

**SPP TLR 5 Investigation Report
Flowgate 6007
(Gentleman – Red Willow 345 kV)
(GENTLMREDWIL)
TLR Level 5: August 2, 2010
Report Issued: December 13, 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 6007 on August 2, 2010. Flowgate 6007 is an SPP flowgate. This flowgate is used to monitor and control voltage and loading on several facilities in the area. The Level 5 TLR was in effect from 00:00 until 00:05 CST on August 2, 2010. Projected flows on the Gentleman – Red Willow 345 kV line were expected to exceed the SOL.

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

The rating of this flowgate is determined by periodic review by NPPD depending upon current and anticipated system conditions. At the time the Level 5A TLR was issued, the Limiting Element was rated at 455 MVA. Flow on the Limiting Element was 413 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 3-7.

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 not enough non-firm transactions or market flows that impacted the flowgate by more than 5% to relieve the loading. 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 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 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. Reconfiguration is sometimes a viable companion to TLR on this flowgate. However, it was not available at the time of this TLR.

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 3-7.

Event History

Issuing RC: SWPP
Flowgate: 6007 - GENTLMN3 345 REDWILO3 345 1
Event Begin: 2010-08-01 20:53
Event End: 2010-08-02 11:08
Event Duration: 15 Hours

| TLR Level | TLR Date | TLR Confirm Time | Run Time | Requested Relief | Remaining Relief | Relief Provided | Total Cuts | |
|------------------------------|------------------|------------------|---------------------|------------------|------------------|-----------------|------------|----|
| | | | | | | | Tags | MW |
| TLR Level 3A | 08/01/2010 21:10 | 08/01/2010 20:53 | 08/01/2010 20:53:03 | 30.0 | 27.6 | 2.4 | 1 | 41 |
| TLR Level 3A | 08/01/2010 22:00 | 08/01/2010 21:35 | 08/01/2010 21:34:57 | 132.0 | 126.8 | 5.2 | 2 | 36 |
| TLR Level 3A | 08/01/2010 23:00 | 08/01/2010 22:27 | 08/01/2010 22:27:03 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| TLR Level 5A | 08/02/2010 00:00 | 08/01/2010 23:29 | 08/01/2010 23:28:59 | 0.0 | 0.0 | 3.0 | 0 | 0 |
| TLR Level 3A | 08/02/2010 00:05 | 08/01/2010 23:50 | 08/01/2010 23:49:54 | 133.0 | 122.0 | 11.0 | 0 | 0 |
| TLR Level 3A | 08/02/2010 01:00 | 08/02/2010 00:26 | 08/02/2010 00:25:43 | 122.0 | 119.0 | 3.0 | 0 | 0 |
| TLR Level 3A | 08/02/2010 02:00 | 08/02/2010 01:30 | 08/02/2010 01:29:38 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| TLR Level 3A | 08/02/2010 03:00 | 08/02/2010 02:34 | 08/02/2010 02:31:44 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| TLR Level 3A | 08/02/2010 04:00 | 08/02/2010 03:27 | 08/02/2010 03:27:06 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| TLR Level 3A | 08/02/2010 05:00 | 08/02/2010 04:26 | 08/02/2010 04:26:06 | 22.0 | 19.0 | 3.0 | 0 | 0 |
| TLR Level 3A | 08/02/2010 06:00 | 08/02/2010 05:26 | 08/02/2010 05:26:17 | 50.0 | 47.0 | 3.0 | 0 | 0 |
| TLR Level 3A | 08/02/2010 07:00 | 08/02/2010 06:26 | 08/02/2010 06:25:56 | 70.0 | 67.0 | 3.0 | 0 | 0 |
| TLR Level 3A | 08/02/2010 08:00 | 08/02/2010 07:27 | 08/02/2010 07:26:32 | 29.0 | 23.1 | 5.9 | 1 | 52 |
| TLR Level 3A | 08/02/2010 09:00 | 08/02/2010 08:30 | 08/02/2010 08:30:01 | 27.0 | 21.0 | 6.0 | 1 | 52 |
| TLR Level 3A | 08/02/2010 10:00 | 08/02/2010 09:27 | 08/02/2010 09:26:35 | 43.0 | 37.0 | 6.0 | 1 | 52 |
| TLR Level 3A | 08/02/2010 11:00 | 08/02/2010 10:27 | 08/02/2010 10:26:07 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| TLR Level 0 | 08/02/2010 11:20 | 08/02/2010 11:08 | 08/02/2010 11:07:36 | 0.0 | 0.0 | 0.0 | 0 | 0 |

