

SPP TLR 5 Investigation Report
Flowgate 5073
(Bartlesville SE – N. Bartlesville 138 kV Line for loss of Northeastern – Delaware 345 kV)
(BVSNBVNESDEL)
TLR Level 5: March 02, 2009
Report Issued: April 27, 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 5073 on March 02, 2009. Flowgate 5073 is an SPP flowgate. The Level 5 TLR was in effect from 8:00 until 14:30 CST on March 02, 2009. Projected post-contingent flows on the Bartlesville – N. Bartlesville 138 kV line exceeded the SOL. The monitored element on this flowgate has a dynamic temperature dependent rating. TLR is issued dependent on this dynamic rating.

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 237 MVA. Flow on the Limiting Element was 111 MVA. Flow on the Contingent Element was 573 MVA. The LODF was approximately 18.74%. Post-contingent flow on the Limiting Element was approximately 218 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 that impacted the flowgate by more than 5% at the time the Level 5 TLR was issued. 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 CST.

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 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 that created heavy south to north flows.

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. Southwestern Power Administration (SPA) and AECI both redispatched generation due to NNL responsibility during this TLR.

TLR Event History

5073 - BvsNbvNesDel

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	03/02/2009 04:55	03/02/2009 04:52	03/02/2009 04:52:09	50.0	47.0	3.0	1	52
SUPERSEDED	3A	03/02/2009 06:00	03/02/2009 05:31	03/02/2009 05:30:40	46.0	43.3	2.7	2	32
SUPERSEDED	3A	03/02/2009 07:00	03/02/2009 06:28	03/02/2009 06:28:01	76.0	73.4	2.6	2	32
SUPERSEDED	5A	03/02/2009 08:00	03/02/2009 07:31	03/02/2009 07:31:20	35.0	0.0	35.4	15	179
SUPERSEDED	5A	03/02/2009 09:00	03/02/2009 08:30	03/02/2009 08:29:42	37.0	0.0	43.5	15	222
SUPERSEDED	5A	03/02/2009 10:00	03/02/2009 09:30	03/02/2009 09:29:40	48.0	0.0	54.8	15	271
SUPERSEDED	5A	03/02/2009 11:00	03/02/2009 10:30	03/02/2009 10:28:36	61.0	0.0	69.9	14	332
SUPERSEDED	5A	03/02/2009 12:00	03/02/2009 11:30	03/02/2009 11:29:28	0.0	0.0	9.7	2	40
SUPERSEDED	5A	03/02/2009 12:00	03/02/2009 11:36	03/02/2009 11:34:07	33.0	0.0	36.9	2	93
SUPERSEDED	5A	03/02/2009 13:00	03/02/2009 12:34	03/02/2009 12:33:58	43.0	0.0	47.6	2	115
SUPERSEDED	5A	03/02/2009 14:00	03/02/2009 13:42	03/02/2009 13:39:18	40.0	0.0	45.4	13	200
SUPERSEDED	3B	03/02/2009 14:30	03/02/2009 14:18	03/02/2009 14:18:14	0.0	37.1	0.0	0	0
SUPERSEDED	3A	03/02/2009 16:00	03/02/2009 15:28	03/02/2009 15:28:09	0.0	0.0	0.5	1	8
SUPERSEDED	3A	03/02/2009 17:00	03/02/2009 16:29	03/02/2009 16:29:34	40.0	37.4	2.6	2	32
SUPERSEDED	3A	03/02/2009 18:00	03/02/2009 17:38	03/02/2009 17:36:36	35.0	32.3	2.7	2	32
SUPERSEDED	3A	03/02/2009 19:00	03/02/2009 18:36	03/02/2009 18:36:36	52.0	49.3	2.7	2	32
SUPERSEDED	3A	03/02/2009 20:00	03/02/2009 19:31	03/02/2009 19:31:23	45.0	42.3	2.7	2	32
SUPERSEDED	3A	03/02/2009 21:00	03/02/2009 20:31	03/02/2009 20:30:41	42.0	39.3	2.7	2	32
TERMINATED	0	03/02/2009 21:35	03/02/2009 21:25	03/02/2009 21:25:14	0.0	0.0	0.0	0	0

