

Minutes Resources Subcommittee

January 28–29, 2009
SEMPRA Generation Office
San Diego, California

A meeting of the North American Electric Reliability Corporation (NERC) Resources Subcommittee (RS) was held on January 28–29, 2009 at the SEMPRA Generation Offices 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 are 3 individual statements and no minority opinions.

Resources Subcommittee Chair Terry Bilke presided and a quorum was present.

Resources Subcommittee Appreciation for Meeting Host SEMPRA Generation

The Resources Subcommittee acknowledges and appreciates the hospitality that SEMPRA Generation and specifically Leesa Nayudu provided to the subcommittee as it hosted the RS meeting at their facility.

Antitrust Compliance Guidelines

Secretary Vandervort acknowledged the NERC Antitrust Compliance Guidelines.

October 28–29, 2008 RS Meeting Minutes

The subcommittee approved the October 28–29, 2008 RS minutes.

Working Group Reports

Control Criteria Working Group — Chair (Vacant)

The Resources Subcommittee noted that the Control Criteria Working Group was retired during the October, 2008 meeting. The Control Criteria Working Group will not be addressed in future agendas or minutes.

Frequency Working Group — Chair Raymond Vice

The Frequency Working Group did not have a report for this meeting.

Inadvertent Interchange Working Group — Chair Don Badley

The Inadvertent Interchange Working Group did not have a report for this meeting.

Operating Reserves Working Group — Chair Larry Akens

The Operating Reserves Working Group did not have a report for this meeting.

NERC Reliability Standards

Numerous RS members are on the listed standard drafting teams. These standards began as RS-sponsored standard authorization requests (SARs). Each standard drafting team is developing new or revising existing standard(s), and will post all the documents for industry comment. The goal for each standard drafting team is to make significant progress towards the next comment posting or standard ballot.

The Frequency Response SDT, the Reliability-based Control SDT, and the Balancing Authority Control SDT are addressing related “balancing (BAL)” standards subject matter. The three SDTs need to coordinate their efforts to reduce duplication, redundancy and overlap, and to ensure all issues, concerns, and requirements are addressed.

RS Chair Bilke requested all SDTs to revise existing NERC Operating Manual reference documents and to create new documents to reflect the technical aspects of their new or revised standards. Mr. Bilke also requested the SDTs prepare specific chapters or sections to the Performance Standard Reference Document and to the Reliability Concepts Document’s “Balancing” chapter that describe, define, instruct, and explain their particular standard requirements, measures, calculations, and to inject background information. Mr. Bilke also requested that the SDTs review and address the FERC Order 693 directives to ensure the directives are considered and addressed.

Frequency Response SDT — Chair Bill Herbsleb

The Frequency Response Standard Drafting Team (FRSDT) continues to look at frequency response calculations. The FRSDT is evaluating its SAR and standards drafting team scope. A change of scope may be required to address additional BAL-002, Disturbance Control Standard, “Bias,” “Variable Bias,” and “Frequency Response-related-to-Bias” work. The FRSDT and the RBCSDT are discussing the possibility of the FRSDT taking the lead on revising the BAL-002 standard. The FRSDT is considering how to incorporate clarification into the standards regarding frequency response versus Bias. The Standards Committee will be consulted to ensure the Bias calculation falls within the FRSDT scope.

Reliability-based Control SDT — Chair Doug Hils

Doug Hils, Reliability-based Control Standard Drafting Team (RBCSDT) chair, gave a status report on the RBCSDT field trials and progress being made on the draft standards. Future RBCSDT meetings will coincide with the RS meetings through 2009 and 2010. Mr. Hils reported that the RBCSDT will validate proposed calculations and assumptions proposed by the drafting team. November, 2008 reflected the lowest number of field trial, frequency trigger limit (FTL) events since the field trials began. There were no definite reasons why November was so good. The RBCSDT is in correspondence with WECC to bring the Western Interconnection balancing authorities into the field trials. WECC philosophy is to have all or none of the balancing authorities participate in the field trials.

Balancing Authority Control SDT (BAL-002, 004, 005, 006 Revisions) — Chair Larry Akens

As a reference the standards under development and their applicable subject matter are:

BAL-002	Disturbance Control Standard (DCS)
BAL-004	Time Error Correction (TEC)
BAL-005	Automatic Generator Control (AGC)
BAL-006	Inadvertent Interchange

Mr. Akens noted that the Balancing Authority Control standard drafting team (BACSDT) is working with the North American Energy Standards Board (NAESB) to address the NERC BAL-004 Time Error Correction and BAL-006 Inadvertent Interchange reliability standards in coordination with the NAESB TEC and Inadvertent Interchange Payback business practice standards. A significant issue is whether or not TEC can be eliminated. The BACSDT will conduct a field trial in the Eastern Interconnection to limit TEC, and a field trial in the ERCOT Interconnection to eliminate TEC. The BACSDT is making progress revising all four standards.

Regarding inadvertent interchange, there is a concern by team members that there may be sanctions against balancing authorities that have large inadvertent interchange balances. Balancing authorities may be performing positive actions to correct frequency error and yet increase their inadvertent interchange balances and have sanctions imposed against them. FERC Order 693 was concerned with the inadvertent interchange balances and the Order did not seem to care if the creation of the inadvertent interchange was due to helping or hurting the respective interconnection frequency.

Performance Standard Reference Document — Chair (Vacant)

The Performance Standard Referenced Document (PSRD) is available and posted on the RS “Related Files” Web site. The NERC Operating Committee requested the RS review the PSRD to ensure there are no “shall” requirements within the PSRD and to revise the document into a “guide.” John Swez volunteered to review the PSRD for “shall” statements and to revise the document into a draft “guide.”

NAESB Time and Inadvertent Interchange Management Business Practice Standards

Chair Bilke informed the RS that the NAESB “Time and Inadvertent Interchange Management” new proposals are to be field tested in the near future. Since “time error correction and inadvertent interchange” affect both NERC Reliability Standards and NAESB business practice standards, a coordinated field test is a necessity. Other features of the NAESB Time and Inadvertent Interchange Management effort include:

- Include the inadvertent interchange “financial settlement” option
- TEC 10 mHz instead of 20 mHz payback offset
- Widen the TEC window to allow all-day-long payback
- Increase the TEC trigger limit in the Eastern Interconnection to 30 seconds

Mr. Bilke encouraged all RS members to participate in the NAESB business practice standard development because of the RS members’ expertise in the subject matter.

BAL Standards Reliability Standards Audit Worksheets (BAL RSAWs)

The RS is the subcommittee custodian of the “BAL” standards and is heavily involved through its member participation in the “balancing” SDTs activities. The RS has action items to review the current reliability standard audit worksheet (RSAW) for each BAL standard that are in their respective area of expertise and recommend enhancements to the NERC Compliance Program to improve the RSAW audits. The reviews are in progress. The assignments are as follows:

BAL-001	Frequency Response Standard Drafting Team	Bill Herbsleb
BAL-002	Reserves Working Group Larry	Akens
BAL-003	Frequency Response Standard Drafting Team	Bill Herbsleb

BAL-004	Inadvertent Interchange Working Group	Don Badley
BAL-005	Frequency Working Group Raym	ond Vice
BAL-006	Inadvertent Interchange Working Group	Don Badley

NERC Active Resources Subcommittee Applications

Consortium for Electric Reliability Technology Solutions (CERTS) project manager Carlos Martinez presented a status of the NERC RS applications, see **Exhibit F**.

Resource Adequacy Application

Resource Adequacy application Release 6.0 will include 2009 jurisdictional boundary changes, 2009 interconnections and balancing authority constants, corrections to performance report problems. Release 6.0 is waiting for the NERC official CPS2 Bounds Report, and the new NERC-MISO physical boundaries and data mapping.

Inadvertent Interchange Application

Bill Herbsleb and Mr. Martinez have been successfully resolving inadvertent interchange mismatches in the Eastern Interconnection. The focus is to complete the historical inadvertent interchange accounts.

Inadvertent Interchange application Release 3.0 will include two WECC Change of Scope enhancements for functional improvements and for computer-to-computer data transfers. CERTS is waiting for NERC to transfer the application to its production servers.

AIE Monitoring Application

Area Interchange Error Monitoring application Release 1.0 is waiting on the completion of the field trials / field tests that will verify the Eastern Interconnection and Western Interconnection AIE surveys.

Area Interchange Error Monitoring application Release 1.0 will include computer-to-computer data transfers that are being incorporated with the Inadvertent Interchange application Change of Scope enhancements.

The RS called an area interchange error (AIE) survey in the Eastern Interconnection for May 12, 2007 and June 17, 2007. The AIE survey data was submitted electronically utilizing the AIE Monitoring application. All Eastern Interconnection balancing authorities have entered their data for the three surveys requested. Balancing authorities currently have mismatched data that needs to be resolved before conclusions and recommendations can be made.

Eastern Interconnection: RS Chair Bilke authorized the balancing authorities in the Eastern Interconnection to enter its AIE survey data into an automated electronic AIE Data Entry Web site for the following hours:

Date	Hour Ending (CDT)	Frequency Error
5/12/2007	0200	+0.030 Hz
5/12/2007	0600	+0.033 Hz
6/17/2007	0600	+0.030 Hz

CERTS is assisting the balancing authorities to address the mismatched data and when necessary to re-enter their survey data.

