

Minutes Resources Subcommittee

January 27–28, 2010
Tucson Electric Company Office
Tucson, Arizona

A meeting of the North American Electric Reliability Corporation (NERC) Resources Subcommittee (RS) was held on January 27–28, 2010 at the Tucson Electric Company Office in Tucson, Arizona. The agenda, and attendance list are attached as **Exhibits A** and **B**, respectively. There are no individual statements or minority opinions.

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

Resources Subcommittee Appreciation for Meeting Host Tucson Electric Company

The Resources Subcommittee acknowledges and appreciates the hospitality that the Tucson Electric Company Organization and specifically John Tolo and Joanne Metcalfe 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, 2009 RS Meeting Minutes

Mike Potishnak moved to approved the October 28–29, 2009 RS minutes. The motion was approved.

RS and Working Group Scopes, Information Item

The NERC Operating Committee reviewed and approved the revised Resources Subcommittee Scope, the initial Frequency Working Group Scope, the initial Inadvertent Interchange Working Group Scope, and the initial Operating Reserves Working Group Scope during the December, 2009 OC meeting. The RS and working group scopes can be found on the Resources Subcommittee Web site, as follows:

<http://www.nerc.com/filez/rs.html>

Approval of RS Meeting Agenda

At the request of RS member Don McInnis, the RS added an agenda item to discuss the definition of a “frequency event” and the respective parameters associated with a frequency event. With the addition of this agenda item, Larry Akens moved to approve the meeting agenda. The motion was approved.

Working Group Reports

Frequency Working Group — Chair Raymond Vice

Mr. Vice reported that since the last RS meeting, the Frequency Working Group has worked with the Frequency Response Standard Drafting Team on the drafting team's frequency response activities. The Frequency Working Group will review and respond to the "Balancing and Frequency Control (Part 1)" document public comments after the comment window closes on February 1, 2010.

Inadvertent Interchange Working Group — Chair Don Badley

Mr. Badley reported that the WECC pre-July 1, 2009 Inadvertent Interchange balances are being traded and a number of BAs have zeroed out their balances. The intent is for all WECC BAs to zero out their pre-July 1, 2009 inadvertent interchange balances by December 31, 2010.

Mr. Badley and Bill Herbsleb reported that they are continuing to balance the inadvertent interchange accounts in the Eastern Interconnection. Mr. Herbsleb noted that there are Eastern Interconnections BAs that are in the dispute resolution process to settle their inadvertent interchange balance mismatches.

Operating Reserves Working Group — Chair Larry Akens

Mr. Akens reported that the major activity of the Operating Reserves Working Group is revising the Operating Reserves definitions and requirements through the Balancing Authority Controls Working Group.

Frequency Response Initiative

Bob Cummings reported that the Frequency Response Initiative preliminary work is just getting started. The initiative was delayed when new NERC CEO Gerry Cauley replaced outgoing CEO Rick Sergel and staffing priorities took precedence over the initiative. Significant efforts will be coordinated between the RS, the Frequency Working Group, the Frequency Response Standard Drafting Team, the Frequency Response Initiative team, and NERC staff, which include:

- NERC Events Analysis staff assisting the Frequency Response Standard Drafting Team in defining what a "frequency event" is, determining the parameters associated with frequency events, and creating an on-going list of events for BAs to use to calculate their frequency response.
- Capturing data from utilities' high speed recorders for the initial indication of frequency events.
- Defining frequency profiles from the various frequency events.
- Looking at trending, information, phasors, and wind farms, etc.
- Defining the frequency response issues for the RS to address and contribute to the overall frequency response evaluations.

The RS suggested that a historical repository of frequency events would be very helpful. The Frequency Response Standard Drafting Team has a field trial planned to evaluate and analyze data and information.

Mr. Cummings said that now is the time to submit what the RS wants and desires for frequency response activities to be incorporated into the 2011 NERC budget.

ACE Diversity Interchange (ADI)

Don Badley, the ADI Task Force chair, reported that the ADITF had its first conference call in December, 2009 and will have a face-to-face meeting in Tucson, AZ after the RS meeting. The ADITF is just beginning its activities and does not have any products to present to the RS.

NERC BA Bubble Diagram

The RS continues to revise the NERC BA Bubble Diagram. Additional changes were presented to Secretary Vandervort during the RS meeting. The RS is asked to review the Bubble Diagram in the meeting agenda and forward any enhancements to Mr. Vandervort in a timely manner. The RS will work with the NERC Compliance Registry Program to keep the Bubble Diagram up-to-date with the changes to the NERC registry.

The BA Bubble Diagram can be found at: http://www.nerc.com/docs/oc/rs/ctrl_nerc.jpg

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 through the NERC Standards Program. 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 FRRSDT is coordinating efforts with the RS, the Frequency Working Group, NERC Staff, and the NERC Frequency Response Initiative team. The first priority is to develop the definition of a “frequency event” and the parameters associated with such frequency events. The FRRSDT will establish parameters, define parameters, identify specific events, collect BA data, evaluate the collected data, and draft standards as necessary.

Reliability-based Control SDT — Chair Doug Hils

Doug Hils, Reliability-based Control Standard Drafting Team (RBCSDT) chair, reported to the RS that the RBCSDT field trials are continuing with status conference calls taking place each month. Mr. Hils is requesting additional participation in the RBCSDT field trials, especially small BAs. WECC is planning to begin participation on March 1, 2010. ERCOT began participation on December 15, 2009. Mike Potishnak is coordinating Hydro Québec’s participation in the field trials with an expected start date of April 1, 2010.

Mr. Hils said that the RBCSDT field trials have not had a severe, tough summer with the conditions that would reflect a number of BAs leaning on the interconnections to truly test the standards concepts.

