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 24, 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 16094 on December 24, 2009. Flowgate 16094 is an SPP flowgate created for a planned outage of Northeastern – Delaware 345 kV line earlier in December. Loading on the flowgate remained relatively high after the Northeastern – Delaware 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 22:35 until 23:35 CST on December 24, 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 182 MVA. Flow on the Contingent Element was 170 MVA. The LODF was approximately 13%. Post-contingent flow on the Limiting Element was projected to be approximately 204 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.
At approximately 21:50 CST, AEP's Flint Creek unit tripped, causing a substantial increase in flowgate loading.

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. Non-firm market flow was 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

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	12/24/2009 21:55	12/24/2009 21:50	12/24/2009 21:49:57	50.0	49.0	1.0	0	0
SUPERSEDED	5B	12/24/2009 22:35	12/24/2009 22:25	12/24/2009 22:24:39	50.0	0.0	50.1	3	25
TERMINATED	0	12/24/2009 23:35	12/24/2009 23:22	12/24/2009 23:22:02	0.0	0.0	0.0	0	0

12/29/2009 11:56:55 (CST)
OATI IDC Support Phone: 763-201-2010 Fax: 763-553-2813

Event Summary

FILE SAVED AS: SWPP_16094_20091224_2155.htm

Incident:	SWPP_16094_20091224_2155	Date: 12/24/2009	Reliability Coordinator: SWPP
Initial Conditions:	Increased Loading		
Flowgate:	16094 - Temp 6 -- Neosho - Columbus 16...	Rating: 215	LODF: 13.14%
TLR Direction:	Normal		
Effective StartTime:	12/24/2009 21:55	Effective EndTime: 12/24/2009 23:35	TLR Duration: 1 Hour and 40 Minutes

TLR Actions

Confirm Time	Level	Effective Hour	Priority	Schedule							NNL Relief			Market Relief				Flow		Cont. 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.		
					MW	Relief	MW	Relief	MW	Relief											
Dec 24 21:50	TLR 3B	CURRENT		NONE								NONE		ED-2 ED-6 FIRM-7 **Total**	SWPP SWPP SWPP	0.0 1.0 0.0 **1.0**	0.0 1.0 0.0 **1.0**	206	229	177	N/A
		NEXT		NONE								NONE		ED-2 ED-6 FIRM-7 **Total**	SWPP SWPP SWPP	0.0 1.0 0.0 **1.0**	0.0 1.0 0.0 **1.0**				
Dec 24 22:25	TLR 5B	CURRENT	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-6 FIRM-7 **Total**	SWPP SWPP SWPP	0.0 15.0 36.5 **51.5**	0.0 15.0 36.5 **51.5**	182	204	170	N/A
		NEXT		NONE								NONE		NONE							
Dec 24 23:22	TLR 0	CURRENT		NONE								NONE		NONE				159	178	146	N/A

