

**SPP TLR 5 Investigation Report**  
**Flowgate 6009**  
**(COOPER\_S)**  
**TLR Level 5: March 2, 2011**  
**Report Issued:**

**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 6009 on March 2, 2011. Flowgate 6009 is an SPP flowgate. The Level 5 TLR was in effect from 9:15 PM on March 2, 2011 until 10:00 AM CST on March 3, 2011. Projected post-contingent flows on the Cooper South line 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 610 MVA. Flow on the Limiting Element was 636 MVA. This flowgate does not have a Contingent Element.

**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.

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

High external impacts in combination with Iatan 2 being offline for maintenance. Cooper – Fairport was in a planned outage.

**5. Procedures implemented prior to hold/curtailment.**

Curtailed non-firm transactions. Next hour flows predicted that not enough non-firm could be curtailed 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. 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.**

In the next day process, we did see an issue with this flowgate, based off of the peak study.

**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.

**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 an outage. Due to this situation, no actions were taken to avoid future hold/curtailments.

**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.

## Event History

**Issuing RC:** SWPP  
**Flowgate:** 6009 - COOPER\_S  
**Event Begin:** 2011-03-02 21:15  
**Event End:** 2011-03-03 11:50  
**Event Duration:** 14 Hours

TLR Level	TLR Date	TLR Confirm Time	Run Time	Requested Relief	Remaining Relief	Relief Provided	Total Cuts	
							Tags	MW
<a href="#">TLR Level 5B</a>	03/02/2011 21:15	03/02/2011 21:03	03/02/2011 21:02:14	125.0	0.0	230.3	0	0
<a href="#">TLR Level 5A</a>	03/02/2011 22:00	03/02/2011 21:31	03/02/2011 21:30:33	404.0	0.0	411.0	73	746
<a href="#">TLR Level 5A</a>	03/02/2011 23:00	03/02/2011 22:34	03/02/2011 22:33:40	412.0	0.0	418.2	64	767
<a href="#">TLR Level 5A</a>	03/03/2011 00:00	03/02/2011 23:30	03/02/2011 23:28:19	411.0	0.0	417.5	62	846
<a href="#">TLR Level 5A</a>	03/03/2011 01:00	03/03/2011 00:33	03/03/2011 00:31:22	401.0	0.0	405.3	45	689
<a href="#">TLR Level 5A</a>	03/03/2011 02:00	03/03/2011 01:28	03/03/2011 01:26:34	406.0	0.0	411.1	56	942
<a href="#">TLR Level 5A</a>	03/03/2011 03:00	03/03/2011 02:33	03/03/2011 02:32:49	382.0	0.0	387.7	61	936
<a href="#">TLR Level 5A</a>	03/03/2011 04:00	03/03/2011 03:33	03/03/2011 03:31:31	362.0	0.0	367.3	55	904
<a href="#">TLR Level 5A</a>	03/03/2011 05:00	03/03/2011 04:31	03/03/2011 04:28:26	367.0	0.0	373.7	65	897
<a href="#">TLR Level 5A</a>	03/03/2011 06:00	03/03/2011 05:28	03/03/2011 05:26:52	360.0	0.0	383.1	8	906
<a href="#">TLR Level 5A</a>	03/03/2011 07:00	03/03/2011 06:28	03/03/2011 06:27:53	350.0	0.0	354.2	45	858
<a href="#">TLR Level 5A</a>	03/03/2011 08:00	03/03/2011 07:30	03/03/2011 07:29:23	380.0	0.0	381.5	20	806
<a href="#">TLR Level 5A</a>	03/03/2011 09:00	03/03/2011 08:32	03/03/2011 08:31:59	370.0	0.0	383.0	10	824
<a href="#">TLR Level 3A</a>	03/03/2011 10:00	03/03/2011 09:43	03/03/2011 09:42:18	380.0	14.5	365.5	8	794
<a href="#">TLR Level 3A</a>	03/03/2011 11:00	03/03/2011 10:36	03/03/2011 10:35:16	170.0	0.0	170.2	8	767
<a href="#">TLR Level 0</a>	03/03/2011 11:50	03/03/2011 11:39	03/03/2011 11:39:06	0.0	0.0	0.0	0	0

