SPP TLR 5 Investigation Report
Temp 21 Flowgate 16216
(Welsh – Diana 345 kV Interface)
TLR Level 5: March 4, 2010
Report Issued: March 30, 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 16216 on March 4, 2010. Flowgate 16216 is an SPP flowgate created due to the planned maintenance outage of the Southwest Shreveport – Diana 345 kV line in conjunction with a forced outage of Pirkey generation. This flowgate actually monitors the #891 345/138 kV transformer at Diana. Coupled with the outage of the Southwest Shreveport line, an outage of the #890 345/138 kV transformer at Diana would isolate #891 on the two 345 kV circuits from Welsh Plant potentially overloading the transformer. The Level 5 TLR was in effect from 5:00 until 5:20 CST on March 4, 2010. Projected flows on the Welsh – Diana 345 kV interface exceeded the SOL.

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 460 MVA. Flow on the Welsh – Diana 345 kV interface was at 477 MVA. Shortly after the Level 5A TLR was issued, the East HVDC into ERCOT ramped in a 250 MW schedule out of the Eastern Interconnection into ERCOT. This coupled with a reduction in generation at Welsh Plant, reduced loading on the flowgate significantly. The TLR was then terminated.

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 3-5.

4. Transmission and generation outages or changes from prediction that may have contributed.
There were no unplanned outages that contributed to this TLR. The forced outage at Pirkey ended on February 19 but heavy loading into Diana from Welsh remained an issue.

5. Procedures implemented prior to hold/curtailment.
Non-firm transactions and market flows had been curtailed 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 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 6. 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.
SPP's outage coordination process identified potential for loading issues due to the outage of the Southwest Shreveport – Diana 345 kV line. The temporary flowgate was created in order to dispatch around the constraint via TLR to control the loading until Pirkey generation 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 7.

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 Southwest Shreveport – Diana 345 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 3-5.

TLR Event History

16216 - Temporary 21 Welsh - Diana interface

Status	TLR Level	TLR Date	TLR Confirm Time	Run Time	Requested Relief	Remaining Relief	Relief Provided	Total Cuts	
								Tags	MW
SUPERSEDED	3B	03/04/2010 01:15	03/04/2010 01:03	03/04/2010 01:02:56	40.0	15.6	24.4	2	17
SUPERSEDED	3A	03/04/2010 03:00	03/04/2010 02:29	03/04/2010 02:29:06	84.0	80.6	3.4	1	25
SUPERSEDED	3A	03/04/2010 04:00	03/04/2010 03:27	03/04/2010 03:27:29	99.0	95.5	3.5	3	36
SUPERSEDED	5A	03/04/2010 05:00	03/04/2010 04:29	03/04/2010 04:28:06	0.0	0.0	5.9	2	60
TERMINATED	0	03/04/2010 05:20	03/04/2010 05:06	03/04/2010 05:06:25	0.0	0.0	0.0	0	0

Event Summary

FILE SAVED AS: SWPP_16216_20100304_0115.htm

Incident:	SWPP_16216_20100304_0115	Date: 03/04/2010 (CST)	Reliability Coordinator: SWPP
Initial Conditions:	load increasing		
Flowgate:	16216 - Temporary 21 Welsh - Diana int...	Rating: 460	LODF: N/A
TLR Direction:	Normal		
Effective StartTime:	03/04/2010 01:15 (CST)	Effective EndTime: 03/04/2010 05:20 (CST)	TLR Duration: 4 Hours and 5 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											
Mar 04 01:03 (CST)	TLR 3B	CURRENT	1-NS 2-NH **Total**	1 / 0 1 / 0 **2 / 0**	10 7 **17**	1.0 0.4 **1.4**	10 7 **17**	1.0 0.4 **1.4**	0 0 **0**	0.0 0.0 **0.0**		NONE		ED-2 ED-6 FIRM-7 **Total**	SWPP SWPP SWPP	0.0 23.0 0.0 **23.0**	0.0 23.0 0.0 **23.0**	496	N/A	N/A	N/A
		NEXT	1-NS 2-NH **Total**	1 / 0 1 / 0 **2 / 0**	20 7 **17**	2.0 0.4 **2.4**	20 7 **27**	2.0 0.4 **2.4**	0 0 **0**	0.0 0.0 **0.0**		NONE		ED-2 ED-6 FIRM-7 **Total**	SWPP SWPP SWPP	0.0 31.0 1.0 **32.0**	0.0 31.0 1.0 **32.0**				
Mar 04 02:29 (CST)	TLR 3A	NEXT	1-NS **Total**	1 / 0 **1 / 0**	25 **25**	2.4 **2.4**	25 **25**	2.4 **2.4**	0 **0**	0.0 **0.0**		NONE		ED-2 ED-6 FIRM-7 **Total**	SWPP SWPP SWPP	0.0 1.0 0.0 **1.0**	0.0 1.0 0.0 **1.0**	460	N/A	N/A	N/A
Mar 04 03:27 (CST)	TLR 3A	NEXT	1-NS **Total**	2 / 0 **2 / 0**	35 **35**	3.4 **3.4**	35 **35**	3.4 **3.4**	0 **0**	0.0 **0.0**		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**	451	N/A	N/A	N/A
Mar 04 04:29 (CST)	TLR 5A	NEXT	1-NS 7-F **Total**	2 / 0 0 / 1 **2 / 1**	60 0 **60**	5.9 0.0 **5.9**	60 0 **60**	5.9 0.0 **5.9**	0 250 **250**	0.0 12.7 **12.7**		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**	477	N/A	N/A	N/A
Mar 04 05:06 (CST)	TLR 0	CURRENT	NONE									NONE		NONE				331	N/A	N/A	N/A

