

SPP TLR 5 Investigation Report
Flowgate 5368
(Kress – Hale Co. 115 kV for loss of Swisher – Tuco 230 kV)
(KREHALSWITUC)
TLR Level 5: April 4-5, 2010
Report Issued: April 14, 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 5368 on April 4-5, 2010. Flowgate 5368 is an SPP flowgate. The flowgate was created in response to a request from the Balancing Authority due to an equipment rating decrease which in turn caused thermal loading concerns. The Level 5 TLR was in effect from 10:55 CST on April 4 until 09:00 CST on April 5, 2010. North – South loading in the SPS region caused the projected post-contingent flows on the Kress – Hale Co. 115 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 132 MVA. Flow on the Limiting Element was 68 MVA. Flow on the Contingent Element was 192 MVA. The LODF was approximately 37%. Post-contingent flow on the Limiting Element was approximately 139 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 3-7.

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 initially issued as 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 8. 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 9.

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 in the SPS region. The facility derating also contributed to the need for the TLR. This facility has been in TLR frequently since the derate in October 2008. Loading sometimes requires escalating to a Level 5 TLR in order to obtain sufficient relief to reduce overloads. The facility has been uprated recently but not to a level that would eliminate all loading issues. A reconfiguration option that had been used to relieve loading during 2009 had been rescinded by SPS due to reduced loading in the area. Loading increases in the area revived the previous constraint. The reconfiguration option was re-established on April 5 eliminating the need for this particular TLR and reducing the probably of future Level 5 TLRs.

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 3-7.

TLR Event History 5368 - KREHALSWITUC

Status	TLR Level	TLR Date	TLR Confirm Time	Run Time	Requested Relief	Remaining Relief	Relief Provided	Total Cuts	
								Tags	MW
SUPERSEDED	5B	04/04/2010 10:55	04/04/2010 10:52	04/04/2010 10:51:41	25.0	0.0	25.0	0	0
SUPERSEDED	5A	04/04/2010 12:00	04/04/2010 11:27	04/04/2010 11:27:02	40.0	0.0	40.0	0	0
SUPERSEDED	5A	04/04/2010 13:00	04/04/2010 12:26	04/04/2010 12:26:02	40.0	0.0	40.0	0	0
SUPERSEDED	5A	04/04/2010 14:00	04/04/2010 13:27	04/04/2010 13:26:56	20.0	0.0	20.0	0	0
SUPERSEDED	5A	04/04/2010 15:00	04/04/2010 14:28	04/04/2010 14:28:34	30.0	0.0	30.0	0	0
SUPERSEDED	5A	04/04/2010 16:00	04/04/2010 15:27	04/04/2010 15:27:04	49.0	0.0	49.0	0	0
SUPERSEDED	5A	04/04/2010 17:00	04/04/2010 16:26	04/04/2010 16:26:02	41.0	0.0	41.0	0	0
SUPERSEDED	5A	04/04/2010 18:00	04/04/2010 17:30	04/04/2010 17:29:24	25.0	0.0	25.0	0	0
SUPERSEDED	5A	04/04/2010 19:00	04/04/2010 18:33	04/04/2010 18:32:24	33.0	0.0	33.0	0	0
SUPERSEDED	5A	04/04/2010 20:00	04/04/2010 19:32	04/04/2010 19:31:40	25.0	0.0	25.0	0	0
SUPERSEDED	5A	04/04/2010 21:00	04/04/2010 20:29	04/04/2010 20:29:19	18.0	0.0	18.0	0	0
SUPERSEDED	5A	04/04/2010 22:00	04/04/2010 21:34	04/04/2010 21:34:11	24.0	0.0	24.0	0	0
SUPERSEDED	5A	04/04/2010 23:00	04/04/2010 22:31	04/04/2010 22:30:49	26.0	0.0	26.0	0	0
SUPERSEDED	5A	04/05/2010 00:00	04/04/2010 23:31	04/04/2010 23:30:35	30.0	0.0	30.0	0	0
SUPERSEDED	5A	04/05/2010 01:00	04/05/2010 00:30	04/05/2010 00:30:31	29.0	0.0	29.0	0	0
SUPERSEDED	5A	04/05/2010 02:00	04/05/2010 01:31	04/05/2010 01:30:37	11.0	0.0	11.0	0	0
SUPERSEDED	5A	04/05/2010 03:00	04/05/2010 02:26	04/05/2010 02:25:42	17.0	0.0	17.0	0	0
SUPERSEDED	5A	04/05/2010 04:00	04/05/2010 03:26	04/05/2010 03:25:51	20.0	0.0	20.0	0	0
SUPERSEDED	5A	04/05/2010 05:00	04/05/2010 04:29	04/05/2010 04:29:07	44.0	0.0	44.0	0	0
SUPERSEDED	5A	04/05/2010 06:00	04/05/2010 05:27	04/05/2010 05:26:52	54.0	0.0	54.0	0	0
SUPERSEDED	5A	04/05/2010 07:00	04/05/2010 06:31	04/05/2010 06:31:23	60.0	0.0	60.0	0	0
SUPERSEDED	5A	04/05/2010 08:00	04/05/2010 07:40	04/05/2010 07:40:00	66.0	0.0	66.0	0	0
SUPERSEDED	3A	04/05/2010 09:00	04/05/2010 08:32	04/05/2010 08:31:49	0.0	0.0	0.0	0	0
TERMINATED	0	04/05/2010 09:00	04/05/2010 08:46	04/05/2010 08:46:33	0.0	0.0	0.0	0	0

