

**MISO Investigation Report on the NERC TLR Level 5 Event  
Manitoba Hydro  
Flowgate 6100: MHEB\_SPC\_W Interface  
February 11, 2010**

Report submitted to NERC on: March 18, 2010

This report is submitted in accordance with the NERC Transmission Loading Relief (TLR) Investigation Procedure for the TLR events that occurred on Flowgate 6100 on February 11, 2010. This event resulted in curtailment of Firm transactions.

**1. Description of purpose/cause of hold/curtailment:**

The definition of flowgate 6100 is listed below.

Monitored Facilities: Ralls Island-E.B. Campbell 230kV line  
Reston-Auburnton 230kV line  
Roblin-Yorkton 230kV line

**2. Facility/Flow gate limitations and flow at the time the TLR was initiated:**

Midwest ISO, along with Manitoba Hydro had developed a special operating guide to provide guidance for operators to manage real time flow on the MHEB\_SPC\_W Interface.

On February 11, 2010, a TLR 5 was required to reduce the east-west flows across the MHEB\_SPC\_W Interface, flowgate 6100, due the Emergency outage of the Cornwallis-Reston 230kV line (C28R). The scheduling limit was reduced to zero, SOL 75MVA.

At 07:20 EST, MHEB requested a TLR to reduce scheduled flows on flowgate 6100.

At 07:28 EST, the MISO Reliability Coordinator issued a TLR-5A for across 08:00 EST on the flowgate.

At 22:52 EST, the MHEB C28R line was returned to service after the emergency outage.

At 23:27 EST, a TLR-0 was issued ending the TLR-5 event for the MHEB\_SPC\_W Interface FG 6100 for across 23:40 EST.

As the NERC IDC showed insufficient non-firm schedule curtailments to relieve schedules to the necessary levels, TLR 5 was issued for 16 continuous issuances

3. **TLR Level 5 issuance information, timing (EST), firm tag information obtained for flow gate #6100**

**February 11, 2010:**

<b>TLR LEVEL</b>	<b>TIME (EST)</b>	<b>Firm Transaction / Curtailment Information</b>	<b>NNL Reduction Requirement</b>
5A	08:00	2 tag of (7-F) = 65 MW schedules curtailed to provide 65 MW relief	none
5A	09:00	2 tag of (7-F) = 65 MW schedules curtailed to provide 65 MW relief	none
5A	10:00	2 tag of (7-F) = 65 MW schedules curtailed to provide 65 MW relief	none
5A	11:00	2 tag of (7-F) = 65 MW schedules curtailed to provide 65 MW relief	none
5A	12:00	2 tag of (7-F) = 65 MW schedules curtailed to provide 65 MW relief	none
5A	13:00	2 tag of (7-F) = 65 MW schedules curtailed to provide 65 MW relief	none
5A	14:00	2 tag of (7-F) = 65 MW schedules curtailed to provide 65 MW relief	none
5A	15:00	2 tag of (7-F) = 65 MW schedules curtailed to provide 65 MW relief	none
5A	16:00	2 tag of (7-F) = 65 MW schedules curtailed to provide 65 MW relief	none
5A	17:00	2 tag of (7-F) = 65 MW schedules curtailed to provide 65 MW relief	none
5A	18:00	2 tag of (7-F) = 65 MW schedules curtailed to provide 65 MW relief	none
5A	19:00	2 tag of (7-F) = 65 MW schedules curtailed to provide 65 MW relief	none
5A	20:00	2 tag of (7-F) = 65 MW schedules curtailed to provide 65 MW relief	none
5A	21:00	2 tag of (7-F) = 65 MW schedules curtailed to provide 65 MW relief	none
5A	22:00	2 tag of (7-F) = 65 MW schedules curtailed to provide 65 MW relief	none
5A	23:00	2 tag of (7-F) = 195 MW schedules curtailed to provide 195 MW relief	none
0	23:40	Curtailments reloaded	None

**NNL Mitigation:**

- There were no NNL obligations for this TLR 5.

**4. Transmission and generation outage or changes from prediction that may have contributed:**

**Significant Forced Transmission Outages:**

Cornwallis-Reston 230kV line (C28R)

**Significant Generator Outages:**

None

**System Condition Summary:**

This was over-scheduling of a defined Interface caused by an emergency outage of the Cornwallis-Reston 230kV line.

**5. Procedures implemented prior to hold/curtailment:**

The MH-SPC 1009/10 standing operating guide was used to determine scheduling and reliability limits for the MHEB\_SPC\_W Interface.

**6. Compare Complete Transaction Curtailment List with the Whole Transaction List as generated by the IDC, before and after curtailments:**

Firm transactions impacting the flow gate by 5% or greater were partially curtailed and reloaded.