## Event Summary

FILE SAVED AS: SWPP\_6009\_20110302\_2015.htm

Incident: SWPP_6009_20110302_2015	Date: 03/02/2011	Reliability Coordinator: SWPP
Initial Conditions: Increasing load		
Flowgate: 6009 - COOPER_S	Rating: 610	LODF: N/A
TLR Direction: Normal		
Effective StartTime: 03/02/2011 21:15	Effective EndTime: 03/03/2011 11:50	TLR Duration: 14 Hours and 35 Minutes

## TLR Actions

Confirm Time	Level	Effective Hour	Priority	Schedule						NNL Relief			Market Relief				Flow			TLR Action Comments						
				Total Tags Cut / Hold	IDC Cut MW	RC Cut Acknowledge MW	Relief MW	Hold MW	Relief MW	CA	IDC MW	RC Ackn MW	Type	Mkt	IDC MW	RC Ackn MW	Current	Post Cont.	Cont. Flow							
Mar 02 21:03	TLR 5B	CURRENT	NONE												ED-2	MISO	24.3	24.3	536	N/A	N/A	N/A				
			FJM	0.0	0.0	ED-6	MISO	210.0	210.0	FJM	0.0	0.0	FIRM-7	MISO	11.0	11.0	FJM	0.0					0.0	SWPP	0.0	0.0
											<b>Total</b>		<b>245.3</b>	<b>245.3</b>												
Mar 02 21:31	TLR 5A	NEXT	NONE												NONE											
			6-NN	1 / 0	50	13.4	50	13.4	0	0.0	NONE															
											<b>Total</b>		<b>69 / 1</b>	<b>0</b>	<b>24.4</b>	<b>115</b>	<b>24.4</b>	<b>26</b>	<b>7.4</b>							
Mar 02 21:31	TLR 5A	NEXT	NONE												ED-2	MISO	39.6	39.6	331	N/A	N/A	N/A				
			FJM	1.3	1.3	ED-6	MISO	216.0	216.0	FJM	0.0	0.0	FIRM-7	MISO	34.4	34.4	FJM	0.0					0.0	SWPP	0.0	0.0
											<b>Total</b>		<b>291.3</b>	<b>291.3</b>												

