

SPP TLR 5 Investigation Report
Temp 14 Flowgate 16178
(Dyess – East Rogers 161 kV for the loss of Tontitown – Lowell 161 kV)
TLR Level 5: February 24, 2010
Report Issued: March 1, 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 16178 on February 24, 2010. Flowgate 16178 is an SPP flowgate created for the planned outage of the East Centerton – Gentry 161 kV line. The Level 5 TLR was in effect from 8:00 until 11:00 CST on February 24, 2010. Projected post contingent flows on the Dyess – East Rogers 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 275 MVA. Flow on the Limiting Element was 128 MVA. Flow on the Contingent Element was 211 MVA. The LODF was approximately 78%. Post-contingent flow on the Limiting Element was projected to be approximately 293 MW.

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 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 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 7. 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.

SPP's outage coordination process identified potential for issues due to the outage of the East Centerton – Gentry 161 kV line. The temporary flowgate was created in order to dispatch around the constraint via TLR if necessary. A temporary operating guide, containing a potential reconfiguration, was also developed to address the loading issue. Unfortunately, at the time of the TLR, the reconfiguration was not effective.

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 temporary maintenance outage of the East Centerton – Gentry 161 kV line. Since the temporary outage was the most significant factor, 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. Non-firm Market Flow was reduced on the flowgate as reported in the TLR Event History and NERC TLR Log on pages 3-6.

TLR Event History

16178 - Temp 14 Dyess - E. Rogers 161kV (flo) Tontitown - Lowell 161kV

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	02/24/2010 06:30	02/24/2010 06:19	02/24/2010 06:18:52	30.0	30.0	0.0	0	0
SUPERSEDED	4	02/24/2010 07:20	02/24/2010 07:08	02/24/2010 07:07:33	0.0	0.0	0.0	0	0
SUPERSEDED	5A	02/24/2010 08:00	02/24/2010 07:39	02/24/2010 07:37:06	64.0	17.6	46.4	6	118
SUPERSEDED	5A	02/24/2010 09:00	02/24/2010 08:31	02/24/2010 08:30:36	0.0	0.0	0.0	0	0
SUPERSEDED	5A	02/24/2010 10:00	02/24/2010 09:28	02/24/2010 09:28:01	80.0	32.7	47.3	6	115
SUPERSEDED	3A	02/24/2010 11:00	02/24/2010 10:29	02/24/2010 10:28:50	25.0	25.0	0.0	0	0
SUPERSEDED	3A	02/24/2010 12:00	02/24/2010 11:26	02/24/2010 11:26:15	154.0	154.0	0.0	0	0
SUPERSEDED	3A	02/24/2010 13:00	02/24/2010 12:28	02/24/2010 12:28:27	122.0	122.0	0.0	0	0
SUPERSEDED	3A	02/24/2010 14:00	02/24/2010 13:28	02/24/2010 13:28:02	51.0	51.0	0.0	0	0
SUPERSEDED	3A	02/24/2010 15:00	02/24/2010 14:27	02/24/2010 14:27:03	138.0	138.0	0.0	0	0
SUPERSEDED	3A	02/24/2010 16:00	02/24/2010 15:29	02/24/2010 15:28:11	135.0	135.0	0.0	0	0
SUPERSEDED	3A	02/24/2010 17:00	02/24/2010 16:26	02/24/2010 16:25:57	138.0	138.0	0.0	0	0
SUPERSEDED	3A	02/24/2010 18:00	02/24/2010 17:26	02/24/2010 17:26:25	126.0	126.0	0.0	0	0
SUPERSEDED	3A	02/24/2010 19:00	02/24/2010 18:28	02/24/2010 18:27:46	69.0	69.0	0.0	0	0
SUPERSEDED	3A	02/24/2010 20:00	02/24/2010 19:28	02/24/2010 19:28:07	59.0	59.0	0.0	0	0
SUPERSEDED	3A	02/24/2010 21:00	02/24/2010 20:26	02/24/2010 20:26:31	59.0	59.0	0.0	0	0
SUPERSEDED	3A	02/24/2010 22:00	02/24/2010 21:26	02/24/2010 21:26:09	57.0	57.0	0.0	0	0
SUPERSEDED	3A	02/24/2010 23:00	02/24/2010 22:26	02/24/2010 22:25:57	95.0	95.0	0.0	0	0
TERMINATED	0	02/24/2010 23:55	02/24/2010 23:34	02/24/2010 23:33:45	0.0	0.0	0.0	0	0

03/01/2010 09:45:06 (CST)