**7. Known Transactions not in the IDC and actions taken:**

There were no known transactions not in the IDC at the time this TLR was in effect that were impacting this flow gate.

**8. RCIS or other system messages:**

Information was provided to NERC Reliability Coordinators via the NERC IDC. The IDC automatically sends TLR Level information to the RCIS. Curtailment information was communicated to the MISO control areas via the MISO MCN and ICCS messaging systems.

**9. State estimator snapshots and security analysis including contingency analysis or stability analysis along with any other recorded data indicating the need for TLR:**

This was over scheduling of a defined Interface caused by an emergency outage.

**10. ATC Limitations before, during, and after the event:**

None - This was over scheduling of a defined Interface caused by an emergency outage.

**11. Description of actions taken to avoid future hold/curtailments:**

None - This was over scheduling of a defined Interface caused by an emergency outage.

**12. Re-dispatch actions taken:**

There were no manual generation re-dispatch actions taken during this event.

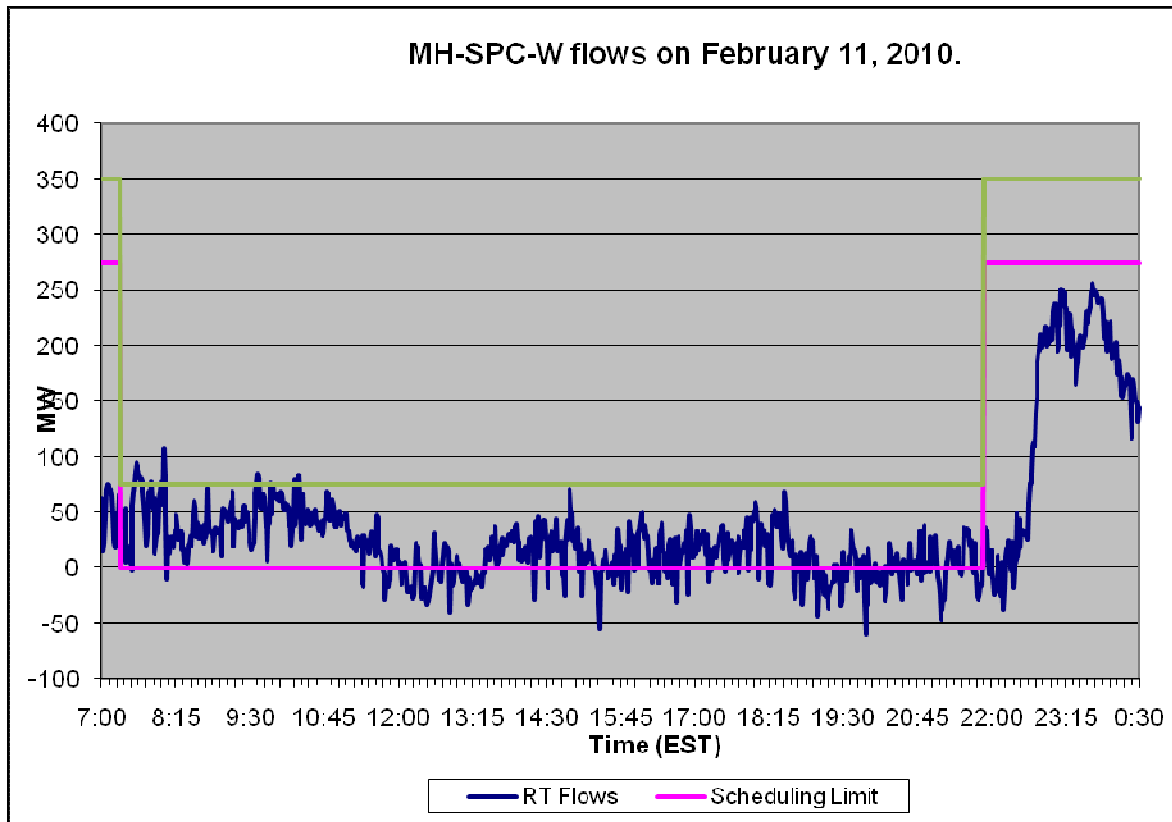
**13. If Firm transaction curtailments took place, description of Transactional Contribution Factor calculation and results as well as how necessary relief was obtained through network service and native load contributions:**

Firm schedules were curtailed as detailed in section 3 above.

**14. Other options considered before/during to avoid hold/curtailment:**

None, an over-scheduled interface event caused this TLR 5 event.

**15. The following chart identifies the flowgate loading for the TLR level 5 event:**



**16. Lessons Learned**

There was a standing operating guide in place to assist Operators with this interface which was followed by the MISO and MHEB Operators. This event was caused by an over-scheduling of the interface that resulted from an emergency outage in SPC.

MISO, SPC and MHEB will continue to work closely to maintain the standing operating guide and its procedures and train its personnel to handle such unforeseen events.