

**SPP TLR 5 Investigation Report
Temp 26 Flowgate 16045
(Neosho – Columbus 161 kV for the loss of Neosho – Delaware 345 kV)
TLR Level 5: December 27, 2009
Report Issued: December 29, 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 16045 on December 27, 2009. Flowgate 16045 is an SPP flowgate created for a planned outage of Neosho – Morgan 345 kV line earlier this fall. Loading on the flowgate remained relatively high after the Neosho – Morgan 345 kV line was returned to service so the flowgate was maintained following the end of the outage. The Level 5 TLR was in effect from 5:00 until 6:55 CST on December 27, 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 5A TLR was issued, the Limiting Element was rated at 215 MVA. Flow on the Limiting Element was 196 MVA. Flow on the Contingent Element was 157 MVA. The LODF was approximately 12%. Post-contingent flow on the Limiting Element was approximately 214 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.

Generation at Flint Creek, which tripped on December 24 and again on December 26, was still out of service and contributed to loading on this flowgate.

5. Procedures implemented prior to hold/curtailment.

There were no non-firm transactions impacting the flowgate by more than 5% prior to the Level 5 TLR being issued. Non-firm market flows were being curtailed prior to going to the level 5 TLR. 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.

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. 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 unscheduled outage of Flint Creek generation and lack of available generation in the Joplin area.

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.

TLR Event History

16045 - Temporary 26 - Neosho-Columbus 161 flo Neosho-Delaware 345

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	12/26/2009 22:40	12/26/2009 22:28	12/26/2009 22:27:33	5.0	5.0	0.0	0	0
SUPERSEDED	3A	12/27/2009 00:00	12/26/2009 23:29	12/26/2009 23:29:15	9.0	2.0	7.0	0	0
SUPERSEDED	3A	12/27/2009 01:00	12/27/2009 00:28	12/27/2009 00:27:42	26.0	20.0	6.0	0	0
SUPERSEDED	3A	12/27/2009 02:00	12/27/2009 01:28	12/27/2009 01:27:40	35.0	20.0	15.0	0	0
SUPERSEDED	3A	12/27/2009 03:00	12/27/2009 02:30	12/27/2009 02:30:08	25.0	19.0	6.0	0	0
SUPERSEDED	3A	12/27/2009 04:00	12/27/2009 03:30	12/27/2009 03:30:10	52.0	42.0	10.0	0	0
SUPERSEDED	5A	12/27/2009 05:00	12/27/2009 04:31	12/27/2009 04:30:07	40.0	0.0	40.0	3	25
SUPERSEDED	5A	12/27/2009 06:00	12/27/2009 05:28	12/27/2009 05:28:03	39.0	0.0	39.2	5	25
TERMINATED	0	12/27/2009 06:55	12/27/2009 06:44	12/27/2009 06:43:32	0.0	0.0	0.0	0	0

12/30/2009 14:19:19 (CST)