Event Summary

FILE SAVED AS: SWPP_5368_20100404_1055.htm

Incident: SWPP_5368_20100404_1055	Date: 04/04/2010 (CST)	Reliability Coordinator: SWPP
Initial Conditions: Loading		
Flowgate: 5368 - KREHALSWITUC	Rating: 132	LODF: 37.46%
TLR Direction: Normal		
Effective StartTime: 04/04/2010 10:55 (CST)	Effective EndTime: 04/05/2010 09:00 (CST)	TLR Duration: 22 Hours and 5 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															
Apr 04 10:52 (CST)	TLR 5B	CURRENT	NONE								NONE			ED-2	SWPP	0.0	0.0	68	139	192	N/A				
			NONE								NONE			ED-6	SWPP	0.0	0.0					FIRM-7	SWPP	25.0	25.0
Apr 04 11:27 (CST)	TLR 5A	NEXT	NONE								NONE			ED-2	SWPP	0.0	0.0	61	123	167	N/A				
			NONE								NONE			ED-6	SWPP	7.0	7.0					FIRM-7	SWPP	33.0	33.0
Apr 04 12:26 (CST)	TLR 5A	NEXT	NONE								NONE			ED-2	SWPP	0.0	0.0	60	118	156	N/A				
			NONE								NONE			ED-6	SWPP	6.0	6.0					FIRM-7	SWPP	34.0	34.0
Apr 04 13:27 (CST)	TLR 5A	NEXT	NONE								NONE			ED-2	SWPP	0.0	0.0	57	115	156	N/A				
			NONE								NONE			ED-6	SWPP	6.0	6.0					FIRM-7	SWPP	14.0	14.0
Apr 04 14:28 (CST)	TLR 5A	NEXT	NONE								NONE			ED-2	SWPP	0.0	0.0	57	121	171	N/A				
			NONE								NONE			ED-6	SWPP	0.0	0.0					FIRM-7	SWPP	30.0	30.0
Apr 04 15:27 (CST)	TLR 5A	NEXT	NONE								NONE			ED-2	SWPP	0.0	0.0	52	115	169	N/A				
			NONE								NONE			ED-6	SWPP	1.0	1.0					FIRM-7	SWPP	48.0	48.0
Apr 04 16:26 (CST)	TLR 5A	NEXT	NONE								NONE			ED-2	SWPP	0.0	0.0	52	115	170	N/A				
			NONE								NONE			ED-6	SWPP	3.0	3.0					FIRM-7	SWPP	38.0	38.0