Western Interconnection: NERC authorized the balancing authorities in the Western Interconnection to submit its AIE survey data to WECC staff which entered the data into the automated electronic AIE Data Entry Web site.

Date	Hour Ending (CDT)	Frequency Error
5/18/2008	0300	-0.0253 Hz
5/18/2008	0400	-0.0236 Hz
6/18/2008	0500	-0.0264 Hz

WECC staff is collecting the AIE survey data, entering the data into the electronic AIE web site, and addressing mismatched AIE survey data.

The RS will then perform the following:

Action

1. The Eastern Interconnection RS members and the RS Survey Contacts need to ensure Eastern Interconnection balancing authorities for the three AIE Survey hours are balanced. Mismatches need to be addressed and resolved.
2. WECC staff needs to ensure the Western Interconnection balancing authorities for the three AIE Survey hours are balanced.
3. The RS needs to analyze both AIE Surveys and draw conclusions.
4. The RS needs to evaluate the electronic AIE Survey application and plan to use the application as is or propose enhancements (automated data transfer, make it more user friendly, a methodology to speed up the balancing process, etc.).

Frequency Monitoring and Analysis Application

Frequency Monitoring and Analysis (FMA) application field trial was completed in November, 2008. The FMA Release 1.0 will be released in February, 2009. FMA Release 2.0 which will include Virginia Tech phasor data integration is anticipated to be released in late 2009. for field trial on October 10, 2008 to the RS Frequency Working Group, with the field trial to last until November 30, 2008. CERTS will use the field trial comments and feedback to update the FMA application and the online users guide.

Intelligent Alarms Application

There were numerous inquiries about the effectiveness and accuracy of the Intelligent Alarms application over the past few months. A CERTS analysis proved that the application was operating and functioning as it was designed. There simply was a reduced number of alarms over the last several months. The monthly duration statistics graph confirm FTL and Long Term alarms had a different pattern over the last few months than had previously been exhibited.

NERC Benchmarking Activity

On behalf of the NERC Benchmarking Working Group Mr. Carlos Martinez, CERTS Project Manager presented a few slides that showed trends in which the Benchmarking Working Group is evaluating for future benchmarking displays.

DOE North American SynchroPhasor Initiative (NASPI)

Chair Bilke requested RS members to volunteer to participate in the NASPI program. Mr. Bilke will continue to bring information and developments to the RS as the project progresses. Additional information can be found on following Web sites:

- <http://www.naspi.org/>
- <http://www.powerit.vt.edu/Fnet.htm>

Time Error Monitoring

The subcommittee reported the following time error monitoring statistics:

Interconnection Time Error Totals – Through December, 2008			
	Fast Time Error Corrections	Slow Time Error Corrections	Total Time Error Corrections
Eastern Interconnection	135	0	135
Western Interconnection	62	51	113
ERCOT	55	6	61
Hydro Québec *	-----	-----	-----

* Hydro Quebec has a frequency based time error monitoring process that does not fit this table.

Performance Monitoring

CPS1 Review

The NERC compliance program determines CPS1 violations, penalties, and monitors corrective actions. The Resources Subcommittee members are required to sign a NERC Confidentiality Agreement prior to reviewing and discussing the monthly and 12-month rolling average CPS1 reports.

The RS discussed and reviewed the CPS1 report for performance analysis purposes and 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 percent score. Due to the confidential nature of the data, details of the discussion and review cannot be disclosed.

CPS2 Review

The NERC compliance program determines CPS2 violations, penalties, and monitors corrective actions. The Resources Subcommittee members are required to sign a NERC Confidentiality Agreement prior to reviewing and discussing the monthly and 12-month rolling average CPS2 reports.

The RS discussed and reviewed the CPS2 report for performance analysis purposes and 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 percent score. Due to the confidential nature of the data, details of the discussion and review cannot be disclosed.

DCS Review

The NERC compliance program determines disturbance control standard (DCS) violations, penalties, and monitors corrective actions. The Resources Subcommittee members are required to sign a NERC Confidentiality Agreement prior to reviewing and discussing the monthly and quarterly DCS reports.

The RS discussed and reviewed the DCS report for performance analysis purposes and to identify generic problems, and to assess why balancing authorities exceeded their DCS limits. Due to the confidential nature of the data, details of the discussion and review cannot be disclosed.

BAL-003 Requirement Question

RS Chair Terry Bilke was asked by industry entities about the intent of the Bias/frequency response relationship in BAL-003. The applicable requirements are BAL-003, requirements R.2 and R.5.

BAL-003-1,

R2. Each Balancing Authority shall establish and maintain a Frequency Bias Setting that is as close as practical to, or greater than, the Balancing Authority's Frequency Response. Frequency Bias may be calculated several ways:

R2.1. The Balancing Authority may use a fixed Frequency Bias value which is based on a fixed, straight-line function of Tie Line deviation versus Frequency Deviation. The Balancing Authority shall determine the fixed value by observing and averaging the Frequency Response for several Disturbances during on-peak hours.

R2.2. The Balancing Authority may use a variable (linear or non-linear) bias value, which is based on a variable function of Tie Line deviation to Frequency Deviation. The Balancing Authority shall determine the variable frequency bias value by analyzing Frequency Response as it varies with factors such as load, generation, governor characteristics, and frequency.

R5. Balancing Authorities that serve native load shall have a monthly average Frequency Bias Setting that is at least 1% of the Balancing Authority's estimated yearly peak demand per 0.1 Hz change.

R5.1. Balancing Authorities that do not serve native load shall have a monthly average Frequency Bias Setting that is at least 1% of its estimated maximum generation level in the coming year per 0.1 Hz change.

The RS discussed the requirements and agreed that in general, the electrical power industry tends to incorrectly interchange the terms “Bias” and “Frequency Response.”

The RS provides the following statement for clarification regarding the “Bias” and “frequency response” in BAL-003, requirements R.2 and R.5: with the following statement:

During the Resources Subcommittee meeting, January 28-29, 2009 the RS was unanimous in its consensus that Bias must be at least 1 percent of the balancing authority's annual peak load (or 1 percent of generation if a generation-only BA), but not necessarily Frequency Response.

No further action will be taken by the RS at this time.

Variable Bias Question

RS Vice-chair Don Badley received a request on the use of variable Bias to accurately model an area's response to frequency change. After discussion, the RS believes that the request that was submitted to Mr. Badley needs to be submitted to the NERC Standards Program as a formal Standard Authorization Request (SAR) or to submit a request for a standard interpretation.

No further action will be taken by the RS at this time.

Reporting Control Performance Data to NERC

A question was asked about reporting required control performance data to NERC. It was pointed out that in the past, required data was submitted by a balancing authority to its region and the region submitted the data to NERC. Now, the data is required to be submitted to NERC or to the Operating Committee.

The RS agreed that the standards' language used within the reporting requirements is a problem and could be defined explained better. The RS believes the standards data reporting requirements will be revised and made clear during future revisions. The RS members suggested that in the mean time, when such reporting questions arise, the initiator should consult with their region for a viable solution to their questions.

Deploying Contingency Reserves for Wind Generation

A question was asked of the Resources Subcommittee about deploying contingency reserves for wind generation. There were many opinions expressed during the RS discussion including the following:

- An RS member's opinion: Unless the wind generator was the single largest single contingency event, it will not be the DCS concern.
- An RS member's opinion: Assuming the wind generation unit is included in the reserve sharing group capacity, the reserve sharing group would respond to an energy need like any other contingency event.
- An RS member's opinion: Wind should be treated like any other event, including using all tools (such as RSG) to support a loss of generation.
- An RS member's opinion: My region will not allow wind to use RSG reserves because when the wind does not blow, there are no wind reserves to draw on.
- An RS member's opinion: Wind reserves and wind contingency reserves seem to be a business practice that the RSG needs to address and come to its own conclusion.
- An RS member's opinion: This issue may have been addressed and discussed in the past. ACE is ACE. There is a general intent to not burden the interconnection. If you have reserves and you need the reserves, then you use the reserves.

- An RS member’s opinion: DCS does not give every entity the rights to burden the rest of the interconnection.
- An RS member’s opinion: The use of contingency reserves for wind generation deployment is a risk management thing. If the reserves are used for “wind” generation contingencies, it does not exempt the balancing authority from meeting its obligation to meet DCS requirements and obligations.

The RS meeting was close to adjourning as it was running out of time. Secretary Vandervort will place this issue on the next RS meeting agenda to continue the discussion.

Resources Subcommittee Action Item List

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

Dates and Locations of Future Meetings

Additional meetings or conference calls may be scheduled as necessary for RS business-related purposes.

