

**SPP TLR 5 Investigation Report  
Flowgate 15524  
(TEMPORARY 16)  
Pecan 161/138 kV Transformer for the Loss of Sand Springs – Prattville 138 kV Line  
TLR Level 5: January 7, 2009  
Report Issued: February 18, 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 15524 on January 7, 2009. Flowgate 15524 is an SPP flowgate. The Level 5 TLR was in effect from 7:45 until 22:00 CST on January 7, 2009. Projected post-contingent flows on the Pecan 161/138 kV transformer exceeded the SOL. This flowgate was created to control loading during the outage of the Riverside – Explorer 138 kV line. The rating is based on the limit within the substation.

**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 120 MVA. Flow on the Limiting Element was 62 MVA. Flow on the Contingent Element was 166 MVA. The LODF was approximately 33%. Post-contingent flow on the Limiting Element was approximately 117 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 that impacted the flowgate by more than 5%. The TLR was escalated to a Level 5 in order to curtail firm transactions and firm market flow.

**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.**

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 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 this situation, no actions were taken to avoid future hold/curtailments.

**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 Flow were reduced on the flowgate as reported in the TLR Event History and NERC TLR Log on pages 3-6.

## TLR Event History

### 15524 - Temp 16 - Pecan 161/138kV XMFR flo Sand Springs - Prattville 138kV

Status	TLR Level	TLR Date (CST)	TLR Confirm Time (CST)	Run Time (CST)	Requested Relief	Remaining Relief	Relief Provided	Total Cuts	
								Tags	MW
<a href="#">SUPERSEDED</a>	3A	01/07/2009 05:15	01/07/2009 04:59	01/07/2009 04:59:05	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	3A	01/07/2009 06:00	01/07/2009 05:29	01/07/2009 05:29:16	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	3A	01/07/2009 07:00	01/07/2009 06:28	01/07/2009 06:27:51	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5B	01/07/2009 07:45	01/07/2009 07:34	01/07/2009 07:33:47	10.0	10.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	01/07/2009 09:00	01/07/2009 08:27	01/07/2009 08:26:59	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	01/07/2009 10:00	01/07/2009 09:28	01/07/2009 09:28:27	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	01/07/2009 11:00	01/07/2009 10:26	01/07/2009 10:26:12	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	01/07/2009 12:00	01/07/2009 11:26	01/07/2009 11:26:32	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	01/07/2009 13:00	01/07/2009 12:31	01/07/2009 12:31:10	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	01/07/2009 14:00	01/07/2009 13:26	01/07/2009 13:26:23	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	01/07/2009 15:00	01/07/2009 14:13	01/07/2009 14:12:53	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	01/07/2009 15:00	01/07/2009 14:31	01/07/2009 14:30:57	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	01/07/2009 16:00	01/07/2009 15:32	01/07/2009 15:31:59	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	01/07/2009 17:00	01/07/2009 16:27	01/07/2009 16:27:25	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	01/07/2009 18:00	01/07/2009 17:28	01/07/2009 17:28:11	1.0	1.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	01/07/2009 19:00	01/07/2009 18:30	01/07/2009 18:29:32	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	01/07/2009 20:00	01/07/2009 19:31	01/07/2009 19:30:51	2.0	2.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	01/07/2009 21:00	01/07/2009 20:28	01/07/2009 20:27:40	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	3A	01/07/2009 22:00	01/07/2009 21:27	01/07/2009 21:27:22	0.0	0.0	0.0	0	0
<a href="#">TERMINATED</a>	0	01/07/2009 22:40	01/07/2009 22:29	01/07/2009 22:29:02	0.0	0.0	0.0	0	0

02/25/2009 10:14:03 (CST)

