

**SPP TLR 5 Investigation Report**  
**Flowgate 15849**  
**(Randall-Palo Duro 115kV for the loss of Amarillo-Swisher 230kV)**  
**(Temp14)**  
**TLR Level 5: July 14-15, 2009**  
**Report Issued: August 4, 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 15849 on July 14-15, 2009. Flowgate 15849 is an SPP flowgate. The Level 5 TLR was in effect from 11:00 on July 14 until 1:00 CST on July 15 and again from 7:00 until 9:50 on July 15, 2009. Projected post-contingent flows on the Randall – Palo Duro 115 kV line exceeded the SOL. This 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 rating is based on the 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 99 MVA. Flow on the Limiting Element was 55 MVA. Flow on the Contingent Element was 175 MVA. The LODF was approximately 21%. Post-contingent flow on the Limiting Element was approximately 90 MVA. However, the balancing authority had been reporting post-contingent loading on the Limiting Element up to 30% higher than those recorded by the Reliability Coordinator. The Reliability Coordinator took action based on the higher loading observed by the balancing authority.

**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 that impacted the flowgate by more than 5%. 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 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 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 system flows coupled with a facility derating. 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. There are currently no plans to uprate this facility; however, a permanent reconfiguration option has been studied, and a new operation guide is being developed to alleviate loading on the flowgate.

**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 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

### 15849 - Temporary 14 - RCIPALAMASWI

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	07/14/2009 07:55	07/14/2009 07:54	07/14/2009 07:53:46	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	3A	07/14/2009 09:00	07/14/2009 08:32	07/14/2009 08:31:10	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	3A	07/14/2009 10:00	07/14/2009 09:29	07/14/2009 09:29:25	6.0	6.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	07/14/2009 11:00	07/14/2009 10:28	07/14/2009 10:27:59	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	07/14/2009 12:00	07/14/2009 11:27	07/14/2009 11:27:02	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	07/14/2009 13:00	07/14/2009 12:28	07/14/2009 12:27:32	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	07/14/2009 14:00	07/14/2009 13:32	07/14/2009 13:31:37	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	07/14/2009 15:00	07/14/2009 14:36	07/14/2009 14:36:10	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	07/14/2009 16:00	07/14/2009 15:33	07/14/2009 15:32:59	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	07/14/2009 17:00	07/14/2009 16:31	07/14/2009 16:30:42	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	07/14/2009 18:00	07/14/2009 17:35	07/14/2009 17:35:36	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	07/14/2009 19:00	07/14/2009 18:40	07/14/2009 18:39:53	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	07/14/2009 20:00	07/14/2009 19:33	07/14/2009 19:32:47	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	07/14/2009 21:00	07/14/2009 20:34	07/14/2009 20:34:29	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	07/14/2009 22:00	07/14/2009 21:31	07/14/2009 21:30:45	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	07/14/2009 23:00	07/14/2009 22:28	07/14/2009 22:28:18	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	07/15/2009 00:00	07/14/2009 23:30	07/14/2009 23:30:21	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	3A	07/15/2009 01:00	07/15/2009 00:32	07/15/2009 00:32:36	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	3A	07/15/2009 02:00	07/15/2009 01:27	07/15/2009 01:27:42	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	3A	07/15/2009 03:00	07/15/2009 02:37	07/15/2009 02:36:42	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	3A	07/15/2009 04:00	07/15/2009 03:34	07/15/2009 03:34:29	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	3A	07/15/2009 05:00	07/15/2009 04:27	07/15/2009 04:26:41	3.0	3.0	0.0	0	0
<a href="#">SUPERSEDED</a>	3A	07/15/2009 06:00	07/15/2009 05:26	07/15/2009 05:25:55	9.0	9.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	07/15/2009 07:00	07/15/2009 06:30	07/15/2009 06:29:28	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	07/15/2009 08:00	07/15/2009 07:28	07/15/2009 07:28:33	20.0	0.0	20.0	0	0
<a href="#">SUPERSEDED</a>	5A	07/15/2009 09:00	07/15/2009 08:27	07/15/2009 08:27:19	0.0	0.0	0.0	0	0
<a href="#">SUPERSEDED</a>	5A	07/15/2009 10:00	07/15/2009 09:27	07/15/2009 09:27:16	0.0	0.0	0.0	0	0
<a href="#">TERMINATED</a>	0	07/15/2009 09:50	07/15/2009 09:39	07/15/2009 09:39:19	0.0	0.0	0.0	0	0

