Persistent Dragging

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NYISO Market Structures Working Group

Generation Issues Task Force Meeting

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Discussion Outline

- **Background**
- **Survey Objectives and Process Description**
- **Current Conditions Summary**
- **Recommendations**
  - *Short term (legacy)*
  - *Long term (SMD2)*

Background

- **Refer to 8/29/03 Generators Meeting Presentation on Persistent Dragging**
- **Primary Causes**
  - *Gen failure to respond to dispatch instructions*
  - *Gen failure to ramp at defined response rate*
- **Problem most severe during high load months**
- **ISO survey of generation to assess causes and inform potential solutions**

Survey Objectives and Process Description

- **Objectives**
  - *Focus on real-time plant operation and management issues.*
  - *Assess communications integrity*
  - *Understand operational considerations affecting generation response to ISO dispatch instructions*

Survey Objectives and Process Description

- **Survey Process**
  - *NYISO Staff visited 12 plants – majority on-dispatch units*
  - *Located in 7 TO operating areas*
  - *Utilized a common question template – (attached)*
  - *Interviewed plant managers and operators in the generator control rooms*
  - *Assessed actual real-time on-line communications integrity during visits*

Survey Results

- **No silver bullet discovered**
- **No systematic problem with ISO/TO/Gen plant telemetric controls process**
- **However, feedback indicates SMD (RTS) will provide a most helpful ingredient**
  - *Forecast advisory dispatch of each individual generators operating profile.*

Survey Results

- **Operators note that units are at times being dispatched in an apparently choppy manner**
  - *Is inconsistent with efficient plant operation*
  - *Difficult to manage plant operational constraints*
  - *Likely a SCD reaction to GT (block unit) starts and stops and/or sluggish ramping of steam.*
- **Potential exists for improvements in specification of ramp rates**
  - *Inclusion of multiple ramp rates*
  - *Adjustment of current rates to more consistently achievable levels*

Survey Results

- **Plant response is effected by operator consideration of:**
  - *Environmental performance requirements*
  - *Operating requirements affecting efficiency*
  - *Hold points to verify basepoint directional consistency*
    - Mill points and gun insertion points
    - Avoiding rough operating regions
  - *Inconsistency between fuel contract provisions and electric system demands.*

Recommendations
(Short Term – Legacy)

- **Ramp performance evaluation and adjustment to meet unit achieved performance**
  - *Daily dragging unit evaluation and response/rate update*
- **Necessity for units to communicate short term operational constraints (stopping points or operating issues) to the ISO**
  - *Units inform the TO*
  - *TO to inform the ISO*
  - *Units communicate release from the temporary condition*

Recommendations
(Long Term – SMD)

- **RTS forecast features will be the greatest benefit to plant operators**
  - *Provides information to proactively operate plants and follow basepoints*
  - *Need to ensure that owners setup access to the displays for the plant operators.*
- **RTD forward optimization horizon should improve the smoothness of the dispatch.**
  - *Need to monitor testing and initial operation to assess level of improvements in smoothing the 5 minute dispatch.*

Recommendations
(Long Term – SMD)

- **Other potential actions for further consideration:**
  - *Evaluate the 15-minute dispatch as an alternative for less responsive units*
  - *Enhanced modeling to include definition of forbidden zones for dispatch*
  - *Improve plant flexibility by grouping steam units (a la GTs) and providing desired net output*
  - *Examine opportunities to improve consistency between gas contracts and electric system market requirements*