

SPP TLR 5 Investigation Report
Temp10_16663
(Neosho – Columbus 161 kV for the loss of Asbury - Purcell 161 kV)
TLR Level 5: October 5-6, 2010
Report Issued: January 17, 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 5-6, 2010. Flowgate 16663 is an SPP flowgate. The Level 5 TLR was in effect from 16:00 on October 5 until 3:00 CST on October 6, 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 189 MVA. The LODF was approximately 36%. Post-contingent flow on the Limiting Element was approximately 203 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 3-7.

4. Transmission and generation outages or changes from prediction that may have contributed.

Generation at Flint Creek tripped on October 4, 2010. This significantly contributed to the higher loading on the flowgate.

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 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 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 3-7. AECl and SPA 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: 2010-10-05 14:04
Event End: 2010-10-06 16:31
Event Duration: 26 Hours

TLR Level	TLR Date	TLR Confirm Time	Run Time	Requested Relief	Remaining Relief	Relief Provided	Total Cuts	
							Tags	MW
TLR Level 3B	10/05/2010 14:15	10/05/2010 14:04	10/05/2010 14:04:21	0.0	0.0	0.0	0	0
TLR Level 5A	10/05/2010 16:00	10/05/2010 15:27	10/05/2010 15:26:28	0.0	0.0	0.0	0	0
TLR Level 5A	10/05/2010 17:00	10/05/2010 16:31	10/05/2010 16:31:10	0.0	0.0	0.0	0	0
TLR Level 5A	10/05/2010 18:00	10/05/2010 17:28	10/05/2010 17:27:05	0.0	0.0	0.0	0	0
TLR Level 5A	10/05/2010 19:00	10/05/2010 18:35	10/05/2010 18:32:56	0.0	0.0	0.0	0	0
TLR Level 5A	10/05/2010 20:00	10/05/2010 19:31	10/05/2010 19:31:10	25.0	0.0	25.6	11	70
TLR Level 5A	10/05/2010 21:00	10/05/2010 20:32	10/05/2010 20:31:03	0.0	0.0	5.3	1	100
TLR Level 5A	10/05/2010 21:00	10/05/2010 20:38	10/05/2010 20:37:45	0.0	0.0	5.3	1	100
TLR Level 5A	10/05/2010 22:00	10/05/2010 21:36	10/05/2010 21:35:39	13.0	0.0	13.2	2	250
TLR Level 5A	10/05/2010 23:00	10/05/2010 22:29	10/05/2010 22:28:56	0.0	0.0	0.0	0	0
TLR Level 5A	10/06/2010 00:00	10/05/2010 23:29	10/05/2010 23:28:03	0.0	0.0	0.0	0	0
TLR Level 5A	10/06/2010 01:00	10/06/2010 00:31	10/06/2010 00:30:12	0.0	0.0	0.0	0	0
TLR Level 5A	10/06/2010 02:00	10/06/2010 01:31	10/06/2010 01:29:16	0.0	0.0	0.0	0	0
TLR Level 3A	10/06/2010 03:00	10/06/2010 02:31	10/06/2010 02:30:26	34.0	34.0	0.0	0	0
TLR Level 3A	10/06/2010 04:00	10/06/2010 03:29	10/06/2010 03:27:51	18.0	18.0	0.0	0	0
TLR Level 3A	10/06/2010 05:00	10/06/2010 04:29	10/06/2010 04:29:08	32.0	32.0	0.0	0	0
TLR Level 3A	10/06/2010 06:00	10/06/2010 05:29	10/06/2010 05:28:47	40.0	40.0	0.0	0	0
TLR Level 3A	10/06/2010 07:00	10/06/2010 06:28	10/06/2010 06:28:00	58.0	58.0	0.0	0	0
TLR Level 3A	10/06/2010 08:00	10/06/2010 07:27	10/06/2010 07:27:12	26.0	26.0	0.0	0	0
TLR Level 3A	10/06/2010 09:00	10/06/2010 08:27	10/06/2010 08:27:27	19.0	19.0	0.0	0	0
TLR Level 3A	10/06/2010 10:00	10/06/2010 09:28	10/06/2010 09:28:23	6.0	6.0	0.0	0	0
TLR Level 3A	10/06/2010 11:00	10/06/2010 10:32	10/06/2010 10:31:03	0.0	0.0	0.0	0	0
TLR Level 3A	10/06/2010 12:00	10/06/2010 11:28	10/06/2010 11:28:35	0.0	0.0	0.0	0	0
TLR Level 3A	10/06/2010 13:00	10/06/2010 12:26	10/06/2010 12:26:32	0.0	0.0	0.0	0	0
TLR Level 3A	10/06/2010 14:00	10/06/2010 13:30	10/06/2010 13:26:34	0.0	0.0	0.0	0	0
TLR Level 3A	10/06/2010 15:00	10/06/2010 14:26	10/06/2010 14:26:36	0.0	0.0	0.0	0	0
TLR Level 3A	10/06/2010 16:00	10/06/2010 15:29	10/06/2010 15:28:50	0.0	0.0	0.0	0	0

