

SPP TLR 5 Investigation Report
Flowgate 5207
(Redbud – Arcadia 345 kV Circuit 1 for loss of Redbud – Arcadia 345 kV Circuit 2)
(REDARCREARC)
TLR Level 5: July 10, 2009
Report Issued: August 3, 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 5207 on July 10, 2009. Flowgate 5207 is an SPP flowgate. The Level 5 TLR was in effect from 15:00 until 17:00 CST on July 10, 2009. Projected post-contingent flows on the Redbud – Arcadia 345 kV line exceeded the SOL. The rating is based on a limit within the substation.

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 1426 MVA. Flow on the Limiting Element was 694 MVA. Flow on the Contingent Element was 654 MVA. The LODF was approximately 96%. Post-contingent flow on the Limiting Element was approximately 1323 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 3-6.

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.

Non-firm transactions had already been curtailed due to TLR action. The TLR was 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 7. 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 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.

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 3-6.

TLR Event History 5207 - RedArcRedArc

Status	TLR Level	TLR Date (CST)	TLR Confirm Time (CST)	Run Time (CST)	Requested Relief	Remaining Relief	Relief Provided	Total Cuts	
								Tags	MW
SUPERSEDED	3B	07/10/2009 10:25	07/10/2009 10:14	07/10/2009 10:13:30	50.0	40.0	10.0	3	100
SUPERSEDED	3A	07/10/2009 12:00	07/10/2009 11:28	07/10/2009 11:28:07	32.0	11.6	20.4	4	108
SUPERSEDED	3A	07/10/2009 13:00	07/10/2009 12:30	07/10/2009 12:30:02	23.0	12.6	10.4	4	108
SUPERSEDED	3A	07/10/2009 14:00	07/10/2009 13:31	07/10/2009 13:31:05	0.0	0.0	0.4	1	8
SUPERSEDED	5A	07/10/2009 15:00	07/10/2009 14:21	07/10/2009 14:20:06	33.0	0.0	33.5	10	112
SUPERSEDED	5A	07/10/2009 15:00	07/10/2009 14:30	07/10/2009 14:29:43	0.0	0.0	10.3	4	108
SUPERSEDED	5A	07/10/2009 16:00	07/10/2009 15:32	07/10/2009 15:31:28	12.0	0.0	12.2	6	111
SUPERSEDED	5A	07/10/2009 16:00	07/10/2009 15:37	07/10/2009 15:36:29	12.0	0.0	12.0	3	100
SUPERSEDED	3A	07/10/2009 17:00	07/10/2009 16:28	07/10/2009 16:28:22	13.0	3.2	9.8	3	100
SUPERSEDED	3A	07/10/2009 18:00	07/10/2009 17:29	07/10/2009 17:29:18	0.0	0.0	0.0	0	0
SUPERSEDED	3A	07/10/2009 19:00	07/10/2009 18:33	07/10/2009 18:32:35	0.0	0.0	10.2	4	108
SUPERSEDED	3A	07/10/2009 20:00	07/10/2009 19:35	07/10/2009 19:34:46	0.0	0.0	10.2	4	108
SUPERSEDED	3A	07/10/2009 21:00	07/10/2009 20:31	07/10/2009 20:30:40	0.0	0.0	10.2	4	108
SUPERSEDED	3A	07/10/2009 22:00	07/10/2009 21:30	07/10/2009 21:30:36	0.0	0.0	8.7	4	93
TERMINATED	0	07/10/2009 22:45	07/10/2009 22:33	07/10/2009 22:32:58	0.0	0.0	0.0	0	0

08/05/2009 15:03:47 (CST)

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

Copyright 2009 - Interchange Distribution Calculator (OATI IDC) - Open Access Technology International, Inc. All Rights Reserved.

