

SPP TLR 5 Investigation Report
TEMP05_16565
(Smithville – Nashua 161 kV for the loss of Stranger Creek - Craig 345 kV)
TLR Level 5: August 15, 2010
Report Issued: December 28, 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 16565 on August 15, 2010. Flowgate 16565 is an SPP flowgate. The Level 5 TLR was in effect from 14:00 until 20:00 CST on August 15, 2010. Projected flows on the Smithville – Nashua 161 kV line were expected to exceed the SOL. This flowgate was created due to wave-trap limitations causing the Smithville – Nashua 161 kV line to be de-rated.

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 224 MVA. Flow on the Limiting Element was 149 MVA. Flow on the Contingent Element was 688 MVA. The LODF was approximately 12%. Post-contingent flow on the Limiting Element was approximately 231 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.

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 North - South flows on the transmission system in this region. The Smithville – Nashua 161 kV line became the most limiting element in the area due to the de-rating of the line. Loading sometimes requires escalating to a Level 5 TLR in order to obtain sufficient relief to reduce overloads. The wave-trap has been replaced, and the rating has been updated to reflect the upgrade.

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.

Event History

Issuing RC: SWPP
Flowgate: 16565 - Temp 05 Smithville - Nashua MPS 161kV (flo) Stranger Creek - Craig 345kV
Event Begin: 2010-08-15 08:26
Event End: 2010-08-15 23:50
Event Duration: 15 Hours

TLR Level	TLR Date	TLR Confirm Time	Run Time	Requested Relief	Remaining Relief	Relief Provided	Total Cuts	
							Tags	MW
TLR Level 3B	08/15/2010 08:35	08/15/2010 08:26	08/15/2010 08:25:53	15.0	15.0	0.0	0	0
TLR Level 3A	08/15/2010 10:00	08/15/2010 09:26	08/15/2010 09:26:15	10.0	10.0	0.0	0	0
TLR Level 3A	08/15/2010 11:00	08/15/2010 10:28	08/15/2010 10:28:25	8.0	8.0	0.0	0	0
TLR Level 3A	08/15/2010 12:00	08/15/2010 11:31	08/15/2010 11:30:46	10.0	10.0	0.0	0	0
TLR Level 3A	08/15/2010 13:00	08/15/2010 12:27	08/15/2010 12:27:30	18.0	18.0	0.0	0	0
TLR Level 5A	08/15/2010 14:00	08/15/2010 13:31	08/15/2010 13:30:32	23.0	0.0	23.0	0	0
TLR Level 5A	08/15/2010 15:00	08/15/2010 14:30	08/15/2010 14:30:07	0.0	0.0	0.0	0	0
TLR Level 5A	08/15/2010 16:00	08/15/2010 15:32	08/15/2010 15:31:46	0.0	0.0	0.0	0	0
TLR Level 5A	08/15/2010 17:05	08/15/2010 16:47	08/15/2010 16:46:21	0.0	0.0	0.0	0	0
TLR Level 5A	08/15/2010 18:00	08/15/2010 17:37	08/15/2010 17:36:20	0.0	0.0	0.0	0	0
TLR Level 5A	08/15/2010 19:00	08/15/2010 18:41	08/15/2010 18:40:51	0.0	0.0	0.0	0	0
TLR Level 3A	08/15/2010 20:00	08/15/2010 19:37	08/15/2010 19:37:02	30.0	30.0	0.0	0	0
TLR Level 3A	08/15/2010 21:00	08/15/2010 20:39	08/15/2010 20:39:16	30.0	30.0	0.0	0	0
TLR Level 3A	08/15/2010 22:00	08/15/2010 21:35	08/15/2010 21:35:16	51.0	51.0	0.0	0	0
TLR Level 3A	08/15/2010 23:00	08/15/2010 22:36	08/15/2010 22:36:15	40.0	40.0	0.0	0	0
TLR Level 0	08/16/2010 00:00	08/15/2010 23:50	08/15/2010 23:49:58	0.0	0.0	0.0	0	0

Event Summary

FILE SAVED AS: SWPP_16565_20100815_0835.htm

Incident: SWPP_16565_20100815_0835 Date: 08/15/2010 Reliability Coordinator: SWPP

