

Minutes Resources Subcommittee

July 30–31, 2008
Chateau Victoria Hotel & Suites
Victoria, British Columbia, Canada

A meeting of the North American Electric Reliability Corporation (NERC) Resources Subcommittee (RS) was held on July 30–31, 2008 in Victoria, British Columbia, Canada. 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.

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

Antitrust Compliance Guidelines

Secretary Vandervort acknowledged the NERC Antitrust Compliance Guidelines.

April 30–May 1, 2008 RS Meeting Minutes

The subcommittee approved the April 30–May 1, 2008 RS minutes.

Working Group Reports

Control Criteria Working Group — Chair (Vacant)

The RS members were asked to consider chairing the Control Criteria Working Group. Secretary Vandervort will create an action item to for the RS to fill the chair vacancy. One option to consider is to rotate the chair position between RS members every six to twelve months.

Frequency Working Group — Chair Raymond Vice

Chair Vice was not able to attend this meeting. There was no Frequency Working Group report.

The Frequency Working Group is drafting a frequency disturbance analysis and frequency signature technical paper. The technical paper will be the basis for a procedure that contains a generic set of actions to be used to analyze events and disturbances in a consistent manner. Different types of analyses will be necessary for different types of disturbances or events with the consistency of using the same methodology each time. This technique is anticipated to give effective, efficient, and thorough conclusions and recommendations in an expeditious manner. Some of the key tools and software applications that the working group is familiar with, will be used on a regular basis, and will be used in future disturbance analysis are:

1. Resources adequacy application
2. Frequency monitoring and analysis application
3. Area interchange error application
4. North American SynchroPhasor Initiative tools
5. Virginia Tech Fnet software
6. Other software tools, applications, and monitoring programs

Inadvertent Interchange Working Group — Chair Don Badley

Chair Badley is working closely with the working group, Bill Herbsleb, and CERTS Carlos Martinez to balance month-end inadvertent interchange values in the Eastern and Western Interconnections. Mr. Herbsleb has devoted considerable time in analyzing and working with CERTS to balance the Eastern Interconnection. Historic inadvertent interchange accounting imbalances have recently been identified and are being addressed to help balance the historical carry-forward balances.

Operating Reserves Working Group — Chair Larry Akens

Chair Akens, John Tolo, and Robert Rhodes reviewed and drafted enhancements to the RS balance and frequency control document that the RS intends to include in the Operating Committee's Reliability Concepts document. The RS discussed the draft changes and will continue to expand and edit the document. All RS working groups are to develop sections of the document focusing on the respective subject matter related to each specific working group.

European Frequency Research

RS Chair Bilke reported that the European power system frequency profile and patterns are very similar to the frequency trends and day-to-day operation in North America. However, when a frequency event occurs, the frequency dips in Europe tend to be deeper than for similar events in North America.

The Frequency Working Group will respond to questions posed by the European frequency research group, possibly establish a relationship between the RS and the European research staff, and communicate and share data between the RS and the European research staff.

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.

Frequency Response SDT — Chair Bill Herbsleb

The Frequency Response Standard Drafting Team (FRSDT) continues to look at frequency response calculations. Mr. Herbsleb anticipates the FRSDT will have a frequency response technical paper ready to publish by the third or fourth quarter of this year.

Mike Potishnak gave three presentations to the RS regarding the FRSDT. The presentations are:

1. ISO-NE's determination of the load provided share of its actual frequency response

2. Point A to Point C transit time study for the Eastern Interconnection using .1 second sampling data
3. Empirical study of ISO-NE's negative response on fully loaded combined cycle facilities running in a thermally limit mode.

Carlos Martinez, CERTS, made a presentation on the FRSDT frequency response calculations. To capture all of the frequency events, CERTS changed the frequency parameter from 8 mHz to 7 mHz in the frequency event calculation.

Chair Terry Bilke presented the NYISO unit frequency response for the August 4, 2007 event presentation. The data contained in the presentation is relevant to the FRSDT effort to develop frequency event response standards.

Reliability-based Control SDT — Chair Doug Hils

Doug Hils, Reliability-based Control Standard Drafting Team (RBCSDT) chair, gave a presentation on the field trials and draft standards. The SAR covered everything that the RBCSDT captured in the previous effort plus additional transmission activity that concerned NPCC, WECC, and FRCC Regions. Mr. Hils reported that the RBCSDT is making progress and continues to sponsor the Reliability-based Control field trials.

