

SPP TLR 5 Investigation Report
Flowgate 6145
(Lake Rd. – Alabama 161 kV for loss of latan – Stranger Creek 345 kV)
(LAKALAIATSTR)
TLR Level 5: September 27, 2009
Report Issued: October 7, 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 6145 on September 27, 2009. Flowgate 6145 is an SPP flowgate. The Level 5 TLR was in effect from 13:45 until 21:00 CST on September 27, 2009. North – South flows during the weekend coupled with a sudden increase in external impacts < 5% caused the projected post-contingent flows on the Lake Road – Alabama 161 kV line to exceed the SOL.

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 172 MVA. Flow on the Limiting Element was 132 MVA. Flow on the Contingent Element was 605 MVA. The LODF was approximately 11%. Post-contingent flow on the Limiting Element was approximately 200 MVA.

3. TLR levels, timing, and relief requested amounts.

TLRs levels, timing and relief requested amounts are shown in the Event History and NERC TLR Log on pages 3-5.

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 to provide the necessary relief on the flowgate. The TLR was initially 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 6. 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 7. Times on the chart are CDT.

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 North to South loading on the transmission system that typically occurs during the weekend. Additional analysis is being done to capture more impacts of external parallel flow in IDC in order to prevent a Level 5 TLR.

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 3-5. AECI re-dispatched to provide relief for NNL responsibility during this TLR.

TLR Event History

6145 - Lake Road-Nashua 161 flo latan-Stranger Creek 345kV

Status	TLR Level	TLR Date (CST)	TLR Confirm Time (CST)	Run Time (CST)	Requested Relief	Remaining Relief	Relief Provided	Total Cuts	
								Tags	MW
SUPERSEDED	5B	09/27/2009 13:45	09/27/2009 13:29	09/27/2009 13:28:14	15.0	0.0	15.1	4	25
SUPERSEDED	5A	09/27/2009 15:00	09/27/2009 14:28	09/27/2009 14:26:24	4.0	0.0	5.4	5	13
SUPERSEDED	5A	09/27/2009 16:00	09/27/2009 15:28	09/27/2009 15:26:15	17.0	0.0	17.7	6	45
SUPERSEDED	5A	09/27/2009 17:00	09/27/2009 16:29	09/27/2009 16:27:03	0.0	0.0	1.9	6	7
SUPERSEDED	5A	09/27/2009 18:00	09/27/2009 17:28	09/27/2009 17:27:38	0.0	0.0	0.4	3	3
SUPERSEDED	5A	09/27/2009 19:00	09/27/2009 18:29	09/27/2009 18:28:42	0.0	0.0	0.0	0	0
SUPERSEDED	5A	09/27/2009 20:00	09/27/2009 19:26	09/27/2009 19:26:12	0.0	0.0	0.0	0	0
SUPERSEDED	3A	09/27/2009 21:00	09/27/2009 20:27	09/27/2009 20:26:48	0.0	0.0	0.0	0	0
SUPERSEDED	3A	09/27/2009 22:00	09/27/2009 21:28	09/27/2009 21:27:50	27.0	27.0	0.0	0	0
SUPERSEDED	3A	09/27/2009 23:00	09/27/2009 22:27	09/27/2009 22:27:14	39.0	36.2	2.8	1	50
SUPERSEDED	3A	09/28/2009 00:00	09/27/2009 23:27	09/27/2009 23:26:47	37.0	33.6	3.4	2	60
TERMINATED	0	09/28/2009 00:35	09/28/2009 00:23	09/28/2009 00:23:18	0.0	0.0	0.0	0	0

10/07/2009 08:10:18 (CST)

OATI IDC Support Phone: 763-201-2010 Fax: 763-553-2813

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Event Summary

FILE SAVED AS: SWPP_6145_20090927_1345.htm

Incident:	SWPP_6145_20090927_1345	Date: 09/27/2009	Reliability Coordinator: SWPP
Initial Conditions:	increasing flow		
Flowgate:	6145 - Lake Road-Nashua 161 flo latan...	Rating: 172	LODF: 11.37%
TLR Direction:	Normal		
Effective StartTime:	09/27/2009 13:45	Effective EndTime: 09/28/2009 00:35	TLR Duration: 10 Hours and 50 Minutes