RBC monthly field trial summaries, documents and tools can be found on the RBCSDT Web site, at: http://www.nerc.com/filez/standards/Reliability_Based_Control_FieldTrial_Tools_2007-18-RF.html

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

Larry Akens, Balancing Authority Control Standard Drafting Team (BACSDT) chair, reported the following:

BAL-002 Disturbance Control Standard (DCS)

BAL-004	BACSDT has a draft that contains 3 or 4 requirements Time Error Correction (TEC) BACSDT has a draft that changes the TEC from 20 mHz offset to 10 mHz offset
BAL-005	BACSDT expects to perform field trials using the proposed TEC 10 mHz offset Automatic Generator Control (AGC), current title BACSDT proposes to change title to “Area Control Error – ACE”
BAL-006	BACSDT has a draft standard ready to go to ballot Inadvertent Interchange BACSDT has received a lot of comments on this standard, development in progress

2010 CPS2 Bounds Report

RS Chair Terry Bilke surveyed the RS members to determine the status of the 2010 CPS2 Bounds report and found that the Eastern Interconnection bounds data is not completely validated. WECC’s 2010 Bounds Report data has been validated and will be officially implemented on February 9, 2010. ERCOT’s 2010 Bounds Report data will be officially implemented on February 1, 2010. Hydro Québec’s 2010 Bounds Report data will be officially implemented on February 1, 2010.

Performance Standard Reference Guidelines

The Performance Standard Reference Document was posted for a 45 day for industry comments. The comment window ends on February 15. The Frequency Working Group will review and respond to comments.

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 C**. The presentation focused on:

- Application Status Summary
- Intelligent Alarm Summary 2007– 2009
- FMA Change of Scope Functional Requirements
- Current and Outstanding Application Issues

CERTS Initiative with D.O.E. to Support Reliability Standards

Mr. Martinez reported that the Department of Energy will lead a CERTS initiative to support research to enhance the NERC reliability standards, see **Exhibit D**.

Inadvertent Interchange Application Training

The RS supports and will evaluate Inadvertent Interchange application training for industry staff. Secretary Vandervort will survey the RS members to determine where, when, and what is needed for such training. Mr. Martinez suggests that two training sessions be conducted for maximum benefit, one in the Southwest and one in the Midwest section of the United States.

DOE North American SynchroPhasor Initiative (NASPI)

Bob Cummings reported that Lynn Costantini will continue to be the NASPI sponsor, he (Mr. Cummings) will be the NERC NASPI technical point-of-contact, and Stan Johnson, recently retired from NERC, will continue to be the NERC NASPI coordinator.

Mr. Bilke suggests that the NASPI Real Time Data Measuring System (RTDMS) visualization tool is very good and recommends the RS members take a look at it. Additional information can be found on the following Web sites:

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

FERC Study on Frequency Response of Renewable Resources

Mahmood Mirheydar reported that FERC is performing a study to determine if frequency response is an appropriate metric to assess the reliability impacts of integrating renewable resources. If frequency response is an appropriate metric, then use the resulting metric(s) to assess the reliability impact of various levels of renewable resources on the grid. The study is being performed by the Lawrence Berkeley National Laboratory and is complete and in review. The report is may be released to the public before the next RS meeting, if so, then Mr. Mirheydar will be able to report on the results, conclusions, and recommendations.

Time Error Monitoring

The subcommittee reported the following time error monitoring statistics:

Interconnection Time Error Totals – 2009			
	Fast Time Error Corrections	Slow Time Error Corrections	Total Time Error Corrections
Eastern Interconnection	71	0	71
Western Interconnection	33	41	74
ERCOT	52	6	58
Hydro Québec *	-----	-----	-----

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

Performance Monitoring

- CPS1 Review
- CPS2 Review
- DCS Review

The NERC compliance program determines control performance standards CPS1, CPS2, and 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 CPS1, CPS2, and DCS reports.

Due to the confidential nature of the data, details of the discussion and review the results of the call cannot be disclosed.

Resources Subcommittee Action Item List

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

Dates and Locations of Future Meetings

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

Tuesday, April 27, 2010 Wednesday, April 28, 2010	1 p.m. – 5 p.m. 8 a.m. – 5 p.m.	St. Louis, MO Host: Ameren Co. * Coordinator: Gerry Beckerle
Wednesday, July 28, 2010 Thursday, July 29, 2010	8 a.m. – 5 p.m. 8 a.m. – noon	Pensacola, FL Host: Southern Co. Office * Coordinator: Raymond Vice
Wednesday, October 27, 2010 Thursday, October 28, 2010	8 a.m. – 5 p.m. 8 a.m. – noon	Valley Forge, or Philadelphia, PA Host: PJM Office * Coordinator: Bill Herbsleb
Wednesday, January 29, 2011 Thursday, January 30	8 a.m. – 5 p.m. 8 a.m. – noon	Austin, TX Host: ERCOT Office * Coordinator: Sydney Niemeyer
Wednesday, April 20, 2011 Thursday, April 21, 2011	8 a.m. – 5 p.m. 8 a.m. – noon	San Diego, CA Host: TBD, WECC RS members * Coordinator: WECC RS Members

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

Respectfully submitted,

Tom Vandervort

Thomas J. Vandervort
 Resources Subcommittee Secretary

Antitrust Compliance Guidelines

I. General

It is NERC's policy and practice to obey the antitrust laws and to avoid all conduct that unreasonably restrains competition. This policy requires the avoidance of any conduct that violates, or that might appear to violate, the antitrust laws. Among other things, the antitrust laws forbid any agreement between or among competitors regarding prices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that unreasonably restrains competition.

It is the responsibility of every NERC participant and employee who may in any way affect NERC's compliance with the antitrust laws to carry out this commitment.