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Event Summary

FILE SAVED AS: SWPP_16178_20100224_0630.htm

Incident:	SWPP_16178_20100224_0630	Date: 02/24/2010	Reliability Coordinator: SWPP
Initial Conditions:	increasing load		
Flowgate:	16178 - Temp 14 Dyess - E. Rogers 161k...	Rating: 275	LODF: 78.28%
TLR Direction:	Normal		
Effective StartTime:	02/24/2010 06:30	Effective EndTime: 02/24/2010 23:55	TLR Duration: 17 Hours and 25 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												
Feb 24 06:19	TLR 3B	CURRENT		NONE								NONE			ED-2	SWPP	0.0	0.0	128	282	197	N/A
		NEXT	8-NN	0 / 1	0	0.0	0	0.0	30	1.6	NONE			ED-2	SWPP	0.0	0.0					
		Total	0 / 1	0	0.0	0	0.0	30	1.6				Total	0.0	0.0							
Feb 24 07:08	TLR 4	CURRENT		NONE								NONE			ED-2	SWPP	0.0	0.0	127	291	210	N/A
		NEXT		NONE								NONE			NONE							
		Total													Total	17.0	17.0					
Feb 24 07:39	TLR 5A	NEXT	7-F	6 / 0	118	7.4	118	7.4	0	0.0	NONE			ED-2	SWPP	0.0	0.0	128	293	211	N/A	
		Total	6 / 0	118	7.4	118	7.4	0	0.0				ED-8	SWPP	39.0	39.0						
														FIRM-7	SWPP	0.0	0.0					
														FIRM-CREDIT	SWPP	0.0	0.0					
														Total	39.0	39.0						
Feb 24 08:31	TLR 5A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	114	257	183	N/A
															ED-8	SWPP	0.0	0.0				
															FIRM-7	SWPP	0.0	0.0				
															FIRM-CREDIT	SWPP	0.0	0.0				
															Total	0.0	0.0					
Feb 24 09:28	TLR 5A	NEXT	7-F	6 / 0	115	7.3	115	7.3	0	0.0	NONE			ED-2	SWPP	0.0	0.0	166	310	184	N/A	
		Total	6 / 0	115	7.3	115	7.3	0	0.0				ED-8	SWPP	40.0	40.0						
														FIRM-7	SWPP	0.0	0.0					
														FIRM-CREDIT	SWPP	0.0	0.0					
														Total	40.0	40.0						
Feb 24 10:29	TLR 3A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	103	234	168	N/A
															ED-8	SWPP	0.0	0.0				
															FIRM-7	SWPP	0.0	0.0				
															Total	0.0	0.0					

Feb 24 11:28	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	121	287	187	N/A
Feb 24 12:28	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	117	257	180	N/A
Feb 24 13:28	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	118	280	182	N/A
Feb 24 14:27	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	103	232	185	N/A
Feb 24 15:29	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	101	216	148	N/A
Feb 24 16:28	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	98	220	157	N/A
Feb 24 17:28	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	105	235	187	N/A
Feb 24 18:28	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	123	272	191	N/A
Feb 24 19:28	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	121	289	190	N/A
Feb 24 20:28	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	118	283	188	N/A
Feb 24 21:28	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	112	252	179	N/A
Feb 24 22:28	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	113	251	177	N/A
Feb 24 23:34	TLR 0	CURRENT	NONE	NONE	NONE				117	255	177	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	30
7	12	233	233	0
Total	12	233	233	30

TLR Market Flow Totals

Market	Type	Market Relief	
		IDC MW	RC Ackn MW
SWPP	ED-2	0.0	0.0
	ED-6	96.0	96.0
	FIRM-7	0.0	0.0
Total for SWPP		96.0	96.0
Total		96.0	96.0

	A	B	C	D
1	Reliability Log for February, 24			2010
2	Time	Initials	Comments	
3	0618	LWB	Issued TLR level 3B on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178	
4	0708	LWB	Issued TLR level 4 on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178	
5	0721	LWB	Directed AEP-W to open breakers 1T20 and 13580 to mitigate floe gate Temp 14 per OP Guide for Temp 14	
6	0724	LWB	AEP-W opened 1T20 and 13580	
7	0725	LWB	FLGT Temp 14 jumped to 197 post contingency loading	
8	0735	LWB	Directed AEP-W to closed breakers 1T20 and 13580 to mitigate floe gate Temp 14 per OP Guide for Temp 14	
9	0737	LWB	AEP-W closed 1T20 and 13580	
10	0737	LWB	Issued TLR level 5A on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178--firm relieve	
11	0831	LWB	Issued TLR level 5A on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178--firm relieve	
12	0848	DGA	Issued TLR level 3B on WelFixRivRed flgt #5104	
13	0928	LWB	Issued TLR level 5A on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178--firm relieve	
14	1028	LWB	Issued TLR level 3A on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178	
15	1126	LWB	Re-issued TLR level 3A on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178	
16	1228	LWB	Re-issued TLR level 3A on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178	
17	1328	LWB	Re-issued TLR level 3A on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178	
18	1427	LWB	Re-issued TLR level 3A on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178	
19	1528	LWB	Re-issued TLR level 3A on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178	
20	1625	LWB	Re-issued TLR level 3A on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178	
21	1726	LWB	Re-issued TLR level 3A on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178	
22	1827	AH	Re-issued TLR level 3A on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178	
23	1928	AH	Re-issued TLR level 3A on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178	
24	2026	AH	Re-issued TLR level 3A on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178	
25	2126	AH	Re-issued TLR level 3A on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178	
26	2225	AH	Re-issued TLR level 3A on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178	
27	2333	AH	Issued TLR level 0 on Temp 14 Dyess - E. Rogers 161kv (flo) Tontitown - Lowell 161kv flgt #16178	
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TEMP14_16178

— Post Cont. — Rating

