

**SPP TLR 5 Investigation Report**  
**Flowgate 5358**  
**(Anadarko – Cornville Tap 138 kV for loss of Southwestern Station – Norge 138 kV)**  
**(ANACORSWSNOR)**  
**TLR Level 5: December 24, 2009**  
**Report Issued: December 30, 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 5358 on December 24, 2009. Flowgate 5358 is an SPP flowgate. The Level 5 TLR was in effect from 19:00 until 22:00 CST on December 24, 2009.

**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 143 MVA. Flow on the Limiting Element was 106 MVA. Flow on the Contingent Element was 77 MVA. The LODF was approximately 29%. Post-contingent flow on the Limiting Element was approximately 128 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 3-5.

**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 impacting 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 flowgate loading.

**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.**

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 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 in the Anadarko, OK area. Due to a lack of available generation in the Joplin, MO area, generation at Anadarko was increased to relieve loading on the Neosho – Columbus 161 kV line for the loss of the Neosho – Delaware 345 kV line flowgate (16045). This generation increase at Anadarko also contributed to loading issues on the Anadarko – Cornville Tap 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 and non-firm Market Flow were reduced on the flowgate as reported in the TLR Event History and NERC TLR Log on pages 3-5.

## TLR Event History

### 5358 - ANACORSWSNOR

| Status                     | TLR Level | TLR Date (CST)   | TLR Confirm Time (CST) | Run Time (CST)      | Requested Relief | Remaining Relief | Relief Provided | Total Cuts |    |
|----------------------------|-----------|------------------|------------------------|---------------------|------------------|------------------|-----------------|------------|----|
|                            |           |                  |                        |                     |                  |                  |                 | Tags       | MW |
| <a href="#">SUPERSEDED</a> | 3B        | 12/24/2009 16:50 | 12/24/2009 16:39       | 12/24/2009 16:39:28 | 40.0             | 4.0              | 36.0            | 0          | 0  |
| <a href="#">SUPERSEDED</a> | 3A        | 12/24/2009 18:00 | 12/24/2009 17:27       | 12/24/2009 17:26:57 | 17.0             | 17.0             | 0.0             | 0          | 0  |
| <a href="#">SUPERSEDED</a> | 3A        | 12/24/2009 19:00 | 12/24/2009 18:27       | 12/24/2009 18:27:40 | 20.0             | 20.0             | 0.0             | 0          | 0  |
| <a href="#">SUPERSEDED</a> | 5A        | 12/24/2009 19:00 | 12/24/2009 18:40       | 12/24/2009 18:39:22 | 0.0              | 0.0              | 0.0             | 0          | 0  |
| <a href="#">SUPERSEDED</a> | 5A        | 12/24/2009 20:00 | 12/24/2009 19:26       | 12/24/2009 19:26:17 | 30.0             | 0.0              | 44.0            | 0          | 0  |
| <a href="#">SUPERSEDED</a> | 5A        | 12/24/2009 21:00 | 12/24/2009 20:29       | 12/24/2009 20:29:29 | 25.0             | 0.0              | 25.0            | 1          | 1  |
| <a href="#">SUPERSEDED</a> | 3A        | 12/24/2009 22:00 | 12/24/2009 21:31       | 12/24/2009 21:31:12 | 20.0             | 20.0             | 0.0             | 0          | 0  |
| <a href="#">SUPERSEDED</a> | 3A        | 12/24/2009 23:00 | 12/24/2009 22:28       | 12/24/2009 22:27:58 | 30.0             | 25.0             | 5.0             | 0          | 0  |
| <a href="#">SUPERSEDED</a> | 3A        | 12/25/2009 00:00 | 12/24/2009 23:26       | 12/24/2009 23:26:31 | 20.0             | 0.0              | 20.0            | 0          | 0  |
| <a href="#">TERMINATED</a> | 0         | 12/25/2009 00:30 | 12/25/2009 00:18       | 12/25/2009 00:17:47 | 0.0              | 0.0              | 0.0             | 0          | 0  |

12/30/2009 10:12:28 (CST)

