



PRR 148: Rationale for Need and Impact on Recent Declared Major Emergencies

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NYSRC Reliability Rules Subcommittee

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NYSERDA, 17 Columbia Circle, Albany, NY

Background

- **The NYISO is proposing this PRR to revise the requirement to appropriately declare a Major Emergency for limit exceedances that cannot be resolved by normal operating actions**
 - Normal Operating actions do not include voltage reduction or load shedding
- **The PRR does not preclude the ability of the NYISO to declare a Major Emergency, if believed necessary**
 - The revised Rule allows additional time for the operator to resolve certain exceedances through normal operating actions, through an Alert State declaration
 - A Major Emergency declaration will still be required under the revised Rule, if flows are over the limit for more than 15 minutes or exceed the limit by more than 5% for more than 10 minutes
- **Major Emergency declarations should be reserved for those power system conditions that may require corrective actions allowed in the Major Emergency state**

Real Time Operating Procedures

- **Transmission and Dispatching Operations Manual**
 - Section 2.1.1
 - The NYISO utilizes five Operating States
 - Normal
 - Warning
 - Alert
 - Major Emergency
 - Restoration
 - Section 2.1.2
 - It is the objective to operate the NYISO to operate the NYISO Controlled Transmission System within the Normal State.

Real Time Operating Procedures

■ Section 2 – Alert State

- Defines Alert State Criteria and provides actions to return to the Normal State
 - Up to but not including Voltage Reduction and Load Shedding

■ Section 3 – Major Emergency State

- Defines Major Emergency State Criteria and provides actions to return to the Normal State
 - Actions in a Major Emergency are “orders” vs requests
 - Allows Voltage Reduction and Load Shedding as corrective actions

Recent Major Emergencies Review

- **September 3, 2019 HQ-Cedars Exceedance**
 - Flow was ~80 MW over limit and ME was 8 minutes in duration
 - Corrective actions included initiating SAR and RPU, Re-dispatched Gilboa units and cut Cedars below limit
- **October 13, 2019 HQ-Cedars Exceedance**
 - Flow was ~60 MW over limit and ME was 3 minutes in duration
 - Corrective actions included directing resources to return to schedule
- **October 13, 2019 Northern Export Exceedance**
 - Flow was ~10 MW over limit and ME was 7 minutes in duration
 - Corrective actions included directing resources to return to schedule
- **November 9, 2019 Central East –VC Exceedance**
 - Flow was ~20 MW over limit and ME was 2 minutes in duration
 - Corrective actions included requesting ISO-NE reduce flows to scheduled amounts, moved Phase Angle Regulators to reduce flows, and placed a capacitor in service to increase the limit

Recent Major Emergencies Review

- **The PRR change would have resulted in Alert State declarations in place of the Major Emergencies.**
 - The MEs in question were small magnitude, short duration, limit exceedances that were resolved through normal operating actions available in the Alert State

Questions?