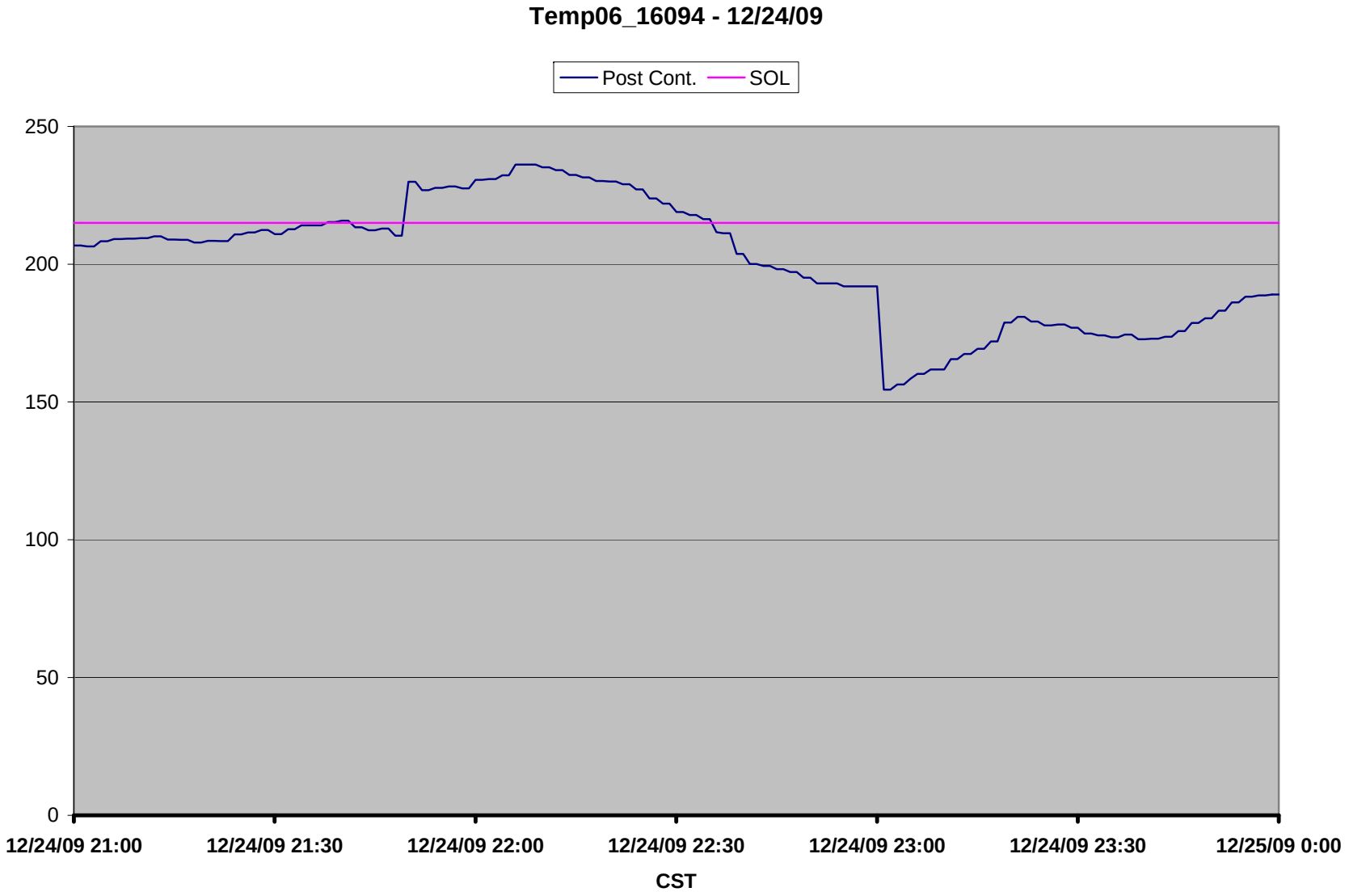
TLR Schedule Totals

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	3	25	25	0
Total	**3**	**25**	**25**	**0**

TLR Market Flow Totals

Market	Type	Market Relief	
		IDC MW	RC Ackn MW
SWPP	ED-2	0.0	0.0
	ED-6	16.0	16.0
	FIRM-7	36.5	36.5
Total for SWPP		52.5	52.5
Total		**52.5**	**52.5**

	A	B	C	D
1	**Reliability Log for December, 24**			**2009**
2	Time	Initials	Comments	Thursday
3	2151	MRH	CSWS entered RSS event ftlo of CSWFlintcreek1 528 - ENTERED WRONG - CANCELLED	
4	2149	MRH	Issued TLR Level 3B on Temp 6 Neosho-Columbus 161kV ftlo Neosho-Morgan 345kV Flgt 16094	
5	2155	MRH	CSWS entered RSS event ftlo of CSWFlintcreek1 ORF 264	
6	2158	MRH	CSWS entered RSS event ftlo of CSW.AECC.Flintcreek1 ORF 264	
7	2211	MRH	Set Effective limits on Temp 6 and Temp 26 to control loading, Temp 6 at 112% and Temp 26 at 114%	
8	2213	MRH	Re-issued TLR Level 5B on Temp 26, flgt #16045 - LOADING	
9	2224	MRH	Re-issued TLR Level 5B on Temp 6 Neosho-Columbus 161kV ftlo Neosho-Morgan 345kV Flgt 16094. LOADING	
10	2322	MRH	Re-issued TLR Level 0 on Temp 6 Neosho-Columbus 161kV ftlo Neosho-Morgan 345kV Flgt 16094.	
11				


Temp06_16094 - 12/24/09
Post Cont.
SOL
250
200
150
100
50
0
12/24/09 21:00
12/24/09 21:30
12/24/09 22:00
12/24/09 22:30
12/24/09 23:00
12/24/09 23:30
12/25/09 0:00
CST