TLR Actions

Confirm Time	Level	Effective Hour	Priority	Schedule						NNL Relief			Market Relief				Flow		Cont. Flow	TLR Action Comments									
				Total Tags Cut / Hold	IDC Cut MW	Relief	RC Cut Acknowledge MW	Relief	Hold MW	Relief	CA	IDC MW	RC Ackn MW	Type	Mkt	IDC MW	RC Ackn MW	Current			Post Cont.								
Sep 27 13:29	TLR 5B	CURRENT	7-F	4 / 0	25	1.5	25	1.5	0	0.0	AECI	1.0	1.0	ED-2	SWPP	0.0	0.0	132	200	605	N/A								
		Total	4 / 0	25	1.5	25	1.5	0	0.0	Total	1.0	1.0	ED-6	SWPP	5.0	5.0	FIRM-7					SWPP	7.3	7.3	Total	12.3	12.3		
Sep 27 14:28	TLR 5A	NEXT	7-F	4 / 0	25	1.5	25	1.5	0	0.0	NONE			NONE				134	192	519	N/A								
		Total	4 / 0	25	1.5	25	1.5	0	0.0	Total	1.0	1.0	ED-2	SWPP	0.0	0.0	ED-6					SWPP	0.0	0.0	FIRM-7	SWPP	4.0	4.0	FIRM-CREDIT
Sep 27 15:28	TLR 5A	NEXT	7-F	6 / 0	45	2.7	45	2.7	0	0.0	AECI	2.0	2.0	ED-2	SWPP	0.0	0.0	130	179	436	N/A								
		Total	6 / 0	45	2.7	45	2.7	0	0.0	Total	2.0	2.0	ED-6	SWPP	0.0	0.0	FIRM-7					SWPP	13.2	13.2	FIRM-CREDIT	SWPP	0.0	0.0	Total
Sep 27 16:29	TLR 5A	NEXT	7-F	6 / 0	7	0.4	7	0.4	0	0.0	NONE			ED-2	SWPP	0.0	0.0	129	179	446	N/A								
		Total	6 / 0	7	0.4	7	0.4	0	0.0	Total	1.3	1.3	ED-6	SWPP	0.0	0.0	FIRM-7					SWPP	1.3	1.3	FIRM-CREDIT	SWPP	0.0	0.0	Total
Sep 27 17:28	TLR 5A	NEXT	7-F	3 / 0	3	0.2	3	0.2	0	0.0	NONE			ED-2	SWPP	0.0	0.0	121	173	462	N/A								
		Total	3 / 0	3	0.2	3	0.2	0	0.0	Total	0.1	0.1	ED-6	SWPP	0.1	0.1	FIRM-7					SWPP	0.0	0.0	FIRM-CREDIT	SWPP	0.0	0.0	Total
Sep 27 18:29	TLR 5A	NEXT	NONE						NONE			ED-2	SWPP	0.0	0.0	109	153	394	N/A										
		Total	0.0	0.0	Total	0.0	0.0	ED-6	SWPP	0.0	0.0	FIRM-7	SWPP	0.0	0.0					FIRM-CREDIT	SWPP	0.0	0.0	Total	0.0	0.0			
Sep 27 19:29	TLR 5A	NEXT	NONE						NONE			ED-2	SWPP	0.0	0.0	112	158	410	N/A										
		Total	0.0	0.0	Total	0.0	0.0	ED-6	SWPP	0.0	0.0	FIRM-7	SWPP	0.0	0.0					FIRM-CREDIT	SWPP	0.0	0.0	Total	0.0	0.0			

Sep 27 20:27	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	104	150	408	N/A	
Sep 27 21:28	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	109	177	602	N/A	
Sep 27 22:27	TLR 3A	NEXT	2-NH Total	1 / 0 1 / 0	50 50	2.8 2.8	50 50	2.8 2.8	0 0	0.0 0.0	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	98	164	584	N/A
Sep 27 23:27	TLR 3A	NEXT	6-NN Total	1 / 0 1 / 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 Total	SWPP SWPP SWPP	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	82	139	510	N/A
Sep 28 00:23	TLR 0	CURRENT	NONE							NONE	NONE			77	132	492	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	1	50	50	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	1	10	10	0
7	28	118	118	0
Total	30	178	178	0

TLR NNL Totals

CA	NNL Relief	
	IDC MW	RC Ackn MW
AECI	4.0	4.0
Total	4.0	4.0

TLR Market Flow Totals

Market	Type	Market Relief	
		IDC MW	RC Ackn MW
SWPP	ED-2	0.0	0.0
	ED-6	5.1	5.1
	FIRM-7	25.9	25.9
Total for SWPP		31.0	31.0
Total		31.0	31.0

	A	B	C	D
195	Reliability Log for Sept, 27			2009
196	Time	Initials	Comments	
197	1314	AH	Nashua 161kV PCB's R5-8 & R3-4 Open	
198	1426	AH	Issued TLR Level 5B on LakAlalatStr flgt #6145, AECI 1.3mw NNL, AECI shut down Clyde wind unit,(34mw)	
199	1526	AH	Issued TLR Level 5a on LakAlalatStr flgt #6145, AECI .6mw NNL, AECI Clyde wind unit,(34mw)left off line	
200	1626	AH	Issued TLR Level 5a on LakAlalatStr flgt #6145, AECI .6mw NNL, AECI Clyde wind unit,(34mw)left off line	
201	1727	WRG	Issued TLR Level 5a on LakAlalatStr flgt #6145, AECI 1.6mw NNL, AECI Clyde wind unit,(34mw)left off line	
202	1827	WRG	Issued TLR Level 5a on LakAlalatStr flgt #6145, AECI .4mw NNL, AECI Clyde wind unit,(34mw)left off line	
203	1928	WRG	Issued TLR Level 5a on LakAlalatStr flgt #6145, AECI .4mw NNL, AECI Clyde wind unit,(34mw)left off line	
204	2026	WRG	Issued TLR Level 5a on LakAlalatStr flgt #6145, AECI .4mw NNL, AECI Clyde wind unit,(34mw)left off line	
205	2126	WRG	Issued TLR Level 3A on LakAlalatStr flgt #6145	
206	2227	WRG	Issued TLR Level 3A on LakAlalatStr flgt #6145	
207	2327	WRG	Issued TLR Level 3A on LakAlalatStr flgt #6145	
208				
209	Reliability Log for Sept, 28			2009
210	Time	Initials	Comments	
211	FYI		Nashua 161kV PCB's R5-8 & R3-4 Open	
212	0026	WRG	Issued TLR Level 3A on LakAlalatStr flgt #6145	
213	0123	WRG	Issued TLR Level 0 on LakAlalatStr flgt #6145	
214				

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