

NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL

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

Joint Meeting Minutes Performance Subcommittee and Resources Subcommittee October 31- November 1, 2000 San Antonio Marriott Riverwalk San Antonio, Texas

Administration

A joint meeting of the North American Electric Reliability Council Performance Subcommittee (PS) and the new Operating Committee Resources Subcommittee (RS) was held on October 31 – November 1, 2000 in San Antonio, Texas. This was the final meeting of the PS. At the end of the meeting, the RS officially assumed the responsibilities of the PS, as directed by the North American Electric Reliability Council Operating Committee (OC). 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 no comments.)

Minutes of the Previous Meeting

The Performance Subcommittee approved the July 27–28, 2000 meeting minutes as amended.

Subcommittee Restructuring

Don Badley expressed concerns that representation from WSCC has been limited as a result of restructuring. Alan Oneal has concerns that the Regions are not being represented as well. Chair Monroe stated that these concerns should be brought to the OC. Chair Monroe also mentioned that the NERC PS has traditionally used the PS Regional Representatives as a go-between between the Control Areas/Regions and the PS. Specifically, this may affect survey reporting.

The members of the new subcommittees were selected to represent the new segments of the industry and for their expertise.

Mike Gildea stated that restructuring is necessary and the expertise of all people is needed to address concerns from all segments of the industry and make people aware of all of the issues. Mr. Gildea requested that members and guests continue to be involved because input is needed.

Terry Bilke reported that most of the motions brought to the PS have been developed in the task forces. The task forces will continue to serve the RS, and task force members do not need to be voting members of the RS.

HQ Request for Interpretation for Policy 1

Michel Tremblay (Hydro-Québec) asked the PS for an interpretation of Operating Reserves in Policy 1. Specifically, Mr. Tremblay asked the PS to address the issue of Operating Reserves obtained outside of a Control Area. HQ challenged ISO-NE's revisions to the market rules filed with FERC stating that reserves cannot be brought into ISO-NE from outside of the Control Area (across DC ties). ISO-NE

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claimed that these market rules were changed reliability purposes. There are issues surrounding the deliverability of the reserves brought in from outside of the Control Area.

ATC will be reserved for the entire path, but there were questions involving the DC tie. With the possibility of the CA claiming whether or not the reserves are deliverable, due to the DC tie, it appears that nothing else in Policy 1 excludes these reserves from being purchased across boundaries.

The Region has a responsibility to ensure that the reserves are dispersed and deliverable. If there are concerns, this issue should be brought to the NPCC.

Doug Hils proposed the following motion clarifying Contingency Reserves:

“A Control Area can meet its Operating Reserve requirement for Contingency Reserve (spinning and/or supplemental) with Operating Reserve held within the metered boundaries of another Control Area. The customer and supplier are responsible for assuring that the procedure for deployment and reporting of the reserve meets the requirements of the Region.

Whenever a source and sink Control Area mutually agree to utilize a ramp duration less than the standard ramp duration in the implementation, adjustment, or curtailment of an Interchange Transaction in order for either Control Area to meet the NERC Disturbance Control Standard (DCS), they must both report their NERC DCS compliance to the event.”

The motion passed unanimously. The Subcommittee will forward this interpretation to NERC staff. NERC staff will send it to the OC for their approval, and post it for a two-week public comment period.

The RS will also make a statement about provision of Operating Reserve across Control Area boundaries.

NERC Software capabilities for AIE Data Collection Procedure

Carlos Martinez presented a brief history of CERTS, then focused on the AIE Data Collection system and described how the network will be connected and data will be collected. The timeline for implementation should begin now and continue through June 2001 until this data can be documented and published.

The NERC PS should publish a final project definition. Then, the functional specification will be developed by NERC and CERTS. CERTS recommends that all software will be designed by CERTS and NERC will provide the hardware. Mr. Martinez's presentation is affixed as **Exhibit F**.

Bob Cummings reviewed the Security Coordinator Information System (SCIS) on-line. This system provides real-time ACE data for the Eastern Interconnection. The Subcommittee had suggestions on how to improve the display and increase technical accuracy. Perhaps, the addition of a column of L10% relative to ACE would help. There are more accurate data displays that will provide clarity for what's really happening in the Interconnection. Approximately 100 out of 120 Control Areas are submitting ACE data. NERC staff (Joe Emde and Will Smith) could display the Regional ACE similar to the Inadvertent Interchange.

Bob Cummings will inform the Subcommittee of an official time and means in which to provide feedback of how to improve the SCIS page.

The RS will go ahead with the AIE Data Collection Document pending any significant changes to the replies to the public comments.

Alternatives to Continuous AIE Data Collection and Reporting

Mike Potishnak offered a possible alternative to the AIE collection. If the RS (or some entity within each Region) collects Actual Net Interchange, Scheduled Net Interchange, and Unilateral Inadvertent Payback, a sufficient “picture” of what is happening in the Interconnection should be generated.

If the AIE Data Collection process is accepted to go forward, it will become an automated process and thus an easier process in the long run. There will be less human involvement and less cause for confusion and delay.