Oct 05 19:31	TLR 5A	NEXT	7-F Total	11 / 0 11 / 0	70 70	6.8 6.8	70 70	6.8 6.8	0 0	0.0 0.0	AECI SPA Total	4.0 1.0 5.0	4.0 1.0 5.0	ED-2 ED-8 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 14.6 0.0 14.6	0.0 0.0 14.6 0.0 14.6	148	219	200	N/A
Oct 05 20:32	TLR 5A	NEXT	1-NS Total	1 / 0 1 / 0	100 100	5.3 5.3	100 100	5.3 5.3	0 0	0.0 0.0	NONE			ED-2 ED-8 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	129	189	168	N/A
Oct 05 20:38	TLR 5A	NEXT	1-NS Total	1 / 0 1 / 0	100 100	5.3 5.3	100 100	5.3 5.3	0 0	0.0 0.0	NONE			ED-2 ED-8 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	123	182	166	N/A
Oct 05 21:36	TLR 5A	NEXT	1-NS Total	1 / 0 1 / 0	100 100	5.3 5.3	100 100	5.3 5.3	0 0	0.0 0.0	NONE			ED-2 ED-8 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	142	204	178	N/A
Oct 05 22:29	TLR 5A	NEXT				NONE					NONE			ED-2 ED-8 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	130	190	170	N/A
Oct 05 23:29	TLR 5A	NEXT				NONE					NONE			ED-2 ED-8 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	147	209	175	N/A
Oct 06 00:31	TLR 5A	NEXT				NONE					NONE			ED-2 ED-8 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	125	184	166	N/A
Oct 06 01:31	TLR 5A	NEXT				NONE					NONE			ED-2 ED-8 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	135	194	167	N/A
Oct 06 02:31	TLR 3A	NEXT				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	150	211	173	N/A
Oct 06 03:29	TLR 3A	NEXT				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	143	203	169	N/A
Oct 06 04:29	TLR 3A	NEXT				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	144	205	171	N/A

Oct 06 05:29	TLR 3A	NEXT	7-F Total	0 / 1 0 / 1	0 0	0.0 0.0	0 0	0.0 0.0	50 50	2.5 2.5	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	129	193	181	N/A
Oct 06 06:28	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	127	194	189	N/A
Oct 06 07:27	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	126	192	187	N/A
Oct 06 08:27	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	161	168	N/A
Oct 06 09:28	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	81	137	159	N/A
Oct 06 10:32	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	81	137	159	N/A
Oct 06 11:28	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	80	138	157	N/A
Oct 06 12:26	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	85	141	159	N/A
Oct 06 13:30	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	81	137	158	N/A
Oct 06 14:26	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	86	141	156	N/A
Oct 06 15:29	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	89	144	155	N/A
Oct 06 16:31	TLR 0	CURRENT	NONE								NONE	NONE			79	133	152	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	3	300	300	10
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	11	70	70	50
Total	14	370	370	60

TLR NNL Totals

CA	NNL Relief	
	IDC MW	RC Ackn MW
AECI	4.0	4.0
SPA	1.0	1.0
Total	5.0	5.0

TLR Market Flow Totals

Market	Type	Market Relief	
		IDC MW	RC Ackn MW
SWPP	ED-2	0.0	0.0
	ED-8	0.0	0.0
	FIRM-7	14.6	14.6
Total for SWPP		14.6	14.6
Total		14.6	14.6

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