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

The first meeting of the Balancing Authority Control Standard Drafting Team (RACSDT) was held on May 14, 2008. The RS discussed the possible elimination of time error correction (TEC) requirements. The RS is divided on the retaining or eliminating the TEC requirements. However, whether the TEC requirements are retained or eliminated, there was consensus on the need to monitor the time error variance of each interconnection which is the basis of the practice known as time error correction. 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

Performance Standard Reference Document — Chair (Vacant)

The Performance Standard Referenced Document (PSRD) is available and posted on the RS "Related Files" Web site. The Frequency Response, Reliability-based Control, and Balancing Authority Control Standard Drafting Teams chairmen, noted above, were requested to prepare specific chapters or sections to the PSRD to describe, define, instruct, and explain their particular standard requirements, measures, calculations, and support background information.

NAESB Time and Inadvertent Interchange Management Business Practice Standards

Chair Bilke informed the RS that the NAESB "Time and Inadvertent Interchange Management" business practice standards team has begun the process to enhance the respective business practices. Mr. Bilke stated that the new proposals are recommended 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. Mr. Bilke encouraged all RS members to participate in the NAESB business practice standard development because of the members' expertise in the subject matter.

Frequency Device Calibration – FERC Order 731

The RS discussed how to address and give recommendations to the industry on how to calibrate frequency devices noted in BAL-005, R17.

BAL-005, R17, “Each BA shall at least annually check and calibrate its time error and frequency devices against a common reference. . . .”

The long-term path to clearly define the requirements to annually check and calibrate the time error and frequency devices is through the Balance Authority Control Standard Drafting Team effort to revise the BAL-005 standard. The short-term path is for the RS to make technically based recommendations to the NERC Compliance department through the Reliability Standards Audit Worksheet (RSAW). Both efforts are being undertaken at this time.

BAL Standards Reliability Standards Audit Worksheets (BAL RSAWs)

The RS discussed and established action items for each RS working group to review the current reliability standard audit worksheet (RSAW) for each BAL standard that is in their respective area of expertise and recommend enhancements to the NERC Compliance department to improve the RSAW audits. 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	Reserves Working Group	Larry Akens
BAL-006	Inadvertent Interchange Working Group	Don Badley

NERC Active Resources Subcommittee Applications

Resource Adequacy Application

Consortium for Electric Reliability Technology Solutions (CERTS) project Mmanager Carlos Martinez presented the situational awareness slides to the RS. These monitoring slides are available on the Resource Adequacy application. The slides were viewed favorably by the subcommittee.

Messrs. Vandervort and Martinez will visit with NERC IT staff to discuss the RS request to develop a registration for either individuals (currently available) and for user groups such as control room staff. Having one registration for control rooms will greatly increase the user base for this application.

Inadvertent Interchange Application

Inadvertent Interchange Working Group chair Don Badley stated that the WECC Interchange Tool (WIT) interchange data can be manually downloaded into the NERC Inadvertent Interchange application but the best possible scenario is for the WIT to electronically interface with the NERC AIE application and then dump data into the NERC Inadvertent Interchange application. CERTS staff has developed the software specifications to forward the WIT interchange data to the NERC Inadvertent Interchange application and to the NERC AIE application. However, WECC chose not to pursue this course of action. Mr. Badley will investigate submitting a RS-sponsored project request to incorporate the CERTS specifications.

Bill Herbsleb and Mr. Martinez researched the historical inadvertent interchange imbalances and mismatches. They have identified the source of significant mismatches prior to 2006 that have continued to carry forward creating the current imbalances. Efforts are under way to correct all imbalance data and mismatch inadvertent interchange balances. The investigation will continue until the historical imbalances and mismatches are resolved. RS members may be called upon to assist the balancing authorities in their regions to address incorrect data.

AIE Monitoring Application

The RS called an area interchange error (AIE) survey in the Eastern Interconnection, for the hours of May 12, 2007, HE 0200 CDT, May 12, 2007, HE 0600 CDT, and June 17, 2007, HE 0600 CDT. 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. Four balancing authorities currently have mismatched data that needs to be resolved before conclusions and recommendations can be made. Actions to support the AIE Monitoring application include:

- AIE survey mismatches need to be addressed and resolved
- Designated members of the RS will review and evaluate the three requested AIE surveys
- Draft and final reports will be forthcoming from the review team
- WECC will call an AIE survey when an appropriate event occurs
- When the AIE monitoring application is verified and validated (based on the AIE survey data), the application will be placed into production and it will be ready for the next AIE survey

Frequency Monitoring and Analysis Application

Messrs. Vandervort and Martinez reported that the frequency monitoring and analysis (FMA) application is awaiting NERC Technology Committee approval to fund the NERC-CERTS application contract. It is anticipated that the contract will be signed and the FMA application will be implemented prior to the next RS meeting.

