

SPP TLR 5 Investigation Report
Temp 5 Flowgate 16316
(Cherry Creek – Boyd 138 kV for the loss of Pleasant Valley – Hollywood 138 kV)
TLR Level 5: April 15, 2010
Report Issued: April 27, 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 16316 on April 15, 2010. Flowgate 16316 is an SPP flowgate created due to the planned maintenance outage of the Penn. – West Moore 138 kV line. The Level 5 TLR was in effect from 15:00 until 23:00 CST on April 15, 2010. Projected post contingent flows on the Cherry Creek – Boyd 138 kV line exceeded the SOL.

2. Facility/flowgate limitations and flows at the time the TLR was initiated.

At the time the initial Level 5A TLR was issued, the Limiting Element was rated at 191 MVA. Flow on the Limiting Element was 72 MVA. Flow on the Contingent Element was 171 MVA. The LODF was approximately 64%. Post-contingent flow on the Limiting Element was approximately 181 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.

SPP's outage coordination process identified potential for loading issues due to the outage of the Penn. – West Moore 138 kV line. The temporary flowgate was created in order to dispatch around the constraint via TLR to control the loading until the line was returned to service.

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 pages 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 the planned maintenance outage of the Penn. – West Moore 138 kV line. Since the temporary outages were the most significant factors associated with this event, no additional actions were necessary.

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.

TLR Event History

16316 - Temp 5 Cherry Creek - Boyd 138 kV (ftlo) Pleasant Valley - Hollywood 138 kV

Status	TLR Level	TLR Date	TLR Confirm Time	Run Time	Requested Relief	Remaining Relief	Relief Provided	Total Cuts	
								Tags	MW
SUPERSEDED	3A	04/15/2010 08:00	04/15/2010 07:32	04/15/2010 07:31:30	146.0	139.0	7.0	0	0
SUPERSEDED	3A	04/15/2010 09:00	04/15/2010 08:28	04/15/2010 08:28:10	0.0	0.0	0.0	0	0
SUPERSEDED	3A	04/15/2010 10:00	04/15/2010 09:30	04/15/2010 09:29:04	26.0	26.0	0.0	0	0
SUPERSEDED	3A	04/15/2010 11:00	04/15/2010 10:27	04/15/2010 10:26:44	9.0	9.0	0.0	0	0
SUPERSEDED	3A	04/15/2010 12:00	04/15/2010 11:29	04/15/2010 11:28:55	13.0	13.0	0.0	0	0
SUPERSEDED	3A	04/15/2010 13:00	04/15/2010 12:34	04/15/2010 12:33:53	34.0	34.0	0.0	0	0
SUPERSEDED	3A	04/15/2010 14:00	04/15/2010 13:29	04/15/2010 13:29:19	18.0	18.0	0.0	0	0
SUPERSEDED	5A	04/15/2010 15:00	04/15/2010 14:34	04/15/2010 14:33:30	0.0	0.0	0.0	0	0
SUPERSEDED	5A	04/15/2010 16:00	04/15/2010 15:34	04/15/2010 15:33:36	0.0	0.0	0.0	0	0
SUPERSEDED	5A	04/15/2010 17:00	04/15/2010 16:32	04/15/2010 16:31:30	0.0	0.0	0.0	0	0
SUPERSEDED	5A	04/15/2010 18:00	04/15/2010 17:35	04/15/2010 17:34:44	10.0	0.0	10.0	2	2
SUPERSEDED	5A	04/15/2010 19:00	04/15/2010 18:32	04/15/2010 18:31:45	0.0	0.0	0.0	0	0
SUPERSEDED	5A	04/15/2010 20:00	04/15/2010 19:28	04/15/2010 19:28:24	5.0	0.0	5.1	2	2
SUPERSEDED	5A	04/15/2010 21:00	04/15/2010 20:28	04/15/2010 20:27:31	4.0	0.0	4.1	2	2
SUPERSEDED	5A	04/15/2010 22:00	04/15/2010 21:29	04/15/2010 21:28:30	13.0	0.0	42.0	0	0
SUPERSEDED	3A	04/15/2010 23:00	04/15/2010 22:32	04/15/2010 22:31:50	10.0	0.0	10.0	0	0
SUPERSEDED	3A	04/16/2010 00:00	04/15/2010 23:26	04/15/2010 23:26:08	24.0	0.0	24.0	0	0
SUPERSEDED	3A	04/16/2010 01:00	04/16/2010 00:26	04/16/2010 00:26:26	22.0	0.0	22.0	0	0
SUPERSEDED	3A	04/16/2010 02:00	04/16/2010 01:26	04/16/2010 01:25:53	53.0	15.0	38.0	0	0
TERMINATED	0	04/16/2010 01:40	04/16/2010 01:30	04/16/2010 01:29:57	0.0	0.0	0.0	0	0

