

SPP TLR 5 Investigation Report
Temp 13 Flowgate 16329
(Five Tribes - Hancock 161 kV for the loss of Muskogee – Ft. Smith 345 kV)
TLR Level 5: April 23, 2010
Report Issued: April 27, 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 16329 on April 16, 2010. Flowgate 16329 is an SPP flowgate created due to the planned maintenance outages of the Pecan Creek – Beggs 138 kV line and the Pecan Creek – Agency 161 kV line coupled with high West to East flows across the area. The Level 5 TLR was in effect from 13:40 until 22:00 CST on April 23, 2010. Projected post contingent flows on the Five Tribes – Hancock 161 kV line exceeded the SOL.

2. Facility/flowgate limitations and flows at the time the TLR was initiated.

At the time the initial Level 5B TLR was issued, the Limiting Element was rated at 223 MVA. Flow on the Limiting Element was 157 MVA. Flow on the Contingent Element was 379 MVA. The LODF was approximately 17%. Post-contingent flow on the Limiting Element was approximately 222 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 no non-firm transactions or market flows impacting the flowgate by more than 5% prior to the level 5 TLR. 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, see page 7. 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.

SPP's outage coordination process identified potential for loading issues due to the outages of the Pecan Creek - Beggs 138 kV line and the Pecan Creek – Agency 161 kV line. The temporary flowgate was created in order to dispatch around the constraint via TLR to control the loading until the lines were returned to service.

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 pages 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 due to the planned maintenance outages of the Pecan Creek - Beggs 138 kV line and the Pecan Creek – Agency 161 kV line. High west to east flows across Oklahoma into Arkansas also contributed to the loading. Since the temporary outages were the most significant factors associated with this event, 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 3-6. SPA NNL responsibility was inadvertently overlooked during this TLR.

TLR Event History

16329 - Temp13 5Tribes-Hancock FTLO Muskogee-FT Smith 345

Status	TLR Level	TLR Date	TLR Confirm Time	Run Time	Requested Relief	Remaining Relief	Relief Provided	Total Cuts	
								Tags	MW
SUPERSEDED	3B	04/23/2010 05:45	04/23/2010 05:33	04/23/2010 05:32:11	40.0	37.4	2.6	1	52
SUPERSEDED	3A	04/23/2010 07:00	04/23/2010 06:28	04/23/2010 06:27:09	10.0	7.4	2.6	1	52
SUPERSEDED	3A	04/23/2010 08:00	04/23/2010 07:27	04/23/2010 07:26:38	19.0	16.4	2.6	1	51
SUPERSEDED	3A	04/23/2010 09:00	04/23/2010 08:27	04/23/2010 08:27:13	10.0	10.0	0.0	0	0
SUPERSEDED	3A	04/23/2010 10:00	04/23/2010 09:28	04/23/2010 09:27:59	10.0	10.0	0.0	0	0
SUPERSEDED	3A	04/23/2010 11:00	04/23/2010 10:27	04/23/2010 10:26:50	13.0	13.0	0.0	0	0
SUPERSEDED	3A	04/23/2010 12:00	04/23/2010 11:26	04/23/2010 11:26:13	8.0	8.0	0.0	0	0
SUPERSEDED	3A	04/23/2010 13:00	04/23/2010 12:28	04/23/2010 12:28:24	18.0	18.0	0.0	0	0
SUPERSEDED	5B	04/23/2010 13:40	04/23/2010 13:31	04/23/2010 13:28:31	30.0	0.0	30.2	4	17
SUPERSEDED	5A	04/23/2010 15:00	04/23/2010 14:30	04/23/2010 14:29:11	4.0	0.0	4.7	4	4
SUPERSEDED	5A	04/23/2010 16:00	04/23/2010 15:30	04/23/2010 15:28:11	24.0	0.0	24.2	4	10
SUPERSEDED	5A	04/23/2010 17:00	04/23/2010 16:28	04/23/2010 16:27:17	11.0	0.0	11.6	4	7
SUPERSEDED	5A	04/23/2010 18:00	04/23/2010 17:29	04/23/2010 17:28:14	0.0	0.0	2.6	1	51
SUPERSEDED	5A	04/23/2010 19:00	04/23/2010 18:43	04/23/2010 18:41:55	6.0	0.0	6.1	5	62
SUPERSEDED	5A	04/23/2010 20:00	04/23/2010 19:29	04/23/2010 19:28:31	6.0	0.0	6.2	6	62
SUPERSEDED	5A	04/23/2010 21:00	04/23/2010 20:29	04/23/2010 20:29:00	1.0	0.0	1.2	3	3
SUPERSEDED	3A	04/23/2010 22:00	04/23/2010 21:30	04/23/2010 21:30:28	41.0	41.0	0.0	0	0
TERMINATED	0	04/23/2010 22:30	04/23/2010 22:21	04/23/2010 22:20:30	0.0	0.0	0.0	0	0

