

SPP TLR 5 Investigation Report
Temp10_16663
(Neosho – Columbus 161 kV for the loss of Asbury - Purcell 161 kV)
TLR Level 5: October 20-21, 2010
Report Issued: January 18, 2010

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 16663 on October 20-21, 2010. Flowgate 16663 is an SPP flowgate. The Level 5 TLR was in effect from 21:00 on October 20 until 6:00 CST on October 21, 2010. Projected post contingent flows on the Neosho – Columbus 161 kV line were expected to exceed 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 136 MVA. Flow on the Contingent Element was 193 MVA. The LODF was approximately 34%. Post-contingent flow on the Limiting Element was approximately 200 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 not enough non-firm transactions and market flows to provide the necessary relief on the flowgate. The TLR was escalated to a Level 5 in order to curtail firm transactions and firm market flow to relieve loading.

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.

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. The Neosho – Columbus 161 kV line was showing in the RTCA application. This flowgate was determined to be the most limiting. 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 during the temporary outage of the Orongo Junction 161 kV bus. Lack of available generation south of the Joplin area during heavy north to south flows from Kansas and Missouri into Oklahoma and Arkansas contributed to the loading.

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 3-6. AECL re-dispatched to provide NNL relief during the event.

Event History

Issuing RC: SWPP
Flowgate: 16663 - Temp10 Neosho-Columbus 161 FTLO Asbury-Purcell 161
Event Begin: 2010-10-20 14:44
Event End: 2010-10-21 05:32
Event Duration: 15 Hours

TLR Level	TLR Date	TLR Confirm Time	Run Time	Requested Relief	Remaining Relief	Relief Provided	Total Cuts	
							Tags	MW
TLR Level 3A	10/20/2010 15:00	10/20/2010 14:44	10/20/2010 14:44:08	10.0	6.8	3.2	1	30
TLR Level 3A	10/20/2010 16:00	10/20/2010 15:27	10/20/2010 15:26:00	30.0	28.0	2.0	0	0
TLR Level 3A	10/20/2010 17:00	10/20/2010 16:30	10/20/2010 16:30:12	17.0	14.7	2.3	1	4
TLR Level 3A	10/20/2010 18:00	10/20/2010 17:30	10/20/2010 17:29:44	7.0	4.7	2.3	1	4
TLR Level 3A	10/20/2010 19:00	10/20/2010 18:28	10/20/2010 18:28:11	13.0	8.9	4.1	1	2
TLR Level 3A	10/20/2010 20:00	10/20/2010 19:29	10/20/2010 19:29:16	20.0	18.0	2.0	0	0
TLR Level 5A	10/20/2010 21:00	10/20/2010 20:31	10/20/2010 20:30:40	6.0	0.0	7.1	2	73
TLR Level 5A	10/20/2010 22:00	10/20/2010 21:32	10/20/2010 21:30:35	1.0	0.0	2.2	1	3
TLR Level 5A	10/20/2010 23:00	10/20/2010 22:31	10/20/2010 22:31:03	4.0	0.0	6.3	1	4
TLR Level 5A	10/21/2010 00:00	10/20/2010 23:29	10/20/2010 23:27:30	1.0	0.0	2.4	1	5
TLR Level 5A	10/21/2010 01:00	10/21/2010 00:27	10/21/2010 00:26:09	5.0	0.0	5.5	14	22
TLR Level 5A	10/21/2010 02:00	10/21/2010 01:27	10/21/2010 01:26:05	7.0	0.0	7.7	14	29
TLR Level 5A	10/21/2010 03:00	10/21/2010 02:27	10/21/2010 02:26:02	8.0	0.0	9.2	14	27
TLR Level 5A	10/21/2010 04:00	10/21/2010 03:26	10/21/2010 03:26:07	8.0	0.0	9.3	15	20
TLR Level 5A	10/21/2010 05:00	10/21/2010 04:26	10/21/2010 04:26:12	8.0	0.0	9.5	1	52
TLR Level 0	10/21/2010 06:00	10/21/2010 05:32	10/21/2010 05:30:59	0.0	0.0	0.0	0	0