Antitrust laws are complex and subject to court interpretation that can vary over time and from one court to another. The purpose of these guidelines is to alert NERC participants and employees to potential antitrust problems and to set forth policies to be followed with respect to activities that may involve antitrust considerations. In some instances, the NERC policy contained in these guidelines is stricter than the applicable antitrust laws. Any NERC participant or employee who is uncertain about the legal ramifications of a particular course of conduct or who has doubts or concerns about whether NERC's antitrust compliance policy is implicated in any situation should consult NERC's General Counsel immediately.

II. Prohibited Activities

Participants in NERC activities (including those of its committees and subgroups) should refrain from the following when acting in their capacity as participants in NERC activities (e.g., at NERC meetings, conference calls and in informal discussions):

- Discussions involving pricing information, especially margin (profit) and internal cost information and participants' expectations as to their future prices or internal costs.
- Discussions of a participant's marketing strategies.
- Discussions regarding how customers and geographical areas are to be divided among competitors.

- Discussions concerning the exclusion of competitors from markets.
- Discussions concerning boycotting or group refusals to deal with competitors, vendors or suppliers.
- Any other matters that do not clearly fall within these guidelines should be reviewed with NERC's General Counsel before being discussed.

III. Activities That Are Permitted

From time to time decisions or actions of NERC (including those of its committees and subgroups) may have a negative impact on particular entities and thus in that sense adversely impact competition. Decisions and actions by NERC (including its committees and subgroups) should only be undertaken for the purpose of promoting and maintaining the reliability and adequacy of the bulk power system. If you do not have a legitimate purpose consistent with this objective for discussing a matter, please refrain from discussing the matter during NERC meetings and in other NERC-related communications.

You should also ensure that NERC procedures, including those set forth in NERC's Certificate of Incorporation, Bylaws, and Rules of Procedure are followed in conducting NERC business.

In addition, all discussions in NERC meetings and other NERC-related communications should be within the scope of the mandate for or assignment to the particular NERC committee or subgroup, as well as within the scope of the published agenda for the meeting.

No decisions should be made nor any actions taken in NERC activities for the purpose of giving an industry participant or group of participants a competitive advantage over other participants. In particular, decisions with respect to setting, revising, or assessing compliance with NERC reliability standards should not be influenced by anti-competitive motivations.

Subject to the foregoing restrictions, participants in NERC activities may discuss:

- Reliability matters relating to the bulk power system, including operation and planning matters such as establishing or revising reliability standards, special operating procedures, operating transfer capabilities, and plans for new facilities.
- Matters relating to the impact of reliability standards for the bulk power system on electricity markets, and the impact of electricity market operations on the reliability of the bulk power system.
- Proposed filings or other communications with state or federal regulatory authorities or other governmental entities.
- Matters relating to the internal governance, management and operation of NERC, such as nominations for vacant committee positions, budgeting and assessments, and employment matters; and procedural matters such as planning and scheduling meetings.

Agenda Resources Subcommittee

January 27, 2010 | 8 a.m.–5 p.m.
January 28, 2010 | 8 a.m.–noon
Tucson Electric Co. Office
1 South Church Street
Tucson, Arizona 85701

1. Administrative

- a. Membership and Guests — Terry Bilke
 - i) Resource Subcommittee (RS) Organization and Assignments (**Attachment 1**)
 - ii) RS Roster (**Attachment 2**)
 - iii) RS Survey Contacts (**Attachment 3**)
- b. Arrangements — Tom Vandervort
- c. Approval of the October 29–30, 2009 RS Meeting Minutes — Terry Bilke (**Attachment 4**)
- d. Approval of the Meeting Agenda
- e. Procedures
 - i) Parliamentary Procedures — Terry Bilke (**Attachment 5**)
 - ii) Antitrust Compliance Guidelines — Tom Vandervort (**Attachment 6**)
- f. Resources Subcommittee Action Items List (review prior to the meeting) — Terry Bilke (**Attachment 7**)
- g. NERC–RS Confidentiality Agreement — Terry Bilke (**Attachment 8**)
- h. Resources Subcommittee Scopes, See Item 3, below — Tom Vandervort
http://www.nerc.com/docs/oc/rs/RS_Scope.pdf

2. NERC CEO Vision, Information Only — Tom Vandervort

- a. Speaking Points for EEI CEOs (**Attachment 9**)
- b. Presentation to Standing Committees, December 8, 2009 (**Attachment 10**)

3. **RS and Working Group Scopes, Information Only — Tom Vandervort**
 - a. RS Scope (**Attachment 11**)
 - b. Frequency Working Group Scope (**Attachment 12**)
 - c. Inadvertent Interchange Working Group Scope (**Attachment 13**)
 - d. Operating Reserves Working Group Scope (**Attachment 14**)
4. **Working Group Reports** (Working Group Meetings, Conference Calls, or Action since the last RS Meeting)
 - a. Frequency Work Group — Raymond Vice
 - b. Inadvertent Interchange Work Group — Don Badley
 - c. Operating Reserves Work Group — Larry Akens
5. **NERC Related Activity**
 - a. OC Meeting – RS Action Items / Assignments — Terry Bilke
 - b. Frequency Response Initiative — Bob Cummings, Tom Vandervort
 - c. RS Support of FRRSDT Data Collection — Terry Bilke, Bill Herbsleb
 - d. Intelligent Alarms – Frequency Trigger Limits (FTLs) Diagnosis and Actions — Terry Bilke, Doug Hils, Carlos Martinez
 - e. Reliability Metrics Working Group — Jessica Bian, Jerry Rust
 - f. Reliability Fundamentals Working Group — Jerry Rust
 - g. ACE Diversity Interchange Task Force (ADITF) — Don Badley
 - h. Update NERC BA Bubble Diagram / Map — Tom Vandervort
 - i) Link to BA Bubble Diagram — http://www.nerc.com/docs/oc/rs/ctrl_nerc.jpg
 - ii) Revised Bubble Diagram (**Attachment 15**)
 - iii) SPP Enhancement to the Bubble Diagram (**Attachment 16**)
 - i. Draft CPS2 Bounds Report – 2010 — Terry Bilke (**Attachment 17**)
 - j. GADS, Unplanned Forced Outages – Trips (Final, Tracking of Automatic Grid Separation Trips in GADS, dated November, 2009 (focus on classification U1, T1)) — Terry Bilke, Tom Vandervort (**Attachment 18**)
6. **NERC Reliability Standards and Reliability Related Documents**
 - a. Frequency Response SDT — Bill Herbsleb
 - b. Reliability-based Control SDT — Doug Hils, Raymond Vice
 - c. Balancing Authority Control SDT — Larry Akens
 - d. NERC OC Operating Manual

