

Resources Subcommittee Meeting

January 31–February 2, 2007

Meeting Minutes

A regular meeting of the North American Electric Reliability Corporation's (NERC) Resources Subcommittee (RS) was held on January 31-February 1, 2007 in San Diego, California. The meeting announcement, agenda, and attendance list are attached as **Exhibits A, B, and C**, respectively. Individual statements and minority opinions are affixed as **Exhibits D and E**. There were none.

Subcommittee Chairman Terry Bilke presided. The secretary announced that a quorum was present.

Antitrust Compliance Guidelines

Secretary Vandervort acknowledged the NERC Antitrust Compliance Guidelines.

Minutes of the Previous Meeting

The subcommittee approved the November 15–17, 2006 meeting minutes.

Task Force Reports

Control Criteria Task Force — Chairman Alan Oneal

Performance Standard Reference Document

The Control Criteria Task Force (CCTF) Chairman Oneal presented the revised version of the Performance Standard Reference Document to the subcommittee. Mr. Oneal will: 1) incorporate the recommended edits; 2) distribute it to the subcommittee; 3) create individual documents for each performance measure contained within the Performance Standard Reference Document; and 4) develop with Raymond Vice a Balancing Authority ACE Limit (BAAL) reference document.

Frequency Task Force — Chairman Raymond Vice

BAL-005-1, Automatic Generation Control SAR

The Frequency Task Force is in the process of reviewing the standard authorization request industry comments. In addition, the task force will review the FERC Reliability Standards NOPR, and NERC's recommendations to address the NOPR. Chairman Vice will generate and distribute initial responses and a revised SAR to the subcommittee for review. The subcommittee objective is to promptly post the next version of the SAR for additional industry comments.

Balancing Authority ACE Limit Reference Document

Mr. Vice will work with Mr. Oneal to develop a Balancing Authority ACE Limit (BAAL) reference document.

Frequency Data Collection and Analysis Project

The Frequency Task Force will work with Carlos Martinez to thoroughly review the "Frequency Monitoring and Analysis" project technical specifications to move the project forward.

Frequency Response Sensitivity Analysis for ISO-NE Bias Calculations

Mike Potishnak performed an extensive analysis of the Independent System Operator-New England (ISO-NE) bias calculations and presented his results to the subcommittee. The analysis addressed the magnitude of squelched governor response, sampling bias, and governor deadbands. For further details contact Mr. Potishnak (contact information is located in the RS agenda).

Inadvertent Interchange Task Force — Chairman Don Badley

BAL-004-, Time Error Correction SAR

The Inadvertent Interchange Task Force is in the process of reviewing the SAR industry comments in order to revise the SAR for the next round of comments. In addition, the task force will review the FERC Reliability Standards NOPR, and NERC's recommendations to address the NOPR. SAR sponsor Bart McManus, Inadvertent Interchange Task Force Chairman Badley, and Secretary Vandervort will generate and distribute initial comment responses and a revised SAR to the subcommittee for review.

BAL-006-1, Inadvertent Interchange SAR

The Inadvertent Interchange Task Force has responded to the SAR industry comments and has revised the SAR for the next round of comments. The task force will review the FERC Reliability Standards NOPR, and NERC's recommendations to address the NOPR as part of the SAR revision.

Inadvertent Interchange Monitoring Application Field Test

Messrs Vandervort and Martinez reported that the Inadvertent Interchange Monitoring application field test ended and the field test participants expressed satisfaction with the application. The participants were mostly from the Western Interconnection with a couple of participating BAs from the Eastern Interconnection. The subcommittee expressed a concern that the Eastern and Western Interconnections may not be ready for a production version until:

- The NERC Inadvertent Interchange application performs its inadvertent interchange functions reliably and effectively, and will not fail.
- All Eastern Interconnections receive the software, install it, and are trained to use it.
- All Eastern Interconnections BA's information technology (IT) departments analyze and install the software (note: some BAs have more restrictive and time-consuming IT policies than others).
- The WECC Information Technology (WIT) interface is validated.