NERC Benchmarking Request

The NERC benchmarking group requested the RS to analyze the 2002 through 2007 frequency data trends to identify root causes to the frequency events that occurred in 2008. The benchmarking statistics are based on all frequency events that exceeded the respective interconnection's frequency trigger limits (FTLs). Each event that lasted at least one minute, regardless of the event duration, was designated as one event.

The RS discussed the frequency trends and noted that past analysis and reports have determined that large frequency events, greater than 31 mHz, have gone down in number while the smaller frequency events, 31 mHz or smaller, have increased in number. The RS believes the increased number of smaller frequency events and an increase in interconnection frequency noise are the reasons for the increased number of 1, 2, 3, and 4 minute frequency events exceeding the FTL high and FTL low limits.

The RS will analyze the interconnection frequency events and determine if the frequency excursions are a problem for the interconnections.

DOE North American SynchroPhasor Initiative (NASPI)

Chair Bilke informed the RS that NERC has designated two managers for the North American SynchroPhasor Initiative (NASPI) and that the NASPI project is included in the proposed NERC 2009 budget. Additional information can be found on following Web sites:

<http://www.naspi.org/>

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

Interconnection Frequency Analysis

The RS discussed the interconnection frequency performance trends focusing on the year 2008. The discussion did not identify any events that required specific subcommittee investigation.

NERC Operating Committee Directives to the Resources Subcommittee Reliability Concepts Document

The NERC Operating Committee asked the RS to write a comprehensive chapter on load-generation balancing. Chair Bilke drafted a “Balancing” chapter for the Reliability Concepts document. Larry Akens, John Tolo, and Robert Rhodes presented their initial edits to the document. The balancing chapter will be divided into sections that the applicable RS working groups will address and write the concepts details, descriptions, supporting language, and provide necessary calculations and illustrations. The effort is on-going.

Time Error Monitoring

The subcommittee reported the following time error monitoring statistics:

Interconnection Time Error Totals – Through June, 2008			
	Fast Time Error Corrections	Slow Time Error Corrections	Total Time Error Corrections
Eastern Interconnection	57	0	57
Western Interconnection	22	25	47
ERCOT	36	4	40
Hydro Québec	-----	-----	-----

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 to review and discuss the monthly and 12-month rolling average CPS1 reports.

The RS reviewed and discussed 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% score.

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 to review and discuss the monthly and 12-month rolling average CPS2 reports.

The RS reviewed and discussed 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% score.

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 to review and discuss the monthly and quarterly DCS reports.

The RS reviewed and discussed the DCS report for performance analysis purposes and to identify generic problems, and to assess why balancing authorities exceeded their DCS limits.

Resources Subcommittee Action Item List

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

Dates and Locations of Future Meetings

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

Tuesday, October 28, 2008	8 a.m.–5 p.m.	San Antonio, TX
Wednesday, October 29, 2008	8 a.m.– noon	
Wednesday, January 28, 2009	8 a.m. – 5 p.m.	San Diego, CA
Thursday, January 29, 2009	8 a.m. – noon	
Wednesday, April 29, 2009	8 a.m. – 5 p.m.	Albuquerque, NM
Thursday, April 30, 2009	8 a.m. – noon	
Wednesday, July 29, 2009	8 a.m. – 5 p.m.	Minneapolis MISO/MRO Office
Thursday, July 30, 2009	8 a.m. – noon	
Wednesday, October 28, 2009	8 a.m. – 5 p.m.	Phoenix, AZ
Thursday, October 28, 2009	8 a.m. – noon	
Wednesday, January 27, 2010	8 a.m. – 5 p.m.	New Orleans, LA
Thursday, January 28, 2010	8 a.m. – noon	Alternate: Miami, FL