http://www.nerc.com/files/opman_12-13Mar08.pdf

- i) Performance Standards Guidelines — John Swez
 - 1) Performance Standards Guidelines Comment Letter (**Attachment 19**)
 - 2) Draft Performance Standard Guidelines (**Attachment 20**)
- ii) Area Interchange Error Survey Training Document — Don Badley and Inadvertent Interchange Working Group
- iii) Frequency Response Characteristic Survey Training Document — Raymond Vice and Frequency Working Group
- iv) Inadvertent Interchange Accounting Training Document — Don Badley and Inadvertent Interchange Working Group
- v) Time Monitoring Reference Document — Don Badley and Inadvertent Interchange Working Group
- e. NAESB WEQ Time and Inadvertent Management — Terry Bilke
- f. Reliability Concepts Document – Balancing and Frequency Control — Terry Bilke
 - i) Balancing and Frequency Control (Part 1) Comment Letter (**Attachment 21**)
 - ii) Draft Balancing and Frequency Control (Part 1) (**Attachment 22**)

7. RS Software Applications

- a. Resources Adequacy (ACE-Frequency) Application System — Carlos Martinez, Terry Bilke
- b. Intelligent Alarms — Carlos Martinez, Terry Bilke
- c. AIE Monitoring Application — Carlos Martinez, Don Badley, Bill Herbsleb
- d. CPS1 & BAAL Monitoring Application — Carlos Martinez, Doug Hils
- e. Frequency Monitoring and Analysis Application — Carlos Martinez, Raymond Vice, Terry Bilke
- f. Inadvertent Interchange Application — Carlos Martinez, Don Badley, Bill Herbsleb
- g. NERC-CERTS-RS Software Application Training — Terry Bilke
- h. DOE North American SynchroPhasor Initiative (NASPI) — Terry Bilke, Bob Cummings
 - i) RAPIR (**Attachment 23**)
 - ii) NASPI RTDMS Visualization and Alarm Client v6 (**Attachment 24**)

8. Frequency and Control Performance

- a. Western Interconnection Frequency Trends and Events — James Murphy
- b. Eastern Interconnection Frequency Trends and Events — Raymond Vice

Attendance List

Resources Subcommittee Meeting

January 27 - 28, 2010
 Tucson Electric Co. Office
 Tucson, Arizona

Attendance	Participation
Terry Bilke, RS Chair	Y
Don Badley	Y
Sydney Niemeyer	Y
William Kunkel	Y
Mike Potishnak	Y
Bill Herbsleb	Y
John Swez	
Doug Hils, Proxy for John Swez	Y
Larry Akens	Y
Gerry Beckerle	Y
Robert Rhodes	Y
James Murphy	Y
John Tolo	Y
Tom Vandervort	Y
LeRoy Patterson	Y
Phil Tatro	Y
Bob Cummings	Y
Carlos Martinez	Y
Mahmood Mirheydar	Y
Glenn Stevens	Y
Tony Nguyen	Y
David Lemmons	Y
Participation Via Conference Call	
Raymond Vice	Y
Don McInnis	Y

*Consortium for
Electric
Reliability
Technology
Solutions*

**NERC
Applications
Status**

Status for NERC Applications and 2009 Change of Scope for Resources Subcommittee

**Tucson, Arizona
January 27, 2010**

NERC Applications Status Summary

Application	NERC Applications Status
Resources Adequacy (ACE Frequency)	<p>Release 6.0 – Current production version. Waiting for final NERC 2010 parameters to integrate in applications. Working on Integration of new Balancing Authorities OSC and GRIF, it will be complete on 2/3.</p>
Inadvertent	<p>Release 3.0 – Current Production version. Implementing WECC request to not add their July 1, 2009 for On and Off Peak inadvertent values to their accumulated Inadvertent. CoS FAT will start next week 2/1, release schedule for last week of March.</p>
Area Interchange Error (AIE)	<p>Release 1.0 – Current production version.</p>
Intelligent Alarms	<p>Release 1.0 – Current production version. Changes to the FTL alarm action messages, requested by RBCSDT, implemented and online. FTL alarm duration corrected to be GT 5 Minutes. ERCOT requested changes for FTL alarms thresholds implemented. Number of 2009 East FTL Alarms reduced when compare with 2007-8. Number of 2009 1-Minute frequency alarms increased in the East when compare to 2007-8, and reduced in the west - SLIDE</p>
Frequency Monitoring and Analysis (FMA)	<p>Release 1.0 – Current production version. CoS to integrate FRSDT data request functionality into the NERC FMA applications was approved and funded by NERC. Functional Specification completed. Delivery is schedule for last week of April, 2010.</p>
Automated Reliability Reports (ARR)	<p>Release 1.0 – Current production version. Broadcast of the Daily report started in July, 2009. The Oct, Nov and Dec reports broadcasted. Winter 2009 report will be broadcast in March, 2010</p>