Wednesday, April 29, 2009 Thursday, April 30, 2009	8 a.m. – 5 p.m. 8 a.m. – noon	Albuquerque, NM Public Service of New Mexico *
Wednesday, July 29, 2009 Thursday, July 30, 2009	8 a.m. – 5 p.m. 8 a.m. – noon	Minneapolis MRO Office *
Wednesday, October 28, 2009 Thursday, October 28, 2009	8 a.m. – 5 p.m. 8 a.m. – noon	Phoenix, AZ Arizona Public Service Co. *
Wednesday, January 27, 2010 Thursday, January 28, 2010	8 a.m. – 5 p.m. 8 a.m. – noon	Tucson, AZ, Tentative: Tucson Electric Co. *
Wednesday, April , 2010 Thursday, April , 2010	8 a.m. – 5 p.m. 8 a.m. – noon	St. Louis, MO Tentative: Ameren Co. *
Wednesday, July , 2010 Thursday, July , 2010	8 a.m. – 5 p.m. 8 a.m. – noon	Birmingham, Pensacola, Gulfport, Tentative: Southern Co Office *
Wednesday, October, 2010 Thursday, October , 2010	8 a.m. – 5 p.m. 8 a.m. – noon	Valley Forge, PA, Tentative: PJM Office *

* Future RS meetings will be hosted at RS member, Region, utility, or volunteer facilities.

Respectfully submitted,

Tom Vandervort

Thomas J. Vandervort
Resources Subcommittee Secretary

Meetings

[View](#)[Search](#)[Print All Meetings](#)

Meeting Group and Dates

Group Name Resources Subcommittee

Dates 1/28/2009 8:00:00 AM 5:00:00 PM
1/29/2009 8:00:00 AM 12:00:00 PM

Hotel

Hotel SEMPRA Generation

Address 101 Ash St, HQ 14D

City San Diego

State CA

Phone 619-696-4442

Fax

Cut Off Date

Attending Staff

Staff Tom Vandervort

Miscellaneous

Notes **DUE TO SECURITY REASONS EVERYONE ATTENDING THIS MEETING MUST REGISTER ON-LINE**

- There is no NERC room block available for this meeting.
- Dress code: Business casual

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Agenda Resources Subcommittee

January 28, 2009 | 8 a.m.–5 p.m.
January 29, 2009 | 8 a.m.–noon
SEMPRA Generation
101 Ash St. HQ 14D
San Diego, CA
Phone: 619-696-4442

1. Administrative

- a. Membership and Guests — Terry Bilke
- b. Arrangements — Tom Vandervort
- c. Approval of Meeting Minutes
 - i) October 28–29, 2008 — Terry Bilke
- d. Approval of the Meeting Agenda
- e. Procedures
 - i) Parliamentary Procedures — Terry Bilke
 - ii) Antitrust Compliance Guidelines — Tom Vandervort
- f. Resources Subcommittee Action Items List (review prior to the meeting) — Terry Bilke
- g. NERC–RS Confidentiality Agreement — Terry Bilke

2. Working Group Reports

Working Group Meetings, Conference Calls, or Action since the last RS Meeting

- a. Control Criteria Work Group — vacant
- b. Frequency Work Group — Raymond Vice
- c. Inadvertent Interchange Work Group — Don Badley
- d. Operating Reserves Work Group — Larry Akens

3. NERC Reliability Standards

- a. Frequency Response SDT — Bill Herbsleb
- b. Reliability-based Control SDT — Doug Hils, Raymond Vice
- c. Balancing Authority Control SDT — Larry Akens
- d. Performance Standards Reference Document — to be determined
- e. NAESB WEQ Time and Inadvertent Management — Terry Bilke
- f. BAL Standards — Reliability Standards Audit Work Sheets - Terry Bilke

4. Active RS NERC-CERTS Applications

- a. Resources Adequacy (ACE-Frequency) Application System — Carlos Martinez, Terry Bilke
- b. Intelligent Alarms — Carlos Martinez, Terry Bilke
- c. AIE Monitoring Application (Project 2000-4) — Carlos Martinez, Don Badley
- d. CPS1 & BAAL Monitoring Application (Project 2001-38) — Carlos Martinez, Doug Hils, Raymond Vice
- e. Frequency Monitoring and Analysis Application (Project 2005-6) — Carlos Martinez, Raymond Vice, Terry Bilke
- f. Inadvertent Interchange Application — Carlos Martinez, Don Badley
- g. DOE North American Synchronous Phasor Initiative (NASPI) — Terry Bilke, Carlos Martinez

5. Frequency and Control Performance

- a. Western Interconnection Frequency Trends and Events — Don Badley
- b. Eastern Interconnection Frequency Trends and Events — Raymond Vice
- c. ERCOT Interconnection Frequency Trends and Events — Sydney Neimeyer
- d. Hydro Quebec Interconnection Frequency Trends and Events — Mike Potishnak
- e. CPS1, CPS2, BAAL Data Trends — Terry Bilke
- f. DCS Data Trends — Terry Bilke
- g. Inadvertent Interchange Balances — Don Badley
- h. AIE Surveys — Terry Bilke, Don Badley, Raymond Vice, Carlos Martinez
- i. NERC Benchmarking Data — Terry Bilke, Carlos Martinez
- j. 2009 Frequency Bias and Estimated Peak Demand — Terry Bilke

6. Time Error

- a. Eastern Interconnection — Bill Herbsleb
- b. Western Interconnection — John Tolo
- c. ERCOT Interconnection — Sydney Niemeyer
- d. Hydro Québec Interconnection — Mike Potishnak

7. NERC Operating Committee Directives to the Resources Subcommittee

- a. Reliability Concepts Document — Terry Bilke
- b. NERC OC Operating Manual – RS Documents – Tom Vandervort

8. Future Meetings

- a. April 29–30, 2009 Albuquerque, NM, Public Service of New Mexico *
 - b. July 29–30, 2009 St. Paul, MN, Midwest Reliability Organization *
 - c. October 28–29, 2009 Phoenix, AZ Arizona Public Service Co. *
 - d. January 27–28, 2010 New Orleans (tentative) Alternative: Miami (tentative) *
- * Future RS meetings need to be held at region, utility, or volunteer facilities



NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Meeting Attendance Resources Subcommittee

January 28, 2009 | 8 a.m.–5 p.m.
January 29, 2009 | 8 a.m.–noon
SEMPRA Generation

Attendance

RS Members

Terry Bilke, RS Chair

Robert	Rhodes
Mike	Potishnak
Bill	Herbsleb
Don	McInnis
Larry	Akens
John	Tolo
Jam	es Murphy
Sydney	Niemeyer
John	Swez
Gerry	Beckerle
Raym	ond Vice
Neal	Balu
Tom	Vandervort

Guests

Doug	Hils
Steve	Myers
Carlos	Martinez
David	Huff
Mahm	ood Mierheydar
Mark	Prosperi-Porta
LeRoy	Patterson
Steve	Crutchfield
Glenn	Stephens

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Individual Statement Resources Subcommittee

Individual:

Name: Michael Potishnak
Date: January 28, 2009

Subject:

NAESB WEQ Time and Inadvertent Management

Statement:

Mike Potishnak expresses concern with the possibility of a 59.98 Hz scheduled frequency on the Eastern Interconnection during the hours of morning pickup. Present NERC rules prohibit starting such a time error correction right now. Also, the Balancing Standard field trial results correlate a greater number of low frequency trigger limits violations with 59.98 Hz operations. An analysis needs to be performed to determine if reliability will be compromised by such operations.

Michael Potishnak
ISO New England, Inc.
Resources Subcommittee Member

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Individual Statement Resources Subcommittee

Individual:

Name: Robert V. Snow
Date: January 23 and 25, 2009

Subject:

Bias versus Frequency Response (BAL-003)

Statement:

Terry,
(E-mail sent to RS Chair Terry Bilke on January 23, 2009)

You may wish to include paragraph 373 of Order No. 693 in your discussions. It is part of the technical basis that the Commission used to approve BAL-003-0 and it was not the subject of any rehearing request. I have included it below with some bolding concerning the question raised. It states:

As the Commission noted in the NOPR and in our response to FirstEnergy, Requirement R2 of this Reliability Standard states that “[e]ach Balancing Authority shall establish and maintain a Frequency Bias Setting that is as close as practical to, or greater than, the Balancing Authority’s Frequency Response.” The Commission believes that the achievement of this Requirement is fundamental to the tie line bias control schemes that have been in use to assist in balancing generation and load in the Interconnections for many years.^[1] We understand that **the present Reliability Standard sets the required frequency response of the balancing authorities to be approximately one percent or greater** by requiring that the frequency bias shall not be less than one percent and that the frequency bias be as close as practical to, or greater than, the actual frequency response. [Bold added by sender]

^[1] Cohn, Nathan, Control of Generation and Power Flow on Interconnected Systems, (John Wiley and Sons 1966).

Bob

Robert V. Snow PE
Senior Electrical Engineer
Federal Energy Regulatory Commission
Office of Electric Reliability
Division of Reliability Standards

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Tom,

(E-mail sent to RS Secretary Tom Vandervort on January 25, 2009)

If you or the various groups find my e-mail of use, please provide it. My e-mail simply points out a paragraph in the Commission Order No. 693. It identifies what the Commission stated concerning its understanding of what the existing mandatory Reliability Standards require. Since no entity took exception (rehearing request), I believe the Commission enforcement process would assign that meaning to the words for Compliance. I know that Howard has advised against that approach. However, the Commission does not have the authority to change Requirements.