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## Event Summary

FILE SAVED AS: SWPP\_15524\_20090107\_0515.htm

Incident:	SWPP_15524_20090107_0515	Date: 01/07/2009	Reliability Coordinator: SWPP
Initial Conditions:	increasing flow		
Flowgate:	15524 - Temp 16 - Pecan 161/138kV XMFR...	Rating: 120	LODF: 33.48%
TLR Direction:	Normal		
Effective StartTime:	01/07/2009 05:15	Effective EndTime: 01/07/2009 22:40	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												
Jan 07 04:59	TLR 3A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	85	117	157	N/A
															ED-6	SWPP	0.0	0.0				
															FIRM-7	SWPP	0.0	0.0				
															<b>Total</b>		<b>0.0</b>	<b>0.0</b>				
Jan 07 05:29	TLR 3A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	82	116	183	N/A
															ED-6	SWPP	0.0	0.0				
															FIRM-7	SWPP	0.0	0.0				
															<b>Total</b>		<b>0.0</b>	<b>0.0</b>				
Jan 07 06:28	TLR 3A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	80	115	187	N/A
															ED-6	SWPP	0.0	0.0				
															FIRM-7	SWPP	0.0	0.0				
															<b>Total</b>		<b>0.0</b>	<b>0.0</b>				
Jan 07 07:34	TLR 5B	CURRENT		NONE								NONE			ED-2	SWPP	0.0	0.0	82	117	186	N/A
															ED-6	SWPP	0.0	0.0				
															FIRM-7	SWPP	0.0	0.0				
															<b>Total</b>		<b>0.0</b>	<b>0.0</b>				
		NEXT		NONE								NONE			NONE							
Jan 07 08:27	TLR 5A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	82	117	186	N/A
															ED-6	SWPP	0.0	0.0				
															FIRM-7	SWPP	0.0	0.0				
															FIRM-CREDIT	SWPP	0.0	0.0				
															<b>Total</b>		<b>0.0</b>	<b>0.0</b>				
Jan 07 09:28	TLR 5A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	81	115	183	N/A
															ED-6	SWPP	0.0	0.0				
															FIRM-7	SWPP	0.0	0.0				
															FIRM-CREDIT	SWPP	0.0	0.0				
															<b>Total</b>		<b>0.0</b>	<b>0.0</b>				
Jan 07 10:28	TLR 5A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	80	110	151	N/A
															ED-6	SWPP	0.0	0.0				
															FIRM-7	SWPP	0.0	0.0				
															FIRM-CREDIT	SWPP	0.0	0.0				
															<b>Total</b>		<b>0.0</b>	<b>0.0</b>				
Jan 07 11:28	TLR 5A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	84	112	144	N/A
															ED-6	SWPP	0.0	0.0				
															FIRM-7	SWPP	0.0	0.0				
															FIRM-CREDIT	SWPP	0.0	0.0				
															<b>Total</b>		<b>0.0</b>	<b>0.0</b>				

Jan 07 12:31	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	58	103	136	N/A
Jan 07 13:28	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	55	98	130	N/A
Jan 07 14:13	TLR 5A PRELIM	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	50	98	128	N/A
Jan 07 14:31	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	57	99	128	N/A
Jan 07 15:32	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	58	100	127	N/A
Jan 07 16:27	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	59	100	124	N/A
Jan 07 17:28	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	66	113	143	N/A
Jan 07 18:30	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	65	118	160	N/A
Jan 07 19:31	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	65	118	159	N/A
Jan 07 20:28	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	63	117	162	N/A
Jan 07 21:27	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 <b>0.0</b>	62	118	168	N/A
Jan 07 22:29	TLR 0	CURRENT	NONE	NONE	NONE				63	112	148	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	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### TLR Market Flow Totals

Market	Type	Market Relief	
		IDC MW	RC Ackn MW
SWPP	ED-2	0.0	0.0
	ED-6	0.0	0.0
	FIRM-7	0.0	0.0
Total for SWPP		0.0	0.0
<b>Total</b>		<b>0.0</b>	<b>0.0</b>

	A	B	C	D
1	<b>Reliability Log for January, 7</b>			<b>2009</b>
2	Time	Initials	Comments	
13	0459	RST	Issued TLR Level 3A on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
16	0529	RST	Re-issued TLR Level 3A on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
19	0627	AH	Re-issued TLR Level 3A on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
21	0733	AH	Issued TLR Level 5B on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
22	0826	AH	Issued TLR Level 5A on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
23	0928	AH	Issued TLR Level 5A on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
24	1026	AH	Issued TLR Level 5A on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
25	1126	AH	Issued TLR Level 5A on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
26	1231	AH	Issued TLR Level 5A on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
28	1326	AH	Issued TLR Level 5A on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
31	1430	AH	Issued TLR Level 5A on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
34	1531	AH	Issued TLR Level 5A on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
37	1627	AH	Issued TLR Level 5A on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
39	1728	AH	Issued TLR Level 5A on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
42	1829	RST	Re-issued TLR Level 5A on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
44	1930	RST	Re-issued TLR Level 5A on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
46	2027	RST	Re-issued TLR Level 5A on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
50	2127	RST	Re-issued TLR Level 3A on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
53	2229	RST	Re-issued TLR Level 0 on Temp 16-Pecan 161/138 kv Xmfr flo Sand Springs-Pratteville 138 kv Flgt. 15524.	
57				
58				
59				

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