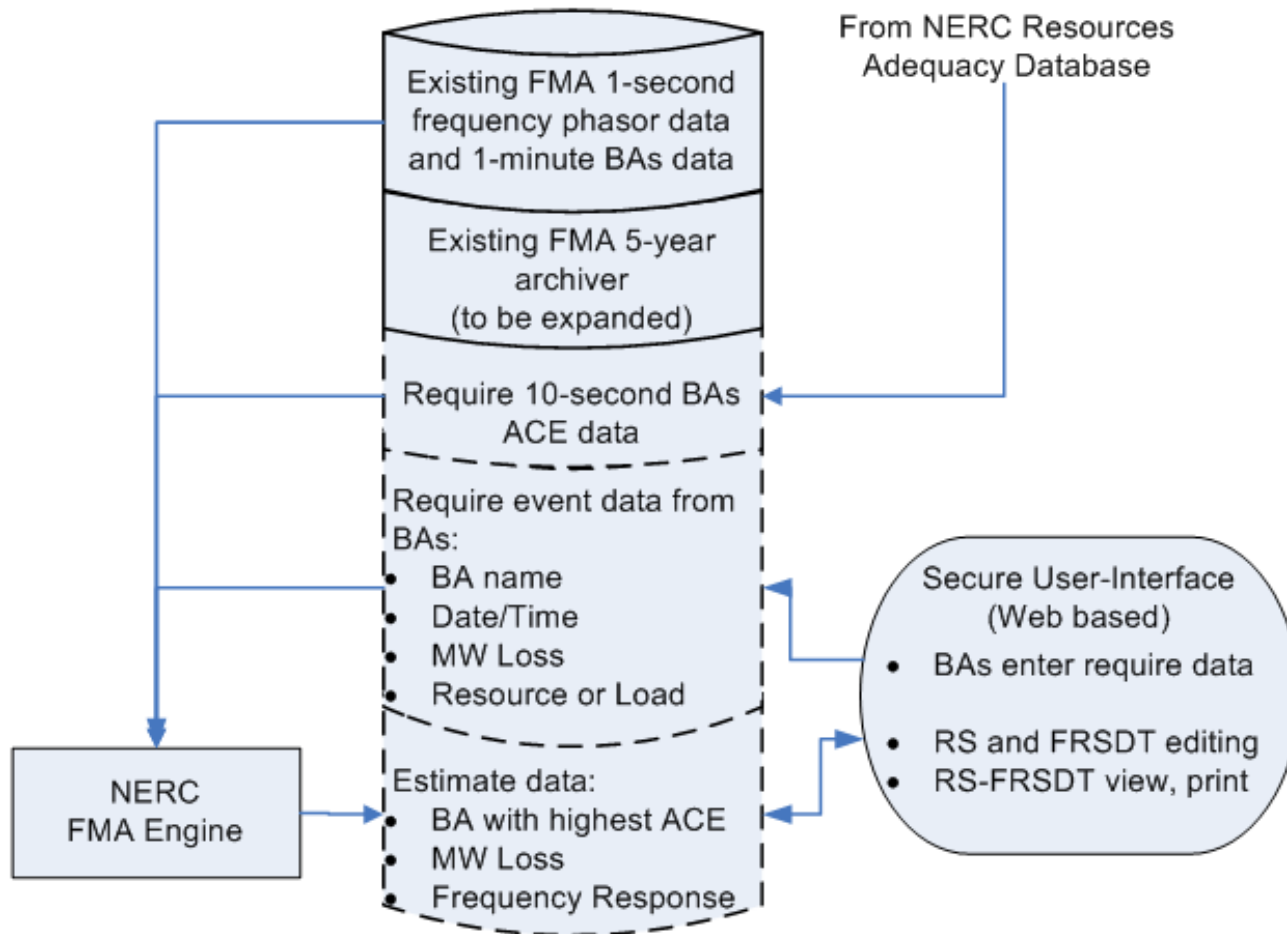
I-Alarms Summary and Trends 2007 to 2009

NERC Intelligent Alarm Type	Intelligent Alarms as Secondary Control Indicators						Alarm as Tertiary Control Indicator			Intelligent Alarms as Primary Control Indicator					
	FTL Low 5-Min EASTERN=59.95 Hz WESTERN=59.932 Hz ERCOT=59.91 Hz			FTL High 5-Min EASTERN=60.05Hz WESTERN=60.068 Hz ERCOT=60.09 Hz			Long Term 60-Min Average>30 mHz			Short Term Low 1-Minute Delta EASTERN<=-35 mHz WESTERN<=-35 mHz ERCOT<=-70 mHz			Short Term High 1-Minute Delta EASTERN>=+35 mHz WESTERN>+35 mHz ERCOT>=+70 mHz		
Year/Interc.	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009
Eastern	21	11	9	15	12	5	14	2	0	217	294	358	150	248	291
Western	1	0	0	0	3	0	3	0	0	50	94	91	36	68	53
ERCOT	NA	NA	25	NA	NA	58	NA	NA	54	NA	NA	204	NA	NA	218

FMA CoS Functional Requirements

- Capability for BA's to enter megawatt (MW) loss data, BA name, date/time, interconnection and event type (generation or load), using a secure web-interface.
- Capability to calculate BA and interconnection FR, as defined by the Frequency Response Standard Drafting Team (FRSDT). The enhancement should enable manual data entry or electronically data entry via file transfer (similar to AIE application).
- Capability to identify the BA with the highest ACE and to calculate interconnections FR using the highest ACE, and compare this FR with the FR calculated using the BA entered MW loss.
- Capability to archive for five years the all events entered and calculated data, using an extension of FMA current five year archive.
- Capability to edit and save any corrections to the entered and calculated event data make by NERC RS and FRSDT members.
- Capability to call, sort, display, and print predefined FR summary reports from the archive data, using a secure web-interface.