There are other paragraphs concerning reserves with due regard to achieving the necessary Frequency Response and the minimum amount of Frequency Response needed for Reliable Operation (both in interconnected and black start mode) that would also appear to be of interest to those drafting new or revised Reliability Standards. It is my opinion that the issue of reserves and response are too interconnected to be viewed in isolation.

Please understand the citation is not my opinion or that of staff but the result of a Commission open rule making process that included a staff assessment, a NOPR, Order No. 693 and Order No. 693A. There were two technical conferences and dozens of outreach meetings with industry organizations including 3,000 pages of industry comments over more than one year of time. As the Commission stated, the approved Reliability Standards are a good starting point but more work is appropriate.

Bob

Robert V. Snow P.E.
Senior Electrical Engineer
Federal Energy Regulatory Commission
Office of Electric Reliability
Division of Reliability Standards



NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Individual Statement

Resources Subcommittee

Individual:

Name: Howard Illian
Date: January 23, 2009

Subject / Purpose:

Bias versus Frequency Response (BAL-003)

Statement:

I understand the desire to use BAL-003 to temporarily solve the Frequency Response problem, but that is not the right way to do it. There was never any intent for BAL-003 to have any influence on the BA Frequency Response. If we begin using BAL-003 to do so we set a very bad precedence. Frequency Response should never be set based on Frequency Bias. Frequency Bias should always be set based on Frequency Response. We have a two-fold problem; 1) the current standard is detrimental to reliability; 2) there is no current standard on Frequency Response.

The current standard is detrimental to reliability because it sets the Frequency Bias at a value significantly larger than the Frequency Response. This causes problems with situational awareness in that ACE gives the dispatcher an incorrect estimate of the true amount of MWs to dispatch to correct a problem. We are, therefore, intentionally giving the dispatcher a bad estimate concerning the condition of the system. This also causes a situational awareness problem for the AGC system in that ACE is also giving the AGC System an incorrect estimate of the true amount of MWs to dispatch to correct the problem. In addition, we have actual experience from the 2003 Blackout that the over-biasing of some BAs caused stability problems as they attempted to survive the disturbance. Did we learn anything from the Blackout? All of this is occurring because someone thought that it would be a good idea to intentionally set bias high to get quicker disturbance recoveries from mutual aid even though it shifts responsibilities for recovery from the BA experiencing the disturbance to all BAs on the interconnection. This shift in responsibility breaks all of the rules under which Tie-line Bias control was initially developed. Also, the additional support resulting from the over-biasing will not be delivered until minutes after the disturbance, too late to have much influence on reliability.

The second point is that we need a Frequency Response Standard based on good scientific and engineering principles. We have already had extensive discussion on this issue.

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

We have already initiated the necessary standards processes to resolve this problem. We do not make things better or more reliable by taking this expedient path in the name of reliability. We only take greater risks because we do not know the full consequences of taking the approach you have suggested. The correct way to achieve good reliability is to remove the minimum bias requirement as soon as possible and to also implement a Frequency Response Standard to set a minimum bias requirement based on a minimum Frequency Response requirement as soon as possible. Both of these steps must be accomplished through the ANSI Standard process that we have chosen to follow.

Howard F. Illian, President
Energy Mark, Inc.

*Consortium for
Electric
Reliability
Technology
Solutions*

**NERC
Applications
Status**

NERC Applications Status and Propose Changes of Scope for 2009 for Resources Subcommittee

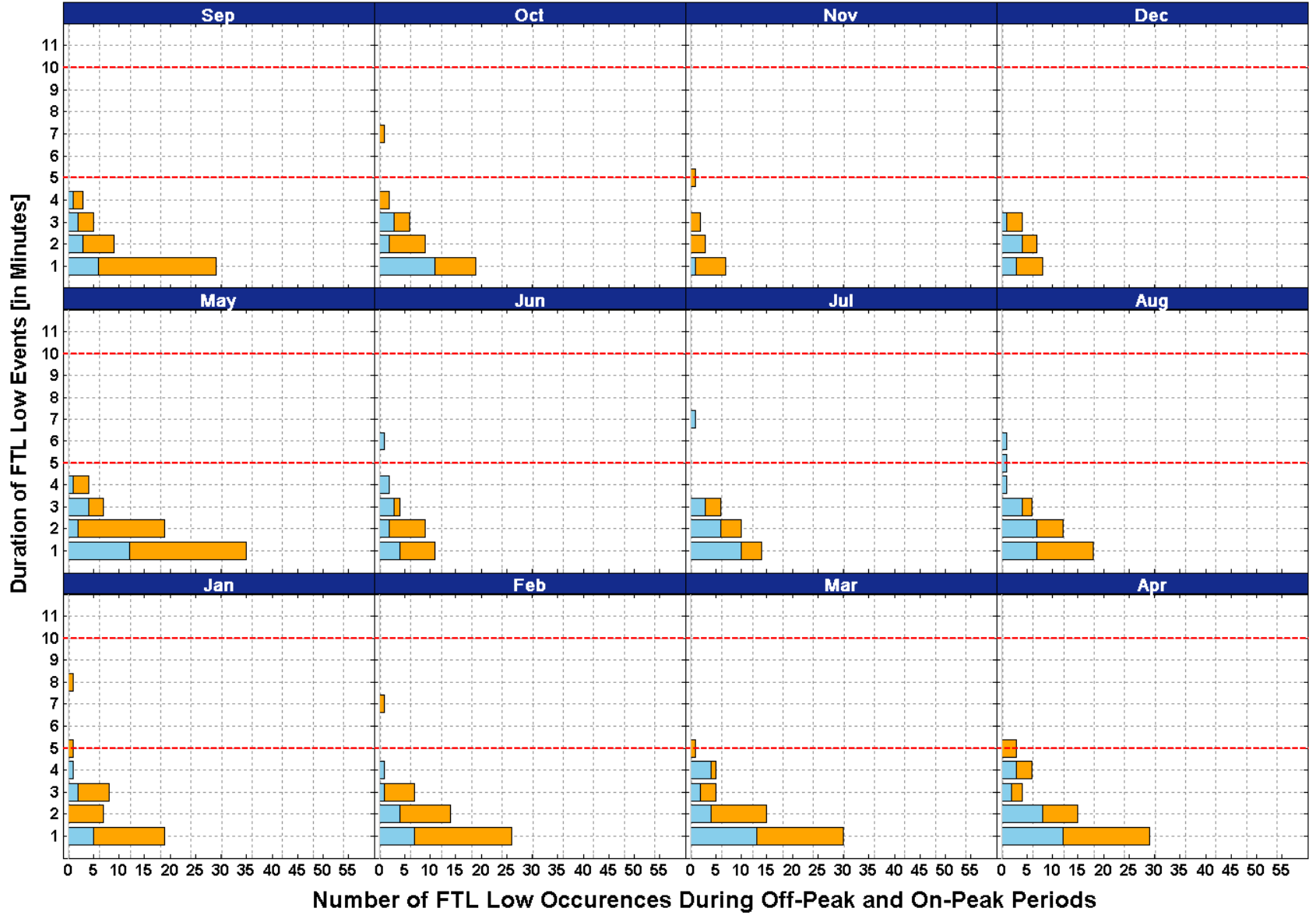
**San Diego, California
January 28-29, 2009**

NERC Applications Status

Application	NERC Applications Status
Resources Adequacy (ACE Frequency)	Release 6.0 – Includes 2009 jurisdictional boundary changes, 2009 interconnections and BAs constants, corrections to performance report problems – Waiting for NERC official 2009 lists, and NERC-MISO data mapping
Inadvertent	Release 3.0 - Includes two WECC Changes of Scope enhancements for functional improvements and for computer-computer data transfers. Waiting for NERC-IT to transfer to their production servers
Area Interchange Error (AIE)	Release 1.0 – Waiting for completion of Field Trial Tests verifying Eastern and Western AIE surveys..WECC Change of Scope for computer to computer data transfer.
Intelligent Alarms	Users questions about different alarm broadcasts patterns during last four months – a) alarm simulations showed FTL and Long Term alarms OK, b) alarms match RBCSDT FTL events (using different data), c) month duration statistics graph confirm different pattern
Frequency Monitoring and Analysis (FMA)	Release 1.0 – Field Trial completed in November. Twenty variance corrections completed in January. Final integration and delivery during second week of February, 2009. R2.0 Virginia Tech phasor-data integration for 4Q09

