

SPP TLR 5 Investigation Report
Temp 6 Flowgate 16094
(Neosho – Columbus 161 kV for the loss of Neosho – Morgan 345 kV)
TLR Level 5: December 4-5, 2009
Report Issued: December 11, 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 16094 on December 4-5, 2009. Flowgate 16094 is an SPP flowgate created for the planned outage of Northeastern – Delaware 345 kV line. The Level 5 TLR was in effect from 23:15 CST on December 4 until 04:00 CST on December 5, 2009. Projected post contingent flows on the Neosho – Columbus 161 kV 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 215 MVA. Flow on the Limiting Element was 180 MVA. Flow on the Contingent Element was 332 MVA. The LODF was approximately 18%. Post-contingent flow on the Limiting Element was projected to be approximately 240 MW.

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 3-5.

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 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 6. 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.

SPP's outage coordination process identified potential for loading issues due to the outage of the Northeastern – Delaware 345 kV line. The temporary flowgate was created in order to dispatch around the constraint via TLR if necessary.

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 7.

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 due to the scheduled outage of Northeastern – Delaware 345 kV line. Since the temporary outage was the most significant factor, no additional actions were necessary.

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 Flows were reduced on the flowgate as reported in the TLR Event History and NERC TLR Log on pages 3-5. Although the IDC assigned NNL responsibility to SPA for the first 3 hours of this TLR, SPA was not asked to provide any redispatch because the only generating plant that caused SPA to have NNL responsibility was actually off-line at the time.

TLR Event History

16094 - Temp 6 -- Neosho - Columbus 161kV (flo) Neosho - Morgan 345kV

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	12/04/2009 22:55	12/04/2009 22:45	12/04/2009 22:44:23	25.0	0.0	25.0	2	75
SUPERSEDED	5B	12/04/2009 23:15	12/04/2009 23:07	12/04/2009 23:06:03	30.0	0.0	30.4	16	24
SUPERSEDED	5A	12/05/2009 01:00	12/05/2009 00:29	12/05/2009 00:27:08	28.0	0.0	28.8	20	67
SUPERSEDED	5A	12/05/2009 02:00	12/05/2009 01:28	12/05/2009 01:27:13	22.0	0.0	26.9	2	78
SUPERSEDED	5A	12/05/2009 03:00	12/05/2009 02:28	12/05/2009 02:27:07	0.0	0.0	21.9	2	78
SUPERSEDED	3A	12/05/2009 04:00	12/05/2009 03:27	12/05/2009 03:26:32	21.0	0.0	21.0	2	77
SUPERSEDED	3A	12/05/2009 05:00	12/05/2009 04:31	12/05/2009 04:31:04	106.0	85.2	20.8	2	76
SUPERSEDED	3A	12/05/2009 06:00	12/05/2009 05:30	12/05/2009 05:30:13	128.0	110.1	17.9	1	10
SUPERSEDED	3A	12/05/2009 07:00	12/05/2009 06:33	12/05/2009 06:33:21	46.0	28.5	17.5	5	20
SUPERSEDED	3A	12/05/2009 08:00	12/05/2009 07:26	12/05/2009 07:25:55	20.0	0.0	20.1	1	9
SUPERSEDED	3A	12/05/2009 09:00	12/05/2009 08:26	12/05/2009 08:25:55	0.0	0.0	0.0	0	0
TERMINATED	0	12/05/2009 09:20	12/05/2009 09:09	12/05/2009 09:09:14	0.0	0.0	0.0	0	0

12/11/2009 12:47:37 (CST)

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Event Summary

FILE SAVED AS: SWPP_16094_20091204_2255.htm

Incident: SWPP_16094_20091204_2255	Date: 12/04/2009	Reliability Coordinator: SWPP
Initial Conditions: increasing load		
Flowgate: 16094 - Temp 6 -- Neosho - Columbus 16...	Rating: 215	LODF: 18.23%
TLR Direction: Normal		
Effective StartTime: 12/04/2009 22:55	Effective EndTime: 12/05/2009 09:20	TLR Duration: 10 Hours and 25 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											
Dec 04 22:45	TLR 3B	CURRENT	1-NS Total	2 / 0 2 / 0	75 148	3.8 3.8	75 75	3.8 3.8	0 0	0.0 0.0	NONE			ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 21.2 0.0 21.2	0.0 21.2 0.0 21.2	172	228	301	N/A
		NEXT	1-NS 3-ND Total	1 / 0 1 / 0 2 / 0	73 1 148	3.7 0.1 3.7	73 1 74	3.7 0.1 3.7	0 0 0	0.0 0.0 0.0	NONE			ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 84.3 0.0 84.3	0.0 84.3 0.0 84.3				
Dec 04 23:07	TLR 5B	CURRENT	7-F Total	16 / 0 16 / 0	24 24	1.6 1.6	24 24	1.6 1.6	0 0	0.0 0.0	NONE			ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 25.0 3.8 28.8	0.0 25.0 3.8 28.8	180	240	332	N/A
		NEXT	1-NS 3-ND 6-NN 7-F Total	1 / 0 1 / 0 0 / 1 3 / 0 5 / 1	73 3 0 3 24	3.7 0.2 0.0 0.2 4.0	73 3 0 3 79	3.7 0.2 0.0 0.2 4.0	0 0 0 0 20	0.0 0.0 1.8 0.0 1.8	NONE			NONE							
Dec 05 00:29	TLR 5A	NEXT	7-F Total	20 / 0 20 / 0	67 67	4.4 4.4	67 67	4.4 4.4	0 0	0.0 0.0	NONE			ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 24.2 0.0 0.0 24.2	0.0 24.2 0.0 0.0 24.2	139	194	302	N/A
Dec 05 01:28	TLR 5A	NEXT	1-NS 3-ND Total	1 / 0 1 / 0 2 / 0	73 5 78	3.7 0.3 3.9	73 5 78	3.7 0.3 3.9	0 0 0	0.0 0.0 0.0	NONE			ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 23.0 0.0 0.0 23.0	0.0 23.0 0.0 0.0 23.0	138	198	321	N/A
Dec 05 02:28	TLR 5A	NEXT	1-NS 3-ND Total	1 / 0 1 / 0 2 / 0	73 5 78	3.7 0.3 3.9	73 5 78	3.7 0.3 3.9	0 0 0	0.0 0.0 0.0	NONE			ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 18.0 0.0 0.0 18.0	0.0 18.0 0.0 0.0 18.0	137	191	298	N/A
Dec 05 03:27	TLR 3A	NEXT	1-NS 3-ND Total	1 / 0 1 / 0 2 / 0	73 4 77	3.7 0.2 3.9	73 4 77	3.7 0.2 3.9	0 0 0	0.0 0.0 0.0	NONE			ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 17.1 0.0 17.1	0.0 17.1 0.0 17.1	150	202	290	N/A