Event Summary

FILE SAVED AS: SWPP_5207_20090710_1025.htm

Incident:	SWPP_5207_20090710_1025	Date: 07/10/2009	Reliability Coordinator: SWPP
Initial Conditions:	load increasing		
Flowgate:	5207 - RedArcRedArc	Rating: 1426	LODF: 96.31%
TLR Direction:	Normal		
Effective StartTime:	07/10/2009 10:25	Effective EndTime: 07/10/2009 22:45	TLR Duration: 12 Hours and 20 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		RC Cut Acknowledge		Hold		CA	IDC MW	RC Ackn MW	Type	Mkt	IDC MW	RC Ackn MW	Current	Post Cont.			
					MW	Relief	MW	Relief	MW	Relief												
Jul 10 10:14	TLR 3B	CURRENT	8-NN	3 / 0	100	10.0	100	10.0	0	0.0	NONE			ED-2	SWPP	0.0	0.0	713	1380	872	N/A	
		Total	3 / 0	100	10.0	100	10.0	0	0.0	ED-8	SWPP	0.0	0.0	FIRM-7	SWPP	0.0	0.0					0.0
		NEXT	8-NN	3 / 0	100	10.0	100	10.0	0	0.0	NONE			ED-2	SWPP	0.0	0.0					
		Total	3 / 0	100	10.0	100	10.0	0	0.0	ED-8	SWPP	36.0	36.0	FIRM-7	SWPP	15.0	15.0					51.0
Jul 10 11:28	TLR 3A	NEXT	8-NN	3 / 0	100	10.0	100	10.0	0	0.0	NONE			ED-2	SWPP	0.0	0.0	893	1322	854	N/A	
			Total	3 / 0	100	10.0	100	10.0	0	0.0	ED-8	SWPP	0.0	0.0	FIRM-7	SWPP	10.0	10.0				
Jul 10 12:30	TLR 3A	NEXT	8-NN	3 / 0	100	10.0	100	10.0	0	0.0	NONE			ED-2	SWPP	0.0	0.0	884	1305	845	N/A	
			Total	3 / 0	100	10.0	100	10.0	0	0.0	ED-8	SWPP	0.0	0.0	FIRM-7	SWPP	0.0	0.0				
Jul 10 13:31	TLR 3A	NEXT	NONE							NONE			ED-2	SWPP	0.0	0.0	898	1331	858	N/A		
Jul 10 14:21	TLR 5A PRELIM	NEXT	8-NN	3 / 0	100	9.9	0	0.0	0	0.0	NONE			ED-2	SWPP	0.0	0.0	894	1323	854	N/A	
			7-F	7 / 0	12	1.8	0	0.0	0	0.0	ED-8	SWPP	0.0	0.0	FIRM-7	SWPP	21.6	0.0				
			Total	10 / 0	112	11.5	0	0.0	0	0.0	FIRM-CREDIT	SWPP	0.0	0.0	Total	21.6	0.0					
Jul 10 14:30	TLR 5A	NEXT	8-NN	3 / 0	100	9.9	100	9.9	0	0.0	NONE			ED-2	SWPP	0.0	0.0	895	1328	858	N/A	
			Total	3 / 0	100	9.9	100	9.9	0	0.0	ED-8	SWPP	0.0	0.0	FIRM-7	SWPP	0.0	0.0				
Jul 10 15:32	TLR 5A	NEXT	8-NN	3 / 0	100	9.8	100	9.8	0	0.0	NONE			ED-2	SWPP	0.0	0.0	898	1327	858	N/A	
			7-F	3 / 0	11	0.7	2	0.3	0	0.0	ED-8	SWPP	0.0	0.0	FIRM-7	SWPP	1.7	1.7				
			Total	6 / 0	111	10.5	102	10.1	0	0.0	FIRM-CREDIT	SWPP	0.0	0.0	Total	1.7	1.7					