Carl Monroe suggested that the Subcommittee call one AIE survey and request only the data described in Mr. Potishnak's proposed method, but especially the Control Area-to-Control Area data. Mr. Potishnak proposed that the RS use the procedure above as a test to see if it works well enough to abort the AIE Data Collection Procedure. No motion was made.

Hour-by-Hour Match of Tie Flows

Chair Monroe discussed a concern expressed by an SPP member that they only agree to hourly tie flows when the On-Peak or Off-Peak values disagree. There are concerns about the impact if there is an hourly reconciliation. Mr. Monroe stated that this would be addressed in the future.

ECAR Inadvertent Settlement Procedure

The Inadvertent Task Force submitted a list of concerns with the ECAR Inadvertent Settlement procedure. The Subcommittee edited and refined the list. Chair Monroe will forward these concerns to Don Benjamin for inclusion in the OC agenda.

Time Error Correction Initiation

The Subcommittee proposed changes to Appendix 1D, “Time Error Correction Procedures.” The Subcommittee decided to change the time error correction initiation in the Eastern Interconnection to +/- ten seconds for all corrections. Also, the Subcommittee decided to never initiate fast time corrections between 0500–0900 Central Time.

NERC staff will incorporate these changes into Appendix 1D and initiate the NERC Standards Procedure by posting the document for a 45-day public comment period.

Resources Subcommittee Scope

Terry Bilke noted that the former charter of the PS contained more details than the new RS scope. Will Smith will research the PS charter and send it to the RS. The Subcommittee needed to approve the proposed scope of the RS. The Subcommittee revised the scope and approved it unanimously.

Don Badley and Carl Monroe will review Policies 5 and 6 and investigate which issues are the responsibilities of the RS.

Compliance Issues

July CPS – Non-Compliance

Columbia Water & Light; CPS 2 = 87.7

St. Joseph's Power & Light*, CPS1 monthly value of 85.34

Virginia Electric & Power – Batesville; CPS 1, 98.60; CPS 2, 62.00

Yadkin – No report.

August CPS – Non-Compliance

Virginia Electric & Power – Batesville; CPS 1 = 84.95; CPS 2 = 76.00

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NPCC – Mike Potishnak
SERC – Raymond Vice
SPP – Carl Monroe
WSCC – Don Badley

Inadvertent Interchange Balances

Eastern Interconnection

August 1999 – Discrepancy between MAIN and ECAR still exists.

December 1999 – Discrepancies between SPP, MAIN, and SERC (On-Peak); MAIN, MAPP, SERC for (Off-Peak)

January 2000 – Discrepancies between MAIN and ECAR (On-Peak and Off-Peak)

Most of the imbalances towards the beginning of 2000 are between ComEd and AEP. Carl Monroe asked the RS members to submit a list of the imbalanced parties by the OC Meeting — October 15, 2000.

The ERCOT Interconnection is balanced to date.

There was no report on WSCC. Don Badley left early and Joe Emde hasn't received an update to the WSCC inadvertent interchange situation.

Joe Emde will check all inadvertent submissions and issue a report by the middle of the week of November 6, 2000. Mr. Emde will also create a list of those parties that are using the approved "official" Excel spreadsheet to submit the inadvertent.

Gary Rudder asked about having a conference call of all parties that balance inadvertent. Alan Oneal added that it might be even more efficient if those parties would use the SPP web-based Inadvertent Tool during these calls to facilitate the balancing.

Once again, SPP has offered to all Regions to use the web-based SPP Inadvertent Tool. Those interested should contact James Keaton at SPP (JKeaton@spp.org). This tool can be used for AIE, Inadvertent, CPS, and DCS.

Doug Hils mentioned that he would get a logon and password from SPP and demonstrate this tool at the next ECAR Operations committee meeting. Mr. Hils suggested that other RS members might wish to do the same.

Policy 1 Update

Will Smith discussed the status of Policy 1. Policy 1, Appendixes 1C and 1F, and compliance templates 1 and 2 are posted. Public comments are due on November 25, 2000. After all comments have been received, the task force chairmen will attempt responses to the comments and distribute to the RS. The RS will then respond to those responses. Chair Monroe will suggest whether or not the RS shall meet again before the January PS meeting to discuss any controversial or extensive changes.

Will Smith will send a copy of the "Specific content issues for PS/RS review" to the RS and Task Force chairmen, so the TF Chairmen can draft responses as well.

Will Smith will forward Compliance Templates P1T5 and P1T6 to Ev Lucenti for formatting and explain the differences between P1T1/ P1T2, and P1T5. Also, the RS wanted to include all reporting deadlines in one template – P1T5, "Surveys Template." The RS still wants to post P1T6, "Yearly Review of Control

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Area Operations,” although it will not become part of the Compliance Pilot. The RS simply wants public comments on the process of an annual Control Area review.