FMA CoS For FRSDT Data Request - Overview



Current and Outstanding Issues

- The 2009 Inadvertent CoS will be deliver for Field Test during second week of March – **Assuming RS-Inadvertent WG will verify/accept – RS to confirm**
- The FMA CoS will be deliver during last week of April – **Assuming FRSDT will verify/accept – RS to confirm**
- Reliability Coordinators requested during their Sacramento meeting to explore options for a frequency short term I-Alarm. Working with TVA to report options – **Requesting RS Feedback**
- Bob Cummings Events Group summarizing the reported FNET and ARR frequency events – **Sharing Information**
- Starting on October, 2010 EPG will have a new NERC applications support/maintenance coordinator – **Questions ?**



Project Plan Overview and 2010 Action Plan and Specific Tasks

Presentation For: Resources Subcommittee,
RBCSDT, FRSDT, and BACSDT

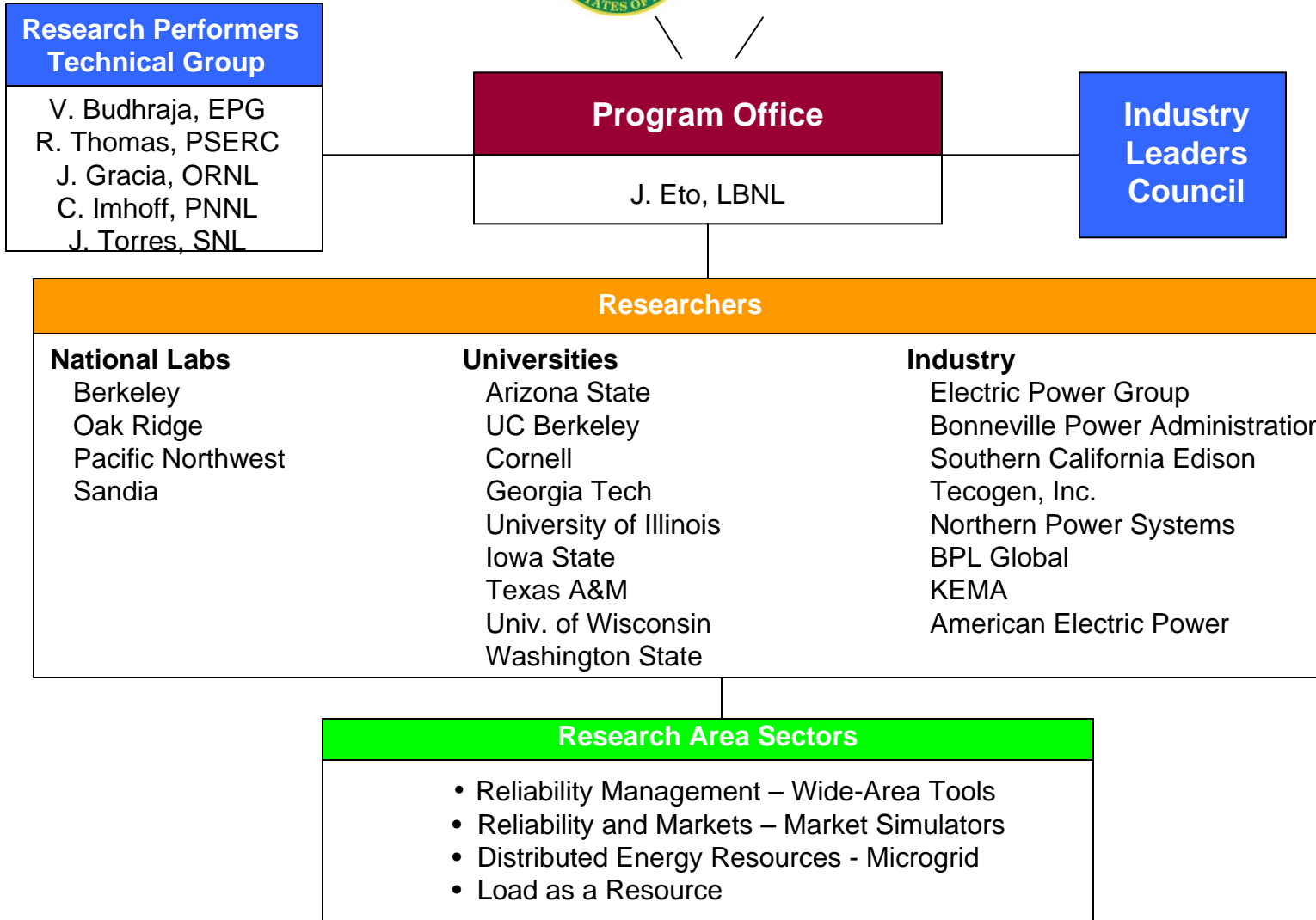
February, 2010



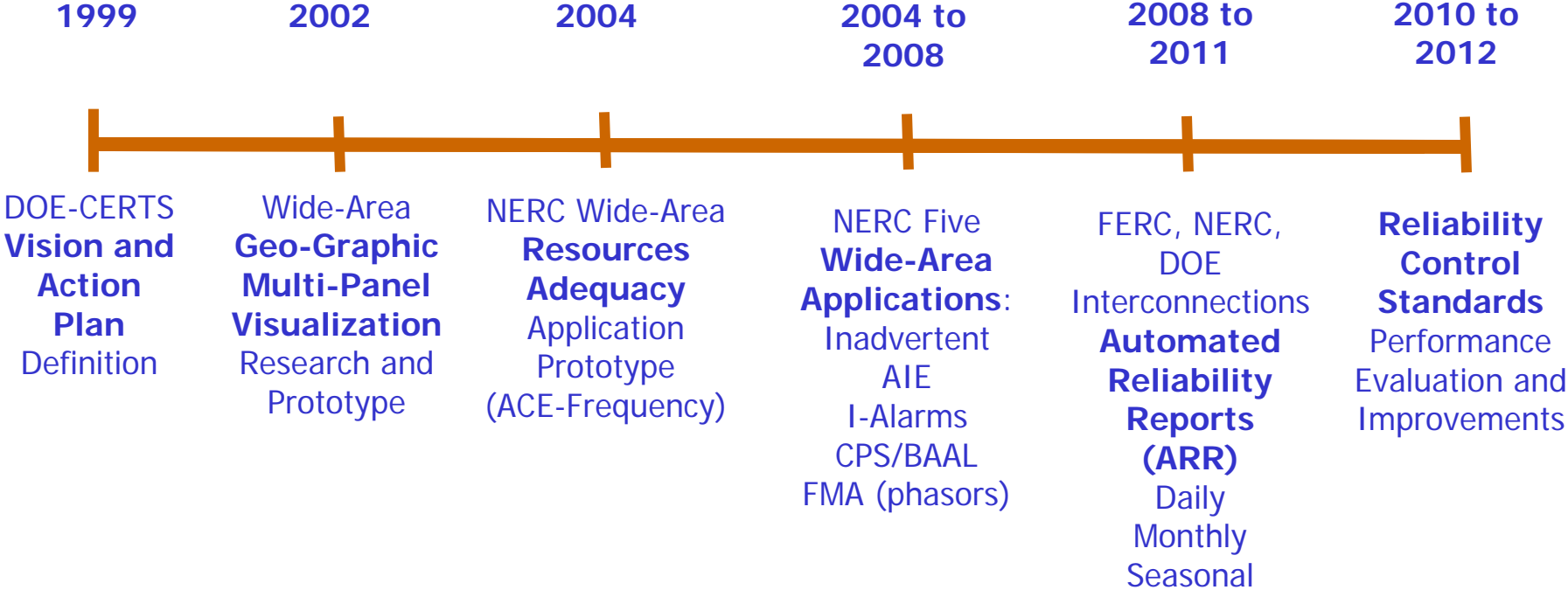
PRESENTATION OVERVIEW

- *CERTS Organization and Reliability Research Objectives*
- *Reliability Standards Research Project Team*
- *CERTS Reliability Control Standards Plan*
- *CERTS Action Plan and Tasks for 2010*
- *Request Resources Subcommittee, RBCSDT
and FRSDT for: Feedback, Priorities, Endorsement and
Collaboration*

Consortium for Electric Reliability Technology Solutions (CERTS)