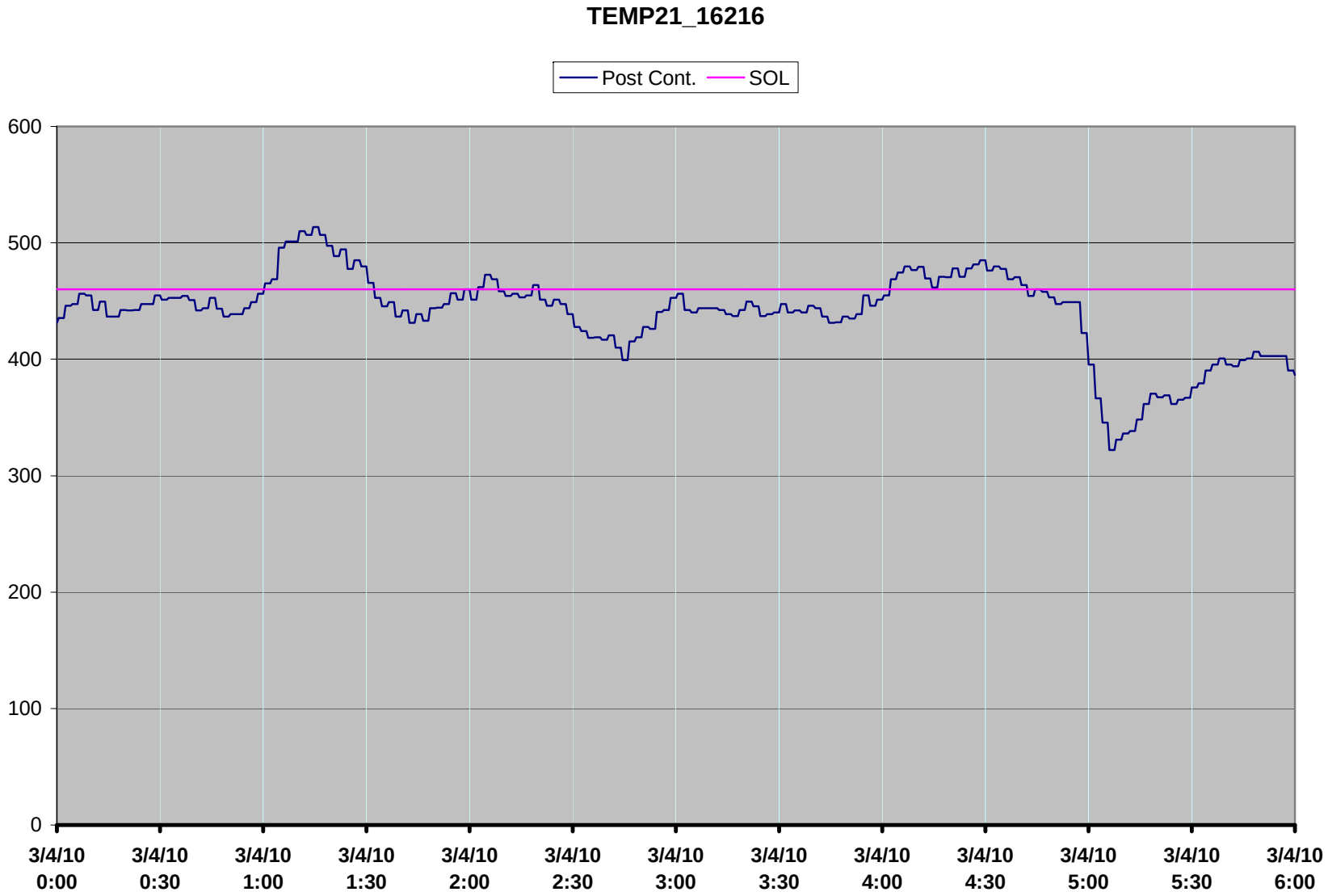
TLR Schedule Totals

Priority	Schedule			
	Total Tags Cut / Hold	IDC Cut MW	RC Cut Acknowledge MW	Hold MW
0	0	0	0	0
1	7	150	150	0
2	2	14	14	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	250
Total	**9**	**164**	**164**	**250**

TLR Market Flow Totals

Market	Type	Market Relief	
		IDC MW	RC Ackn MW
SWPP	ED-2	0.0	0.0
	ED-6	24.0	24.0
	FIRM-7	0.0	0.0
Total for SWPP		24.0	24.0
Total		**24.0**	**24.0**

	A	B	C	D	E
1			**Reliability Log for March, 4**	**2010**	
2	Time	Initials	Comments		
3	0102	WRG	Issued TLR Level 3B on Temp 21 flgt #16216		
4	0229	WRG	Issued TLR Level 3A on Temp 21 flgt #16216		
5	0327	WRG	Issued TLR Level 3A on Temp 21 flgt #16216		
6	0428	WRG	Issued TLR Level 5A on Temp 21 flgt #16216 Feasibility		
7	0506	WRG	Issued TLR Level 0 on Temp 21 flgt #16216 Feasibility		
8					
9					


TEMP21_16216
Post Cont.
SOL
600
500
400
300
200
100
0
3/4/10 0:00
3/4/10 0:30
3/4/10 1:00
3/4/10 1:30
3/4/10 2:00
3/4/10 2:30
3/4/10 3:00
3/4/10 3:30
3/4/10 4:00
3/4/10 4:30
3/4/10 5:00
3/4/10 5:30
3/4/10 6:00