Apr 15 15:34 (CST)	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	71	178	169	N/A
Apr 15 16:32 (CST)	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	71	178	168	N/A
Apr 15 17:35 (CST)	TLR 5A	NEXT	7-F Total	2 / 0 2 / 0	2 2	0.1 0.1	2 2	0.1 0.1	0 0	0.0 0.0	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 9.9 0.0 9.9	0.0 0.0 9.9 0.0 9.9	71	178	168	N/A
Apr 15 18:32 (CST)	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	70	175	168	N/A
Apr 15 19:28 (CST)	TLR 5A	NEXT	7-F Total	2 / 0 2 / 0	2 2	0.1 0.1	2 2	0.1 0.1	0 0	0.0 0.0	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 5.0 0.0 5.0	0.0 0.0 5.0 0.0 5.0	71	178	168	N/A
Apr 15 20:28 (CST)	TLR 5A	NEXT	7-F Total	2 / 0 2 / 0	2 2	0.1 0.1	2 2	0.1 0.1	0 0	0.0 0.0	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 4.0 0.0 4.0	0.0 0.0 4.0 0.0 4.0	71	178	168	N/A
Apr 15 21:29 (CST)	TLR 5A	NEXT	NONE								NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 42.0 0.0 0.0 42.0	0.0 42.0 0.0 0.0 42.0	70	178	170	N/A
Apr 15 22:32 (CST)	TLR 3A	NEXT	NONE								NONE	ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 10.0 0.0 10.0	0.0 10.0 0.0 10.0	66	169	162	N/A
Apr 15 23:26 (CST)	TLR 3A	NEXT	NONE								NONE	ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 24.0 0.0 24.0	0.0 24.0 0.0 24.0	66	171	168	N/A
Apr 16 00:26 (CST)	TLR 3A	NEXT	NONE								NONE	ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 22.0 0.0 22.0	0.0 22.0 0.0 22.0	66	170	164	N/A
Apr 16 01:26 (CST)	TLR 3A	NEXT	NONE								NONE	ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 38.0 0.0 38.0	0.0 38.0 0.0 38.0	54	128	117	N/A
Apr 16 01:30 (CST)	TLR 0	CURRENT	NONE								NONE	NONE			54	128	117	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	6	6	6	0
Total	6	6	6	0

TLR Market Flow Totals

Market	Type	Market Relief	
		IDC MW	RC Ackn MW
SWPP	ED-2	0.0	0.0
	ED-6	143.0	143.0
	FIRM-7	18.9	18.9
Total for SWPP		161.9	161.9
Total		161.9	161.9

Reliability Log for April, 15			2010
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Time	Initials	Comments	
0831	LWB	Issued TLR level 3A on CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316.	
0928	LWB	Re-issued TLR level 3A on Temp 05 CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316.	
1029	LWB	Re-issued TLR level 3A on Temp 05 CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316.	
1126	LWB	Re-issued TLR level 3A on Temp 05 CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316.	
1228	LWB	Re-issued TLR level 3A on Temp 05 CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316.	
1333	LWB	Re-issued TLR level 3A on Temp 05 CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316.	
1429	LWB	Re-issued TLR level 3A on Temp 05 CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316.	
1533	LWB	Issued TLR level 5A on Temp 05 CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316, Feasibility.	
1633	LWB	Issued TLR level 5A on Temp 05 CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316, Feasibility.	
1731	LWB	Issued TLR level 5A on Temp 05 CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316, Feasibility.	
1834	WRG	Issued TLR level 5A on Temp 05 CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316, Feasibility.	
1931	WRG	Issued TLR level 5A on Temp 05 CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316, Feasibility.	
2028	WRG	Issued TLR level 5A on Temp 05 CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316, Feasibility.	
2127	WRG	Issued TLR level 5A on Temp 05 CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316, Feasibility.	
2228	WRG	Issued TLR level 5A on Temp 05 CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316, Feasibility.	
2328	WRG	Issued TLR level 5A on Temp 05 CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316, Feasibility.	

Reliability Log for April, 16			2010
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Time	Initials	Comments	Friday
0026	WRG	Issued TLR level 3A on Temp 05 CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316,	
0126	WRG	Re-Issued TLR level 3A on Temp 05 CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316	
0229	WRG	Re-Issued TLR level 0 on Temp 05 CHERRY CREEK - Boyd 138 KV (ftlo) Pleasant Valley - Hollywood 138 KV #16316	

Temp05_16316

— Post Cont. — SOL

