

**SPP TLR 5 Investigation Report**  
**Flowgate 5014**  
**(Elk City 230/138 kV Transformer for the loss of Tuco – Oklaunion 345 kV Line)**  
**TLR Level 5: June 2, 2009**  
**Report Issued: July 14, 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 5014 on June 2, 2009. Flowgate 5014 is an SPP flowgate. The Level 5 TLR was in effect from 18:15 until 20:15 CST on June 2, 2009. Projected post-contingent flows on Elk City 230/138 kV transformer exceeded the SOL.

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

At the time the Level 5B TLR was issued, the Limiting Element was rated at 287 MVA. Flow on the Limiting Element was 198 MVA. Flow on the Contingent Element was 277 MVA. The LODF was approximately 34%. Post-contingent flow on the Limiting Element was approximately 291 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 3-6.

**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.**

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 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 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 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. There was a significant increase in SPS wind generation during the period of increased loading on the flowgate. Due to this situation, no further actions were taken.

**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.

## TLR Event History

### 5014 - ElkXfrTucOku

Status	TLR Level	TLR Date (CST)	TLR Confirm Time (CST)	Run Time (CST)	Requested Relief	Remaining Relief	Relief Provided	Total Cuts	
								Tags	MW
SUPERSEDED	3B	06/02/2009 16:30	06/02/2009 16:17	06/02/2009 16:17:09	75.0	0.0	75.0	0	0
<a href="#">SUPERSEDED</a>	3A	06/02/2009 18:00	06/02/2009 17:29	06/02/2009 17:27:48	28.0	0.0	28.0	1	150
<a href="#">SUPERSEDED</a>	5B	06/02/2009 18:15	06/02/2009 18:05	06/02/2009 18:04:31	50.0	0.0	154.0	0	0
<a href="#">SUPERSEDED</a>	5A	06/02/2009 20:00	06/02/2009 19:28	06/02/2009 19:27:45	97.0	0.0	225.3	1	150
<a href="#">SUPERSEDED</a>	3B	06/02/2009 20:15	06/02/2009 20:06	06/02/2009 20:05:30	100.0	0.0	100.0	0	0
<a href="#">SUPERSEDED</a>	3A	06/02/2009 22:00	06/02/2009 21:33	06/02/2009 21:32:56	119.0	0.0	119.0	0	0
<a href="#">SUPERSEDED</a>	3A	06/02/2009 23:00	06/02/2009 22:28	06/02/2009 22:27:41	102.0	0.0	102.0	0	0
<a href="#">SUPERSEDED</a>	3A	06/03/2009 00:00	06/02/2009 23:29	06/02/2009 23:28:58	114.0	0.0	114.0	0	0
<a href="#">SUPERSEDED</a>	3A	06/03/2009 01:00	06/03/2009 00:26	06/03/2009 00:26:09	100.0	0.0	100.0	0	0
<a href="#">SUPERSEDED</a>	3A	06/03/2009 02:00	06/03/2009 01:27	06/03/2009 01:27:01	113.0	0.0	113.0	0	0
<a href="#">SUPERSEDED</a>	3A	06/03/2009 03:00	06/03/2009 02:34	06/03/2009 02:32:37	113.0	0.0	113.0	0	0
<a href="#">SUPERSEDED</a>	3A	06/03/2009 04:00	06/03/2009 03:26	06/03/2009 03:26:32	124.0	0.0	124.0	0	0
<a href="#">SUPERSEDED</a>	3A	06/03/2009 05:00	06/03/2009 04:27	06/03/2009 04:27:24	97.0	0.0	97.0	0	0
<a href="#">SUPERSEDED</a>	3A	06/03/2009 06:00	06/03/2009 05:27	06/03/2009 05:26:55	130.0	0.0	130.0	0	0
<a href="#">SUPERSEDED</a>	3A	06/03/2009 07:00	06/03/2009 06:26	06/03/2009 06:26:27	89.0	0.0	89.0	0	0
<a href="#">SUPERSEDED</a>	3A	06/03/2009 08:00	06/03/2009 07:32	06/03/2009 07:31:44	91.0	0.0	91.0	0	0
<a href="#">SUPERSEDED</a>	3A	06/03/2009 09:00	06/03/2009 08:28	06/03/2009 08:28:03	124.0	0.0	124.0	0	0
<a href="#">TERMINATED</a>	0	06/03/2009 09:00	06/03/2009 08:49	06/03/2009 08:49:21	0.0	0.0	0.0	0	0

07/16/2009 11:29:08 (CST)

OATI IDC Support Phone: 763-201-2010 Fax: 763-553-2813

Copyright 2009 - Interchange Distribution Calculator (OATI IDC) - Open Access Technology International, Inc. All Rights Reserved.