The CS again proposed PIT4, “Minimum Operating Reserves.” The Subcommittee denied this template at the last PS meeting in July 1999. There are concerns from the Compliance Subcommittee that this is a necessary standard. If the CS has concerns, they need to be presented to the RS. The RS does not see the need to send members to the CS meetings to hear their concerns. The RS stated that anyone could submit comments through the public comment period associated with the posting of Policy 1.

Policy 1 Section 3.2.2.2

The RS unanimously approved a change to the reference in this Standard from ten to 15 minutes. This will be forwarded to the OC for approval at the next OC meeting in November 2000.

Frequency Bias Submission

Alan Oneal suggested that the annual request for new frequency bias values be distributed early enough, so the new values are active by January 1, 2000. A few Subcommittee members disagreed and prefer the current method of reporting their values to NERC by February 1 of each year. Currently, these values are requested by February 1 because it was necessary that the previous year’s load be calculated. Mr. Oneal will comment on this issue through the public comment period of Policy 1.

Occasionally, Control Areas attempt to change their frequency bias values more often than annually. At the very least, these values are calculated into an L_{10} value once per year. If Control Areas change their bias mid-year, they should continue to use the same B_i (Bias of the Interconnection) in their L_{10} calculations. What remains unclear is when the RS should recalculate the B_i , so all Control Areas within an Interconnection should use an updated L_{10} .

Similarly, the same issue arises whenever new Control Areas are formed. This will be addressed through the public comment posting of Policy 1.

ACE Diversity Project

Mike Potishnak presented a new project called ADI. The ADI concept is designed to get several Control Areas to net out their ACE values in real-time. It basically uses the concepts of supplemental regulation and pseudo-ties. When Control Areas do this “netting out,” the randomness allows them to have less AGC capability while meeting CPS 1 and 2, thus saving money.

This seems like a viable project that will improve CPS 2 scores and reduce AGC requirements.

Frequency Data Collection

Bob Cummings and Joe Emde will work with the Frequency Task Force to develop frequency data collection and analysis.

Time Error Correction Notification Process

Don Badley mentioned that the Security Coordinator Subcommittee announced changes to the notification. Will Smith will research this and distribute information to the RS.

Future Issues for the RS

The development of Regional Transmission Operators may affect Interconnections next year, and perhaps the Policies.

Future Meetings and Locations

April 23, 2001 @ 1 p.m. – April 25, 2001 @ 5 p.m.

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Proposed Locations: St.Louis, Salt Lake, Las Vegas
(MAIN – Paul Spicer)

August 1, 2001 @ 8 a.m. – August 3, 2001 @ noon
Proposed Locations: San Francisco (Fisherman's Wharf), Toronto, Minneapolis
(WSCC – Don Badley)

Will Smith will consult with the RS representatives in those areas and ask if they would like to find hotels and make arrangements before NERC attempts to make arrangements.

William E. Smith, I I I

William E. Smith, III
Resources Subcommittee Secretary



Exhibit A

NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL

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

PLEASE RESPOND BY October 9, 2000

September 11, 2000

TO: RESOURCES SUBCOMMITTEE

Resources Subcommittee Meeting

The first meeting of the new Operating Committee Resources Subcommittee (old Performance Subcommittee) is scheduled for October 30–November 1, 2000 at the San Antonio Marriott Riverwalk, San Antonio, Texas; Ph: 210-224-4555, Fx: 210-224-2754, Reservations: 1-800-648-4462.

Rooms are blocked for the nights of **October 29–31, 2000**; \$179 single/double occupancy. The cut-off date for sleeping rooms is **Monday, October 9, 2000**. Check-in time is 4 p.m. and check out is noon. *You must make your reservations by the cut-off date -- NERC is charged higher rates if the rooms blocked are not picked up by this date.*

The hotel is located 20 minutes from the San Antonio Airport. The San Antonio Trans shuttle is available outside of baggage claim for \$11 one way. Taxis cost about \$15.

When making your hotel reservations, please make sure to mention NERC so your reservation is credited to our room block. A penalty may be charged to NERC if the total rooms blocked for this event are not picked up. Please inform us immediately if you are unable to attend. Also, if you are using an agency for your travel plans, make sure they mention NERC.

Please fill out this form and fax or e-mail it to me. Let me know if you have any questions. Thank you for your assistance.

Sincerely,
Barbara Bogenrief
Barbara S. Bogenrief
Secretary-Operations

/bsb

cc: Performance Subcommittee

I plan to attend the October 30–31–November 1, 2000 RS meeting.