Jul 10 15:37	TLR 5A	NEXT	6-NN Total	3 / 0 3 / 0	100 100	9.8 9.8	100 100	9.8 9.8	0 0	0.0 0.0	NONE	ED-2 ED-8 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 0.0 2.1 0.0 2.1	0.0 0.0 2.1 0.0 2.1	697	1330	658	N/A
Jul 10 16:28	TLR 3A	NEXT	6-NN Total	3 / 0 3 / 0	100 100	9.8 9.8	100 100	9.8 9.8	0 0	0.0 0.0	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	697	1330	658	N/A
Jul 10 17:29	TLR 3A	NEXT	7-F Total	0 / 1 0 / 1	0 0	0.0 0.0	0 0	0.0 0.0	85 85	11.6 11.6	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	709	1353	669	N/A
Jul 10 18:33	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	699	1333	659	N/A
Jul 10 19:35	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	722	1378	682	N/A
Jul 10 20:31	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	738	1407	695	N/A
Jul 10 21:30	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	703	1339	661	N/A
Jul 10 22:33	TLR 0	CURRENT	NONE								NONE	NONE			581	1107	547	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	27	900	800	0
7	10	23	2	85
Total	37	923	802	85

TLR Market Flow Totals

Market	Type	Market Relief	
		IDC MW	RC Ackn MW
SWPP	ED-2	0.0	0.0
	ED-6	0.0	0.0
	FIRM-7	35.5	35.4
Total for SWPP		35.5	35.4
Total		35.5	35.4

08/05/2009 15:04:53 (CST)

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

Copyright 2009 - Interchange Distribution Calculator (OATI IDC) - Open Access Technology International, Inc. All Rights Reserved.

	A	B	C	D
257	Reliability Log for July, 10			2009
258	Time	Initials	Comments	
290	1113	WRG	Issued TLR Level 3B on Redbud-Arcadia 345Kv flo Redbud-Arcadia 345Kv flgt # 5207	
303	1228	WRG	Re-Issued TLR Level 3A on Redbud-Arcadia 345Kv flo Redbud-Arcadia 345Kv flgt # 5207	
310	1330	WRG	Re-Issued TLR Level 3A on Redbud-Arcadia 345Kv flo Redbud-Arcadia 345Kv flgt # 5207	
317	1431	WRG	Re-Issued TLR Level 3A on Redbud-Arcadia 345Kv flo Redbud-Arcadia 345Kv flgt # 5207	
318	1520	WRG	Re-Issued TLR Level 5A on Redbud-Arcadia 345Kv flo Redbud-Arcadia 345Kv flgt # 5207 for feasibility.	
323	1529	WRG	Re-Issued TLR Level 5A on Redbud-Arcadia 345Kv flo Redbud-Arcadia 345Kv flgt # 5207 for feasibility.	
331	1636	WRG	Re-Issued TLR Level 5A on Redbud-Arcadia 345Kv flo Redbud-Arcadia 345Kv flgt # 5207 for feasibility.	
338	1728	WRG	Re-Issued TLR Level 3A on Redbud-Arcadia 345Kv flo Redbud-Arcadia 345Kv flgt # 5207 for feasibility.	
345	1829	RST	Re-Issued TLR Level 3A on Redbud-Arcadia 345Kv flo Redbud-Arcadia 345Kv flgt # 5207 for feasibility.	
352	1932	RST	Re-Issued TLR Level 3A on Redbud-Arcadia 345Kv flo Redbud-Arcadia 345Kv flgt # 5207 for feasibility.	
357	2034	RST	Re-Issued TLR Level 3A on Redbud-Arcadia 345Kv flo Redbud-Arcadia 345Kv flgt # 5207 for feasibility.	
362	2130	RST	Re-Issued TLR Level 3A on Redbud-Arcadia 345Kv flo Redbud-Arcadia 345Kv flgt # 5207 for feasibility.	
369	2230	RST	Re-Issued TLR Level 3A on Redbud-Arcadia 345Kv flo Redbud-Arcadia 345Kv flgt # 5207 for feasibility.	
374	2332	RST	Re-Issued TLR Level 0 on Redbud-Arcadia 345Kv flo Redbud-Arcadia 345Kv flgt # 5207 for feasibility.	
377				
378				

5207 7/10/09

