

**SPP TLR 5 Investigation Report
Flowgate 15812
(Temp 20 Arcadia 345/138 kV Transformer 1 for the loss of
Arcadia 345/138 kV Transformer 2)
(Temp 20)
TLR Level 5: June 2, 2009
Report Issued: July 14, 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 15812 on June 2, 2009. Flowgate 15812 is an SPP flowgate. The Level 5 TLR was in effect from 11:00 until 21:20 CST on June 2, 2009. Projected post-contingent flows on Arcadia 345/138 kV transformer exceeded the SOL. The flowgate was created due to the temporary outage of the Arcadia - Northwest 345 kV line.

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 448 MVA. Flow on the Limiting Element was 295 MVA. Flow on the Contingent Element was 280 MVA. The LODF was approximately 56%. Post-contingent flow on the Limiting Element was approximately 452 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.

There were no non-firm transactions that impacted the flowgate by more than 5% at the time the Level 5 TLR was issued. The TLR was escalated to a Level 5 in order to curtail firm transactions and firm market flow to alleviate loading on the flowgate.

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 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 during the temporary outage of the Arcadia - Northwest 345 kV line. Due to this situation, no further actions were taken.

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

15812 - Temporary 20 Arcadia 345/138 XFR 1 (flo) Arcadia 345/138 XFR 2

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	06/02/2009 09:30	06/02/2009 09:16	06/02/2009 09:16:21	0.0	0.0	0.0	0	0
SUPERSEDED	5A	06/02/2009 11:00	06/02/2009 10:26	06/02/2009 10:26:18	0.0	0.0	0.0	0	0
SUPERSEDED	5A	06/02/2009 12:00	06/02/2009 11:26	06/02/2009 11:26:07	0.0	0.0	0.0	0	0
SUPERSEDED	5A	06/02/2009 13:00	06/02/2009 12:26	06/02/2009 12:26:24	0.0	0.0	0.0	0	0
SUPERSEDED	5A	06/02/2009 14:00	06/02/2009 13:27	06/02/2009 13:27:02	0.0	0.0	0.0	0	0
SUPERSEDED	5A	06/02/2009 15:00	06/02/2009 14:29	06/02/2009 14:29:19	0.0	0.0	0.0	0	0
SUPERSEDED	5A	06/02/2009 16:00	06/02/2009 15:30	06/02/2009 15:29:41	0.0	0.0	0.0	0	0
SUPERSEDED	5A	06/02/2009 17:00	06/02/2009 16:40	06/02/2009 16:40:23	0.0	0.0	0.0	0	0
SUPERSEDED	5A	06/02/2009 18:00	06/02/2009 17:41	06/02/2009 17:40:33	0.0	0.0	0.0	0	0
SUPERSEDED	5A	06/02/2009 19:00	06/02/2009 18:40	06/02/2009 18:40:04	0.0	0.0	0.0	0	0
SUPERSEDED	5A	06/02/2009 20:00	06/02/2009 19:41	06/02/2009 19:40:39	0.0	0.0	0.0	0	0
SUPERSEDED	5A	06/02/2009 21:00	06/02/2009 20:34	06/02/2009 20:33:30	0.0	0.0	67.0	0	0
SUPERSEDED	3B	06/02/2009 21:20	06/02/2009 21:10	06/02/2009 21:10:26	0.0	0.0	0.0	0	0
TERMINATED	0	06/02/2009 21:40	06/02/2009 21:31	06/02/2009 21:30:52	0.0	0.0	0.0	0	0

07/16/2009 11:08:23 (CST)

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Event Summary

FILE SAVED AS: SWPP_15812_20090602_0930.htm

Incident:	SWPP_15812_20090602_0930	Date: 06/02/2009	Reliability Coordinator: SWPP
Initial Conditions:	Increased Flows		
Flowgate:	15812 - Temporary 20 Arcadia 345/138 X...	Rating: 448	LODF: 56.16%
TLR Direction:	Normal		
Effective StartTime:	06/02/2009 09:30	Effective EndTime: 06/02/2009 21:40	TLR Duration: 12 Hours and 10 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												
Jun 02 09:16	TLR 3B	CURRENT		NONE								NONE			ED-2	SWPP	0.0	0.0	285	436	270	N/A
		NEXT		NONE								NONE			ED-6	SWPP	0.0	0.0				
				NONE								NONE			FIRM-7	SWPP	0.0	0.0				
				NONE								NONE			Total		0.0	0.0				
Jun 02 10:26	TLR 5A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	295	452	280	N/A
				NONE								NONE			ED-6	SWPP	0.0	0.0				
				NONE								NONE			FIRM-7	SWPP	0.0	0.0				
				NONE								NONE			FIRM-CREDIT	SWPP	0.0	0.0				
				NONE								NONE			Total		0.0	0.0				
Jun 02 11:26	TLR 5A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	297	455	282	N/A
				NONE								NONE			ED-6	SWPP	0.0	0.0				
				NONE								NONE			FIRM-7	SWPP	0.0	0.0				
				NONE								NONE			FIRM-CREDIT	SWPP	0.0	0.0				
				NONE								NONE			Total		0.0	0.0				
Jun 02 12:26	TLR 5A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	318	487	302	N/A
				NONE								NONE			ED-6	SWPP	0.0	0.0				
				NONE								NONE			FIRM-7	SWPP	0.0	0.0				
				NONE								NONE			FIRM-CREDIT	SWPP	0.0	0.0				
				NONE								NONE			Total		0.0	0.0				
Jun 02 13:27	TLR 5A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	280	429	266	N/A
				NONE								NONE			ED-6	SWPP	0.0	0.0				
				NONE								NONE			FIRM-7	SWPP	0.0	0.0				
				NONE								NONE			FIRM-CREDIT	SWPP	0.0	0.0				
				NONE								NONE			Total		0.0	0.0				
Jun 02 14:29	TLR 5A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	293	449	279	N/A
				NONE								NONE			ED-6	SWPP	0.0	0.0				
				NONE								NONE			FIRM-7	SWPP	0.0	0.0				
				NONE								NONE			FIRM-CREDIT	SWPP	0.0	0.0				
				NONE								NONE			Total		0.0	0.0				
Jun 02 15:30	TLR 5A	NEXT		NONE								NONE			ED-2	SWPP	0.0	0.0	297	452	277	N/A
				NONE								NONE			ED-6	SWPP	0.0	0.0				
				NONE								NONE			FIRM-7	SWPP	0.0	0.0				
				NONE								NONE			FIRM-CREDIT	SWPP	0.0	0.0				
				NONE								NONE			Total		0.0	0.0				