Name:

Nickname:

Title:

Company:

E-mail:

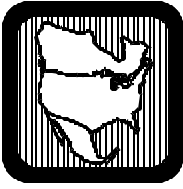


Exhibit B

NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL

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

PERFORMANCE SUBCOMMITTEE and RESOURCES SUBCOMMITTEE JOINT-MEETING

Tuesday October 31, 2000 — 8 a.m.–5 p.m.
Wednesday November 1, 2000 — 8 a.m.–noon

San Antonio Marriott Riverwalk
San Antonio, Texas

AGENDA

1. Administrative Matters

- a. PS and RS Membership and Guests — Secretary
- b. Subcommittee restructuring and meeting format
- c. Introductions
- d. Organization, Roster, and Contacts List **R**
- e. Arrangements — Secretary
- f. Approval of minutes of July 27–28, 2000 meeting **R**
- g. Approval of agenda
- h. Resource Subcommittee scope **R**
- i. Parliamentary Procedure **R**

2. Operating Committee – July 12–13, 2000 Meeting **R**

3. Task Force Reports

- a. Reserves Task Force
- b. Frequency Task Force
- c. Inadvertent Task Force
- d. Automatic Generation Control Task Force

4. Compliance Issues

- a. Control Performance Standard
 - i) CPS — receive non-compliance reports **R**
- b. Disturbance Control Standard
 - i) DCS — receive non-compliance reports
 - ii) SRSG exemption (?)
- c. Compliance letters from Compliance Subcommittee
- d. Compliance Subcommittee liaisons and Task Force — Stan Kopman, Gary Rudder, Joe Willson
- e. Inadvertent Interchange
 - i) Receive progress reports for all Interconnections **R**
 - ii) August 18, 1999 transaction between OPPD and TVA
 - iii) Submission data forms and WSCC error-check file
- f. AIE Surveys
 - i) May 2000 summary **R**
 - ii) Explanations from Control Areas with an L₁₀ greater than 150%
 - iii) WSCC February 28, 2000 summary

- 5. AIE Data Collection pilot program (AIE Data Collection Version 1.6)**
 - a. SPP tool and NERC software development and capabilities – Bob Cummings and Carlos Martinez
 - b. ECAR Inadvertent Sanction Mechanism to be recommended to OC by CACTF
 - c. Alternative to Continuous Hourly AIE reporting — Mike Potishnak
 - d. Hour by Hour Match of Tie Flows for AIE — Carl Monroe
- 6. Policy 1 — Will Smith**
 - a. Policy 1 update
 - i) Specific content issues for PS/RS review
 - ii) Compliance templates
 - (a) P1T4 – Minimum Level of Operating Reserves **R**
 - (b) P1T5 – Surveys Template
 - (c) P1T6 – Annual CA Review
- 7. Pumped Hydro Generation as Synchronized Reserve **R****
- 8. Hydro Quebec Request for Interpretation of Policy 1 **R****
- 9. 2000/2001 Frequency Bias and Peak Load**
 - a. Submission dates — Alan O Neal
 - b. Adjust L₁₀ for new Control Areas? — Alan O Neal
- 10. Frequency Performance**
 - a. Eastern Interconnection Frequency report
 - b. WSCC frequency performance — Don Badley
- 11. Time Error**
 - a. Time Error Notification Procedure — Carl Monroe
 - b. Number of Time Errors in the Eastern Interconnection — Carl Monroe
 - c. Interconnections Reports
 - i) Eastern Interconnection — Doug Hils
 - ii) Western Interconnection — Tony Deluca
 - iii) ERCOT Interconnection — Wayne Kemper
- 12. Policy Interpretation Procedure **R****
- 13. ACE Data Collection**
- 14. Policy 10 update**
- 15. Roundtable Discussion**
 - a. Winter 2000
- 16. Dates and Locations of Future Meetings **R****
 - a. New list of NERC Meeting Locations **R**

R Background material attached.

Exhibit C

Resources Subcommittee Meeting Attendance October 31 – November 1, 2000 San Antonio, Texas

Don Badley	Northwest Power Pool
Terry Bilke	
Bob Cummings	NERC Staff
Joe Emde	NERC Staff
Mike Gildea	Duke Energy North America
Doug Hils	Cinergy
Wayne Kemper	ERCOT
Richarch Kosch	Lincoln Electric System
Carlos Martinez	CERTS
Don McInnis	Florida Power & Light Company
Gerry Mellinger	ECAR
Carl Monroe	Chairman, SPP
Susan Morris	Tennessee Valley Authority
Alan Oneal	MidAmerican Energy Company
Richard Penn	Ontario Power Generation, Inc.
Mike Potishnak	ISO-NE
Gary Rudder	Tennessee Valley Authority
Will Smith	NERC Staff
Paul Spicer	MAIN
Jim Stanton	Calpine Corporation
Raymond Vice	Southern Company Services, Inc.
Joseph D. Willson	PJM Interconnection, L.L.C.

Tom Vandervort

Omaha Public Power District

Exhibit D

**Individual Statements
Resources Subcommittee Meeting
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None

Exhibit E

**Minority Opinions
Resources Subcommittee Meeting
October 31 – November 1, 2000**

No minority opinions were offered for the record.