Mar 02 22-24	TLR 5A	NEXT	2-NH 5-NN 6-NN 7-F <b>Total</b>	2 / 0 1 / 0 4 / 0 57 / 0 <b>64 / 0</b>	150 58 348 111 <b>667</b>	48.9 8.2 48.3 23.2 <b>128.6</b>	150 58 348 111 <b>667</b>	48.9 8.2 48.3 23.2 <b>128.6</b>	0 0 0 0 <b>0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	NONE	ED-2 ED-5 FIRM-7 FIRM-CREDIT <b>Total</b>	MISO FJM SWPP MISO FJM SWPP MISO FJM SWPP MISO FJM SWPP <b>Total</b>	31.8 1.1 216.0 0.0 0.0 27.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 <b>275.9</b>	31.8 1.1 216.0 0.0 0.0 27.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 <b>275.9</b>	448	N/A	N/A	N/A
Mar 02 23-30	TLR 5A	NEXT	2-NH 6-NN 7-F <b>Total</b>	2 / 0 1 / 0 55 / 0 <b>58 / 0</b>	150 100 106 <b>356</b>	48.9 13.7 22.0 <b>84.7</b>	150 100 106 <b>356</b>	48.9 13.7 22.0 <b>84.7</b>	0 0 0 <b>0</b>	0.0 0.0 0.0 <b>0.0</b>	NONE	ED-2 ED-5 FIRM-7 FIRM-CREDIT <b>Total</b>	MISO FJM SWPP MISO FJM SWPP MISO FJM SWPP <b>Total</b>	23.8 1.1 216.0 0.0 0.0 24.7 0.0 0.0 0.0 0.0 0.0 0.0 <b>265.6</b>	23.8 1.1 216.0 0.0 0.0 24.7 0.0 0.0 0.0 0.0 0.0 0.0 <b>265.6</b>	388	N/A	N/A	N/A
Mar 03 00-33	TLR 5A	NEXT	2-NH 6-NN 7-F <b>Total</b>	1 / 0 1 / 0 39 / 0 <b>41 / 0</b>	50 100 49 <b>199</b>	4.3 13.7 9.9 <b>27.9</b>	50 100 49 <b>199</b>	4.3 13.7 9.9 <b>27.9</b>	0 0 0 <b>0</b>	0.0 0.0 0.0 <b>0.0</b>	NONE	ED-2 ED-5 FIRM-7 FIRM-CREDIT <b>Total</b>	MISO FJM SWPP MISO FJM SWPP MISO FJM SWPP <b>Total</b>	78.5 0.4 216.0 0.0 0.0 15.3 0.0 0.0 0.0 0.0 0.0 0.0 <b>310.2</b>	78.5 0.4 216.0 0.0 0.0 15.3 0.0 0.0 0.0 0.0 0.0 0.0 <b>310.2</b>	438	N/A	N/A	N/A
Mar 03 01-32	TLR 5A	NEXT	2-NH 6-NN 7-F <b>Total</b>	3 / 0 3 / 0 48 / 0 <b>52 / 0</b>	155 312 81 <b>548</b>	9.8 42.7 15.7 <b>69.3</b>	155 300 51 <b>536</b>	9.8 41.0 15.7 <b>67.6</b>	0 0 0 <b>0</b>	0.0 0.0 0.0 <b>0.0</b>	NONE	ED-2 ED-5 FIRM-7 FIRM-CREDIT <b>Total</b>	MISO FJM SWPP MISO FJM SWPP MISO FJM SWPP <b>Total</b>	58.4 0.9 216.0 0.0 0.0 21.4 0.0 0.0 0.0 0.0 0.0 0.0 <b>296.6</b>	58.4 0.9 216.0 0.0 0.0 21.4 0.0 0.0 0.0 0.0 0.0 0.0 <b>296.6</b>	449	N/A	N/A	N/A
Mar 03 02-33	TLR 5A	NEXT	2-NH 6-NN 7-F <b>Total</b>	2 / 0 3 / 0 52 / 0 <b>57 / 0</b>	100 336 106 <b>542</b>	7.0 46.4 21.8 <b>75.2</b>	100 300 106 <b>506</b>	7.0 41.0 21.8 <b>70.1</b>	0 0 0 <b>0</b>	0.0 0.0 0.0 <b>0.0</b>	NONE	ED-2 ED-5 FIRM-7 FIRM-CREDIT <b>Total</b>	MISO FJM SWPP MISO FJM SWPP MISO FJM SWPP <b>Total</b>	24.5 1.2 216.0 0.0 0.0 25.2 0.0 0.0 0.0 0.0 0.0 0.0 <b>266.9</b>	24.5 1.2 216.0 0.0 0.0 25.2 0.0 0.0 0.0 0.0 0.0 0.0 <b>266.9</b>	215	N/A	N/A	N/A
Mar 03 03-33	TLR 5A	NEXT	2-NH 6-NN 7-F <b>Total</b>	2 / 0 3 / 0 46 / 0 <b>51 / 0</b>	100 332 75 <b>510</b>	6.9 45.8 16.1 <b>68.6</b>	100 300 78 <b>478</b>	6.9 41.0 16.1 <b>64.1</b>	0 0 0 <b>0</b>	0.0 0.0 0.0 <b>0.0</b>	NONE	ED-2 ED-5 FIRM-7 FIRM-CREDIT <b>Total</b>	MISO FJM SWPP MISO FJM SWPP MISO FJM SWPP <b>Total</b>	16.5 0.6 216.0 0.0 0.0 20.1 0.0 0.0 0.0 0.0 0.0 0.0 <b>253.4</b>	16.5 0.6 216.0 0.0 0.0 20.1 0.0 0.0 0.0 0.0 0.0 0.0 <b>253.4</b>	306	N/A	N/A	N/A
Mar 03 04-31	TLR 5A	NEXT	2-NH 6-NN 7-F <b>Total</b>	2 / 0 3 / 0 56 / 0 <b>61 / 0</b>	100 333 100 <b>503</b>	6.9 41.4 20.4 <b>68.7</b>	100 300 100 <b>500</b>	6.9 41.0 20.4 <b>68.3</b>	0 0 0 <b>0</b>	0.0 0.0 0.0 <b>0.0</b>	NONE	ED-2 ED-5 FIRM-7 FIRM-CREDIT <b>Total</b>	MISO FJM SWPP MISO FJM SWPP MISO FJM SWPP <b>Total</b>	20.3 1.0 216.0 0.0 0.0 22.6 0.0 0.0 0.0 0.0 0.0 0.0 <b>259.8</b>	20.3 1.0 216.0 0.0 0.0 22.6 0.0 0.0 0.0 0.0 0.0 0.0 <b>259.8</b>	367	N/A	N/A	N/A
Mar 03 05-28	TLR 5A	NEXT	2-NH 5-NN 6-NN <b>Total</b>	1 / 0 1 / 0 2 / 0 <b>4 / 0</b>	50 24 238 <b>312</b>	4.3 3.4 33.2 <b>40.9</b>	50 24 238 <b>312</b>	4.3 3.4 33.2 <b>40.9</b>	0 0 0 <b>0</b>	0.0 0.0 0.0 <b>0.0</b>	NONE	ED-2 ED-5 FIRM-7 FIRM-CREDIT <b>Total</b>	MISO FJM SWPP MISO FJM SWPP MISO FJM SWPP <b>Total</b>	43.8 0.0 216.0 0.0 0.0 10.0 0.0 0.0 0.0 <b>269.6</b>	43.8 0.0 216.0 0.0 0.0 10.0 0.0 0.0 0.0 <b>269.6</b>	491	N/A	N/A	N/A