08/04/2009 13:37:32 (CST)

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## Event Summary

FILE SAVED AS: SWPP\_15849\_20090714\_0755.htm

Incident:	SWPP_15849_20090714_0755	Date: 07/14/2009	Reliability Coordinator: SWPP
Initial Conditions:	Increased Flows		
Flowgate:	15849 - Temporary 14 - RCIPALAMASWI	Rating: 99	LODF: 20.38%
TLR Direction:	Normal		
Effective StartTime:	07/14/2009 07:55	Effective EndTime: 07/15/2009 09:50	TLR Duration: 25 Hours and 55 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												
Jul 14 07:54	TLR 3B	CURRENT	NONE								NONE			ED-2	SWPP	0.0	0.0	82	100	191	N/A	
		NEXT	NONE								NONE			ED-6	SWPP	0.0	0.0					
Jul 14 08:32	TLR 3A	NEXT	NONE								NONE			ED-2	SWPP	0.0	0.0	51	81	149	N/A	
Jul 14 09:29	TLR 3A	NEXT	NONE								NONE			ED-6	SWPP	0.0	0.0	50	80	150	N/A	
Jul 14 10:28	TLR 5A	NEXT	NONE								NONE			FIRM-7	SWPP	0.0	0.0	55	90	175	N/A	
Jul 14 11:27	TLR 5A	NEXT	NONE								NONE			FIRM-CREDIT	SWPP	0.0	0.0	52	83	154	N/A	
Jul 14 12:28	TLR 5A	NEXT	NONE								NONE			FIRM-CREDIT	SWPP	0.0	0.0	52	81	145	N/A	
Jul 14 13:32	TLR 5A	NEXT	NONE								NONE			FIRM-CREDIT	SWPP	0.0	0.0	53	84	155	N/A	

Jul 14 14:36	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	52	84	158	N/A
Jul 14 15:33	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	50	78	141	N/A
Jul 14 16:31	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	52	81	147	N/A
Jul 14 17:35	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	50	78	141	N/A
Jul 14 18:40	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	54	85	153	N/A
Jul 14 19:33	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	47	72	124	N/A
Jul 14 20:34	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	51	79	140	N/A
Jul 14 21:31	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	54	85	153	N/A
Jul 14 22:28	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	55	88	164	N/A
Jul 14 23:30	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	52	84	158	N/A
Jul 15 00:32	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 <b>0.0</b>	55	89	169	N/A

Jul 15 01:27	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 <b>0.0</b>	59	95	179	N/A
Jul 15 02:37	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 <b>0.0</b>	59	95	180	N/A
Jul 15 03:34	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 <b>0.0</b>	60	97	185	N/A
Jul 15 04:27	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 <b>0.0</b>	58	93	174	N/A
Jul 15 05:26	TLR 3A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 <b>Total</b>	SWPP SWPP SWPP	0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 <b>0.0</b>	52	82	149	N/A
Jul 15 06:30	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	46	71	126	N/A
Jul 15 07:28	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 20.0 0.0 <b>20.0</b>	0.0 0.0 20.0 0.0 <b>20.0</b>	49	77	142	N/A
Jul 15 08:27	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	48	77	143	N/A
Jul 15 09:27	TLR 5A	NEXT	NONE	NONE	ED-2 ED-6 FIRM-7 FIRM-CREDIT <b>Total</b>	SWPP SWPP SWPP SWPP	0.0 0.0 0.0 0.0 <b>0.0</b>	0.0 0.0 0.0 0.0 <b>0.0</b>	48	77	147	N/A
Jul 15 09:39	TLR 0	CURRENT	NONE	NONE	NONE				47	75	141	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
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</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	0.0	0.0
	FIRM-7	20.0	20.0
Total for SWPP		20.0	20.0
<b>Total</b>		<b>20.0</b>	<b>20.0</b>