Jun 02 22:28	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 102.0 0.0 <b>102.0</b>	0.0 102.0 0.0 <b>102.0</b>	178	250	215	N/A
Jun 02 23:29	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 114.0 0.0 <b>114.0</b>	0.0 114.0 0.0 <b>114.0</b>	152	237	251	N/A
Jun 03 00:26	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 100.0 0.0 <b>100.0</b>	0.0 100.0 0.0 <b>100.0</b>	158	242	250	N/A
Jun 03 01:27	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 113.0 0.0 <b>113.0</b>	0.0 113.0 0.0 <b>113.0</b>	158	242	248	N/A
Jun 03 02:34	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 113.0 0.0 <b>113.0</b>	0.0 113.0 0.0 <b>113.0</b>	158	247	264	N/A
Jun 03 03:26	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 124.0 0.0 <b>124.0</b>	0.0 124.0 0.0 <b>124.0</b>	142	228	255	N/A
Jun 03 04:27	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 97.0 0.0 <b>97.0</b>	0.0 97.0 0.0 <b>97.0</b>	162	252	267	N/A
Jun 03 05:27	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 130.0 0.0 <b>130.0</b>	0.0 130.0 0.0 <b>130.0</b>	140	211	211	N/A
Jun 03 06:26	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 89.0 0.0 <b>89.0</b>	0.0 89.0 0.0 <b>89.0</b>	155	237	243	N/A
Jun 03 07:32	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 91.0 0.0 <b>91.0</b>	0.0 91.0 0.0 <b>91.0</b>	154	241	258	N/A
Jun 03 08:28	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 124.0 0.0 <b>124.0</b>	0.0 124.0 0.0 <b>124.0</b>	138	208	209	N/A
Jun 03 08:49	TLR 0	CURRENT	NONE	NONE	NONE				137	202	194	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	5	750	750	98
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>5</b>	<b>750</b>	<b>750</b>	<b>98</b>

### TLR Market Flow Totals

Market	Type	Market Relief	
		IDC MW	RC Ackn MW
SWPP	ED-2	0.0	0.0
	ED-6	2024.7	2024.7
	FIRM-7	4.0	4.0
<b>Total for SWPP</b>		<b>2028.7</b>	<b>2028.7</b>
<b>Total</b>		<b>2028.7</b>	<b>2028.7</b>

	A	B	C	D	E
1	<b>Reliability Log for June, 2</b>			<b>2009</b>	
2	Time	Initials	Comments		
72	1717	MRH	Issued TLR 3B on ELKXFRTUCOKU flgt 5014.		
73	1723	MRH	FG 5014 exceeded IROL limit of 316.		
75	1728	MRH	Issued OOME Directive to SPS - Bill to Decrement Harrington 1 & 2 Down 61 Mws on Unit 1 and dn 60 MWs on unit #2 for a total of 121 MWs.		
76	1728	MRH	Issued OOME Directive to CSW - Tyler to Increment SWT3 up 121 Mws for a total of 183 output.		
77	1728	MRH	MOPS advised of OOME order to SPS and CSW		
80	1733	MRH	FG 5014 under IROL Limit of 316.		
85	1745	MRH	SPS-Bill and CSW-Tyler advised to end OOME Directive on Harrinton 1 #2 and Swt 3 and to follow economic Dispatch.		
90	1827	RGH	Issued TLR 3A on ELKXFRTUCOKU flgt 5014.		
96	1856	RGH	CSWS ElkXfrTucOku exceeded IROL limit of 316mw.		
97	1858	RGH	OOME instructions issued to CSWS BA (Mike) to raise Southwest station #3 unit from 100mw to 175mw (+75mw) for relief on flgt #5014		
98	1859	RGH	OOME instructions issued to SPS BA (Bill) to lower Harrington #1 unit from 269mw to 200mw (-69mw) for relief on flgt#5014)		
99	1902	RGH	CSWS ElkXfrTucOku under IROL limit of 316mw.		
100	1904	RGH	Issued TLR level 5B on ElkXfrTucOku #5014		
108	1959	RGH	OOME instructions issued to CSWS (Mike) and SPS (Bill) BA's have been rescinded and CSWS Southwest #3 and SPS Harrington #1 can return to economic dispatch.		
109	2027	RGH	Issued TLR level 5A on ElkXfrTucOku #5014		
116	2105	RGH	Issued TLR level 3B on ElkXfrTucOku #5014		
124	2232	RGH	Issued TLR level 3A on ElkXfrTucOku #5014		
128	2327	RGH	Issued TLR level 3A on ElkXfrTucOku #5014		
138					
139	<b>Reliability Log for June, 3</b>			<b>2009</b>	
140	Time	Initials	Comments		
145	0028	RGH	Issued TLR level 3A on ElkXfrTucOku #5014		
150	0126	RGH	Issued TLR level 3A on ElkXfrTucOku #5014		
155	0227	RGH	Issued TLR level 3A on ElkXfrTucOku #5014		
160	0332	RGH	Issued TLR level 3A on ElkXfrTucOku #5014		
167	0426	RGH	Issued TLR level 3A on ElkXfrTucOku #5014		
170	0527	RGH	Issued TLR level 3A on ElkXfrTucOku #5014		
176	0625	MRH	Re-issued TLR level 3A on ElkXfrTucOku #5014		
182	0726	MRH	Re-issued TLR level 3A on ElkXfrTucOku #5014		
196	0928	MRH	Re-issued TLR level 3A on ElkXfrTucOku #5014		
200	0949	MRH	Re-issued TLR level 0 on ElkXfrTucOku #5014		
294					

5014 6/2/09