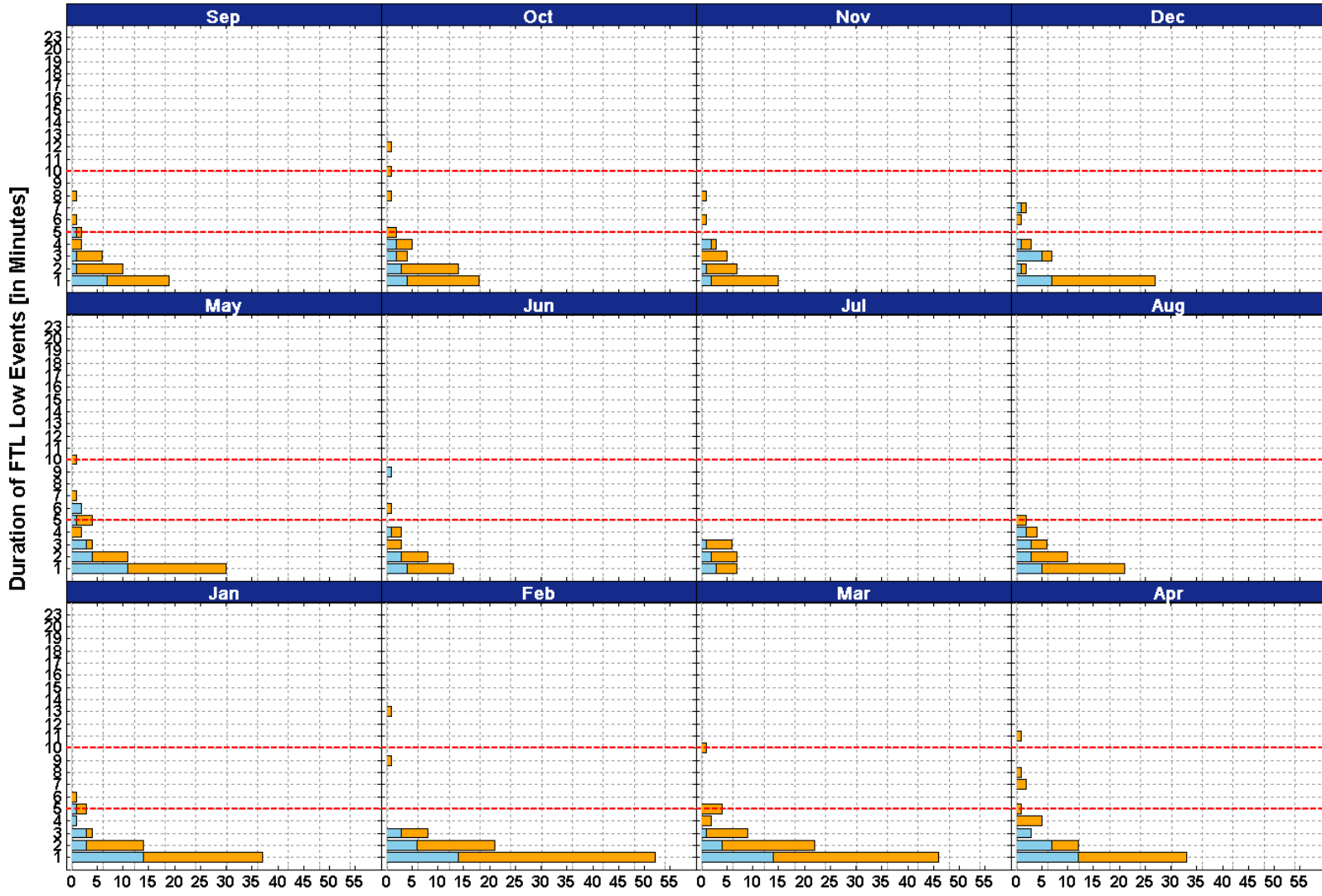
2008 EASTERN INTERCONNECTION MONTHLY DURATION OF LOW FREQUENCY EVENTS [Minutes] BY OCCURRENCES

■ Off-Peak (Hours 2300 to 500)
 ■ On-Peak (Hours 600 to 2200)



2008 ERCOT INTERCONNECTION MONTHLY DURATION OF LOW FREQUENCY EVENTS [Minutes] BY OCCURRENCES

Off-Peak (Hours 2300 to 500) On-Peak (Hours 600 to 2200)

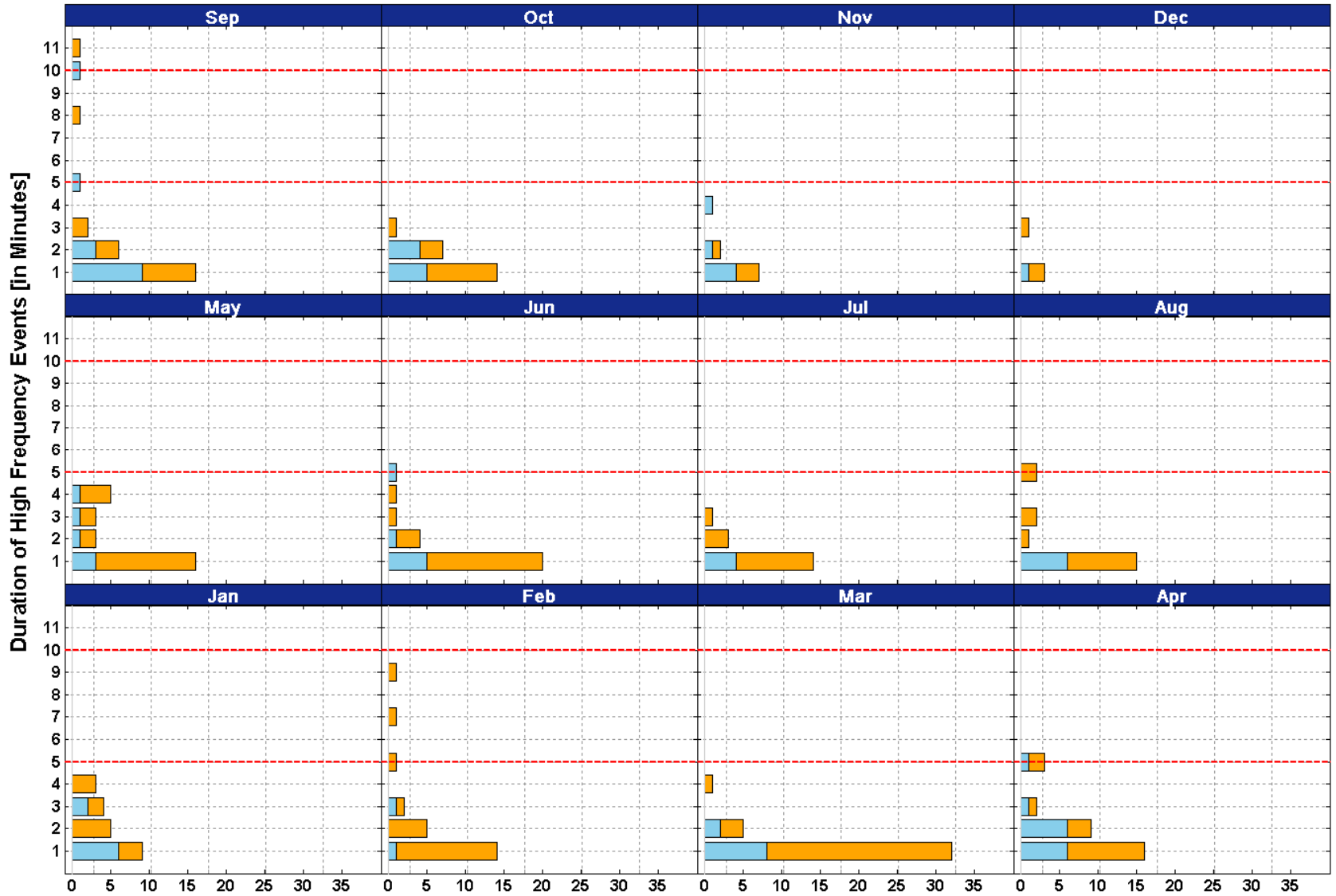


Number of FTL Low Occurences During Off-Peak and On-Peak Periods

2008 EASTERN INTERCONNECTION MONTHLY

DURATION OF HIGH FREQUENCY EVENTS [Minutes] BY OCCURRENCES

Off-Peak (Hours 2300 to 500) On-Peak (Hours 600 to 2200)