Respectfully submitted,

Tom Vandervort

Thomas J. Vandervort
 Resources Subcommittee Secretary

Angie Nicastro

Exhibit A

From: Angie Nicastro
Sent: Monday, June 02, 2008 10:10 AM
To: Angie Nicastro
Subject: MEETING: July 2008 Resources Subcommittee
Attachments: NERC Resources Subcommittee.vcs



Meeting Announcement: Resources Subcommittee

July 30-31, 2008 | Victoria, British Columbia, Canada

Register online today: <http://www.nerc.net/meetingregistrations/Committee.aspx?meetingdate=7/30/2008&meetingtype=RS>

Meeting Group and Dates	
Group Name	Resources Subcommittee
Dates	7/30/2008 -- 8:00:00 AM to 5:00:00 PM 7/31/2008 -- 8:00:00 AM to 12:00:00 PM
Hotel	
Hotel	Chateau Victoria Hotel & Suites
Address	740 Burdett Avenue
City	Victoria, BC V8W 1B2
State	Canada
Phone	250-382-4221
Fax	TBD
Cut-Off Date	7/7/2008
Attending Staff	
Staff	Tom Vandervort
Miscellaneous	
Notes	<p>PLEASE CALL THE HOTEL DIRECTLY TO BOOK RESERVATIONS</p> <p>Hotel Location- map</p> <ul style="list-style-type: none"> • Room Block Code: NERC • Room rate: \$195 CAD single/double occupancy • Room block: Nights of July 27-30, 2008 - There are a limited amount of rooms are available. • Check-in: 4 p.m., Check-out: noon • Check with the hotel directly for early cancellation/departure fees • Hotel cut off date: July 7, 2008 NOTE: After the cut-off date the hotel will release this block of rooms and only accept reservations on a space-available basis at the prevailing room rate. • Dress code: Business casual

When making your hotel reservation, please be sure to mention the "NERC" to get the preferred rate and ensure your reservation is credited to the NERC room block. The hotel will charge NERC a penalty if the total rooms blocked for this event are not picked up. Also, if you use a travel agency for your travel plans, please make sure the agency mentions NERC. For more information or assistance, please contact Angie Nicastro, Administrative Assistant, at angie.nicastro@nerc.net or at (609) 452-8060.

Attached please find an outlook meeting invitation. If you would like to add it to your schedule, just double click on the attachment, select "Open" from the pop up screen, and then hit the "Save & Close" button at the upper left hand of the meeting screen to add to your calendar.

North American Electric Reliability Corporation
 116-390 Village Blvd.
 Princeton, NJ 08540
 609.452.8060 | www.nerc.com

8/4/2008

Agenda (Revised) Resources Subcommittee

July 30, 2008 | 8 a.m.–5 p.m.
July 31, 2008 | 8 a.m.–noon
Chateau Victoria Hotel & Suites
740 Burdett Avenue
Victoria, BC V8W 1B2, Canada
250-382-4221

1. Administrative

- a. Membership and Guests — Chair
- b. Arrangements — Secretary
- c. Approval of Meeting Minutes
 - i) April 30–May 1, 2008 — Chair
- d. Procedures
 - i) Parliamentary Procedures — Chair
 - ii) Antitrust Compliance Guidelines — Secretary
- e. Resources Subcommittee Action Items List (review prior to the meeting) — Chair
- f. NERC – RS Confidentiality Agreement — Chair
- g. Resources Subcommittee Charter — Secretary

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. European Frequency Research

- a. Research Effort in Europe to Understand Frequency Patterns — Chair
 - i) **Reliability Concepts Document** — **Larry Akens w/John Tolo's Input**

4. NERC Reliability Standards

- a. Frequency Response SDT — Bill Herbsleb
 - i) **Three Items to Present** — **Mike Potishnak**
 - ii) **Frequency Response Calculations** — **Carlos Martinez**
 - iii) **NYISO Unit Frequency Response** — **Terry Bilke**

- 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 — Chair
- f. **Frequency Devise Calibration – FERC Order 713 — Terry Bilke**
- g. **BAL RSAWs — Terry Bilke**

5. 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
- h. **Benchmarking Discussion — Carlos Martinez, Tom Vandervort**

6. Frequency and Control Performance

- a. Western Interconnection Frequency Trends and Events — Bart McManus
- 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
- i) **Inadvertent Interchange Balances — Carlos Martinez**
- h. AIE Survey — Terry Bilke, Don Badley, Raymond Vice, Carlos Martinez
- i. Regional UFLS Databases — Tom Vandervort
- j. Eastern Interconnection Alarms – Observations — Raymond Vice, Carlos Martinez
- k. Disturbances Frequency Signatures and Analysis — Raymond Vice