Event Summary

FILE SAVED AS: SWPP_16329_20100423_0545.htm

Incident:	SWPP_16329_20100423_0545	Date: 04/23/2010 (CST)	Reliability Coordinator: SWPP
Initial Conditions:	increasing load		
Flowgate:	16329 - Temp13 5Tribes-Hancock FTLO Mu...	Rating: 223	LODF: 17.21%
TLR Direction:	Normal		
Effective StartTime:	04/23/2010 05:45 (CST)	Effective EndTime: 04/23/2010 22:30 (CST)	TLR Duration: 16 Hours and 45 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 MVV	RC Ackn MVV	Type	Mkt	IDC MVV	RC Ackn MVV	Current	Post Cont.	Cont. Flow		
					MW	Relief	MW	Relief	MW	Relief												
Apr 23 05:33 (CST)	TLR 3B	CURRENT	3-ND	1 / 0	52	2.6	52	2.6	0	0.0	NONE			ED-2	SWPP	0.0	0.0	153	230	453	N/A	
		Total	1 / 0	104	2.6	52	2.6	0	0.0	ED-6	SWPP	0.0	0.0	FIRM-7	SWPP	0.0	0.0					0.0
		NEXT	3-ND	1 / 0	51	2.6	51	2.6	0	0.0	NONE			ED-2	SWPP	0.0	0.0					
		Total	1 / 0	104	2.6	51	2.6	0	0.0	ED-6	SWPP	0.0	0.0	FIRM-7	SWPP	0.0	0.0					0.0
Apr 23 06:28 (CST)	TLR 3A	NEXT	3-ND	1 / 0	52	2.6	52	2.6	0	0.0	NONE			ED-2	SWPP	0.0	0.0	137	202	382	N/A	
			Total	1 / 0	52	2.6	52	2.6	0	0.0				ED-6	SWPP	0.0	0.0					
			Total	1 / 0	51	2.6	51	2.6	0	0.0				FIRM-7	SWPP	0.0	0.0					
					0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0							
Apr 23 07:27 (CST)	TLR 3A	NEXT	3-ND	1 / 0	51	2.6	51	2.6	0	0.0	NONE			ED-2	SWPP	0.0	0.0	135	196	357	N/A	
			Total	1 / 0	51	2.6	51	2.6	0	0.0				ED-6	SWPP	0.0	0.0					
			Total	1 / 0	51	2.6	51	2.6	0	0.0				FIRM-7	SWPP	0.0	0.0					
					0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0							
Apr 23 08:27 (CST)	TLR 3A	NEXT	NONE								NONE			ED-2	SWPP	0.0	0.0	153	215	383	N/A	
														ED-6	SWPP	0.0	0.0					
														FIRM-7	SWPP	0.0	0.0					
														0.0	0.0							
Apr 23 09:28 (CST)	TLR 3A	NEXT	NONE								NONE			ED-2	SWPP	0.0	0.0	158	224	385	N/A	
														ED-6	SWPP	0.0	0.0					
														FIRM-7	SWPP	0.0	0.0					
														0.0	0.0							
Apr 23 10:27 (CST)	TLR 3A	NEXT	NONE								NONE			ED-2	SWPP	0.0	0.0	152	214	383	N/A	
														ED-6	SWPP	0.0	0.0					
														FIRM-7	SWPP	0.0	0.0					
														0.0	0.0							
Apr 23 11:28 (CST)	TLR 3A	NEXT	NONE								NONE			ED-2	SWPP	0.0	0.0	153	215	384	N/A	
														ED-6	SWPP	0.0	0.0					
														FIRM-7	SWPP	0.0	0.0					
														0.0	0.0							