Jun 02 18:40	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	295	452	280	N/A
Jun 02 17:41	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	284	435	270	N/A
Jun 02 18:40	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	274	420	280	N/A
Jun 02 19:41	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	288	441	273	N/A
Jun 02 20:34	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT Total	SWPP SWPP SWPP SWPP	0.0 35.0 32.0 0.0 67.0	0.0 35.0 32.0 0.0 67.0	288	441	273	N/A
Jun 02 21:10	TLR 3B	CURRENT	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	254	389	241	N/A
		NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 Total	SWPP SWPP SWPP	0.0 12.0 0.0 12.0	0.0 0.0 0.0 0.0				
Jun 02 21:31	TLR 0	CURRENT	NONE	NONE	NONE				214	328	203	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	32.0	32.0
Total for SWPP		67.0	67.0
Total		67.0	67.0

07/16/2009 11:09:00 (CST)

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	A	B	C	D
126	Reliability Log for June, 2			2009
127	Time	Initials	Comments	
162	1016	MRH	Issued TLR Level 3B on Temp 20 Arcadia 345/138kV Xmfr #1 ftlo Arcadia345/138kV Xmfr #2, Flgt. 15812.	
166	1126	MRH	Re-issued TLR Level 5A on Temp 20 Arcadia 345/138kV Xmfr #1 ftlo Arcadia345/138kV Xmfr #2, Flgt. 15812. Due to feasibility reasons.	
170	1226	MRH	Re-issued TLR Level 5A on Temp 20 Arcadia 345/138kV Xmfr #1 ftlo Arcadia345/138kV Xmfr #2, Flgt. 15812. Due to feasibility reasons.	
175	1326	MRH	Re-issued TLR Level 5A on Temp 20 Arcadia 345/138kV Xmfr #1 ftlo Arcadia345/138kV Xmfr #2, Flgt. 15812. Due to feasibility reasons.	
180	1427	MRH	Re-issued TLR Level 5A on Temp 20 Arcadia 345/138kV Xmfr #1 ftlo Arcadia345/138kV Xmfr #2, Flgt. 15812. Due to feasibility reasons.	
187	1529	MRH	Re-issued TLR Level 5A on Temp 20 Arcadia 345/138kV Xmfr #1 ftlo Arcadia345/138kV Xmfr #2, Flgt. 15812. Due to feasibility reasons.	
194	1629	MRH	Re-issued TLR Level 5A on Temp 20 Arcadia 345/138kV Xmfr #1 ftlo Arcadia345/138kV Xmfr #2, Flgt. 15812. Due to feasibility reasons.	
209	1740	MRH	Re-issued TLR Level 5A on Temp 20 Arcadia 345/138kV Xmfr #1 ftlo Arcadia345/138kV Xmfr #2, Flgt. 15812. Due to feasibility reasons.	
220	1840	RGH	Re-issued TLR Level 5A on Temp 20 Arcadia 345/138kV Xmfr #1 ftlo Arcadia345/138kV Xmfr #2, Flgt. 15812. Due to feasibility reasons.	
232	1940	RGH	Re-issued TLR Level 5A on Temp 20 Arcadia 345/138kV Xmfr #1 ftlo Arcadia345/138kV Xmfr #2, Flgt. 15812. Due to feasibility reasons.	
240	2040	RGH	Re-issued TLR Level 5A on Temp 20 Arcadia 345/138kV Xmfr #1 ftlo Arcadia345/138kV Xmfr #2, Flgt. 15812. Due to feasibility reasons.	
245	2133	RGH	Re-issued TLR Level 5A on Temp 20 Arcadia 345/138kV Xmfr #1 ftlo Arcadia345/138kV Xmfr #2, Flgt. 15812. Due to feasibility reasons.	
247	2210	RGH	Re-issued TLR Level 3B on Temp 20 Arcadia 345/138kV Xmfr #1 ftlo Arcadia345/138kV Xmfr #2, Flgt. 15812.	
248	2210	RGH	Re-issued TLR Level 0 on Temp 20 Arcadia 345/138kV Xmfr #1 ftlo Arcadia345/138kV Xmfr #2, Flgt. 15812.	
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