Exhibit F

Preliminary Overview for NERC Area Interchange Error (AIE) Monitoring System

NERC Performance Subcommittee Meeting
San Antonio, TX – October 31, 2000

Carlos A. Martinez
CERTS - Real Time Monitoring and Control
Southern California Edison

Bob Cummings
North American Electric Reliability Council

CERTS



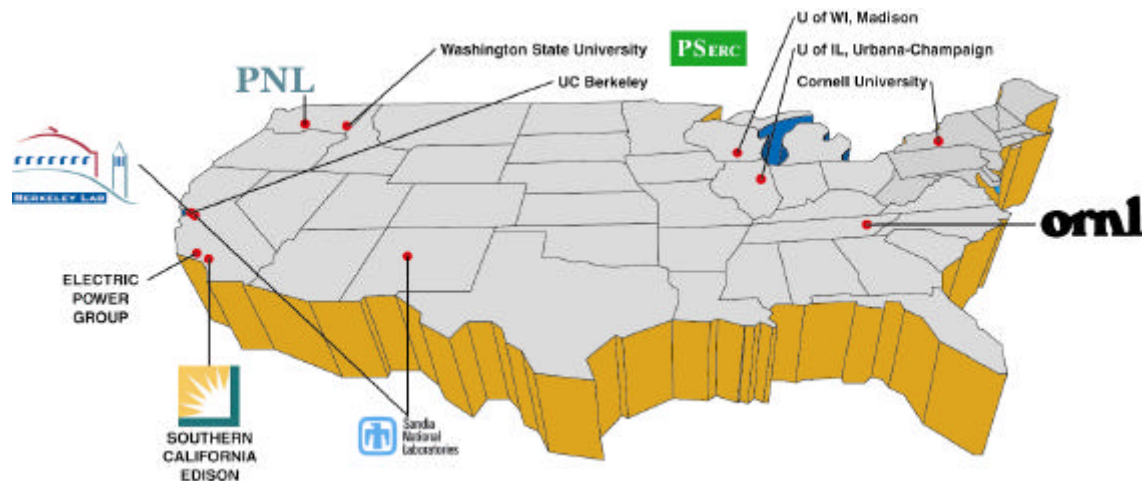
CERTS Mission Statement

CERTS Has Been Formed to Research, Develop, and Commercialize New Methods, Tools, and Technologies to Protect and Enhance the Reliability of U.S. Electric Power Systems Under the Emerging Competitive Electricity Market Structure

CERTS



CERTS Research Performers



CERTS



CERTS Organization

Management Steering Committee

- **VIKRAM BUDHRAJA**
Electric Power Group, Chair
- **MARK LEVINE**
Lawrence Berkeley National Laboratory, Vice-Chair
- **MARILYN BROWN**
Oak Ridge National Laboratory
- **CARL IMHOFF**
Pacific Northwest National Laboratory
- **ROBERT THOMAS**
Power Systems Engineering Research Center
- **MARJORIE TATRO**
Sandia National Laboratories

Industry Advisory Board

- **VIKRAM S. BUDHRAJA**
President
Electric Power Group
- **MICHEHL R. GENT**
President
North American Electric Reliability Council
- **TERRY M. WINTER**
Chief Executive Officer
California Independent System Operator
- **PHILLIP G. HARRIS**
President and CEO
PJM Interconnection, L.L.C.
- **BRUCE A. RENZ**
VP Energy Delivery Support
American Electric Power
Chair, AEIC Electric Reliability Committee
EPRI Research Advisory Council
- **RICK A. BOWEN**
Executive Vice President
Dynergy
- **PAUL BARBER**
Sr. Vice President, Transmission & Engineering
Citizens Power
- **DALE T. BRADSHAW**
Senior Mgr., Power Delivery Technology
Tennessee Valley Authority
- **SUSAN F. CLARK**
Florida Public Service Commission
Chair, NARUC Electricity Committee
- **JOHN D. WILEY**
Provost & Vice Chancellor, Academic
University of Wisconsin
- **CHARLES B. CURTIS**
Executive Vice President
United Nations Foundation

CERTS



CERTS Research Areas

Reliability Technology
Issues and Needs
Assessment



Real Time
System
Monitoring
and Control



Integration of
Distributed
Energy
Resources



Reliability
and
Markets

Addresses recommendations made by Secretary of Energy Advisory Board (SEAB) Task Force on Electric System Reliability

CERTS



CERTS Real Time System Monitoring and Control

Resource
Reliability
Adequacy

System Security and
Operations

Future Operations

Development, and Demonstrate Reliability Adequacy Tools:

- VAR Management
- Ancillary Services Performance
- Near Real Time Forecast

1999-2001

Dispatcher and Operating Engineering Applications Using Synchronized Phasor Measurements

- Monitoring & Post Dist. Tool
- Enhance Stability Nomograms
- Standard, Low Cost, Reliable Phasor Technologies
- Validation of Stability Models

2000-2003

Prototype New Real Time Controls

Based on Distributed Closed Loop Feedback Controls and Synchronized Phasor Measurements