Apr 23 12:28 (CST)	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	155	219	375	N/A
Apr 23 13:31 (CST)	TLR 5B	CURRENT	7-F Total	4 / 0 4 / 0	17 17	1.0 1.0	17 17	1.0 1.0	0 0	0.0 0.0	SPA Total	1.0 1.0	1.0 1.0	ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 0.0 48.8 48.6	0.0 0.0 48.8 48.6	157	222	379	N/A
		NEXT	7-F Total	4 / 0 4 / 0	17 17	1.0 1.0	17 17	1.0 1.0	0 0	0.0 0.0	NONE			NONE							
Apr 23 14:30 (CST)	TLR 5A	NEXT	7-F Total	4 / 0 4 / 0	4 4	0.2 0.2	4 4	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 0.0 4.4 0.0 4.4	0.0 0.0 4.4 0.0 4.4	151	220	406	N/A
Apr 23 15:30 (CST)	TLR 5A	NEXT	7-F Total	4 / 0 4 / 0	10 10	0.6 0.6	10 10	0.6 0.6	0 0	0.0 0.0	NONE			ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 23.2 0.0 23.2	0.0 0.0 23.2 0.0 23.2	148	221	425	N/A
Apr 23 16:28 (CST)	TLR 5A	NEXT	7-F Total	4 / 0 4 / 0	7 7	0.4 0.4	7 7	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 0.0 11.0 0.0 11.0	0.0 0.0 11.0 0.0 11.0	157	226	405	N/A
Apr 23 17:29 (CST)	TLR 5A	NEXT	3-ND Total	1 / 0 1 / 0	51 51	2.6 2.6	51 51	2.6 2.6	0 0	0.0 0.0	NONE			ED-2 ED-6 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	148	215	392	N/A
Apr 23 18:43 (CST)	TLR 5A	NEXT	3-ND 7-F Total	1 / 0 4 / 0 5 / 0	52 10 62	2.6 0.5 3.1	52 10 62	2.6 0.5 3.1	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 0.0 2.9 0.0 2.9	0.0 0.0 2.9 0.0 2.9	149	214	379	N/A
Apr 23 19:29 (CST)	TLR 5A	NEXT	3-ND 7-F Total	1 / 0 5 / 0 6 / 0	51 11 62	2.6 0.8 3.2	51 11 62	2.6 0.8 3.2	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 0.0 3.0 0.0 3.0	0.0 0.0 3.0 0.0 3.0	153	215	364	N/A
Apr 23 20:29 (CST)	TLR 5A	NEXT	7-F Total	3 / 0 3 / 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 1.0 0.0 0.0 1.0	0.0 1.0 0.0 0.0 1.0	150	215	382	N/A
Apr 23 21:30 (CST)	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	132	185	312	N/A
Apr 23 22:21 (CST)	TLR 0	CURRENT	NONE								NONE			NONE			110	159	290	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	7	360	360	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	32	79	79	0
Total	39	439	439	0

TLR NNL Totals

CA	NNL Relief	
	IDC MW	RC Ackn MW
SPA	1.0	1.0
Total	1.0	1.0

TLR Market Flow Totals

Market	Type	Market Relief	
		IDC MW	RC Ackn MW
SWPP	ED-2	0.0	0.0
	ED-8	1.0	1.0
	FIRM-7	93.1	93.1
Total for SWPP		94.1	94.1
Total		94.1	94.1

Reliability Log for April, 23**2010**

Time	Initials	Comments
0632	DGA	Issued TLR Level 3B on Temp13_16329 Five Tribes-Hancock fto Muskogee-Ft Smith
0727	DGA	Issued TLR Level 3A on Temp13_16329 Five Tribes-Hancock fto Muskogee-Ft Smith
0826	DGA	Re-issued TLR Level 3A on Temp13_16329 Five Tribes-Hancock fto Muskogee-Ft Smith
0927	DGA	Re-issued TLR Level 3A on Temp13_16329 Five Tribes-Hancock fto Muskogee-Ft Smith
1027	DGA	Re-issued TLR Level 3A on Temp13_16329 Five Tribes-Hancock fto Muskogee-Ft Smith
1126	DGA	Re-issued TLR Level 3A on Temp13_16329 Five Tribes-Hancock fto Muskogee-Ft Smith
1226	DGA	Re-issued TLR Level 3A on Temp13_16329 Five Tribes-Hancock fto Muskogee-Ft Smith
1328	DGA	Re-issued TLR Level 3A on Temp13_16329 Five Tribes-Hancock fto Muskogee-Ft Smith
1428	DGA	Re-issued TLR Level 5B on Temp13_16329 Five Tribes-Hancock fto Muskogee-Ft Smith-loading and feasibility
1529	DGA	Re-issued TLR Level 5A on Temp13_16329 Five Tribes-Hancock fto Muskogee-Ft Smith-loading and feasibility
1628	DGA	Re-issued TLR Level 5A on Temp13_16329 Five Tribes-Hancock fto Muskogee-Ft Smith-loading and feasibility
1727	DGA	Re-issued TLR Level 5A on Temp13_16329 Five Tribes-Hancock fto Muskogee-Ft Smith-loading and feasibility
1828	WRG	Re-issued TLR Level 5A on Temp13_16329 Five Tribes-Hancock fto Muskogee-Ft Smith-loading and feasibility
1941	WRG	Re-issued TLR Level 5A on Temp13_16329 Five Tribes-Hancock fto Muskogee-Ft Smith-loading and feasibility
2028	WRG	Re-issued TLR Level 5A on Temp13_16329 Five Tribes-Hancock fto Muskogee-Ft Smith-loading and feasibility
2129	WRG	Re-issued TLR Level 5A on Temp13_16329 Five Tribes-Hancock fto Muskogee-Ft Smith-loading and feasibility
2230	WRG	Re-issued TLR Level 3A on Temp13_16329 Five Tribes-Hancock fto Muskogee-Ft Smith-loading and feasibility
2320	WRG	Re-issued TLR Level 0 on Temp13_16329 Five Tribes-Hancock fto Muskogee-Ft Smith-loading and feasibility

Temp13_16329

— Post Cont. — SOL