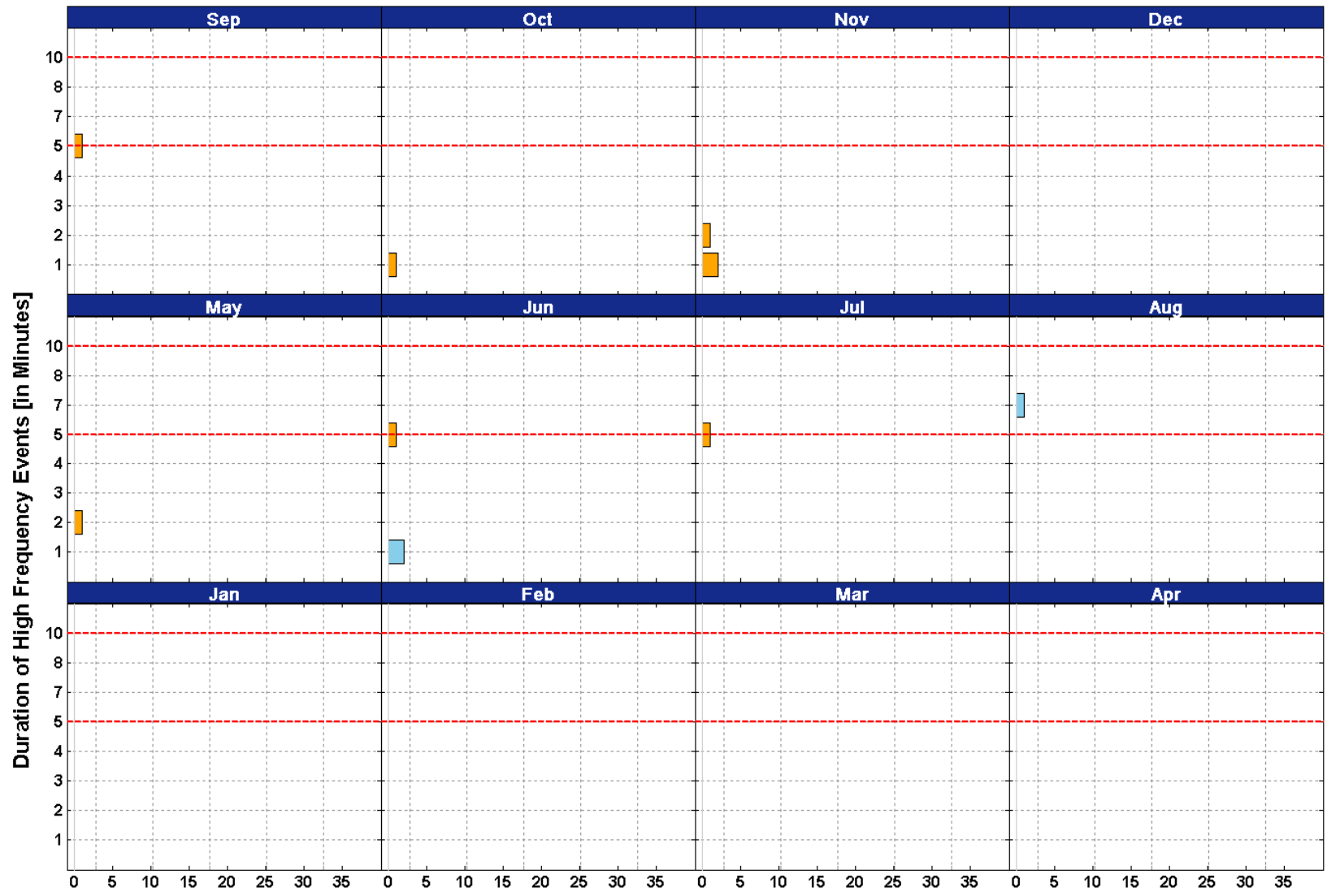


Number of FTL High Occurences During Off-Peak and On-Peak Periods

2008 WESTERN INTERCONNECTION MONTHLY

DURATION OF HIGH FREQUENCY EVENTS [Minutes] BY OCCURRENCES

Off-Peak (Hours 2300 to 500) On-Peak (Hours 600 to 2200)

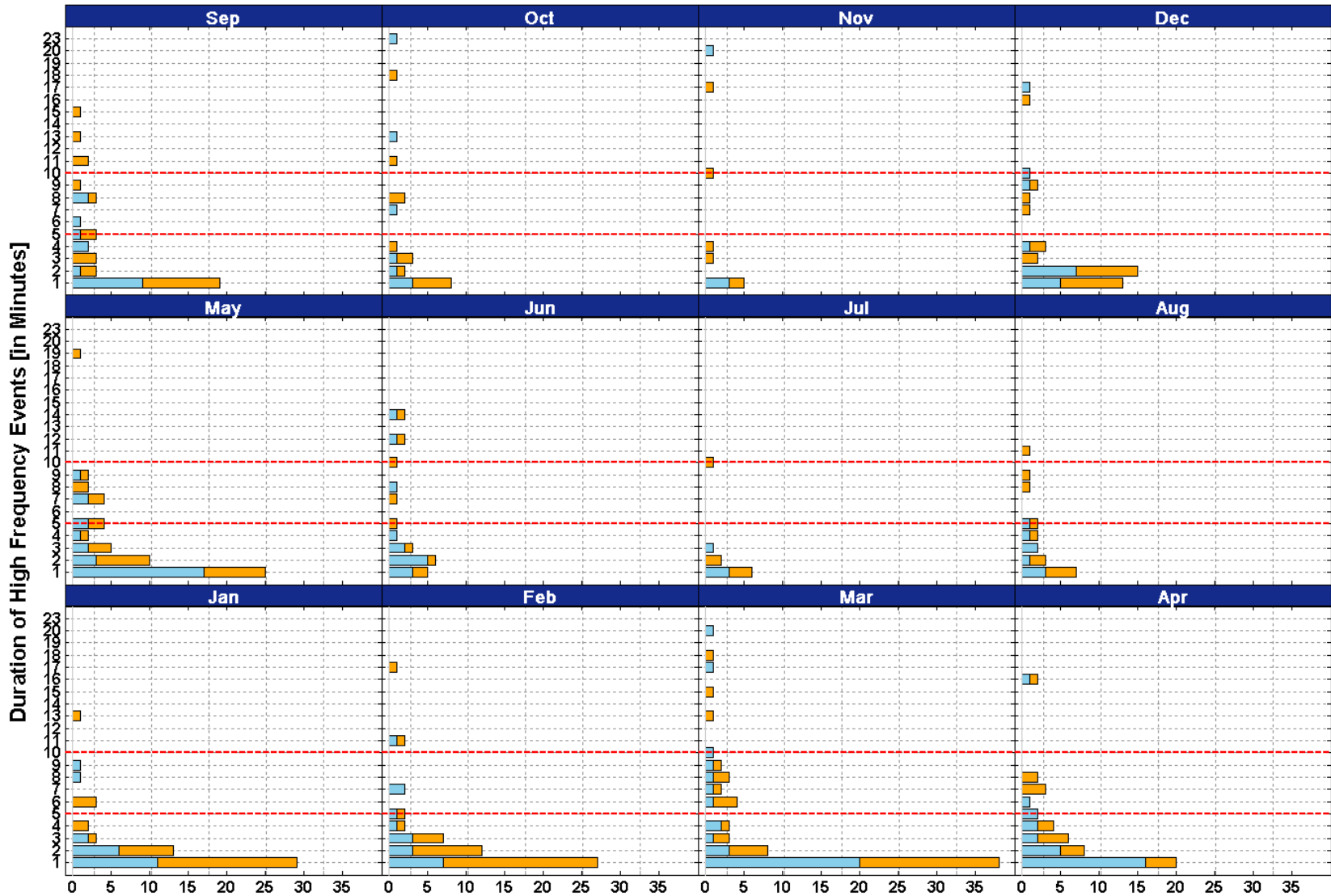


Number of FTL High Occurences During Off-Peak and On-Peak Periods

2008 ERCOT INTERCONNECTION MONTHLY

DURATION OF HIGH FREQUENCY EVENTS [Minutes] BY OCCURRENCES

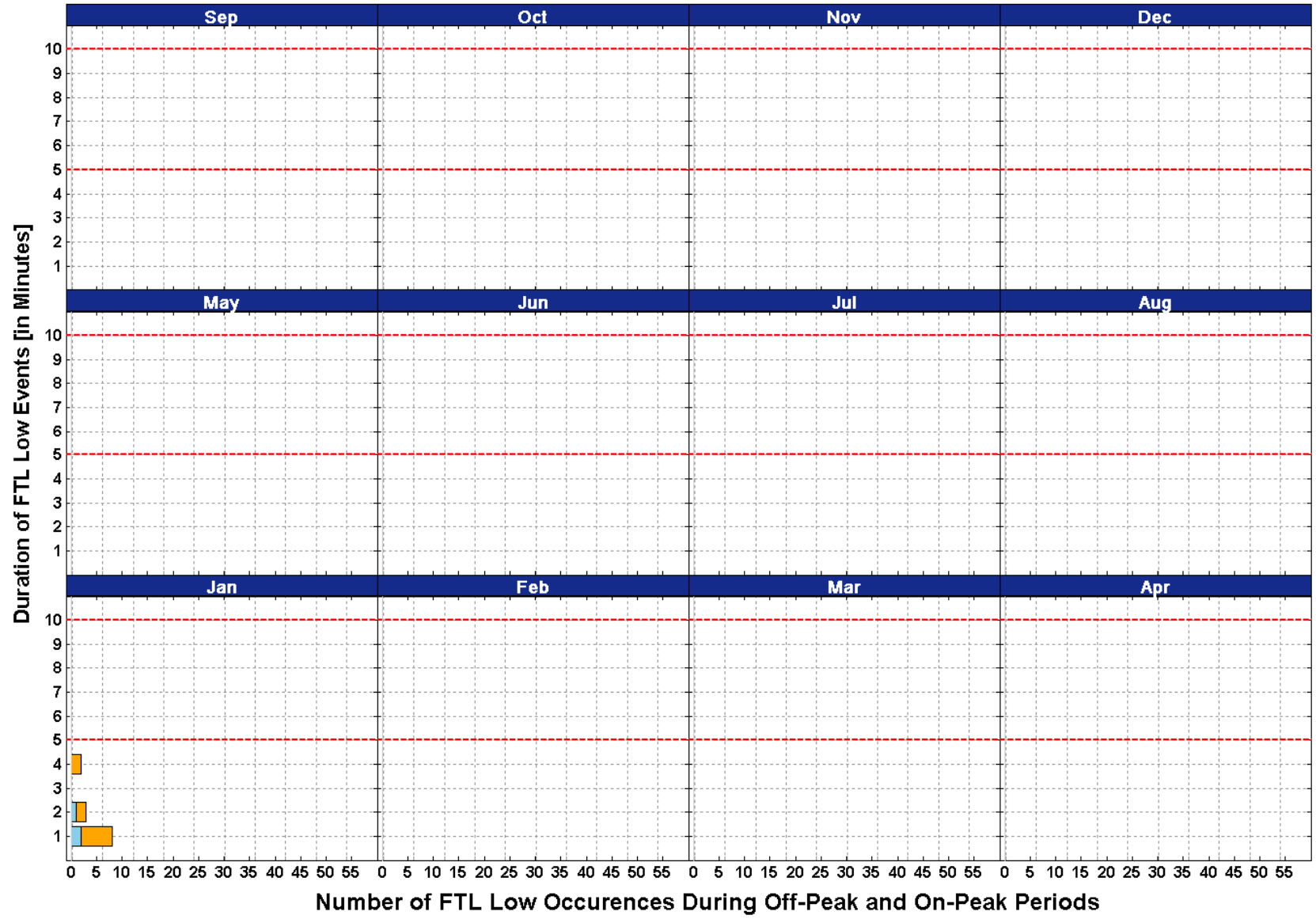
Off-Peak (Hours 2300 to 500) On-Peak (Hours 600 to 2200)