7. Time Error

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

8. NERC Operating Committee Directives to the Resources Subcommittee

- a. Reliability Concepts Document — Terry Bilke
 - i) **Reliability Concepts Document – Larry Akens w/John Tolo’s Input**

9. Future Meetings

- a. October 29–30, 2008 San Antonio
- b. January 28–29, 2009 San Diego
- c. April 29–30, 2009 Albuquerque (tentative)
- d. July 29–30, 2009 Toronto (tentative)
- e. October 28–29, 2009 Phoenix

Resources Subcommittee Meeting July 30-31, 2008

Attendees

Akens, Larry (SERC)
Badley, Don (Vice Chairman) (WECC)
Beckerle, Gerry (SERC)
Bilke, Terry (Chairman)
Crutchfield, Stephen (NERC) (guest)
Eckstein, James (RFC) (proxy for John Swez)
Herbsleb, William (RFC)
Hils, Doug (Duke Energy) (guest)
Martinez, Carlos (CERTS) (guest)
Mirheydar, Mahmood (FERC) (guest)
Murphy, James (BPA) (proxy for Bart McManus)
Niemeyer, Sydney (ERCOT)
Potishnak, Michael (NPCC)
Rhodes, Robert Jr. (SPP)
Stephens, Glenn
Tolo, John (WECC)
Vandervort, Thomas (NERC)
Vice, Raymond (SERC)

**Individual Statements
Resources Subcommittee Meeting
July 30-31, 2008**

There were none.

**Minority Opinions
Resources Subcommittee Meeting
July 30-31, 2008**

There were none.



**Resources Subcommittee
July 30–31, 2008 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>050108, Terry started an outline of the Reliability Concepts “Balance” Chapter. Terry asked each Working Group to further develop their respective sections.</p> <p>073108, Larry Akens, John Tolo, Robert Rhodes began contributing and editing the document. Each Working Group is to develop their respective sections.</p> <p>Bill Herbsleb volunteered to address the arrow / timelines in the RS document.</p>	102908	
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>073108, At the next RS meeting, request Carlos to describe the NERC-CERTS FMA</p>	102908	

Action Figure	Subject	Action Item/Assignment	Due Date	Completion Date
		application capabilities to be the frequency event repository.		
Terry Bilke	Control Criteria Working Group	013008, With the departure of Alan Oneal from the RS, a new Control Criteria Working Group Chair needs to be designated. One option is for each RS member to chair the CCWG for a period of time (e.g. 12 month rotation). Or, the CCWG may need to be retired.	10290808	
Resources Subcommittee Working Groups	Reliability Standards Audit Worksheets (RSAWs)	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: <ul style="list-style-type: none"> • BAL-001 FRSDT Bill Herbsleb • BAL-002 ORWG Larry Akens • BAL-003 FRSDT Bill Herbsleb • BAL-004 IIWG Don Badley • BAL-005 ORWG Larry Akens • BAL-006 IIWG Don Badley 	102908	
Resources Subcommittee	Benchmarking Request	073108, The NERC Benchmarking Department requested the RS to analyze the 202 through 2007 frequency data trends to identify root causes to the frequency events that occurred in 2008 (see the RS meeting agenda for July 30-31, 2008). The RS will analyze the Interconnection frequency events and determine if the frequency excursions are a problem for the interconnections.	102908	
Tom Vandervort	Control Performance Data	073108, During the control performance data discussion, issues arose, Tom Vandervort will check with Chris Scheetz on the following: <ul style="list-style-type: none"> • Identify why CPS2 – LAFA is over 100%. How can that be? • CPS2 – in SERC, where is AMMO and AMIL? • Why are all BAs not represented in the DCS Quarterly Summary? • Request to include lost units noted in DCS Reports in Quarterly Summary. 	102908	
Raymond Vice and Frequency Work Group	Disturbance Analysis Procedure	013108, After a discussion on consolidating the various industry tools used to monitor and analyze disturbances, Raymond Vice volunteered the Frequency Work Group to write a white paper on how to analyze a disturbance. The goal is to write a generic set of actions that can be used to analyze events and disturbances in a consistent manner.	102908	