CERTS RESEARCH ON RELIABILITY MANAGEMENT EVOLUTION AND PRIORITIES



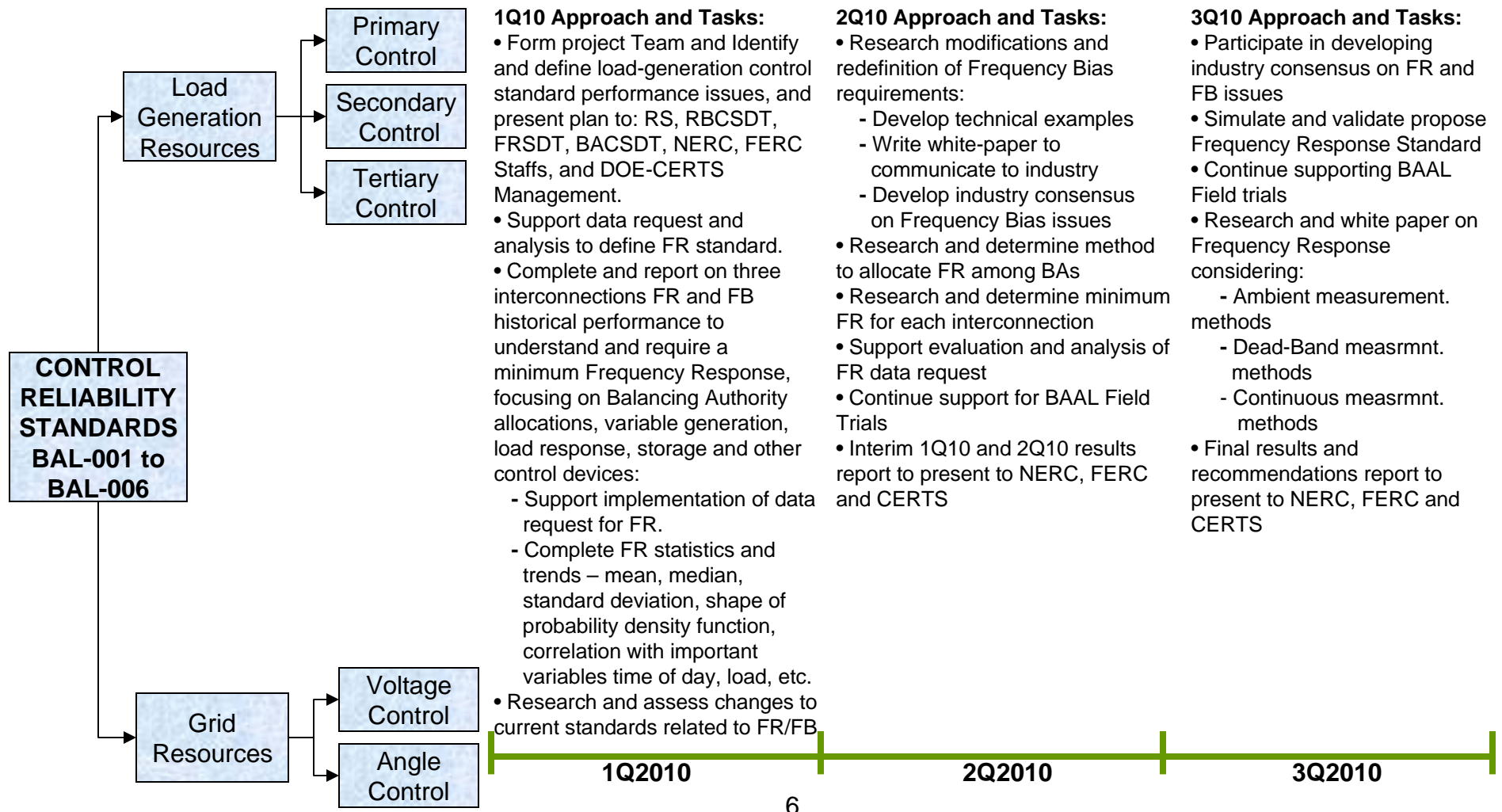
CERTS STANDARDS RESEARCH PROJECT TEAM

<i>CERTS – LBLN</i>	<i>Joe Eto</i>	<i>Project Administrator</i>
<i>CERTS – EPG</i>	<i>Carlos Martinez</i>	<i>Project Lead - Consultant</i>
<i>Energy Mark, Inc.</i>	<i>Howard Illian</i>	<i>Consultant</i>
<i>Patterson Consulting, Inc</i>	<i>LeRoy Patterson</i>	<i>Consultant</i>
<i>University of Illinois</i>	<i>Pete Sauer</i>	<i>Consultant</i>

2010 PLAN AND TASKS FOR FREQUENCY RESPONSE AND FREQUENCY BIAS STANDARDS PERFORMANCE EVALUATION AND IMPROVEMENTS

CERTS Reliability Standards Plan Goal: Adequate Reliability Standards Responding to New Load and Generation Characteristics

2010 Action Plan: Complete Frequency Response and Bias research, performance evaluation and historical trends to understand and quantify current situation. Simulate and validate propose Frequency Response standards. Evaluate Frequency Bias requirements, and support the data request and analysis for Frequency Response and the Field Trials for propose BAAL standard.



FEEDBACK FROM RS, FRSDT, RBCSDT, BACSDT TO HELP SHAPE AND PRIORITIZE CERTS PLAN

- *Feedback from CERTS Plan Presentations*
- *Review, Discuss and Formalize Standards Directed Research and Other Requests with Carlos or Howard or LeRoy*
- *Acceptance Criteria: Stakeholders and Industry Consensus, CERTS Standards Plan Priorities, and Funding Availability*
- *Development Work Process - Stakeholders Liaison with CERTS Project Team*



**Resources Subcommittee
January 27–28, 2010 Meeting
Open Action Item List**

Action Figure	Subject	Action Item/Assignment	Due Date	Completion Date
Bill Herbsleb, Mike Potishnak	BA Check List for Decertificaton	<p>102809, Bill Herbsleb, Mike Potishnak, and Tom Vandervort to develop some sort of check list on what needs to be done when a BA:</p> <ul style="list-style-type: none"> • Certifies • Decertifies • Merges • Consolidates, Etc. <p>012710, Bill and Mike to work on the BA Check List. Terry asked to develop the check list by the end of February, 2010.</p> <p>Mike wants to have the BA mapping as part of the resolution (what is looked at before and after a BA divides, merges, retires, etc. – the initial BA and resulting BA).</p> <p>RS Chair Bilke requests Bill and Mike develop the subject BA check-list by 022810.</p>	022810	
Resources Subcommittee	NERC OC Operating Manual Docs	<p>073108, RS members on each open BAL-related standard drafting team are to request that the SDT write or plan to write a modules 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.</p> <p>102908, RS Working Groups and RBCSDT, BACSDT, and FRSDT are to revise the documents for accuracy. RS will then submit the revised documents to the RFWG to update the manual. SDTs can develop the documents as standards reference documents to support their respective standards.</p> <p>012909, John Swez to review the Performance Standard Reference Document for</p>	042709	