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|                 |        |         |      |      |  |                      |                                   |                                   |     |     |    |     |
|-----------------|--------|---------|------|------|--|----------------------|-----------------------------------|-----------------------------------|-----|-----|----|-----|
| Dec 24<br>22:28 | TLR 3A | NEXT    | NONE | NONE | ED-2<br>ED-6<br>FIRM-7<br><b>Total</b> | SWPP<br>SWPP<br>SWPP | 0.0<br>5.0<br>0.0<br><b>5.0</b>   | 0.0<br>5.0<br>0.0<br><b>5.0</b>   | 111 | 139 | 99 | N/A |
| Dec 24<br>23:28 | TLR 3A | NEXT    | NONE | NONE | ED-2<br>ED-6<br>FIRM-7<br><b>Total</b> | SWPP<br>SWPP<br>SWPP | 0.0<br>20.0<br>0.0<br><b>20.0</b> | 0.0<br>20.0<br>0.0<br><b>20.0</b> | 78  | 97  | 88 | N/A |
| Dec 25<br>00:18 | TLR 0  | CURRENT | NONE | NONE | NONE                                   |                      |                                   |                                   | 69  | 87  | 63 | N/A |

### TLR Schedule Totals

| Priority     | Schedule                 |               |                             |            |
|--------------|--------------------------|---------------|-----------------------------|------------|
|              | Total Tags<br>Cut / Hold | IDC Cut<br>MW | RC Cut<br>Acknowledge<br>MW | Hold<br>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            | 1                        | 1             | 1                           | 0          |
| <b>Total</b> | <b>1</b>                 | <b>1</b>      | <b>1</b>                    | <b>0</b>   |

### TLR Market Flow Totals

| Market                | Type   | Market Relief |                  |
|-----------------------|--------|---------------|------------------|
|                       |        | IDC<br>MW     | RC<br>Ackn<br>MW |
| SWPP                  | ED-2   | 0.0           | 0.0              |
|                       | ED-6   | 98.0          | 98.0             |
|                       | FIRM-7 | 31.9          | 31.9             |
| <b>Total for SWPP</b> |        | <b>129.9</b>  | <b>129.9</b>     |
| <b>Total</b>          |        | <b>129.9</b>  | <b>129.9</b>     |

|    | A                                       | B        | C  | D           | E |
|----|---|----------|--|-------------|---|
| 1  | <b>Reliability Log for December, 24</b> |          |  | <b>2009</b> |   |
| 2  | Time                                    | Initials | Comments   | Thursday    |   |
| 3  | 1639                                    | WRG      | Issued TLR 3B on AnaCorSwsNor flgt# 5358                             |             |   |
| 4  | 1726                                    | WRG      | Issued TLR 3B on AnaCorSwsNor flgt# 5358                             |             |   |
| 5  | 1827                                    | MRH      | Re-issued TLR 3A on AnaCorSwsNor flgt# 5358                          |             |   |
| 6  | 1839                                    | MRH      | Re-issued TLR 5A on AnaCorSwsNor flgt# 5358. Loading and Feasibility |             |   |
| 7  | 1926                                    | MRH      | Re-issued TLR 5A on AnaCorSwsNor flgt# 5358. Loading and Feasibility |             |   |
| 8  | 2029                                    | MRH      | Re-issued TLR 5A on AnaCorSwsNor flgt# 5358. Loading and Feasibility |             |   |
| 9  | 2131                                    | MRH      | Re-issued TLR 3A on AnaCorSwsNor flgt# 5358.                         |             |   |
| 10 | 2227                                    | MRH      | Re-issued TLR 3A on AnaCorSwsNor flgt# 5358.                         |             |   |
| 11 | 2326                                    | MRH      | Re-issued TLR 3A on AnaCorSwsNor flgt# 5358.                         |             |   |
| 12 |   |          |  |             |   |
| 13 | <b>Reliability Log for December, 25</b> |          |  | <b>2009</b> |   |
| 14 | Time                                    | Initials | Comments   | Thursday    |   |
| 15 | 0017                                    | MRH      | Re-issued TLR 0 on AnaCorSwsNor flgt# 5358.                          |             |   |
| 16 |   |          |  |             |   |
| 17 |   |          |  |             |   |
| 18 |   |          |  |             |   |

# FLGT 5358 - 12/24/09

— Post Cont. — SOL