	A	B	C	D
99	<b>Reliability Log for July, 14</b>			<b>2009</b>
100	Time	Initials	Comments	
110	0853	MRH	Issued TLR level 3B on Temp14 RCIPALAMASWI #15849.	
111	0931	MRH	Re-issued TLR level 3A on Temp14 RCIPALAMASWI #15849.	
112	1029	MRH	Re-issued TLR level 3A on Temp14 RCIPALAMASWI #15849.	
113	1127	MRH	Re-issued TLR level 5A on Temp14 RCIPALAMASWI #15849. FOR FEASIBILITY	
114	1227	MRH	Re-issued TLR level 5A on Temp14 RCIPALAMASWI #15849. FOR FEASIBILITY	
115	1327	MRH	Re-issued TLR level 5A on Temp14 RCIPALAMASWI #15849. FOR FEASIBILITY	
116	1431	MRH	Re-issued TLR level 5A on Temp14 RCIPALAMASWI #15849. FOR FEASIBILITY	
117	1536	MRH	Re-issued TLR level 5A on Temp14 RCIPALAMASWI #15849. FOR FEASIBILITY	
118	1632	MRH	Re-issued TLR level 5A on Temp14 RCIPALAMASWI #15849. FOR FEASIBILITY	
119	1730	MRH	Re-issued TLR level 5A on Temp14 RCIPALAMASWI #15849. FOR FEASIBILITY	
120	1835	RGH	Re-issued TLR level 5A on Temp14 RCIPALAMASWI #15849. FOR FEASIBILITY	
121	1939	RGH	Re-issued TLR level 5A on Temp14 RCIPALAMASWI #15849. FOR FEASIBILITY	
122	2032	RGH	Re-issued TLR level 5A on Temp14 RCIPALAMASWI #15849. FOR FEASIBILITY	
123	2134	RGH	Re-issued TLR level 5A on Temp14 RCIPALAMASWI #15849. FOR FEASIBILITY	
124	2230	RGH	Re-issued TLR level 5A on Temp14 RCIPALAMASWI #15849. FOR FEASIBILITY	
125	2328	RGH	Re-issued TLR level 5A on Temp14 RCIPALAMASWI #15849. FOR FEASIBILITY	
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128	<b>Reliability Log for July, 15</b>			<b>2009</b>
129	Time	Initials	Comments	
130	0030	RGH	Re-issued TLR level 5A on Temp14 RCIPALAMASWI #15849. FOR FEASIBILITY	
131	0132	RGH	Re-issued TLR level 3A on Temp14 RCIPALAMASWI #15849.	
132	0227	RGH	Re-issued TLR level 3A on Temp14 RCIPALAMASWI #15849.	
133	0336	RGH	Re-issued TLR level 3A on Temp14 RCIPALAMASWI #15849.	
134	0434	RGH	Re-issued TLR level 3A on Temp14 RCIPALAMASWI #15849.	
135	0526	RGH	Re-issued TLR level 3A on Temp14 RCIPALAMASWI #15849.	
136	0625	MRH	Re-issued TLR level 3A on Temp14 RCIPALAMASWI #15849.	
137	0729	MRH	Re-issued TLR level 5A on Temp14 RCIPALAMASWI #15849. FOR FEASIBILITY	
138	0828	MRH	Re-issued TLR level 5A on Temp14 RCIPALAMASWI #15849. FOR FEASIBILITY	
139	0927	MRH	Re-issued TLR level 5A on Temp14 RCIPALAMASWI #15849. FOR FEASIBILITY	
140	1027	MRH	Re-issued TLR level 5A on Temp14 RCIPALAMASWI #15849. FOR FEASIBILITY	
141	1039	MRH	Re-issued TLR level 0 on Temp14 RCIPALAMASWI #15849	
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