Action Figure	Subject	Action Item/Assignment	Due Date	Completion Date
		<p>accuracy. Ongoing action item.</p> <p>RS Operating Manual documents are:</p> <p>Performance Standard Reference Document (PSRD) – John Swez</p> <p>Area Interchange Error Survey Training Document – Don Badley and Inadvertent Interchange WG</p> <p>Frequency Response Training Document – Raymond Vice and Frequency WG</p> <p>Inadvertent Interchange Accounting Training Document – Don Badley and Inadvertent Interchange WG</p> <p>Time Monitoring Reference Document – Don Badley and Inadvertent Interchange WG</p> <p>072909, RS needs to review and concur with revisions and then forward to the OC for authorization to post for industry comments 45 days.</p> <p>102809, Terry to present the revised PSRD to the OC to begin the Ops Manual revision process. With OC authorization, the PSRD will be posted for 45 days.</p> <p>121609, NERC posted the Performance Standard Reference Document for 45 day comment period which ends on Feb 12, 2010.</p>		
Resources Subcommittee	NERC Balancing Authority Bubble Map	<p>092909, RS to review and update the NERC Bubble diagram / map, on the NERC RS website. RS to submit enhancements and revisions to the BA bubble diagram to Tom Vandervort by August 14, 2009</p> <p>102809, TV gave the proposed NERC Bubble diagram revisions to NERC Communications Program (designated custodian). Now with Joe Emde</p> <p>010110, Joe Emde is revising the BA Bubble Diagram. RS members are requested to check the revised Bubble Diagram for accuracy. In Progress.</p> <p>012710, TV to work with Craig Lawrence to establish changes to the registry to be reflected on the Bubble Diagram. TV to reach out to the IS to determine if the IS agrees that the Bubble Diagram reflects actual interchange paths.</p>	042710	
Don Badley , Bill Herbsleb 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</p>	042710	

Action Figure	Subject	Action Item/Assignment	Due Date	Completion Date
		<p>called upon to resolve the mismatches and imbalances.</p> <p>102909, 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>012710, Don and Bill will prepare and send out a summary of the EI mismatches.</p>		
	NERC-CERTS Project Review			
Carlos Martinez	Inadvertent Interch missing or mismatch data entries	072909, Based on RS suggestion, Carlos to send e-mail notification to BAs' staff that performs Inadvertent Interchange application data entries when triggers show missing or mismatched data. Carlos to work closely with Don Badley and Bill Herbsleb. Ongoing effort.	042710	