Event Summary

FILE SAVED AS: SWPP_5073_20090302_0455.htm

Incident: SWPP_5073_20090302_0455	Date: 03/02/2009	Reliability Coordinator: SWPP
Initial Conditions: increasing load		
Flowgate: 5073 - BvsNbvNesDel	Rating: 237	LODF: 18.74%
TLR Direction: Normal		
Effective StartTime: 03/02/2009 04:55	Effective EndTime: 03/02/2009 21:35	TLR Duration: 16 Hours and 40 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 MV	RC Ackn MV	Type	Mkt	IDC MV	RC Ackn MV	Current	Post Cont.		Cont. Flow
Mar 02 04:52	TLR 3B	CURRENT	2-NH	1 / 0	52	3.0	52	3.0	0	0.0	NONE			ED-2	SWPP	0.0	0.0	125	228	553	N/A
		Total	1 / 0	104	3.0	52	3.0	0	0.0	ED-6	SWPP	0.0	0.0	FIRM-7	SWPP	0.0	0.0				
		NEXT	2-NH	1 / 0	51	2.9	51	2.9	0	0.0	NONE			ED-2	SWPP	0.0	0.0				
		Total	1 / 0	104	2.9	51	2.9	0	0.0	ED-6	SWPP	0.0	0.0	FIRM-7	SWPP	0.0	0.0				
Mar 02 05:31	TLR 3A	NEXT			NONE						NONE			ED-2	SWPP	0.0	0.0	108	206	527	N/A
														ED-6	SWPP	0.0	0.0				
														FIRM-7	SWPP	0.0	0.0				
														Total		0.0	0.0				
Mar 02 06:28	TLR 3A	NEXT			NONE						NONE			ED-2	SWPP	0.0	0.0	116	237	646	N/A
														ED-6	SWPP	0.0	0.0				
														FIRM-7	SWPP	0.0	0.0				
														Total		0.0	0.0				
Mar 02 07:31	TLR 5A	NEXT	7-F	14 / 0	155	9.7	155	9.7	0	0.0	AECI	5.0	5.0	ED-2	SWPP	0.0	0.0	111	218	573	N/A
			Total	14 / 0	155	9.7	155	9.7	0	0.0	SPA	1.0	1.0	ED-6	SWPP	0.0	0.0				
											Total	6.0	6.0	FIRM-7	SWPP	17.4	17.4				
														FIRM-CREDIT	SWPP	0.0	0.0				
														Total		17.4	17.4				
Mar 02 08:30	TLR 5A	NEXT	7-F	14 / 0	198	12.4	198	12.4	0	0.0	AECI	5.0	5.0	ED-2	SWPP	0.0	0.0	108	136	151	N/A
			Total	14 / 0	198	12.4	198	12.4	0	0.0	SPA	1.0	2.0	ED-6	SWPP	0.0	0.0				
											Total	6.0	7.0	FIRM-7	SWPP	22.7	22.7				
														FIRM-CREDIT	SWPP	0.0	0.0				
														Total		22.7	22.7				
Mar 02 09:30	TLR 5A	NEXT	7-F	14 / 0	247	15.5	247	15.5	0	0.0	AECI	7.0	7.0	ED-2	SWPP	0.0	0.0	111	210	530	N/A
			Total	14 / 0	247	15.5	247	15.5	0	0.0	SPA	2.0	2.0	ED-6	SWPP	0.0	0.0				
											Total	9.0	9.0	FIRM-7	SWPP	28.6	28.6				
														FIRM-CREDIT	SWPP	0.0	0.0				
														Total		28.6	28.6				
Mar 02 10:30	TLR 5A	NEXT	7-F	13 / 0	308	19.5	308	19.5	0	0.0	AECI	7.0	7.0	ED-2	SWPP	0.0	0.0	102	196	502	N/A
			Total	13 / 0	308	19.5	308	19.5	0	0.0	SPA	3.0	3.0	ED-6	SWPP	0.0	0.0				
											Total	10.0	10.0	FIRM-7	SWPP	38.7	38.7				
														FIRM-CREDIT	SWPP	0.0	0.0				
														Total		38.7	38.7				

Mar 02 11:30	TLR 5A	NEXT	2-NH 7-F Total	1 / 0 1 / 0 2 / 0	24 16 40	1.7 0.8 2.5	0 0 0	0.0 0.0 0.0	0 0 0	0.0 0.0 0.0	AECI SPA Total	1.0 0.0 1.0	1.0 3.0 4.0	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 6.2 0.0 6.2	0.0 0.0 0.0 0.0 0.0	113	215	546	N/A
Mar 02 11:36	TLR 5A	NEXT	2-NH 7-F Total	1 / 0 1 / 0 2 / 0	24 69 93	1.7 3.6 5.3	24 69 93	1.7 3.6 5.3	0 0 0	0.0 0.0 0.0	AECI Total	4.0 4.0	4.0 4.0	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 27.0 0.0 27.0	0.0 0.0 27.0 0.0 27.0	117	229	602	N/A
Mar 02 12:34	TLR 5A	NEXT	2-NH 7-F Total	1 / 0 1 / 0 2 / 0	24 91 115	1.7 4.8 6.5	24 91 115	1.7 4.8 6.5	0 0 0	0.0 0.0 0.0	AECI SPA Total	4.0 1.0 5.0	5.0 1.0 6.0	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 36.1 0.0 36.1	0.0 0.0 36.1 0.0 36.1	112	213	541	N/A
Mar 02 13:42	TLR 5A	NEXT	7-F Total	12 / 0 12 / 0	176 176	11.2 11.2	176 176	11.2 11.2	0 0	0.0 0.0	AECI SPA Total	4.0 1.0 5.0	4.0 1.0 5.0	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 26.5 0.0 26.5	0.0 0.0 26.5 0.0 26.5	105	204	530	N/A
Mar 02 14:18	TLR 3B	CURRENT	NONE								NONE		ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	104	206	545	N/A	
		NEXT	2-NH Total	1 / 0 1 / 0	24 0	2.1 2.1	24 24	2.1 2.1	0 0	0.0 0.0	NONE		ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0					
Mar 02 15:28	TLR 3A	NEXT	NONE								NONE		ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	100	203	550	N/A	
Mar 02 16:29	TLR 3A	NEXT	NONE								NONE		ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	99	207	577	N/A	
Mar 02 17:36	TLR 3A	NEXT	NONE								NONE		ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	101	207	569	N/A	
Mar 02 18:36	TLR 3A	NEXT	NONE								NONE		ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	103	207	559	N/A	
Mar 02 19:31	TLR 3A	NEXT	2-NH Total	1 / 0 1 / 0	24 24	2.2 2.2	24 24	2.2 2.2	0 0	0.0 0.0	NONE		ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	109	214	564	N/A	
Mar 02 20:31	TLR 3A	NEXT	2-NH Total	1 / 0 1 / 0	24 24	2.2 2.2	24 24	2.2 2.2	0 0	0.0 0.0	NONE		ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	103	206	550	N/A	
Mar 02 21:25	TLR 0	CURRENT	NONE								NONE		NONE				98	195	520	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	8	247	223	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	70	1280	1244	0
Total	78	1507	1467	0