Mar 03 06:28	TLR 5A	NEXT	2-NH 6-NN 7-F <b>Total</b>	1 / 0 3 / 0 38 / 0 <b>40 / 0</b>	50 170 44 <b>264</b>	4.3 29.8 8.9 <b>43.0</b>	50 170 44 <b>264</b>	4.3 29.8 8.9 <b>43.0</b>	0 0 0 <b>0</b>	0.0 0.0 0.0 <b>0.0</b>	NONE	ED-2  ED-5  FIRM-7  FIRM-CREDIT  <b>Total</b>	MISO PJM SWPP MISO PJM SWPP MISO PJM SWPP <b>Total</b>	6.3 2.3 216.0 0.0 0.0 13.8 0.0 0.0 0.0 0.0 0.0 <b>238.4</b>	6.3 2.3 216.0 0.0 0.0 13.8 0.0 0.0 0.0 0.0 0.0 <b>238.4</b>	437	N/A	N/A	N/A
Mar 03 07:30	TLR 5A	NEXT	2-NH 6-NN 7-F <b>Total</b>	1 / 0 2 / 1 52 / 0 <b>15 / 1</b>	50 150 12 <b>212</b>	4.3 27.0 2.4 <b>33.7</b>	50 150 12 <b>212</b>	4.3 27.0 2.4 <b>33.7</b>	0 30 0 <b>30</b>	0.0 4.2 0.0 <b>4.2</b>	NONE	ED-2  ED-5  FIRM-7  FIRM-CREDIT  <b>Total</b>	MISO PJM SWPP MISO PJM SWPP MISO PJM SWPP <b>Total</b>	48.3 0.1 216.0 0.0 0.0 10.8 0.0 0.0 0.0 0.0 0.0 <b>275.2</b>	48.3 0.1 216.0 0.0 0.0 10.8 0.0 0.0 0.0 0.0 0.0 <b>275.2</b>	592	N/A	N/A	N/A
Mar 03 08:52	TLR 5A	NEXT	2-NH 6-NN <b>Total</b>	2 / 0 3 / 0 <b>5 / 0</b>	65 165 <b>230</b>	5.1 29.1 <b>34.2</b>	65 165 <b>230</b>	5.1 29.1 <b>34.2</b>	0 0 <b>0</b>	0.0 0.0 <b>0.0</b>	NONE	ED-2  ED-5  FIRM-7  FIRM-CREDIT  <b>Total</b>	MISO PJM SWPP MISO PJM SWPP MISO PJM SWPP <b>Total</b>	60.3 0.0 216.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 <b>276.3</b>	60.3 0.0 216.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 <b>276.3</b>	534	N/A	N/A	N/A
Mar 03 08:43	TLR 3A	NEXT	2-NH 6-NN 7-F <b>Total</b>	1 / 0 1 / 0 0 / 2 <b>2 / 2</b>	50 13.3 0 <b>100</b>	4.3 13.3 0 <b>17.6</b>	50 13.3 0 <b>100</b>	4.3 13.3 0 <b>17.6</b>	0 0 75 <b>75</b>	0.0 0.0 10.6 <b>10.6</b>	NONE	ED-2  ED-5  FIRM-7  <b>Total</b>	MISO PJM SWPP MISO PJM SWPP MISO PJM SWPP <b>Total</b>	35.8 0.0 216.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 <b>261.8</b>	35.8 0.0 216.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 <b>261.8</b>	459	N/A	N/A	N/A
Mar 03 10:36	TLR 3A	NEXT	2-NH 6-NN 7-F <b>Total</b>	1 / 0 2 / 0 0 / 1 <b>3 / 1</b>	50 123 0 <b>173</b>	4.3 20.1 0 <b>24.4</b>	50 123 0 <b>173</b>	4.3 20.1 0 <b>24.4</b>	0 0 20 <b>20</b>	0.0 0.0 2.8 <b>2.8</b>	NONE	ED-2  ED-5  FIRM-7  <b>Total</b>	MISO PJM SWPP MISO PJM SWPP MISO PJM SWPP <b>Total</b>	7.3 0.0 66.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 <b>73.5</b>	7.3 0.0 66.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 <b>73.5</b>	387	N/A	N/A	N/A
Mar 03 11:58	TLR 0	CURRENT				NONE					NONE					420	N/A	N/A	N/A