Number of FTL High Occurences During Off-Peak and On-Peak Periods

2009 EASTERN INTERCONNECTION MONTHLY DURATION OF LOW FREQUENCY EVENTS [Minutes] BY OCCURRENCES

Off-Peak (Hours 2300 to 500) On-Peak (Hours 600 to 2200)



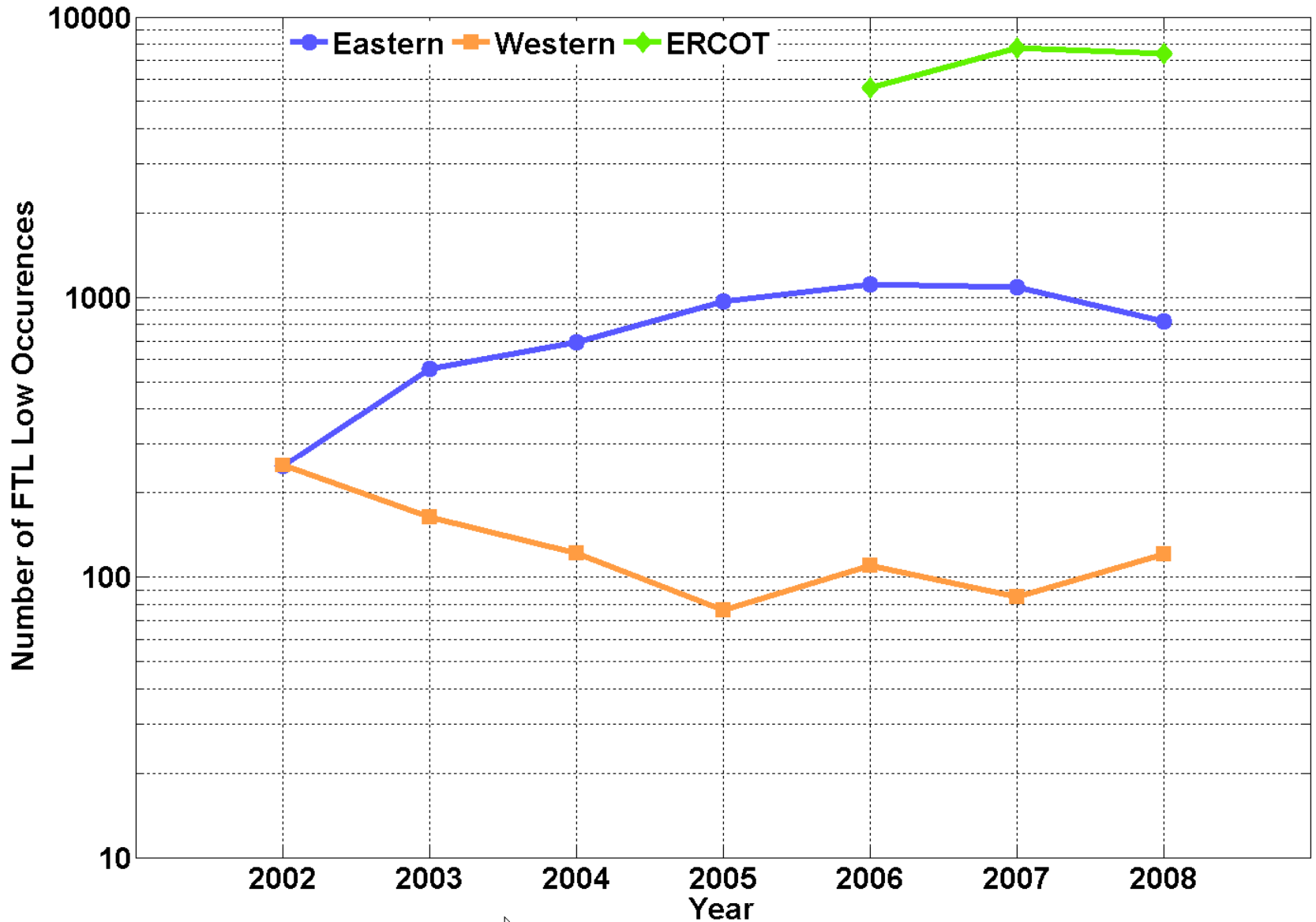
Propose Changes of Scope for 2009

Application	Propose Change of Scope	Est. Price
Resources Adequacy and Intelligent Alarms	The proposed change will incorporate: a) capability for broadcasting email alarms when there is a Frequency Response interconnection event, b) for each event compute BAs frequency response, c) archive X years of event data, and d) report frequency response performance using events data for X years.	\$
Applications Location, Installation, Documentation	Creation of web-site to make available online: a) the NERC applications procedures to access the application software, b) the applications software installation instructions, and c) the applications user guide and functional specification. Every document will be created in PDF and HTML searchable formats.	\$
Inadvertent	Capability to notify via email and report in a monthly basis to Regions, BAs and Resources Subcommittee: a) The Regions and BAs that have submitted its monthly inadvertent data and have been accepted by the NERC database, and b) Regions and BAs that have edited their inadvertent data that and have created inadvertent mismatches, c) define and create and automatic process to identify interconnections level mismatches after all disputes have been resolved (July 2006 scenario)	\$
	The proposed change will provide the capability to identify and report root-cause of monthly and yearly interconnection inadvertent balances by using the hourly AIE data, integrating it and comparing it to monthly inadvertent values for each BA.	\$

***Interconnections Frequency Low and High
Counts Comparison from 2002 to 2008***

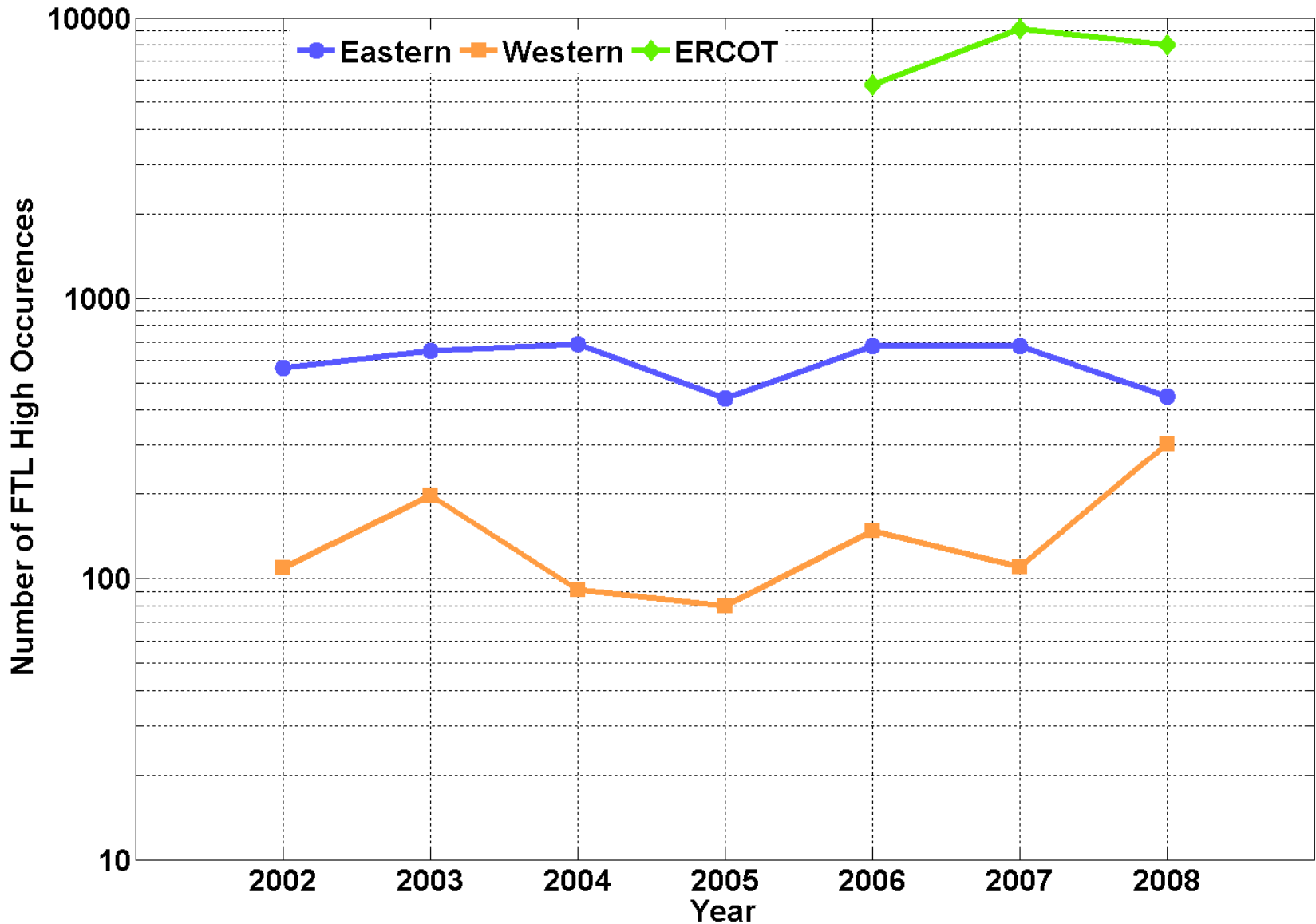
EASTERN, WESTERN, ERCOT INTERCONNECTIONS – 2002 to 2008