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Event Summary

FILE SAVED AS: SWPP_16045_20091226_2240.htm

Incident: SWPP_16045_20091226_2240	Date: 12/26/2009	Reliability Coordinator: SWPP
Initial Conditions: increasing flow		
Flowgate: 16045 - Temporary 26 - Neosho-Columbus...	Rating: 215	LODF: 12.03%
TLR Direction: Normal		
Effective StartTime: 12/26/2009 22:40	Effective EndTime: 12/27/2009 06:55	TLR Duration: 8 Hours and 15 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 26 22:28	TLR 3B	CURRENT		NONE								NONE			ED-2 ED-8 FIRM-7 Total	SWPP SWPP SWPP	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	197	235	317	N/A
		NEXT		NONE								NONE			ED-2 ED-8 FIRM-7 Total	SWPP SWPP SWPP	0.0 10.0 0.0 10.0	0.0 10.0 0.0 10.0				
Dec 26 23:29	TLR 3A	NEXT		NONE								NONE			ED-2 ED-8 FIRM-7 Total	SWPP SWPP SWPP	0.0 7.0 0.0 7.0	0.0 7.0 0.0 7.0	192	230	317	N/A
Dec 27 00:28	TLR 3A	NEXT		NONE								NONE			ED-2 ED-8 FIRM-7 Total	SWPP SWPP SWPP	0.0 6.0 0.0 6.0	0.0 6.0 0.0 6.0	184	222	317	N/A
Dec 27 01:28	TLR 3A	NEXT		NONE								NONE			ED-2 ED-8 FIRM-7 Total	SWPP SWPP SWPP	0.0 15.0 0.0 15.0	0.0 15.0 0.0 15.0	179	220	346	N/A
Dec 27 02:30	TLR 3A	NEXT		NONE								NONE			ED-2 ED-8 FIRM-7 Total	SWPP SWPP SWPP	0.0 6.0 0.0 6.0	0.0 6.0 0.0 6.0	196	218	184	N/A
Dec 27 03:30	TLR 3A	NEXT		NONE								NONE			ED-2 ED-8 FIRM-7 Total	SWPP SWPP SWPP	0.0 10.0 0.0 10.0	0.0 10.0 0.0 10.0	193	213	171	N/A
Dec 27 04:31	TLR 5A	NEXT	7-F Total	3 / 0 3 / 0	25 25	1.5 1.5	25 25	1.5 1.5	0 0	0.0 0.0	NONE			ED-2 ED-8 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 37.0 1.8 0.0 38.6	0.0 37.0 1.8 0.0 38.6	196	214	157	N/A	

Dec 27 05:28	TLR 5A	NEXT	7-F Total	5 / 0 5 / 0	25 25	1.4 1.4	25 25	1.4 1.4	0 0	0.0 0.0	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP Total	0.0 37.7 0.0 0.0 37.7	0.0 37.7 0.0 0.0 37.7	194	212	150	N/A
Dec 27 05:44	TLR 0	CURRENT	NONE				NONE				NONE				177	206	248	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	8	50	50	0
Total	8	50	50	0

TLR Market Flow Totals

Market	Type	Market Relief	
		IDC MW	RC Ackn MW
SWPP	ED-2	0.0	0.0
	ED-6	118.7	118.7
	FIRM-7	1.6	1.6
Total for SWPP		120.3	120.3
Total		120.3	120.3

	A	B	C	D	E
1	Reliability Log for December, 26			2009	
2	Time	Initials	Comments		
3	1453	RGH	Tyler @ AEP reports that Flint Creek is decreasing generation to 125 - 150mw total output to check for condenser leak. This unit has a 5% impact on temp 6 as an increment unit		
4	2227	RST	Issued TLR Level 3B on Temp 26-Neosho-Columbus 161kV fto Neosho-Delaware 345 Flgt. 16045.		
5	2329	RST	Re-issued TLR Level 3A on Temp 26-Neosho-Columbus 161kV fto Neosho-Delaware 345 Flgt. 16045.		
6					
7	Reliability Log for December, 27			2009	
8	Time	Initials	Comments		
9	0027	RST	Re-issued TLR Level 3A on Temp 26-Neosho-Columbus 161kV fto Neosho-Delaware 345 Flgt. 16045.		
10	0127	RST	Re-issued TLR Level 3A on Temp 26-Neosho-Columbus 161kV fto Neosho-Delaware 345 Flgt. 16045.		
11	0230	RST	Re-issued TLR Level 3A on Temp 26-Neosho-Columbus 161kV fto Neosho-Delaware 345 Flgt. 16045.		
12	0330	RST	Re-issued TLR Level 3A on Temp 26-Neosho-Columbus 161kV fto Neosho-Delaware 345 Flgt. 16045.		
13	0430	RST	Re-issued TLR Level 5A on Temp 26-Neosho-Columbus 161kV fto Neosho-Delaware 345 Flgt. 16045.		
14	0528	RST	Re-issued TLR Level 5A on Temp 26-Neosho-Columbus 161kV fto Neosho-Delaware 345 Flgt. 16045.		
15	0643	RST	Re-issued TLR Level 5A on Temp 26-Neosho-Columbus 161kV fto Neosho-Delaware 345 Flgt. 16045.		
16					
17					

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