Appendix



Major Emergency Report

September 3, 2019 09:43

HQ-Cedars 105% Limit Exceedance

Jon Sawyer

Chief System Operator

System Operations Advisory Subcommittee

October 8, 2019
Conference Call

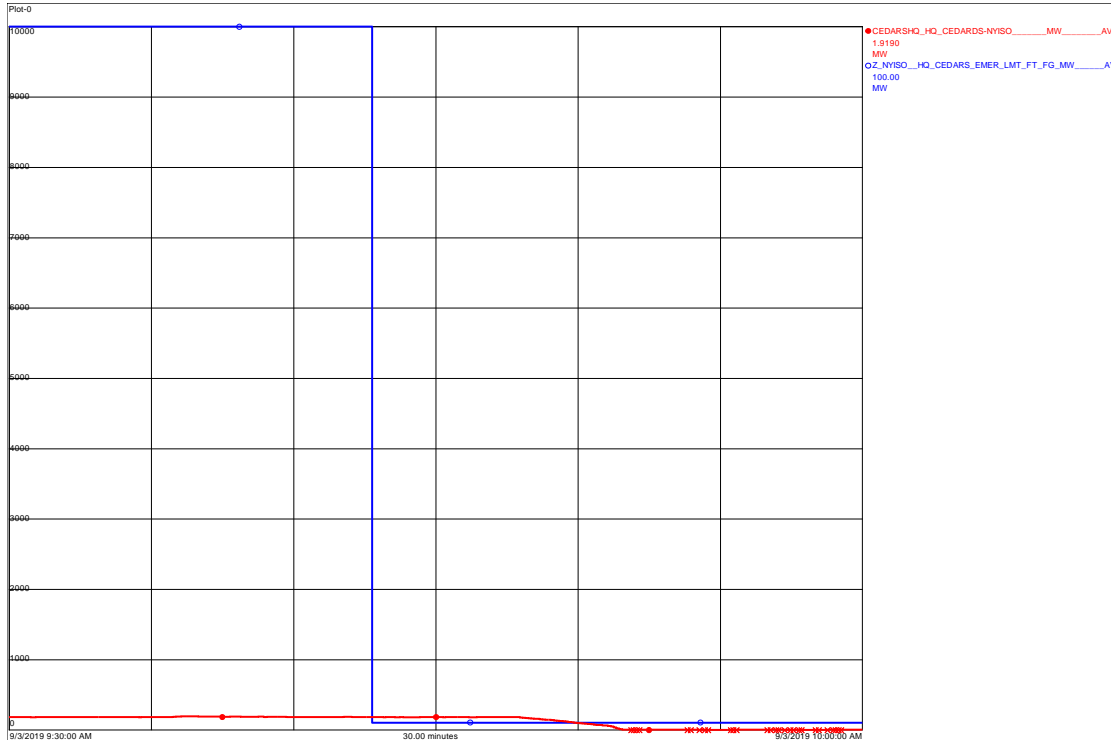
Event Description

- **At 09:43 on 09/03/2019**
 - A Major Emergency was declared by the NYISO Shift Supervisor when the power flow on HQ-Cedars exceeded the 105% Transient Stability Limit.
- **Cause**
 - Marcy 345 kV North Bus tripped, including the UCC2-41 Marcy-Coopers Corners, MSU1 Marcy-Massena, 7040 Massena-Chateaugay, Marcy Cap 1 and Marcy Statcom.
- **Corrective Action**
 - The NYISO Shift Supervisor Initiated SAR and RPU, Re-dispatched Gilboa units and cut Cedars below limit.
- **Load Relief was not required**
- **Major Emergency was terminated at 09:51**

Event Chronology

- **09:36**
 - Marcy 345 kV North Bus tripped, including the UCC2-41 Marcy-Coopers Corners, MSU1 Marcy-Massena, 7040 Massena-Chateaugay, Marcy Cap 1 and Marcy Statcom.
- **09:37**
 - SAR and RPU initiated.
- **09:43**
 - Major Emergency declared for exceeding 105% of the HQ-Cedars Transient Stability Limit.
- **09:44**
 - Adjusted Gilboa generation.
- **09:44**
 - Curtailed Cedars Contracts below limit.
- **09:51**
 - Major Emergency terminated

HQ-Cedars Interface Flow





Major Emergency Report

October 13, 2019 16:17

HQ-Cedars 105% Limit Exceedance

Jon Sawyer

Chief System Operator

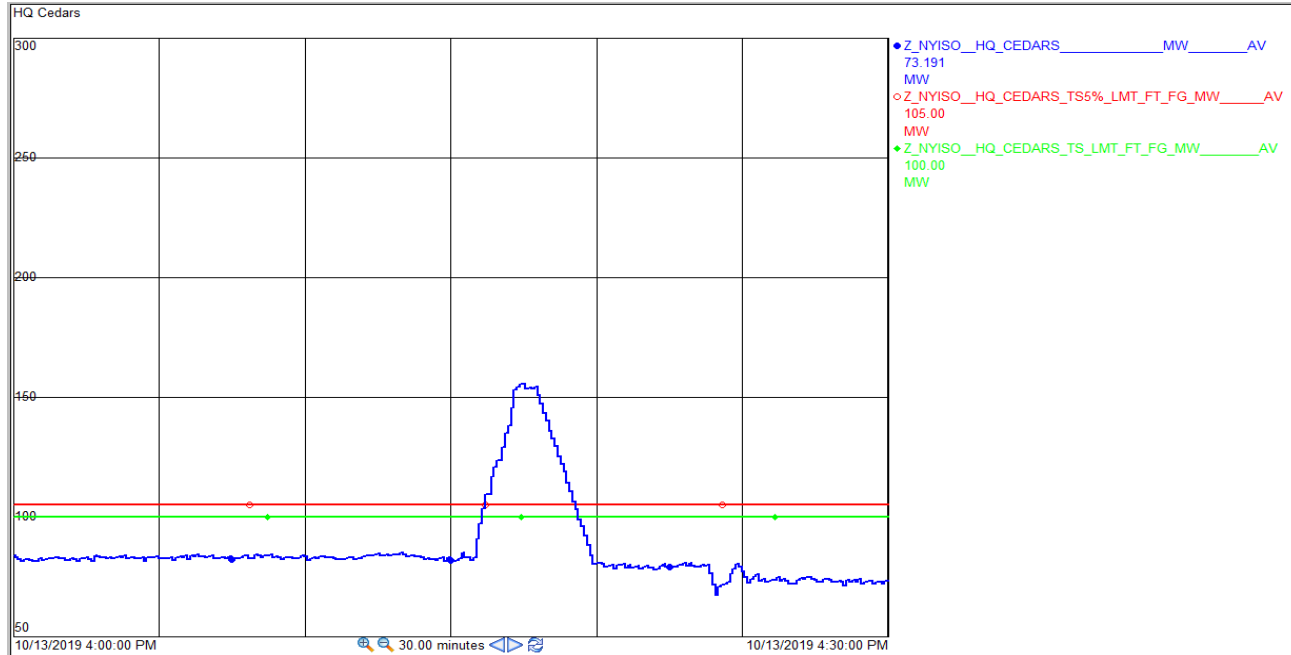
System Operations Advisory Subcommittee

November 4, 2019
Conference Call

Event Description

- **At 16:17 on 10/13/2019**
 - A Major Emergency was declared by the NYISO Shift Supervisor when the power flow on HQ-Cedars exceeded the 105% Transient Stability Limit.
- **Cause**
 - Resources producing above schedule
- **Corrective Action**
 - The NYISO Shift Supervisor directed resources to return to schedule to reduce HQ Cedars flow.
- **Load Relief was not required**
- **Major Emergency was terminated at 16:20**