YEARLY TREND OF LOW FREQUENCY EVENTS



EASTERN, WESTERN, ERCOT INTERCONNECTIONS – 2002 to 2008

YEARLY TREND OF HIGH FREQUENCY EVENTS





**Resources Subcommittee
January 28–29, 2009 Meeting
Open Action Item List**

Action Figure	Subject	Action Item/Assignment	Due Date	Completion Date
Terry Bilke and Resources Subcommittee	Load-Generation Balancing Chapter for the OC Reliability Concepts Open Source Document	<p>013108, NERC Operating Committee Chair, Gayle Mayo asked the RS to write a comprehensive Reliability Concepts Document chapter on load-generation balancing. The chapter must state what must be done to ensure balance.</p> <p>In conjunction with the OC request, Don Benjamin requests the RS to contribute chapters to the OC Reliability Concepts Document – Balance Resources and Demand, Frequency Trends, Frequency Profile, Time Error Correction, ACE, Bias, Inadvertent Interchange, AIE, etc.</p> <p>The RS is asked to circulate their draft technical papers as an initial start to this project</p> <p>102908, Terry asked each Working Group to further develop their respective sections.</p> <p>012909, Terry and Tom will section out the “Balancing” chapter and distribute the sections to the RS working groups and to the RS-related standard drafting teams.</p>	042909	
Terry Bilke and Resources Subcommittee	Frequency Event Repository	<p>013108, The RS requests a frequency event repository be initiated. Possibly visit with CERTS, NASPI, VTech, Bill Herbsleb/PJM, Sydney mentioned the August 4 event appendix that may be relevant to this effort, etc., to determine what frequency retention is already taking place.</p> <p>050108, Mike Potishnak has developed an interim “Yugo” frequency repository. Carlos may have the solution to the frequency repository request with the FMA application. The RS needs to understand the FMA capabilities further.</p> <p>102908, Terry and Tom need to visit with NERC IT to determine if a public server / list server can be created to receive industry frequency data for a repository.</p> <p>120208, A NERC RS public folder was created that allows the industry to send</p>	042909	

Action Figure	Subject	Action Item/Assignment	Due Date	Completion Date
		<p>questions and data to the RS. balancing@nerc.com</p> <p>012909, RS members that wish to join Terry and Tom on the receiving end should let Tom know and you will be added to the "balancing" list server.</p>		
Resources Subcommittee	Reserve Sharing DCS Lists	<p>102908, RS members check the Reserve Sharing DCS lists to identify any balancing authority in your region that is not in a listed reserve sharing group. Tom to send the list to each RS member that has signed the NERC RS Confidentiality Agreement.</p> <p>012909, Chris Scheetz to cross-check the Compliance Program list of BAs against the list of CPS1 BAs, CPS2 BAs, and DCS BAs or RSGs.</p>	042909	
Resources Subcommittee	NERC OC Operating Manual Docs	<p>073108, RS members on each open BAL-related standard drafting team to request that the SDT write or plan to write a module for each SDT specific requirement and how to achieve technical results for the PSRD.</p> <p>102908, Resources Subcommittee recommended to the OC that the RS documents that are found in the OC Operating Manual be kept in the manual. RS Working Groups and RBCSDT, BACSDT, and FRSDT are to revise the documents for accuracy. RS will then submit the revised documents to the OC to update the manual.</p> <p>RS and the SDTs needs to revise the reference documents into guidelines and ensure there are no requirements in these documents that should be in standards.</p> <p>RS Operating Manual documents are:</p> <p>Performance Standard Reference Document (PSRD)</p> <p>Area Interchange Error Survey Training Document</p> <p>Frequency Response Training Document</p> <p>Inadvertent Interchange Accounting Training Document</p> <p>Time Monitoring Reference Document</p> <p>012909, Ongoing action item.</p>	042909	
Resources Subcommittee Working Groups	Reliability Standards Audit Worksheets (RSAWs)	<p>073108, Each RS Working Group is to review the RSAWs that are in their respective area of expertise and recommend enhancements to the NERC Compliance Dept. to improve the RSAW Audits. Assignments are:</p> <ul style="list-style-type: none"> • BAL-001 FRSDT Bill Herbsleb • BAL-002 ORWG Larry Akens • BAL-003 FRSDT Bill Herbsleb 	042909	

Action Figure	Subject	Action Item/Assignment	Due Date	Completion Date
		<ul style="list-style-type: none"> BAL-004 IIWG Don Badley BAL-005 FWG Raymond Vice BAL-006 IIWG Don Badley <p>012909, The Ongoing action item.</p>		
Raymond Vice and Frequency Working Group	European Frequency Research Group to Understand Frequency Patterns	<p>073108, Establish and keep the communications channels open; respond to the questions; and possibly establish a relationship between the RS and the European Research Effort. Questions asked by the European Research Effort Group (reference RS meeting agenda for July 30-31, 2008):</p> <ol style="list-style-type: none"> Are there frequency patterns the same in the Eastern Interconnection, especially their correlation to the load gradients? Do you have any results/observations regarding the causes for the power imbalances? Have you already applied any measures against the power imbalances? <p>042909, <i>Is this an action item or should it be addressed elsewhere?</i></p>	042909	
Don Badley and Inadvertent Interchange Work Group	Inadvertent Interchange Balances	<p>073108, HIGH PRIORITY</p> <p>Coordinated effort is necessary to attain and incorporate the proper 2006 and 2007 carry-forward inadvertent interchange data.</p> <p>Don Badley to work with Bill Herbsleb, Carlos to aggressively bring all BAs up to date and balance their inadvertent interchange values through January 1, 2007 (the line in the sand – balances going forward). RS members and RS Survey Contacts may be called upon to resolve the mismatches and imbalances.</p> <p>102908, Don Badley and Bill Herbsleb are addressing the mismatched balances, in progress. Don and Bill may call upon RS members for assistance to resolve mismatches and balance the Eastern Interconnection inadvertent interchange accounts.</p> <p>042909, <i>Need Update on this action item. Is the II application in production? Can this action item be closed?</i></p>	042909	
Don Badley and Inadvertent WG	AIE Field Test and initial AIE Survey	<p>101408, RS members to work with their region's BAs to wrap-up the Eastern Interconnection and Western Interconnection AIE Surveys.</p> <ol style="list-style-type: none"> Help Address and resolve mismatches Evaluate the AIE application 	042909	

Action Figure	Subject	Action Item/Assignment	Due Date	Completion Date
		<p>3. Make recommendations to improve or make application more user-friendly</p> <p>Eastern Interconnection AIE Survey:</p> <p>5/12/07 HE 0200</p> <p>5/12/07 HE 0600</p> <p>5/17/07 HE 0600</p> <p>Western Interconnection AIE Survey</p> <p>5/18/08 HE 0300</p> <p>5/18/08 HE 0400</p> <p>5/18/08 HE 0500</p> <p>012909, RS members to contact BAs that still have interchange mismatches and imbalances for the AIE Survey hours specified above. Due Date: ASAP</p>		
	NERC-CERTS Project Review			
Carlos Martinez	Application Web Tutorial and Q&A	<p>073108, CERTS Carlos Martinez to develop a web tutorial and Q&A for the applications, especially the Resources Adequacy application. First priority will be to determine what is needed from NERC to develop the web-based tutorial and Q&A.</p> <p>102908, Action Item in progress</p>	042909	
Resources Subcommittee	Who is not submitting data to applications	<p>102908, RS members and CERTS to Identify and contact entities that are not submitting data to NERC ICCP to populate NERC Applications (e.g. Resources Adequacy, FMA, etc.)</p> <p>010909, Request made to identify which BAs are not submitting data to NERC in order to resolve and populate black holes on the Resources Adequacy application.</p> <p>012909, Need to identify who is not consistently submitting data to NERC.</p>	042909	