Apr 04 17:30 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 25.0 0.0 25.0	0.0 0.0 25.0 0.0 25.0	53	120	179	N/A
Apr 04 18:33 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 7.0 26.0 0.0 33.0	0.0 7.0 26.0 0.0 33.0	51	116	174	N/A
Apr 04 19:32 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 2.0 23.0 0.0 25.0	0.0 2.0 23.0 0.0 25.0	56	125	188	N/A
Apr 04 20:29 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 18.0 0.0 18.0	0.0 0.0 18.0 0.0 18.0	53	121	184	N/A
Apr 04 21:34 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 1.0 23.0 0.0 24.0	0.0 1.0 23.0 0.0 24.0	60	128	178	N/A
Apr 04 22:31 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 26.0 0.0 26.0	0.0 0.0 26.0 0.0 26.0	57	120	169	N/A
Apr 04 23:31 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 30.0 0.0 30.0	0.0 0.0 30.0 0.0 30.0	56	117	164	N/A
Apr 05 00:30 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 29.0 0.0 29.0	0.0 0.0 29.0 0.0 29.0	56	119	169	N/A
Apr 05 01:31 (CST)	TLR 5A	NEXT	NONE	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	54	115	165	N/A
Apr 05 02:26 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 17.0 0.0 17.0	0.0 0.0 17.0 0.0 17.0	55	116	163	N/A
Apr 05 03:26 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 20.0 0.0 20.0	0.0 0.0 20.0 0.0 20.0	57	119	167	N/A

Apr 05 04:29 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-8 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 2.0 42.0 0.0 44.0	0.0 2.0 42.0 0.0 44.0	59	124	175	N/A
Apr 05 05:27 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-8 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 54.0 0.0 54.0	0.0 0.0 54.0 0.0 54.0	48	114	178	N/A
Apr 05 06:31 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-8 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 80.0 0.0 60.0	0.0 0.0 80.0 0.0 60.0	57	121	172	N/A
Apr 05 07:40 (CST)	TLR 5A	NEXT	NONE	NONE	ED-2 ED-8 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 66.0 0.0 66.0	0.0 0.0 66.0 0.0 66.0	50	114	172	N/A
Apr 05 08:32 (CST)	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	41	103	168	N/A
Apr 05 08:46 (CST)	TLR 0	CURRENT	NONE	NONE		NONE			44	107	170	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-6	35.0	35.0
	FIRM-7	692.0	692.0
Total for SWPP		727.0	727.0
Total		727.0	727.0

Reliability Log for April, 4			2010
Time	Initials	Comments	Sunday
3/22/10	900	SPS Imports limited to 427 and SPS Exports limited to 385. Due to Elk City-Sweetwater line out.	
1151	MRH	Issued TLR Level 5B on KREHALSWITUC Flgt 5368, Loading and Feasibility. Set effective limit at 125. RC chose to issue on this Flgt verse 5354 RanPalAmaSwi because it was at 107% and 5354 was at 104% at the time of issue. Flgt 5368 will cut the same flow that affects 5354 thus reducing the increased flow on flgt 5354.	
1223	MRH	Set Effective limit at 120 on Flgt 5368 to control loading.	
1227	MRH	Re-ssued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
1326	MRH	Re-ssued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
1426	MRH	Re-ssued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
1528	MRH	Re-ssued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
1627	MRH	Re-ssued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
1726	MRH	Re-ssued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
1829	LRG	Re-ssued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
1932	LRG	Re-ssued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
2031	LRG	Re-ssued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
2129	LRG	Re-ssued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
2234	LRG	Re-ssued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
2330	LRG	Re-ssued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	

Reliability Log for April, 5			2010
Time	Initials	Comments	Monday
3/22/10	900	SPS Imports limited to 427 and SPS Exports limited to 385. Due to Elk City-Sweetwater line out.	
4/05/10	930	SPS opened Kress 8927 breaker at Kress on the Kress-Happy 115kv, the breaker will stay open unless they need to close for adverse conditions demand closing.	
0030	LRG	Re-ssued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
0130	LRG	Re-ssued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
0230	LRG	Re-ssued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
0325	LRG	Re-ssued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
0425	LRG	Re-ssued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
0529	LWB	Re-issued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
0626	LWB	Re-issued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
0731	LWB	Re-issued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
0840	LWB	Re-issued TLR Level 5A on KREHALSWITUC Flgt 5368, Loading and Feasibility.	
0930	LWB	SPS opened Kress 8927 breaker at Kress on the Kress-Happy 115kv, the breaker will stay open unless they need to close for adverse conditions demand closing.	
0932	LWB	Issued TLR Level 3A on KREHALSWITUC Flgt 5368.	
0946	LWB	Issued TLR Level 0 on KREHALSWITUC Flgt 5368.	

KREHALSWITUC

— Post Cont. — SOL