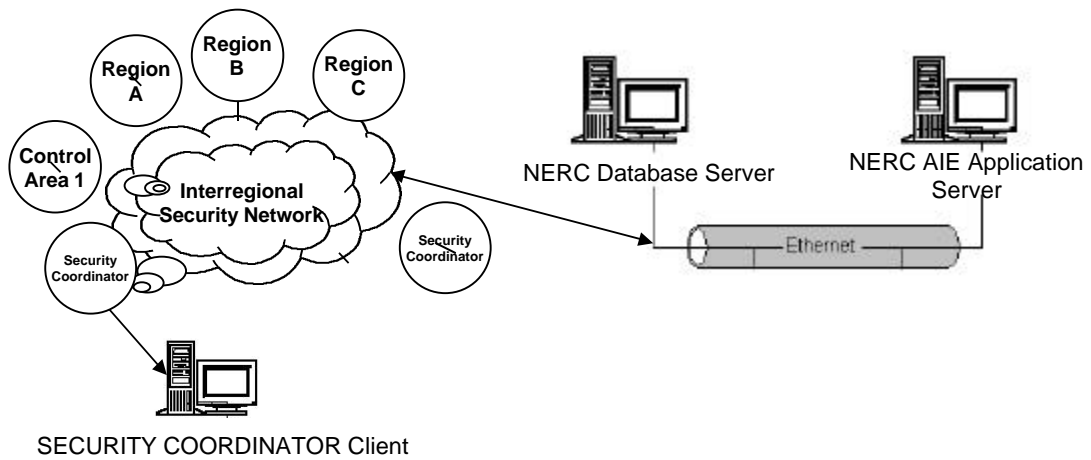
2001-2005

GOAL
AUTOMATIC
SWITCHABLE
NETWORK

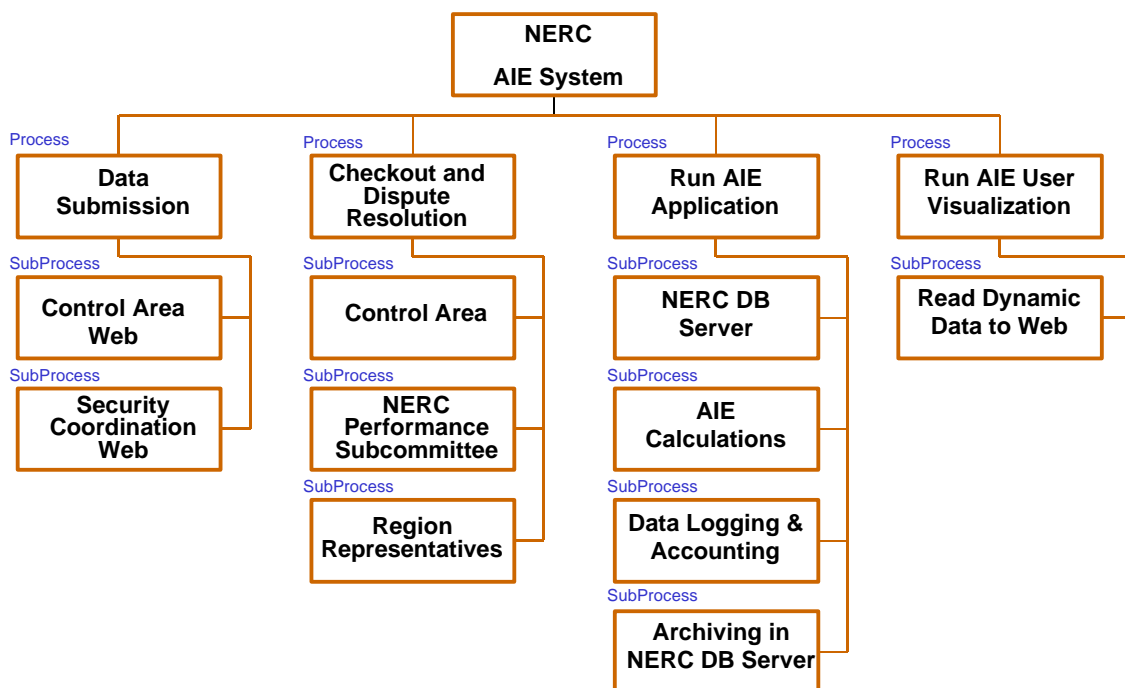
CERTS



NERC AIE Monitoring System Overview

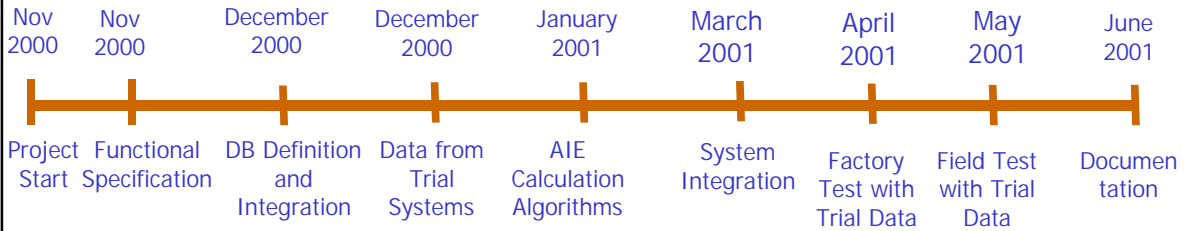


NERC AIE Monitoring System Processes



NERC AIE Monitoring System Development

TIMEFRAME

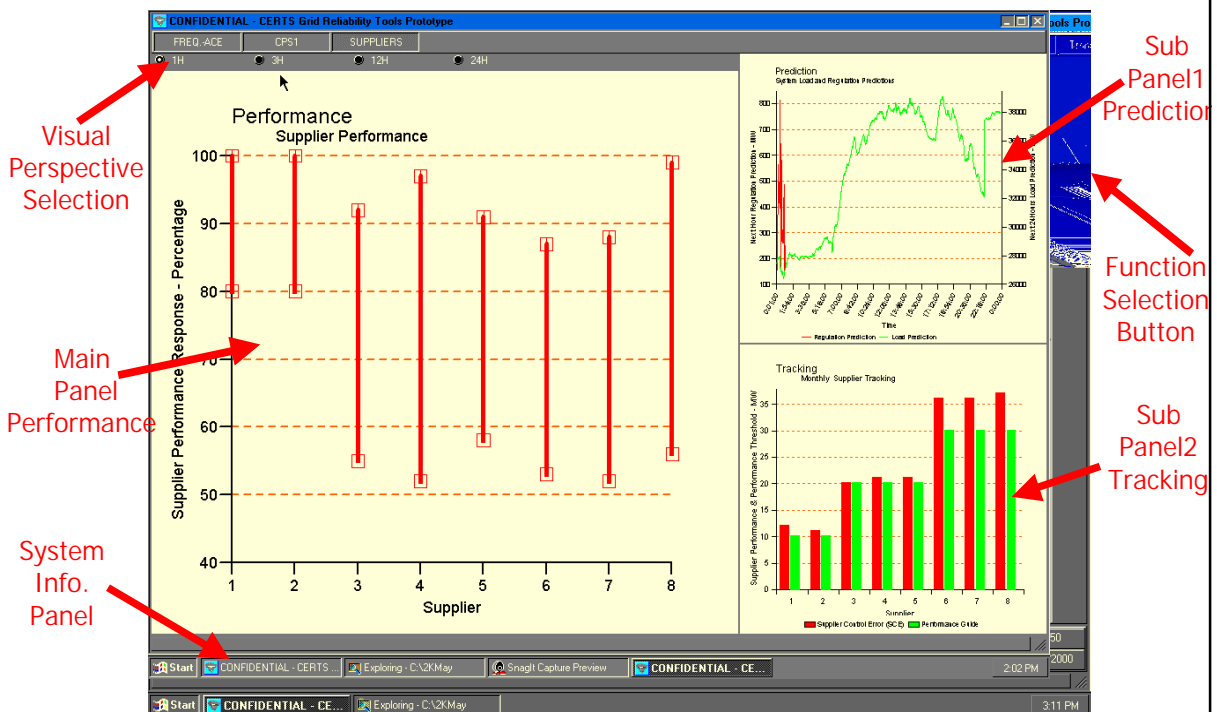