#### TLR Schedule Totals

Priority	Schedule			
	Total Tags Cut / Hold	IDC Cut MIV	RC Cut Acknowledge MIV	Hold MIV
0	0	0	0	0
1	0	0	0	0
2	21	1120	1120	0
3	0	0	0	0
4	0	0	0	0
5	2	82	82	0
6	34	2987	2984	30
7	470	938	938	121
<b>Total</b>	<b>527</b>	<b>5107</b>	<b>5024</b>	<b>151</b>

#### TLR Market Flow Totals

Market	Type	Market Relief	
		IDC MIV	RC Ackn MIV
MISO	ED-2	509.1	509.1
	ED-5	0.0	0.0
	FIRM-7	0.0	0.0
<b>Total MISO</b>		<b>509.1</b>	<b>509.1</b>
PJM	ED-2	10.0	10.2
	ED-5	0.0	0.0
	FIRM-7	0.0	0.0
<b>Total PJM</b>		<b>10.0</b>	<b>10.2</b>
SWPP	ED-2	3084.2	3084.2
	ED-5	256.3	256.4
	FIRM-7	0.0	0.0
<b>Total for SWPP</b>		<b>3340.5</b>	<b>3340.6</b>
<b>Total</b>		<b>3859.7</b>	<b>3859.9</b>

Date	Time	Category	Issue
3/2/2011	20:02	TLR - 5b Initial	
3/2/2011	20:30	TLR - 5a Initial	
3/2/2011	21:33	TLR - 5a Reissue	

Date	Time	Category	Issue
3/3/2011	08:42	TLR - 3a Reissue	Reduced level from TLR 5A
3/3/2011	10:39	TLR - 0	