Event Summary

FILE SAVED AS: SWPP_6007_20100801_2110.htm

Incident: SWPP_6007_20100801_2110

Date: 08/01/2010

Reliability Coordinator: SWPP

Initial Conditions: Increased Flows

Flowgate: 6007 - GENTLMN3 345 REDWILO3 345 1

Rating: 455

LODF: N/A

TLR Direction: Normal

Effective StartTime: 08/01/2010 21:10

Effective EndTime: 08/02/2010 11:20

TLR Duration: 14 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 | | | | | | | | | | | | |
| Aug 01 20:53 | TLR 3A | NEXT | 8-NN Total | 1 / 0 1 / 0 | 41 41 | 2.4 2.4 | 41 41 | 2.4 2.4 | 0 0 | 0.0 0.0 | NONE | ED-2 | MISO | 0.0 | 0.0 | 442 | N/A | N/A | N/A | | | |
| | | | | | | | | | | | ED-6 | MISO | 0.0 | 0.0 | | | | | | | | |
| | | | | | | | | | | | FIRM-7 | MISO | 0.0 | 0.0 | | | | | | | | |
| | | | | | | | | | | | | SWPP | 0.0 | 0.0 | | | | | | | | |
| | | | | | | | | | | | Total | | 0.0 | 0.0 | | | | | | | | |
| Aug 01 21:35 | TLR 3A | NEXT | 1-NS 8-NN Total | 1 / 0 1 / 0 2 / 0 | 11 25 36 | 0.8 1.8 2.2 | 11 25 36 | 0.8 1.8 2.2 | 0 0 0 | 0.0 0.0 0.0 | NONE | ED-2 | MISO | 0.0 | 0.0 | 432 | N/A | N/A | N/A | | | |
| | | | | | | | | | | | ED-6 | SWPP | 3.0 | 3.0 | | | | | | | | |
| | | | | | | | | | | | | MISO | 0.0 | 0.0 | | | | | | | | |
| | | | | | | | | | | | FIRM-7 | SWPP | 0.0 | 0.0 | | | | | | | | |
| | | | | | | | | | | | Total | | 3.0 | 3.0 | | | | | | | | |
| Aug 01 22:27 | TLR 3A | NEXT | | | | | | | | | NONE | ED-2 | MISO | 0.0 | 0.0 | 426 | N/A | N/A | N/A | | | |
| | | | | | | | | | | | | ED-6 | SWPP | 0.0 | 0.0 | | | | | | | |
| | | | | | | | | | | | | MISO | 0.0 | 0.0 | | | | | | | | |
| | | | | | | | | | | | FIRM-7 | SWPP | 0.0 | 0.0 | | | | | | | | |
| | | | | | | | | | | | Total | | 0.0 | 0.0 | | | | | | | | |
| Aug 01 23:29 | TLR 5A | NEXT | | | | | | | | | NONE | ED-2 | MISO | 0.0 | 0.0 | 413 | N/A | N/A | N/A | | | |
| | | | | | | | | | | | | ED-6 | SWPP | 3.0 | 3.0 | | | | | | | |
| | | | | | | | | | | | | MISO | 0.0 | 0.0 | | | | | | | | |
| | | | | | | | | | | | | SWPP | 0.0 | 0.0 | | | | | | | | |
| | | | | | | | | | | | FIRM-7 | MISO | 0.0 | 0.0 | | | | | | | | |
| | | | | | | | | | | | | SWPP | 0.0 | 0.0 | | | | | | | | |
| | | | | | | | | | | | FIRM-CREDIT | MISO | 0.0 | 0.0 | | | | | | | | |
| | | | | | | | | | | | Total | | 3.0 | 3.0 | | | | | | | | |