PROJECT RECOMMENDATIONS

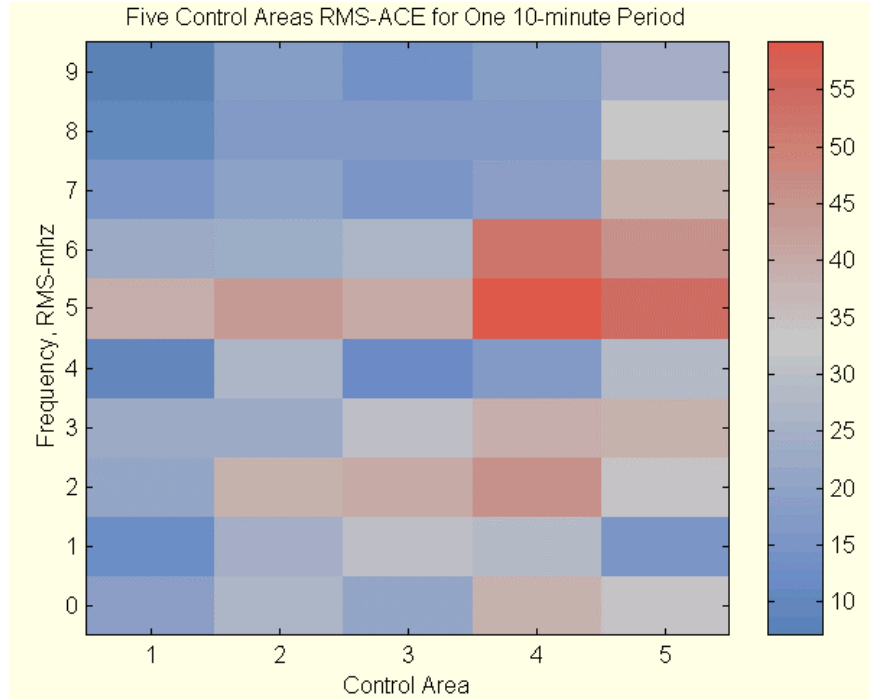
- Final Requirements Definition – NERC Performance Subcommittee
- Functional Design Specifications – NERC / CERTS
- Project Management – NERC
- Project Deployment Coordination – CERTS
- Project Software Development Costs – NERC / CERTS
- Project Hardware Costs - NERC