Operating Reserves Task Force — Chairman Larry Akens

BAL-002-0, Disturbance Control Standard SAR

The Operating Reserves Task Force (ORTF) Chairman Akens will generate a draft SAR to revise BAL-002-0, Disturbance Control Standard, including recommendations to address the FERC Reliability Standards NOPR, and NERC's recommendations to address the NOPR's BAL-002-0 requirements. The ORTF intends to revise BAL-002-0 to enhance the reliability requirements necessary to address the performance measures for the contingency response.

NERC Standards Review

The subcommittee agreed to devote the necessary time between meetings to work on subcommittee-sponsored SARs and to schedule monthly conference calls or face-to-face meetings to status the progress, request assistance, and determine any obstacles or road blocks that are impacting the progress of the SARs.

Frequency Response SAR

Terry Bilke reported that he added more detail to the Frequency Response SAR scope, responded to the comments, and submitted the Frequency Response SAR to the NERC standards manager to repost for another round of comments.

Balancing Standards BAL-002, 004, 005, and 006 Revision SARs

Refer to the task force summaries for the BAL-002, 004, 005, and 006 discussions, goals, and objectives.

BAL-001-0 through BAL-006-0 Reference Documents

Refer to the Control Criteria Task Force for Performance Standard Reference Document discussion, goals, and objectives. Reference documents for the BAL-002, 004, 005, 006 SARs will be identified during the standard drafting team process.

FERC RM06-16-000, Mandatory Reliability Standards for the Bulk-Power System NOPR

The FERC NOPR will be reviewed and given a high priority during the BAL-002, 004, 005, and 006 revision SARs development. The task forces will focus on three parameters: 1) What is needed for reliability, 2) Who is going to provide it, and 3) How is it measured?

Projects

The subcommittee agreed to devote the necessary time between meetings to work on subcommittee-sponsored projects and to schedule monthly conference calls or face-to-face meetings to status the progress, request assistance, and determine any obstacles or road blocks that are impacting the progress of the projects.

Real-Time Resource Adequacy (ACE-Frequency) Application, Project 2000-03

Real-time Resource Adequacy (ACE-Frequency) Application allow NERC Reliability Coordinators to immediately be alerted of electricity reliability threats originated by abnormal resource adequacy giving them time to work with out-of-compliance balancing authorities or other operational organizations to make operational corrections, thereby reducing the chances of unplanned blackouts.

ERCOT has agreed to submit data to be included in the ACE-Frequency application. Brian Nolan, NERC projects manager, will coordinate the necessary infrastructure, hardware, and software modifications to include ERCOT into the ACE-Frequency Monitoring application.

Action Required: The Resources Adequacy (ACE-Frequency) application release 4.0 is scheduled for distribution in the last week of March 2007. A letter will be sent to each BA with instructions on how to subscribe to the NERC Web-based application.

Reliability coordinators, balancing authorities, and transmission operators that are signatories to the NERC confidentiality agreement can subscribe to the Resources Adequacy (ACE-Frequency) application by contacting Tom Vandervort at tom.vandervort@nerc.net or Carlos Martinez at martinez@electricpowergroup.org.

CPS1 & BAAL Monitoring Application, Project 2001-38

This application is being used by NERC Balance Resources and Demand (BRD) standard drafting team and the BRD field test participating balancing authorities for BAAL alarming and performance analysis. The BRD standard drafting team has the lead to recommend changes to this application in anticipation of when the standards will be approved. The RS will work with the BRD standard drafting team as requested to ensure the production version of this application supports the approved BRD standards.

Action Required: Balance Resources and Demand standard drafting team to determine what changes are needed to transition this field test application to a production application.

AIE Monitoring Application, Project 2000-04

The AIE monitoring Application will initially be a balancing authority manual entry collection tool to identify balancing authorities that cause large or long-term frequency deviations, and help reliability coordinators and balancing authorities to assess the situation and recommend alternative actions. The application is intended to allow AIE surveys to be completed upon demand in a timely manner. BAs will submit the specified hourly data into an electronic Web-based data entry form. In the future, the RS hopes to automate the process to receive hourly data automatically to avoid the time delays associated with the manual entries.

Action Required: RS AIE Monitoring Application Team evaluation of the application

Inadvertent Interchange Application, Project 2001-37

This Inadvertent Interchange Application is the NERC replacement for the SPP Inadvertent Interchange tool.