| | | | | | | | | | | | | |
|-----------------|--------|------|------|------|--------------|------|-------------|-------------|-----|-----|-----|-----|
| Aug 01 23:50 | TLR 3A | NEXT | NONE | NONE | ED-2 | MISO | 0.0 | 0.0 | 436 | N/A | N/A | N/A |
| | | | | | ED-6 | SWPP | 6.0 | 6.0 | | | | |
| | | | | | | MISO | 0.0 | 0.0 | | | | |
| | | | | | FIRM-7 | SWPP | 5.0 | 5.0 | | | | |
| | | | | | | MISO | 0.0 | 0.0 | | | | |
| | | | | | | SWPP | 0.0 | 0.0 | | | | |
| | | | | | Total | | 11.0 | 11.0 | | | | |
| Aug 02 00:26 | TLR 3A | NEXT | NONE | NONE | ED-2 | MISO | 0.0 | 0.0 | 421 | N/A | N/A | N/A |
| | | | | | ED-6 | SWPP | 3.0 | 3.0 | | | | |
| | | | | | | MISO | 0.0 | 0.0 | | | | |
| | | | | | FIRM-7 | SWPP | 0.0 | 0.0 | | | | |
| | | | | | | MISO | 0.0 | 0.0 | | | | |
| | | | | | | SWPP | 0.0 | 0.0 | | | | |
| | | | | | Total | | 3.0 | 3.0 | | | | |
| Aug 02 01:30 | TLR 3A | NEXT | NONE | NONE | ED-2 | MISO | 0.0 | 0.0 | 430 | N/A | N/A | N/A |
| | | | | | ED-6 | SWPP | 0.0 | 0.0 | | | | |
| | | | | | | MISO | 0.0 | 0.0 | | | | |
| | | | | | FIRM-7 | SWPP | 0.0 | 0.0 | | | | |
| | | | | | | MISO | 0.0 | 0.0 | | | | |
| | | | | | | SWPP | 0.0 | 0.0 | | | | |
| | | | | | Total | | 0.0 | 0.0 | | | | |
| Aug 02 02:34 | TLR 3A | NEXT | NONE | NONE | ED-2 | MISO | 0.0 | 0.0 | 423 | N/A | N/A | N/A |
| | | | | | ED-6 | SWPP | 0.0 | 0.0 | | | | |
| | | | | | | MISO | 0.0 | 0.0 | | | | |
| | | | | | FIRM-7 | SWPP | 0.0 | 0.0 | | | | |
| | | | | | | MISO | 0.0 | 0.0 | | | | |
| | | | | | | SWPP | 0.0 | 0.0 | | | | |
| | | | | | Total | | 0.0 | 0.0 | | | | |
| Aug 02 03:27 | TLR 3A | NEXT | NONE | NONE | ED-2 | MISO | 0.0 | 0.0 | 433 | N/A | N/A | N/A |
| | | | | | ED-6 | SWPP | 0.0 | 0.0 | | | | |
| | | | | | | MISO | 0.0 | 0.0 | | | | |
| | | | | | FIRM-7 | SWPP | 0.0 | 0.0 | | | | |
| | | | | | | MISO | 0.0 | 0.0 | | | | |
| | | | | | | SWPP | 0.0 | 0.0 | | | | |
| | | | | | Total | | 0.0 | 0.0 | | | | |
| Aug 02 04:28 | TLR 3A | NEXT | NONE | NONE | ED-2 | MISO | 0.0 | 0.0 | 436 | N/A | N/A | N/A |
| | | | | | ED-6 | SWPP | 3.0 | 3.0 | | | | |
| | | | | | | MISO | 0.0 | 0.0 | | | | |
| | | | | | FIRM-7 | SWPP | 0.0 | 0.0 | | | | |
| | | | | | | MISO | 0.0 | 0.0 | | | | |
| | | | | | | SWPP | 0.0 | 0.0 | | | | |
| | | | | | Total | | 3.0 | 3.0 | | | | |
| Aug 02 05:26 | TLR 3A | NEXT | NONE | NONE | ED-2 | MISO | 0.0 | 0.0 | 400 | N/A | N/A | N/A |
| | | | | | ED-6 | SWPP | 3.0 | 3.0 | | | | |
| | | | | | | MISO | 0.0 | 0.0 | | | | |
| | | | | | FIRM-7 | SWPP | 0.0 | 0.0 | | | | |
| | | | | | | MISO | 0.0 | 0.0 | | | | |
| | | | | | | SWPP | 0.0 | 0.0 | | | | |
| | | | | | Total | | 3.0 | 3.0 | | | | |
| Aug 02 06:26 | TLR 3A | NEXT | NONE | NONE | ED-2 | MISO | 0.0 | 0.0 | 399 | N/A | N/A | N/A |
| | | | | | ED-6 | SWPP | 3.0 | 3.0 | | | | |
| | | | | | | MISO | 0.0 | 0.0 | | | | |
| | | | | | FIRM-7 | SWPP | 0.0 | 0.0 | | | | |
| | | | | | | MISO | 0.0 | 0.0 | | | | |
| | | | | | | SWPP | 0.0 | 0.0 | | | | |
| | | | | | Total | | 3.0 | 3.0 | | | | |

