

MISO Investigation Report on the NERC TLR Level 5 Event
Manitoba Hydro
Flowgate 6100: MHEB_SPC_W Interface
April 12-13, 2010

Report submitted to NERC on: May 12, 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 April 12, 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 has developed a standing operating guide to provide guidance for operators to manage real time flow on the MHEB_SPC_W Interface.

On April 12, 2010, a TLR 5 was required to reduce the real-time west flows across the MHEB_SPC_W interface flowgate 6100 due to the forced outage of the Cornwallis-Reston 230kV line. MHEB request a new scheduling limit of 0MW and SOL = 75MW.

At 20:28 EST, MHEB informed MISO that they needed TLR the MHEB_SPC_W interface flowgate 6100 to curtail schedules west.

At 20:33 EST, MISO issued a TLR-3B for across 20:45 EST on the MHEB_SPC_W flowgate 6100 to reduce the real-time flows.

At 21:29 EST, MISO re-issued the TLR-3B as a TLR-3A for across 22:00 EST.

At 21:53 EST, MISO re-issued the TLR-3A as a TLR-5A for across 22:00 EST curtailing firm transactions on Flowgate 6100.

At 02:29 EST, MISO re-issued the TLR-5A as a TLR-3A for across 03:00 EST.

At 12:34 EST, MISO issued a TLR-0 for across 13:00 EST on flowgate 6100 thus ending the TLR.

As the NERC IDC showed insufficient non-firm schedule curtailments to relieve flows to the necessary levels, TLR-5 was issued for 5 continuous issuances over the duration of this event.

3. **TLR Level 5 issuance information, timing (EST), firm tag information obtained for flow gate #6100 April 12-13, 2010:**

TLR LEVEL	TIME (EST)	Firm Transaction / Curtailment Information	NNL Reduction Requirement
3B	20:45	No Firm Curtailments	None
3A	22:00	No Firm Curtailments	None
5A	22:00	2 tags of (7-F & 7-FN) = 76 MW schedules curtailed to provide 76 MW relief	None
5A	23:00	2 tags of (7-F & 7-FN) = 125 MW schedules curtailed to provide 125 MW relief	None
5A	00:00	2 tags of (7-F & 7-FN) = 125 MW schedules curtailed to provide 125 MW relief	None
5A	01:00	2 tags of (7-F & 7-FN) = 125 MW schedules curtailed to provide 125 MW relief	None
5A	02:00	2 tags of (7-F & 7-FN) = 125 MW schedules curtailed to provide 125 MW relief	None
3A	03:00	No Firm Curtailments	None
0	13:00	Terminated TLR	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:

Prairie-Winger 230kV
Cornwallis-Reston 230kV

Significant Generator Outages:

Coal Creek 2	550
King 1	611
Sherburne County 2	769
Laramie River 1	585
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	2515

System Condition Summary:

Forced outage on the Cornwallis-Reston 230kV line resulted in a lower limit on the MH-SPC interface.

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

None – this issue is covered by the Standing op-guide

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:

None – this issue is covered by the Standing op-guide

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

None – this issue is covered by the Standing op-guide

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

None – this issue is covered by the Standing op-guide

12. Re-dispatch actions taken:

None – this issue is covered by the Standing op-guide

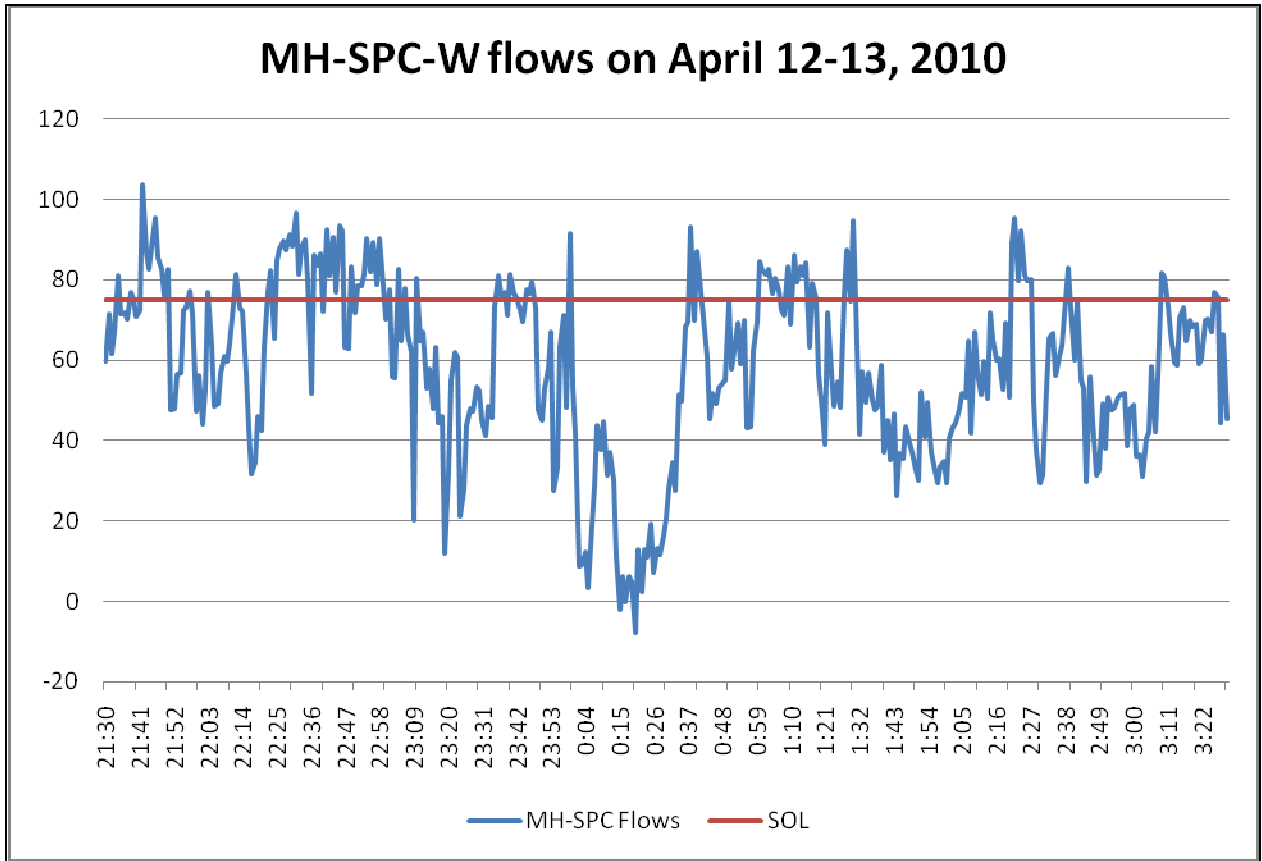
13. If Firm transaction curtailments took place, description of Transactional Contribution Factor calculation and results as well as how necessary relief was obtained through network service and native load contributions:

Firm schedules were curtailed as detailed in section 3 above.

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

None – this issue is covered by the Standing op-guide

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



16. Lessons Learned

The MHEB and MISO Operators reacted appropriately forced outage of the Cornwallis-Reston 230kV circuit of the MHEB_SPC_W Interface.

MHEB and MISO will continue to work closely to ensure the Interface limits are respected.