Event Summary

FILE SAVED AS: SWPP_16663_20101020_1500.htm

Incident: SWPP_16663_20101020_1500	Date: 10/20/2010	Reliability Coordinator: SWPP
Initial Conditions: Loading		
Flowgate: 16663 - Temp10 Neosho-Columbus 161 FTL...	Rating: 215	LODF: 33.59%
TLR Direction: Normal		
Effective StartTime: 10/20/2010 15:00	Effective EndTime: 10/21/2010 06:00	TLR Duration: 15 Hours and 0 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												
Oct 20 14:44	TLR 3A	NEXT	6-NN Total	1 / 0 1 / 0	30 30	2.2 2.2	30 30	2.2 2.2	0 0	0.0 0.0	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	141	210	207	N/A	
Oct 20 15:27	TLR 3A	NEXT	NONE								NONE			ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 2.0 0.0 2.0	0.0 2.0 0.0 2.0	126	191	194	N/A	
Oct 20 16:30	TLR 3A	NEXT	2-NH Total	1 / 0 1 / 0	4 4	0.3 0.3	4 4	0.3 0.3	0 0	0.0 0.0	NONE			ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 2.0 0.0 2.0	0.0 2.0 0.0 2.0	132	195	189	N/A	
Oct 20 17:30	TLR 3A	NEXT	2-NH Total	1 / 0 1 / 0	4 4	0.3 0.3	4 4	0.3 0.3	0 0	0.0 0.0	NONE			ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 2.0 0.0 2.0	0.0 2.0 0.0 2.0	128	190	188	N/A	
Oct 20 18:28	TLR 3A	NEXT	NONE								NONE			ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 4.0 0.0 4.0	0.0 4.0 0.0 4.0	121	185	193	N/A	
Oct 20 19:29	TLR 3A	NEXT	NONE								NONE			ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 2.0 0.0 2.0	0.0 2.0 0.0 2.0	140	208	205	N/A	
Oct 20 20:31	TLR 5A	NEXT	1-NS 3-ND Total	1 / 0 1 / 0 2 / 0	72 1 73	5.0 0.1 5.1	72 1 73	5.0 0.1 5.1	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 2.0 0.0 0.0 2.0	0.0 2.0 0.0 0.0 2.0	136	200	193	N/A	

Oct 20 21:32	TLR 5A	NEXT	3-ND Total	1 / 0 1 / 0	3 3	0.2 0.2	3 3	0.2 0.2	0 0	0.0 0.0	NONE			ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 2.0 0.0 0.0 2.0	0.0 2.0 0.0 0.0 2.0	152	216	192	N/A
Oct 20 22:31	TLR 5A	NEXT	3-ND Total	1 / 0 1 / 0	4 4	0.3 0.3	4 4	0.3 0.3	0 0	0.0 0.0	NONE			ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 8.0 0.0 0.0 6.0	0.0 8.0 0.0 0.0 6.0	139	201	185	N/A
Oct 20 23:29	TLR 5A	NEXT	3-ND Total	1 / 0 1 / 0	5 5	0.4 0.4	5 5	0.4 0.4	0 0	0.0 0.0	NONE			ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 2.0 0.0 0.0 2.0	0.0 2.0 0.0 0.0 2.0	142	204	187	N/A
Oct 21 00:27	TLR 5A	NEXT	3-ND 7-F Total	1 / 0 13 / 0 14 / 0	6 16 22	0.4 1.2 1.6	6 16 22	0.4 1.2 1.6	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 3.5 0.0 0.0 3.5	0.0 3.5 0.0 0.0 3.5	148	213	194	N/A
Oct 21 01:27	TLR 5A	NEXT	3-ND 7-F Total	1 / 0 13 / 2 14 / 2	5 24 29	0.4 1.7 2.1	5 24 29	0.4 1.7 2.1	0 90 90	0.0 8.3 6.3	AECI Total	1.0 1.0	1.0 1.0	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 4.9 0.0 0.0 4.9	0.0 4.9 0.0 0.0 4.9	140	203	189	N/A
Oct 21 02:27	TLR 5A	NEXT	3-ND 7-F Total	1 / 0 13 / 0 14 / 0	5 22 27	0.4 1.5 1.9	5 22 27	0.4 1.5 1.9	0 0 0	0.0 0.0 0.0	AECI Total	1.0 1.0	1.0 1.0	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 8.6 0.0 0.0 6.6	0.0 8.6 0.0 0.0 6.6	140	202	185	N/A
Oct 21 03:28	TLR 5A	NEXT	3-ND 7-F Total	1 / 0 14 / 0 15 / 0	3 17 20	0.2 1.2 1.5	3 17 20	0.2 1.2 1.5	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 7.4 0.0 0.0 7.4	0.0 7.4 0.0 0.0 7.4	138	199	183	N/A
Oct 21 04:28	TLR 5A	NEXT	8-NN Total	1 / 0 1 / 0	52 52	7.5 7.5	52 52	7.5 7.5	0 0	0.0 0.0	NONE			ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 2.0 0.0 0.0 2.0	0.0 2.0 0.0 0.0 2.0	130	192	185	N/A
Oct 21 05:32	TLR 0	CURRENT	NONE								NONE			NONE				118	177	178	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	1	72	72	0
2	2	8	8	0
3	8	32	32	0
4	0	0	0	0
5	0	0	0	0
6	2	82	82	0
7	53	79	79	90
Total	66	273	273	90

TLR NNL Totals

CA	NNL Relief	
	IDC MW	RC Ackn MW
AECI	2.0	2.0
Total	2.0	2.0

TLR Market Flow Totals

Market	Type	Market Relief	
		IDC MW	RC Ackn MW
SWPP	ED-2	0.0	0.0
	ED-8	49.4	49.4
	FIRM-7	0.0	0.0
Total for SWPP		49.4	49.4
Total		49.4	49.4

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