The Inadvertent Interchange Monitoring application field test ended January 12, 2007 and the field test participants expressed satisfaction with the application. The participants were mostly from the Western Interconnection with a couple of participating BAs from the Eastern Interconnection.

The new NERC Inadvertent Interchange application is anticipated to be released on March 1, 2007. After this date the current SPP Inadvertent Interchange tool will only allow users to read the historical data (the data entry capabilities will be turned off).

Action Required: The NERC program registry and application/tools subscription requirements must be specified and the balancing authorities must submit their subscription data. This is a critical component to all NERC-CERTS applications.

Intelligent Alarms

The ORS requested the RS to be more responsive to frequency events that the reliability coordinators (RCs) identify as meeting the frequency actions guidelines. The RS's response is to be more responsive and to improve the RCs-RS communications process. The RS authorized an ACE-Frequency application change of scope that implemented "intelligent alarms" that depict the frequency profile for events that meet predetermined criteria, and identify the balancing authorities that support or hurt frequency. The RS believes this additional tool helps the RCs address and correct future frequency events.

The Resources Subcommittee ACE-Frequency Intelligent Alarms (IAs) became operational on December 13, 2006; the field test ended on January 15, 2007; and the final production IAs started on January 22, 2007. The IAs have been well received by the reliability coordinators, balancing authorities, and transmission operators.

Action Required: Reliability coordinators, balancing authorities, and transmission operators that are signatories to the NERC confidentiality agreement can subscribe to the Intelligent Alarms by contacting Tom Vandervort at tom.vandervort@nerc.net or Carlos Martinez at martinez@electricpowergroup.org.

Performance Monitoring

CPS1 Review

The subcommittee reviewed and discussed the monthly and 12-month rolling average CPS1 reports.

The NERC compliance program determines CPS1 violations, penalties, and monitors corrective actions. The RS reviews the CPS1 report for performance analysis purposes. The subcommittee reviews the data to identify generic problems, inform subcommittee regional representatives when balancing authorities' scores are close to violation, and to assess why balancing authorities have scores below or near the acceptable 100% score.

CPS2 Review

The Resources Subcommittee reviewed and discussed the monthly CPS2 reports.

The NERC compliance program determines CPS2 violations, penalties, and monitors corrective actions. The Resources Subcommittee reviews the CPS2 report for performance analysis purposes. The subcommittee reviews the data to identify generic problems, inform subcommittee regional representatives when balancing authorities' scores are close to violation, and to assess why balancing authorities have scores below or near the acceptable 90% score.

Time Error Corrections

The following interconnection time error corrections from January 1, 2006 were reported:

2006	Fast TEC	Slow TEC	Total TEC
Eastern Interconnection, January–December	140	6	146
Western Interconnection, January–December	69	31	100
ERCOT, January-December	34	8	42
Hydro-Québec (see details below)			

Hydro-Québec: At the last meeting, the subcommittee asked Mike Potishnak to work with Hydro-Québec to summarize and document the occurrences of time error corrections. Mr. Potishnak responded to the subcommittee with an explanation that Hydro-Québec does not have a time error correction practice that uses explicit scheduled frequencies that differ from 60 Hz. The scheduled frequency is always 60 Hz. However, a permissive strategy is used to conditionally offset the area control error by up to 50 MW. In this control strategy, if the normal variations of generation/ load mismatch results in high frequency while the time error is negative, up to 50 MW less of lower control signals are sent, leaving the frequency a

little high so the clocks can catch up. Conversely, if the frequency ends up low through normal variations while the time error is positive, up to 50 MW less of raise control signals are sent, leaving the frequency a little low so the clocks will slow down.

Mr. Potishnak also described the monthly time error report that Hydro-Quebec intends to provide to the NERC RS. The subcommittee agreed to accept this report and may offer suggested enhancements.

Resources Subcommittee Action Item List

The subcommittee reviewed and updated the action item list, which is affixed as **Exhibit G**.

Dates and Locations of Future Meetings

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|------------------------|-----------------|
| 1. April 25–26, 2007 | Denver, CO |
| 2. July 18–19, 2007 | Calgary, Canada |
| 3. October 24–25, 2007 | Portland, OR |

Respectfully submitted,

Tom Vandervort

Thomas J. Vandervort
Resources Subcommittee Secretary