Dec 05 04:31	TLR 3A	NEXT	1-NS 3-ND Total	1 / 0 1 / 0 2 / 0	73 3 76	3.7 0.2 3.8	73 3 76	3.7 0.2 3.8	0 0 0	0.0 0.0 0.0	NONE	ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 17.0 0.0 17.0	0.0 17.0 0.0 17.0	148	204	308	N/A
Dec 05 05:30	TLR 3A	NEXT	8-NN Total	1 / 0 1 / 0	10 10	0.9 0.9	10 10	0.9 0.9	0 0	0.0 0.0	NONE	ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 17.0 0.0 17.0	0.0 17.0 0.0 17.0	142	198	298	N/A
Dec 05 06:33	TLR 3A	NEXT	3-ND 8-NN Total	1 / 0 1 / 0 2 / 0	1 10 11	0.1 0.9 0.9	1 10 11	0.1 0.9 0.9	0 0 0	0.0 0.0 0.0	NONE	ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 16.0 0.0 16.0	0.0 16.0 0.0 16.0	138	190	290	N/A
Dec 05 07:28	TLR 3A	NEXT	8-NN Total	1 / 0 1 / 0	9 9	0.8 0.8	9 9	0.8 0.8	0 0	0.0 0.0	NONE	ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 19.3 0.0 19.3	0.0 19.3 0.0 19.3	133	184	284	N/A
Dec 05 08:26	TLR 3A	NEXT	7-F Total	0 / 1 0 / 1	0 0	0.0 0.0	0 0	0.0 0.0	25 25	2.2 2.2	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	133	178	250	N/A
Dec 05 09:09	TLR 0	CURRENT	NONE								NONE	NONE				107	144	205	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	8	513	513	0
2	0	0	0	0
3	7	22	22	0
4	0	0	0	0
5	0	0	0	0
6	3	29	29	20
7	39	94	94	25
Total	57	658	658	45

TLR Market Flow Totals

Market	Type	Market Relief	
		IDC MW	RC Ackn MW
SWPP	ED-2	0.0	0.0
	ED-6	197.8	197.8
	FIRM-7	3.8	3.8
Total for SWPP		201.6	201.6
Total		201.6	201.6

	A	B	C	D
1	Reliability Log for December, 4			2009
2	Time	Initials	Comments	
3	2244	LWB	Issued TLR level 3B on Temp 6--Neosho-Columbus 161kv (flo) Neosho-Morgan 345kv flgt #16094	
4	2306	LWB	Issued TLR level 5B on Temp 6--Neosho-Columbus 161kv (flo) Neosho-Morgan 345kv flgt #16094,Market Relief MW 28.8, SPA NNL 0.1	
5				
6	Reliability Log for December, 5			2009
7	Time	Initials	Comments	
8	0027	LWB	Issued TLR level 5A on Temp 6--Neosho-Columbus 161kv (flo) Neosho-Morgan 345kv flgt #16094,Market Relief MW 24.2, SPA NNL 0.2	
9	0127	LWB	Re-issued TLR level 5A on Temp 6--Neosho-Columbus 161kv (flo) Neosho-Morgan 345kv flgt #16094,Market Relief MW 23.0, SPA NNL 0.2	
10	0227	LWB	Re-issued TLR level 5A on Temp 6--Neosho-Columbus 161kv (flo) Neosho-Morgan 345kv flgt #16094,Market Relief MW 18.02, SPA NNL 0	
11	0326	LWB	Issued TLR level 3A on Temp 6--Neosho-Columbus 161kv (flo) Neosho-Morgan 345kv flgt #16094.	
12	0431	LWB	Re-issued TLR level 3A on Temp 6--Neosho-Columbus 161kv (flo) Neosho-Morgan 345kv flgt #16094.	
13	0530	LWB	Re-issued TLR level 3A on Temp 6--Neosho-Columbus 161kv (flo) Neosho-Morgan 345kv flgt #16094.	
14	0633	LRG	Re-issued TLR level 3A on Temp 6--Neosho-Columbus 161kv (flo) Neosho-Morgan 345kv flgt #16094.	
15	0725	LRG	Re-issued TLR level 3A on Temp 6--Neosho-Columbus 161kv (flo) Neosho-Morgan 345kv flgt #16094.	
16	0825	LRG	Re-issued TLR level 3A on Temp 6--Neosho-Columbus 161kv (flo) Neosho-Morgan 345kv flgt #16094.	
17	0909	LRG	Re-issued TLR level 0 on Temp 6--Neosho-Columbus 161kv (flo) Neosho-Morgan 345kv flgt #16094.	
18				
19				

16094 -- 12/4/09 - 12/5/09

— Post Cont. — SOL