Action Figure	Subject	Action Item/Assignment	Due Date	Completion Date
		050108, Raymond, Tom, and Bob Cummings to get together to determine what Bob needs. 073108, Raymond and the FWG to work on the Disturbance Analysis and Frequency Signature technical paper.		
Raymond Vice and Frequency Work Group	Load-Generation Balancing Chapter for the OC Reliability Concepts Open Source Document	050108, Raymond and the FWG to work on the respective sections of Terry's Reliability Concepts "Balancing" Chapter.	102908	
Raymond Vice and Frequency Working Group	European Frequency Research Group to Understand Frequency Patterns	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): <ol style="list-style-type: none"> 1. Are there frequency patterns the same in the Eastern Interconnection, especially their correlation to the load gradients? 2. Do you have any results/observations regarding the causes for the power imbalances? 3. Have you already applied any measures against the power imbalances. 	102908	
Don Badley and Inadvertent Interchange Work Group	Inadvertent Interchange Balances	073108, HIGH PRIORITY Coordinated effort is necessary to attain and incorporate the proper 2006 and 2007 carry-forward inadvertent interchange data. 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.	102908	
Don Badley and Inadvertent Interchange Work Group	Load-Generation Balancing Chapter for the OC Reliability Concepts Open Source Document	073108, Don and the IIWG to work on the respective sections of Terry's Reliability Concepts "Balancing" Chapter.	102908	
Larry Akens and Operating Reserves Work Group	Load-Generation Balancing Chapter for the OC Reliability Concepts Open	073108, Larry and the ORWG to work on the respective sections of Terry's Reliability Concepts "Balancing" Chapter.	102908	

Action Figure	Subject	Action Item/Assignment	Due Date	Completion Date
	Source Document			
CCWG Chair and Control Criteria Work Group	Rewrite Performance Standards Reference Document	073108, Contact each open BAL-related standard drafting team to request that they write or plan to write a module for each SDT specific requirement and how to achieve technical results for the PSRD.	102908	
Don Badley and Inadvertent WG	AIE Field Test and initial AIE Survey	073108, In progress - evaluate the AIE Field Test and the automated electronic initial AIE Survey (May 12, 2007, HE 0200 CDT; May 12, 2007, HE 0600 CDT; and June 17, 2007, HE 0600 CDT). Contact BAs that still have interchange mismatches and imbalances for the four AIE Survey hours specified above. Due Date: ASAP	102908	
	NERC-CERTS Project Review			
Terry Bilke	Resources Adequacy Application Review Team	021007, Resources Adequacy Application (NERC Project 2000-03) – A small Resources Subcommittee team will review the issues and address the project parameters. The goal is to recommend expectations, priorities, uses, methodologies, specifications, timelines, and results. Collaboration with ORS, RCWG, NERC Projects, NERC Training Dept, NERC IT, etc. to be initiated as necessary. Project Review Team: Leader-Terry Bilke, Raymond Vice, Sydney Niemeyer, Robert Rhodes, Bill Herbsleb, John Tolo, Bart McManus, Tom Vandervort Group recommendations are to be shared with RS, CERTS and NERC Projects. RS to review the data quality reports – are they appropriate or do they need to be modified. RS recommends setting the frequency response at 3,000 MW/0.1 Hz 073108, Team available for consultation or action	102908	
Terry Bilke	Develop Resources Adequacy Application Training Documents	021007, Resources Adequacy Application (NERC Project 2000-03) – A small Resources Subcommittee team will review the issues and address the project parameters. The goal is to recommend training lessons content, on-line help application, user friendly training tools. Collaboration with ORS, RCWG, NERC Projects, NERC Training Dept, etc. to be initiated as necessary. Project Review Team: Leader-Terry Bilke, Robert Rhodes, Tom Vandervort	102908	

