7	SWPP	0.0	0.0						
												<b>Total</b>			<b>0.0</b>	<b>0.0</b>					
Aug 14 11:28	TLR 3A	NEXT		NONE						NONE			ED-2	SWPP	0.0	0.0	116	171	119	N/A	
												ED-6	SWPP	0.0	0.0						
												FIRM-7	SWPP	0.0	0.0						
												<b>Total</b>			<b>0.0</b>	<b>0.0</b>					
Aug 14 12:29	TLR 3A	NEXT		NONE						NONE			ED-2	SWPP	0.0	0.0	118	176	127	N/A	
												ED-6	SWPP	0.0	0.0						
												FIRM-7	SWPP	0.0	0.0						
												<b>Total</b>			<b>0.0</b>	<b>0.0</b>					
Aug 14 13:28	TLR 5A	NEXT		NONE						NONE			ED-2	SWPP	0.0	0.0	118	174	121	N/A	
												ED-6	SWPP	0.0	0.0						
												FIRM-7	SWPP	0.0	0.0						
												FIRM-CREDIT	SWPP	0.0	0.0						
												<b>Total</b>			<b>0.0</b>	<b>0.0</b>					
Aug 14 14:28	TLR 5A	NEXT		NONE						NONE			ED-2	SWPP	0.0	0.0	118	175	124	N/A	
												ED-6	SWPP	0.0	0.0						
												FIRM-7	SWPP	0.0	0.0						
												FIRM-CREDIT	SWPP	0.0	0.0						
												<b>Total</b>			<b>0.0</b>	<b>0.0</b>					

Aug 14 15:28	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	118	176	128	N/A
Aug 14 16:28	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	117	176	128	N/A
Aug 14 17:32	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	120	179	129	N/A
Aug 14 18:34	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 <b>0.0</b>	111	166	119	N/A
Aug 14 19:38	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 <b>0.0</b>	107	155	104	N/A
Aug 14 20:37	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 <b>0.0</b>	110	161	110	N/A
Aug 14 21:16	TLR 0	CURRENT	NONE	NONE	NONE				97	144	103	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
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### TLR Market Flow Totals

Market	Type	Market Relief	
		IDC MW	RC Action MW
SWPP	ED-2	0.0	0.0
	ED-6	0.0	0.0
	FIRM-7	0.0	0.0
Total for SWPP		0.0	0.0
Total		0.0	0.0

**Reliability Log for August, 14****2010**

Time	Initials	Comments	
1055	LRG	Issued TLR level 3A on Temp. 14 SapSanTulOly # 16508	
1127	LRG	Issued TLR level 3A on Temp. 14 SapSanTulOly # 16508	
1227	LRG	Issued TLR level 3A on Temp. 14 SapSanTulOly # 16508	
1329	LRG	Issued TLR level 3A on Temp. 14 SapSanTulOly # 16508	
1428	LRG	Issued TLR level 5A on Temp. 14 SapSanTulOly # 16508-feasibility	
1527	LRG	Issued TLR level 5A on Temp. 14 SapSanTulOly # 16508-feasibility	
1628	LRG	Issued TLR level 5A on Temp. 14 SapSanTulOly # 16508-feasibility	
1831	LWB	Re-issued TLR level 5A on Temp. 14 SapSanTulOly # 16508-feasibility	

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