HQ-Cedars Interface Flow





Major Emergency Report

October 13, 2019 23:59

Northern Export 105% Limit Exceedance

Jon Sawyer

Chief System Operator

System Operations Advisory Subcommittee

November 4, 2019
Conference Call

Event Description

- **At 23:59 on 10/13/2019**
 - A Major Emergency was declared by the NYISO Shift Supervisor when the power flow on Northern Export exceeded the 105% Transient Stability Limit.
- **Cause**
 - Resources producing above schedule
- **Corrective Action**
 - The NYISO Shift Supervisor directed resources to return to schedule to reduce Northern Export flow.
- **Load Relief was not required**
- **Major Emergency was terminated at 00:06 on 10/14/2019**

Northern Export Interface Flow





Major Emergency Report

November 7, 2019 00:04

Central East VC 105% Limit Exceedance

Jon Sawyer

Chief System Operator

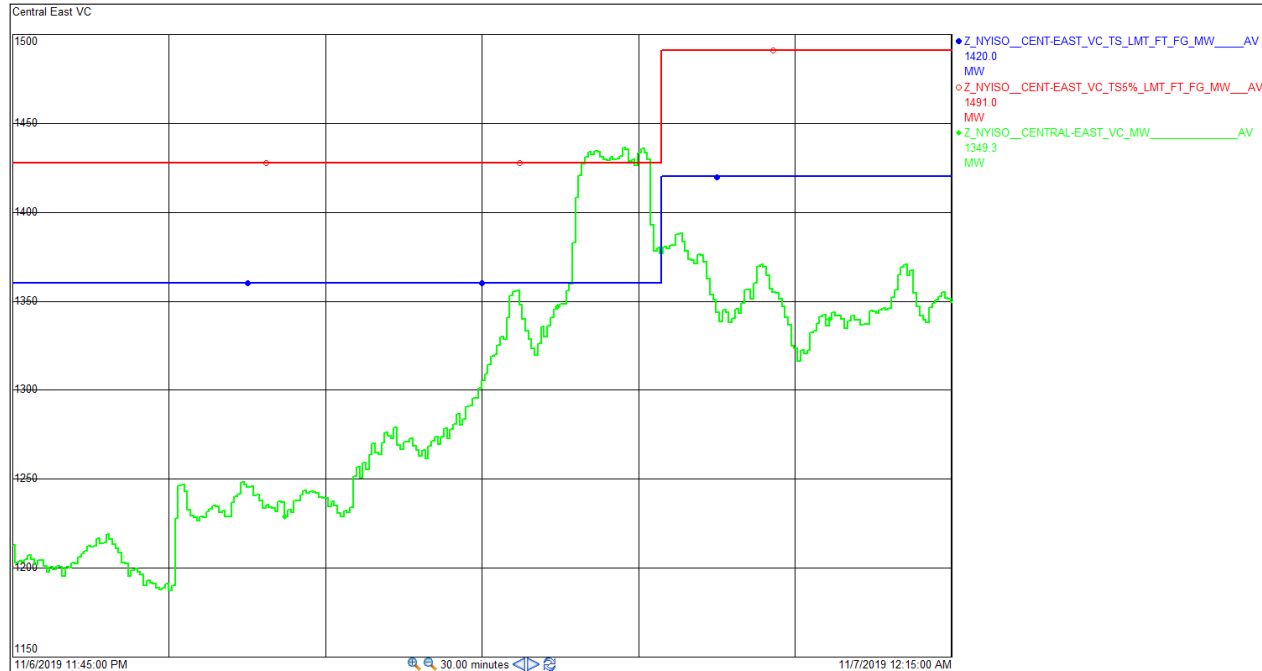
System Operations Advisory Subcommittee

December 5, 2019
Conference Call

Event Description

- **At 00:04 on 11/07/2019**
 - A Major Emergency was declared by the NYISO Shift Supervisor when the power flow on Central East VC exceeded the 105% Voltage Transfer Limit.
- **Cause**
 - Energy flows towards ISO-NE exceeded scheduled amounts
- **Corrective Action**
 - The NYISO Shift Supervisor requested ISO-NE reduce flows to scheduled amounts, moved Phase Angle Regulators to reduce flows, and placed a capacitor in service to increase the limit.
- **Load Relief was not required**
- **Major Emergency was terminated at 00:06 on 11/07/2019**

Central East VC Interface Flow



The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefits to consumers by:

- Maintaining and enhancing regional reliability
- Operating open, fair and competitive wholesale electricity markets
- Planning the power system for the future
- Providing factual information to policy makers, stakeholders and investors in the power system



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