Initial Conditions: loading

Flowgate: 16565 - Temp 05 Smithville - Nashua MP... Rating: 224 LODF: 11.95%

TLR Direction: Normal

Effective StartTime: 08/15/2010 08:35 Effective EndTime: 08/16/2010 00:00 TLR Duration: 15 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												
Aug 15 08:28	TLR 3B	CURRENT		NONE								NONE			ED-2	SWPP	0.0	0.0	159	251	774	N/A
		NEXT		NONE								NONE			ED-6	SWPP	0.0	0.0				
Aug 15 09:28	TLR 3A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	142	221	888	N/A
Aug 15 10:28	TLR 3A	NEXT		NONE								NONE			ED-6	SWPP	0.0	0.0	147	233	722	N/A
Aug 15 11:31	TLR 3A	NEXT		NONE								NONE			FIRM-7	SWPP	0.0	0.0	148	230	705	N/A
Aug 15 12:27	TLR 3A	NEXT		NONE								NONE			FIRM-7	SWPP	0.0	0.0	148	229	882	N/A
Aug 15 13:31	TLR 5A	NEXT		NONE								NONE			FIRM-CREDIT	SWPP	0.0	0.0	149	231	888	N/A

Aug 15 14:30	TLR 5A	NEXT	NONE	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	146	225	668	N/A
Aug 15 15:32	TLR 5A	NEXT	NONE	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	144	221	646	N/A
Aug 15 16:47	TLR 5A	NEXT	NONE	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	229	663	N/A
Aug 15 17:37	TLR 5A	NEXT	NONE	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	147	230	699	N/A
Aug 15 18:41	TLR 5A	NEXT	NONE	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	149	236	733	N/A
Aug 15 19:37	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	139	221	694	N/A
Aug 15 20:39	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	148	233	718	N/A
Aug 15 21:35	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	144	229	714	N/A
Aug 15 22:36	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	133	211	661	N/A
Aug 15 23:50	TLR 0	CURRENT	NONE	NONE	NONE				124	193	579	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
Total	0	0	0	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	23.0	23.0
Total for SWPP		23.0	23.0
Total		23.0	23.0

Reliability Log for August, 15

2010

Time	Initials	Comments	
8/13/10		KCPL-Jennings opened Nashua 161kV PCB R3-8 and R4-5 to relieve Loading on Flgt 5382 LAKALASTJHAW per OP Guide.	
0925	LRG	Issued TLR level 3B on Temp. 5 Smithville-Nashua flo Stranger Creek-Craig # 16565	
1026	LRG	Issued TLR level 3A on Temp. 5 Smithville-Nashua flo Stranger Creek-Craig # 16565	
1128	LRG	Issued TLR level 3A on Temp. 5 Smithville-Nashua flo Stranger Creek-Craig # 16565	
1230	LRG	Issued TLR level 3A on Temp. 5 Smithville-Nashua flo Stranger Creek-Craig # 16565	
1327	LRG	Issued TLR level 3A on Temp. 5 Smithville-Nashua flo Stranger Creek-Craig # 16565	
1430	LRG	Issued TLR level 3A on Temp. 5 Smithville-Nashua flo Stranger Creek-Craig # 16565	
1530	LRG	Issued TLR level 3A on Temp. 5 Smithville-Nashua flo Stranger Creek-Craig # 16565	
1631	LRG	Issued TLR level 3A on Temp. 5 Smithville-Nashua flo Stranger Creek-Craig # 16565	
1746	LWB	Re-issued TLR level 5A on Temp. 5 Smithville-Nashua flo Stranger Creek-Craig # 16565	
1836	LWB	Re-issued TLR level 5A on Temp. 5 Smithville-Nashua flo Stranger Creek-Craig # 16565 feasibility	
1940	LWB	Re-issued TLR level 5A on Temp. 5 Smithville-Nashua flo Stranger Creek-Craig # 16565 feasibility	
2037	LWB	Issued TLR level 3A on Temp. 5 Smithville-Nashua flo Stranger Creek-Craig # 16565.	
2139	LWB	Issued TLR level 3A on Temp. 5 Smithville-Nashua flo Stranger Creek-Craig # 16565.	
2235	LWB	Re-issued TLR level 3A on Temp. 5 Smithville-Nashua flo Stranger Creek-Craig # 16565.	
2336	LWB	Re-issued TLR level 3A on Temp. 5 Smithville-Nashua flo Stranger Creek-Craig # 16565.	

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