Proposed Visualization – Master Display



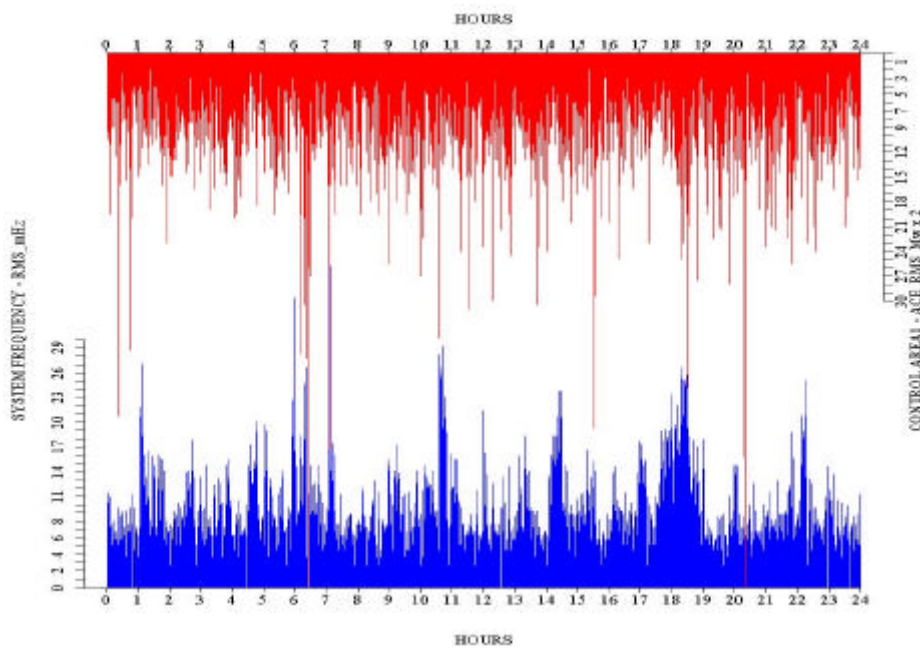
Proposed Visualization – Multi Control Area



CERTS



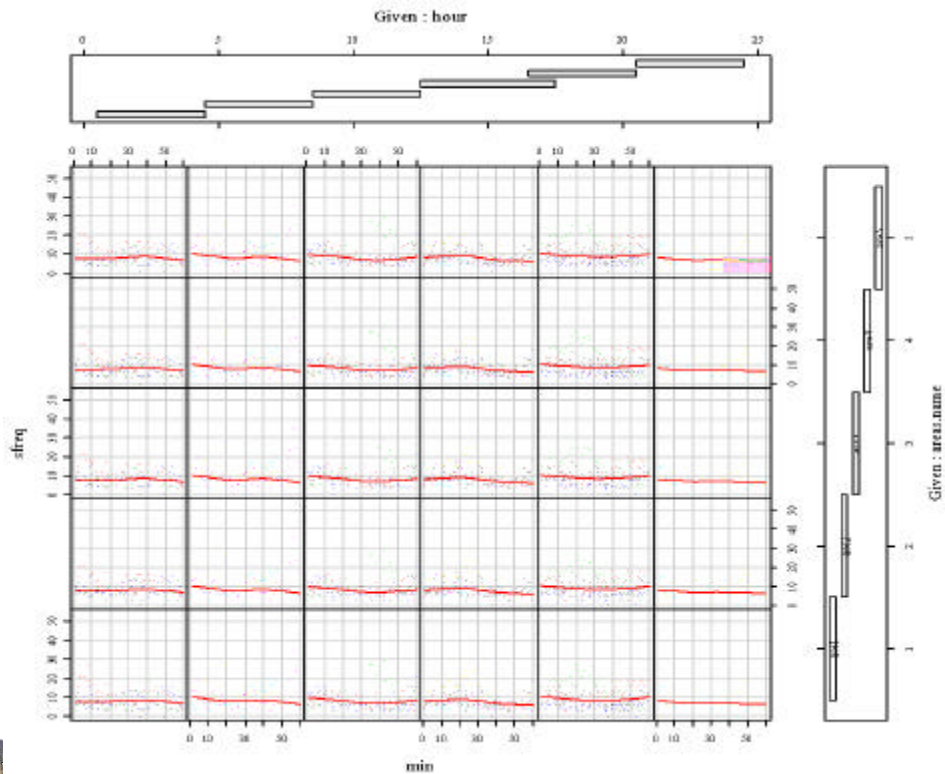
Proposed Visualization – Multi Control Area



CERTS



Proposed Visualization – Multi Control Area



CERTS Near Term Project Requirements

- Coordination Meeting to Identify and Define Project Ownerships / Responsibilities – NERC Staff
- Final Definition of Functional Requirements NERC Performance Subcommittee
- Coordination Meeting with NERC Information Technology Staff – NERC Staff
- Definition of Trial Control Areas and Data Availability NERC Performance Subcommittee
- Review and Approval of Functional Specification