| | | | | | | | | | | | | | | | | | | | |
|--------------|--------|---------|----------------------|-----------------------|-----------------|-------------------|-----------------|-------------------|---------------|-------------------|------|--|--|--|--|-----|-----|-----|-----|
| Aug 02 07:27 | TLR 3A | NEXT | 1-NS Total | 1 / 0 1 / 0 | 52 52 | 2.9 2.9 | 52 52 | 2.9 2.9 | 0 0 | 0.0 0.0 | NONE | ED-2 ED-6 FIRM-7 Total | MISO SWPP MISO SWPP MISO SWPP | 0.0 3.0 0.0 0.0 0.0 0.0 3.0 | 0.0 3.0 0.0 0.0 0.0 0.0 3.0 | 418 | N/A | N/A | N/A |
| Aug 02 08:30 | TLR 3A | NEXT | 1-NS Total | 1 / 0 1 / 0 | 52 52 | 3.0 3.0 | 52 52 | 3.0 3.0 | 0 0 | 0.0 0.0 | NONE | ED-2 ED-6 FIRM-7 Total | MISO SWPP MISO SWPP MISO SWPP | 0.0 3.0 0.0 0.0 0.0 0.0 3.0 | 0.0 3.0 0.0 0.0 0.0 0.0 3.0 | 380 | N/A | N/A | N/A |
| Aug 02 09:27 | TLR 3A | NEXT | 1-NS Total | 1 / 0 1 / 0 | 52 52 | 3.0 3.0 | 52 52 | 3.0 3.0 | 0 0 | 0.0 0.0 | NONE | ED-2 ED-6 FIRM-7 Total | MISO SWPP MISO SWPP MISO SWPP | 0.0 3.0 0.0 0.0 0.0 0.0 3.0 | 0.0 3.0 0.0 0.0 0.0 0.0 3.0 | 390 | N/A | N/A | N/A |
| Aug 02 10:27 | TLR 3A | NEXT | NONE | | | | | | | | NONE | ED-2 ED-6 FIRM-7 Total | MISO SWPP MISO SWPP MISO SWPP | 0.0 0.0 0.0 0.0 0.0 0.0 0.0 | 0.0 0.0 0.0 0.0 0.0 0.0 0.0 | 325 | N/A | N/A | N/A |
| Aug 02 11:08 | TLR 0 | CURRENT | NONE | | | | | | | | NONE | NONE | | | 281 | 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 | 4 | 167 | 167 | 0 |
| 2 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 |
| 6 | 2 | 66 | 66 | 0 |
| 7 | 0 | 0 | 0 | 0 |
| Total | 6 | 233 | 233 | 0 |

TLR Market Flow Totals

| Market | Type | Market Relief | |
|----------------|--------|---------------|-------------|
| | | IDC MW | RC Ackn MW |
| MISO | ED-2 | 0.0 | 0.0 |
| | ED-8 | 0.0 | 0.0 |
| | FIRM-7 | 0.0 | 0.0 |
| Total MISO | | 0.0 | 0.0 |
| SWPP | ED-2 | 33.0 | 33.0 |
| | ED-8 | 5.0 | 5.0 |
| | FIRM-7 | 0.0 | 0.0 |
| Total for SWPP | | 38.0 | 38.0 |
| Total | | 38.0 | 38.0 |

Reliability Log for August, 1**2010**

| Time | Initials | Comments | |
|------|----------|---|--|
| 2153 | MRH | Issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007, set effective limit at 425 due to loading. | |
| 2234 | MRH | Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007 | |
| 2327 | MRH | Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007 | |
| | | | |
| | | | |

Reliability Log for August,2**2010**

| Time | Initials | Comments | |
|------|----------|--|--|
| 0028 | MRH | Re-issued TLR Level 3A to a Level 5A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007. FEASIBILITY | |
| 0049 | MRH | Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007. | |
| 0125 | MRH | Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007. | |
| 0229 | MRH | Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007. | |
| 0331 | MRH | Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007. | |
| 0427 | MRH | Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007. | |
| 0526 | LRG | Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007. | |
| 0626 | LRG | Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007. | |
| 0725 | LRG | Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007. | |
| 0826 | LRG | Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007. | |
| 0930 | LRG | Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007. | |
| 1026 | LRG | Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007. | |
| 1126 | LRG | Re-issued TLR Level 3A on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007. | |
| 1207 | LRG | Re-issued TLR Level 0 on GENTLMN3 345 REDWILO3 345 1 Flgt. 6007. | |
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GENTLMREDWIL - 6007