Action Figure	Subject	Action Item/Assignment	Due Date	Completion Date
		<p>Group recommendations are to be shared with RS, CERTS, and NERC Projects.</p> <p>Training – there are a lot of functions that are not easy to know what to do. RCs want additional training.</p> <ul style="list-style-type: none"> • Training sites include NE, SE, and one in the west; • another option is to “train the trainer;” • another option is to have a WebEx session. <p>102908, Team available for consultation or action</p>		
Don Badley	AIE Monitoring Application Review	<p>021007, AIE Monitoring Application (NERC Project 2000-04) – A small Resources Subcommittee team will review the issues and address the project parameters. The goal is to recommend expectations, priorities, uses, methodologies, specifications, timelines, and results. Collaboration with ORS, RCWG, NERC Projects, NERC Training Dept, NERC IT, etc. to be initiated as necessary.</p> <p>Project Review Team: Leader-Don Badley, Raymond Vice, Bart McManus, John Tolo, Terry Bilke, Don McInnis, Mike Potishnak, Tom Vandervort, Brian Nolan</p> <p>Group recommendations are to be shared with RS, CERTS, and NERC Projects.</p> <p>The following individuals signed the WECC confidentiality agreement and were approved to receive WECC data to support the AIE Monitoring Application development:</p> <ul style="list-style-type: none"> Don Badley, Team Leader Raymond Vice Bart McManus John Tolo Terry Bilke Don McInnis Mike Potishnak Tom Vandervort Brian Nolan <p>073108, Team available for consultation or action</p>	102908	
Don Badley	Inadvertent Interchange Application Review	<p>021007, Inadvertent Interchange Application (NERC Project 2001-37) – A small Resources Subcommittee team will review the issues and address the project parameters. The goal is to recommend expectations, priorities, uses, methodologies, specifications, timelines, and results. Collaboration with ORS, RCWG, NERC Projects, NERC Training Dept, NERC IT, etc. to be initiated as necessary.</p> <p>Project Review Team: Leader-Don Badley, Inadvertent Task Force, someone from</p>	102908	

Action Figure	Subject	Action Item/Assignment	Due Date	Completion Date
		<p>Southwest Power Pool (Robert Rhodes will be the point of contact to identify who this person will be), Tom Vandervort</p> <p>Group recommendations are to be shared with RS, CERTS, and NERC Projects.</p> <p>In progress. Don will recommend additional monthly interconnection inadvertent interchange reporting to Carlos</p> <p>TV to work with Joe Emde to generate monthly inadvertent interchange accounting reports.</p> <p>073108, Team available for consultation or action</p>		
Raymond Vice	CPS1 & BAAL Monitoring Application Review	<p>021007, CPS1 & BAAL Monitoring Application (NERC Project 2001-38) – A small Resources Subcommittee team will review the issues and address the project parameters. The goal is to recommend expectations, priorities, uses, methodologies, specifications, timelines, and results. Collaboration with ORS, RCWG, NERC Projects, NERC Training Dept, NERC IT, etc. to be initiated as necessary.</p> <p>Project Review Team: Leader-Raymond Vice, Doug Hills, Mark Henry, Sydney Niemeyer, Don Badley, John Tolo, Bart McManus, Tom Vandervort</p> <p>Group recommendations are to be shared with RS, CERTS, and NERC Projects.</p> <p>073108, Team available for consultation or action</p>	102908	
Raymond Vice	Frequency Monitoring and Analysis (FMA) System Project Review	<p>021007, Frequency Monitoring and Analysis (FMA) System Project (NERC Project 2005-06) – A small Resources Subcommittee team will review the issues and address the project parameters. The goal is to recommend expectations, priorities, uses, methodologies, specifications, timelines, and results. Collaboration with ORS, RCWG, NERC Projects, NERC Training Dept, NERC IT, etc. to be initiated as necessary.</p> <p>Project Review Team: Leader-Raymond Vice, Frequency Task Force, Tom Vandervort</p> <p>Group recommendations are to be shared with RS, CERTS, and NERC Projects.</p> <p>073108, Team available for consultation or action</p>	102908	
Brian Nolan	Incorporate ERCOT into ACE-Freq App	<p>092106, Brian Nolan to incorporate the necessary technology to allow ERCOT to send data to the ACE-Frequency monitoring application. Brian will report the progress of this activity to the RS at the January, 2007 meeting.</p> <p>073107, Brian Nolan, the project is waiting on Verizon line drops – In progress.</p>	102908	
Tom Vandervort	NERC Application Registration	<p>073108, Tom and Carlos are to visit with Brian Nolan to develop a registrations for</p>	102908	

Action Figure	Subject	Action Item/Assignment	Due Date	Completion Date
and Carlos Martinez		both individuals and for groups such as a control room registration.		
Carlos Martinez	Application Web Tutorial and Q&A	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.	102908	
Carlos Martinez	WIT Link to AIE and Inadvertent Applications	073108, Carlos Martinez to send the CERTS electronic – user - interface to the AIE and Inadvertent Interchange applications Specifications to the RS.	102908	