



## NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL

Princeton Forrestal Village, 116-390 Village Boulevard, Princeton, New Jersey 08540-5731

July 1, 2003

Mr. Mark Fidrych  
Chairman, Operating Committee  
Power Operations Specialist  
Western Area Power Administration  
P.O. Box 3700  
Loveland, Colorado 80539-3003

Mr. Michael S. Grim  
Chairman, Market Committee  
Director – Markets and Regulation  
TXU Energy Trading Company, LLC  
1717 Main Street, Suite 20-197  
Dallas, Texas 75201

Dear Mark and Mike:

### **0600 and 2200 Frequency Excursion Issues**

The NERC Operating Committee charged the Resources Subcommittee (RS), Market Interface Practices Subcommittee (MIPS), Interchange Subcommittee (IS), and Interconnected Operations Services Subcommittee (IOSS) to review the 0600 and 2200 frequency excursion issues. The following discussion and recommendations are offered subsequent to that review.

All three Interconnections are experiencing marked changes in the frequency that occur on a regular basis at the start of the 0600 and 2200 CPT hours with the 2200 hour being of primary concern. Data and control area observations indicate that one strong contributing factor to the frequency decline seen at the 2200 hour is the abrupt ending of large amounts of discrete peak 16-hour block sales (precisely at the end of the hour), which overwhelms the ability of the replacement generation to compensate for the change. Other factors such as pumped storage hydro shifting from energy generation to energy consumption that are tied to the on-peak and off-peak transition further exacerbate the problem.

There is accumulating evidence that these rapid transaction ramps (or lack of ramps) are causing control areas in the Eastern and Western Interconnections to have poor CPS performance during these hours. Two control areas — one in the East and one in the West — have identified these large rapid ramping schedules as the cause of their failure of monthly CPS criteria. Current CPS metrics, considered to be long-term measures, do not fully capture the ramifications of the daily 0600 and 2200 frequency excursions. The fact that two control areas have failed a long-term metric because of this problem indicates the problem is occurring on a regular basis. The Western Interconnection has stated that the magnitude of the frequency excursions continues to increase, and has credited low interconnection frequency (symptomatic of the 2200 hour ramping dilemma) as contributing to the dropping of firm load due to under frequency following a unit trip.

The subcommittees jointly recommend that the NERC Operating Committee and Market Committee address these issues through consideration of ramping limits, the merits of establishing ramping standards (rules) for generators, potential demand side options, etc.

Further, the subcommittees recommend that the Operating Committee and the Market Committee work through the appropriate groups to address the practices that induce these abrupt transaction changes. Potential areas that need to be considered are:

- Schedule ramp and ramp rate discrepancies between NERC Operating Policies (agreeable source and sink ramp rates) and FERC transmission tariffs (start and stop transmission reservation at the top of the hour with no allowance for ramps).
- Control areas proactive authority to take actions to address the imbalance between pre-existing contracts and physical constraints of the system. These constraints are caused by mismatches between load (energy demand) and generation ramping practices and capabilities.
- The need for tools, standards, and metrics to allow control areas to limit the size of schedule ramps to the capability of its capacity to follow the ramps.
- Providing industry education to marketers, schedulers, operators, etc., to consider and assess the schedule impact (including ramps or lack of ramps) on grid operation when writing interconnection, scheduling, and regulation service commercial contracts.

Since several of these areas involve commercial issues, the subcommittees recommend the Market Committee take the lead to work with the NAESB WEQ to develop ramping limits, or equivalent rules, governing ramp duration within contracts. PJM and ISO-NE have different versions of ramping standards that may be used as models.

More details on the 2200 hour excursions can be found in the Frequency Excursion Task Force report located at [ftp://www.nerc.com/pub/sys/all\\_updl/oc/rs/FETF-Report\\_20020828.doc](ftp://www.nerc.com/pub/sys/all_updl/oc/rs/FETF-Report_20020828.doc)

Sincerely,

Resources Subcommittee  
Market Interface Practices Subcommittee

Interconnected Operations Services Subcommittee  
Interchange Subcommittee

cc: Technical Steering Committee