

**SPP TLR 5 Investigation Report  
Flowgate 5003  
(Broken Bow – Bethel Tap 138 kV for loss of Valliant - Pittsburg 345 kV)  
(BRKCLAVALPIT)  
TLR Level 5: April 13-14, 2010  
Report Issued: April 26, 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 5003 on April 13-14, 2010. Flowgate 5003 is an SPP flowgate. The Level 5 TLR was in effect from 16:25 until 19:00 CST on April 13 and again from 19:20 CST on April 13 until 4:00 CST on April 14, 2010. North – South loading in the region caused the projected post-contingent flows on the Broken Bow – Bethel Tap 138 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 107 MVA. Flow on the Limiting Element was 52 MVA. Flow on the Contingent Element was 643 MVA. The LODF was approximately 10%. Post-contingent flow on the Limiting Element was approximately 118 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 impacting the flowgate by more than 5% prior to the Level 5 TLR. The TLR was initially 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 to South loading on the transmission system in the region. Loading sometimes requires escalating to a Level 5 TLR in order to obtain sufficient relief to reduce overloads.

**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 5003 - BrkClaValPit

Status	TLR Level	TLR Date	TLR Confirm Time	Run Time	Requested Relief	Remaining Relief	Relief Provided	Total Cuts	
								Tags	MW
SUPERSEDED	5B	04/13/2010 16:25	04/13/2010 16:12	04/13/2010 16:11:29	25.0	10.2	14.8	2	268
<a href="#">SUPERSEDED</a>	5A	04/13/2010 18:00	04/13/2010 17:33	04/13/2010 17:32:20	10.0	0.0	10.0	2	160
<a href="#">SUPERSEDED</a>	3A	04/13/2010 19:00	04/13/2010 18:32	04/13/2010 18:31:58	11.0	11.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5B	04/13/2010 19:20	04/13/2010 19:11	04/13/2010 19:09:53	30.0	14.8	15.2	2	270
<a href="#">SUPERSEDED</a>	5A	04/13/2010 21:00	04/13/2010 20:33	04/13/2010 20:30:48	0.0	0.0	61.5	2	125
<a href="#">SUPERSEDED</a>	5B	04/13/2010 21:25	04/13/2010 21:18	04/13/2010 21:14:48	140.0	103.2	36.8	2	268
<a href="#">SUPERSEDED</a>	5A	04/13/2010 23:00	04/13/2010 22:32	04/13/2010 22:32:22	65.0	0.0	65.0	3	242
<a href="#">SUPERSEDED</a>	5A	04/14/2010 00:00	04/13/2010 23:33	04/13/2010 23:31:12	91.0	37.0	54.0	2	38
<a href="#">SUPERSEDED</a>	5A	04/14/2010 01:00	04/14/2010 00:31	04/14/2010 00:30:53	0.0	0.0	52.0	0	0
<a href="#">SUPERSEDED</a>	5A	04/14/2010 02:00	04/14/2010 01:31	04/14/2010 01:31:03	19.0	0.0	52.0	0	0
<a href="#">SUPERSEDED</a>	5A	04/14/2010 03:00	04/14/2010 02:33	04/14/2010 02:32:34	0.0	0.0	52.0	0	0
<a href="#">SUPERSEDED</a>	3A	04/14/2010 04:00	04/14/2010 03:32	04/14/2010 03:31:51	21.0	0.0	21.0	0	0
<a href="#">SUPERSEDED</a>	3A	04/14/2010 05:00	04/14/2010 04:29	04/14/2010 04:28:55	5.0	0.0	5.0	0	0
<a href="#">SUPERSEDED</a>	3A	04/14/2010 06:00	04/14/2010 05:30	04/14/2010 05:29:49	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	3A	04/14/2010 07:00	04/14/2010 06:35	04/14/2010 06:33:00	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	3A	04/14/2010 08:00	04/14/2010 07:30	04/14/2010 07:29:57	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	3A	04/14/2010 09:00	04/14/2010 08:33	04/14/2010 08:32:23	0.0	0.0	0.0	0	0
<a href="#">TERMINATED</a>	0	04/14/2010 09:15	04/14/2010 09:07	04/14/2010 09:05:07	0.0	0.0	0.0	0	0