TLR NNL Totals

CA	NNL Relief	
	IDC MW	RC Ackn MW
AECI	37.0	38.0
SPA	9.0	10.0
Total	46.0	48.0

TLR Market Flow Totals

Market	Type	Market Relief	
		IDC MW	RC Ackn MW
SWPP	ED-2	0.0	0.0
	ED-6	0.0	0.0
	FIRM-7	203.2	203.2
Total for SWPP		203.2	203.2
Total		203.2	203.2

Reliability Log for March, 2				2009
1	Time	Initials	Comments	
3				
38	0452	LWB	Issued TLR level 3B on BvsNbvNesDel flgt #5073.	
42	0530	LWB	Issued TLR level 3A on BvsNbvNesDel flgt #5073.	
51	0628	RST	Re-issued TLR level 3A on BvsNbvNesDel flgt #5073.	
59	0731	RST	Re-issued TLR level 5A on BvsNbvNesDel flgt #5073. AECI dropping 66 MWs on Chocteau. SPA NNL=1.3 MWs SPA dropping 10 MWs on Keystone and raising 10 MWs on JRSP.	
66	0829	RST	Re-issued TLR level 5A on BvsNbvNesDel flgt #5073. AECI staying the same. SPA NNL=1.5 MWs SPA raising Table Rock 100 MWs and dropping Norfolk 100 MWs. They had picked up 30 MWs on Truman which helped the flgt. 0.9 MWs.	
73	0929	RST	Re-issued TLR level 5A on BvsNbvNesDel flgt #5073. AECI staying the same. SPA NNL=1.8 MWs SPA dropping Table Rock 100 MWs and dropping Eufaula 100 MWs. They reducing sales to accomidate this.	
79	1028	AH	Re-issued TLR level 5A on BvsNbvNesDel flgt #5073. AECI staying the same. SPA NNL=2.9 MWs SPA inc Table Rock 45 MWs and dropping Tenkiller and Weber Falls 20 mws. They reducing sales to accomidate this.	
84	1134	AH	Re-issued TLR level 5A on BvsNbvNesDel flgt #5073. AECI staying the same. SPA NNL=.4 MWs SPA inc Table Rock 13 MWs and dropping Dardnell 13 mws. They reducing sales to accomidate this.	
90	1233	AH	Re-issued TLR level 5A on BvsNbvNesDel flgt #5073. AECI staying the same. SPA NNL=.6 MWs SPA inc Table Rock 19 MWs and dropping Dardnell 19 mws. They reducing sales to accomidate this.	
95	1339	AH	Re-issued TLR level 5A on BvsNbvNesDel flgt #5073. AECI staying the same. SPA NNL=1.2 MWs SPA inc Table Rock 19 MWs and dropping Dardnell 40 mws. Kerr down 30mw.	
98	1418	AH	Issued TLR level 3B on BvsNbvNesDel flgt #5073.	
109	1629	RST	Re-issued TLR level 3A on BvsNbvNesDel flgt #5073.	
113	1736	RST	Re-issued TLR level 3A on BvsNbvNesDel flgt #5073.	
122	1836	RGH	Re-issued TLR level 3A on BvsNbvNesDel flgt #5073.	
130	1931	RGH	Re-issued TLR level 3A on BvsNbvNesDel flgt #5073.	
141	2030	RGH	Re-issued TLR level 3A on BvsNbvNesDel flgt #5073.	
145	2125	RGH	Re-issued TLR level 0 on BvsNbvNesDel flgt #5073.	
164				

5073 3-2-2009