Apr 13 22:32 (CST)	TLR 5A	NEXT	7-F Total	3 / 0 3 / 0	242 242	13.0 13.0	242 242	13.0 13.0	0 0	0.0 0.0	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 19.0 33.0 0.0 52.0	0.0 19.0 33.0 0.0 52.0	31	79	470	N/A
Apr 13 23:33 (CST)	TLR 5A	NEXT	7-F Total	2 / 0 2 / 0	38 38	2.0 2.0	38 38	2.0 2.0	0 0	0.0 0.0	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 45.0 7.0 0.0 52.0	0.0 45.0 7.0 0.0 52.0	38	92	524	N/A
Apr 14 00:31 (CST)	TLR 5A	NEXT	NONE								NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 45.0 7.0 0.0 52.0	0.0 45.0 7.0 0.0 52.0	36	89	518	N/A
Apr 14 01:31 (CST)	TLR 5A	NEXT	NONE								NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 36.0 16.0 0.0 52.0	0.0 36.0 16.0 0.0 52.0	36	88	504	N/A
Apr 14 02:33 (CST)	TLR 5A	NEXT	NONE								NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 40.0 12.0 0.0 52.0	0.0 40.0 12.0 0.0 52.0	34	83	475	N/A
Apr 14 03:32 (CST)	TLR 3A	NEXT	NONE								NONE	ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 21.0 0.0 21.0	0.0 21.0 0.0 21.0	38	83	438	N/A
Apr 14 04:29 (CST)	TLR 3A	NEXT	NONE								NONE	ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 5.0 0.0 5.0	0.0 5.0 0.0 5.0	43	95	501	N/A
Apr 14 05:30 (CST)	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	43	95	501	N/A
Apr 14 06:35 (CST)	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	47	100	519	N/A
Apr 14 07:30 (CST)	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	47	102	535	N/A
Apr 14 08:33 (CST)	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	43	98	518	N/A
Apr 14 09:07 (CST)	TLR 0	CURRENT	NONE								NONE	NONE				41	93	501	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	2	125	125	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	18	1802	1802	0
<b>Total</b>	<b>20</b>	<b>1927</b>	<b>1927</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	257.0	257.0
	FIRM-7	134.0	134.0
<b>Total for SWPP</b>		<b>391.0</b>	<b>391.0</b>
<b>Total</b>		<b>391.0</b>	<b>391.0</b>

<b>Reliability Log for April, 13</b>			<b>2010</b>
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Time	Initials	Comments	Tuesday
1711	DGA	Issued TLR level 5B (reverse direction) on BRKCLAVALPIT flgt #5003	
1724	DGA	Issued Directive to SPA (McNeil) to bring up Broken Bow generation up 25mws now and an additional 25mws (50mws total) @ 1800 to mitigate flowgates 5211 and 5003	
1832	WRG	Issued TLR level 5A (reverse direction) on BRKCLAVALPIT flgt #5003	
1935	WRG	Issued TLR level 3A (reverse direction) on BRKCLAVALPIT flgt #5003	
2009	WRG	Issued TLR level 5B (reverse direction) on BRKCLAVALPIT flgt #5003 Firm curtailments	
2028	WRG	Issued TLR level 5A (reverse direction) on BRKCLAVALPIT flgt #5003	
2129	WRG	Issued TLR level 5A (reverse direction) on BRKCLAVALPIT flgt #5003	
2214	WRG	Issued TLR level 5B (reverse direction) on BRKCLAVALPIT flgt #5003	
2332	WRG	Issued TLR level 5A (reverse direction) on BRKCLAVALPIT flgt #5003	

<b>Reliability Log for April, 14</b>			<b>2010</b>
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Time	Initials	Comments	Wednesday
0031	WRG	Issued TLR level 5A (reverse direction) on BRKCLAVALPIT flgt #5003	
0130	WRG	Issued TLR level 5A (reverse direction) on BRKCLAVALPIT flgt #5003	
0230	WRG	Issued TLR level 5A (reverse direction) on BRKCLAVALPIT flgt #5003	
0332	WRG	Issued TLR level 5A (reverse direction) on BRKCLAVALPIT flgt #5003	
0431	WRG	Issued TLR level 3A (reverse direction) on BRKCLAVALPIT flgt #5003	
0529	WRG	Issued TLR level 3A (reverse direction) on BRKCLAVALPIT flgt #5003	
0629	DGA	Re-issued TLR level 3A (reverse direction) on BRKCLAVALPIT flgt #5003	
0733	DGA	Re-issued TLR level 3A (reverse direction) on BRKCLAVALPIT flgt #5003	
0829	DGA	Re-issued TLR level 3A (reverse direction) on BRKCLAVALPIT flgt #5003	
0932	DGA	Re-issued TLR level 3A (reverse direction) on BRKCLAVALPIT flgt #5003	
1015	DGA	Issued TLR level 0 (reverse direction) on BRKCLAVALPIT flgt #5003	

### BRKCLAVALPIT #5003 Reverse Direction

