NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Agenda
Member Representatives Committee

February 9, 2009 | 12–3 p.m.
Arizona Grand Resort
8000 South Arizona Grand Parkway
Phoenix, Arizona
877-800-4888

Note: 9:00 am Orientation Session for New Members (the Palm 2B)

12:00 noon Closed Session (the Eucalyptus)

1. **Election of New Trustees (3)**

12:30 pm Informational Presentation (during lunch) — *Accommodating High Levels of Variable Generation* (Draft)

1:00 pm Introductions and Chairman's Remarks

Antitrust Compliance Guidelines

Consent Agenda — Approve

2. **Welcome New and Returning Members**

*3. **Minutes**
- October 28, 2008 Meeting
- November 14, 2008 Conference Call
- January 13, 2009 Conference Call

*4. **Future Meetings**

Regular Agenda

5. **Results of Election of New Trustees**

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Princeton, NJ 08540
609.452.8060 | www.nerc.com

6. **Comments by Outgoing Chairman**

*7. **Annual Priorities-and-Emphasis Discussion for the Upcoming Year**

8. **Role of Stakeholders in a Self-Regulatory Organization**

9. **Role of NERC in Presenting Reliability Impacts on Public Policy Issues**

*10. **CIP – Review of New Alert Procedure Including International Cross-Border Requirements**

*11. **2009 Performance Assessment – Update of Schedule and Process**

12. **Timeline for 2010 Budget and Business Plan**

*13. **Feedback to Board and Board Committees between MRC meetings**

*14. **Changes to Section 500 of NERC Rules of Procedure – Organization Registration and Certification**

*15. **Generator Owner/Operator - Transmission Owner/Operator Survey**

*16. **Update on Regulatory Matters**

17. **Comments by Observers**

18. **Upcoming Issues for May Meeting**

Other Business

Information Only — No Discussion

*19. **Training, Education, and Personnel Certification Program**

*20. **Reliability Readiness Evaluation and Improvement Program**

*21. **Reliability Metrics and Benchmarking Program**

*22. **Events Analysis and Information Exchange Program**

* Background material included

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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.

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Draft Minutes
Member Representatives Committee

October 28, 2008 | 12–3 p.m.
The Westin Arlington Gateway
801 North Glebe Road
Arlington, Virginia
703-717-6200

Member Representatives Committee Chairman Steve Hickok called to order a duly noticed meeting of the North American Electric Reliability Corporation Member Representatives Committee on October 28, 2008 at 1:00 p.m., local time, and a quorum was declared present. The meeting announcement, agenda, and list of attendees are attached as **Exhibits A**, **B**, and **C**, respectively.

NERC Antitrust Compliance Guidelines

David Cook, vice president, general counsel, and director of regulatory services, called attention to the NERC Antitrust Compliance Guidelines distributed with the agenda.

Minutes

The Member Representatives Committee approved the draft minutes of the July 29, 2008 meeting and the September 24, 2008 conference call (**Exhibits D** and **E,** respectively).

Future Meetings

The Member Representatives Committee approved November 4, 2009 in Atlanta, Georgia as a future meeting date and location.

Introductions and Chairman's Remarks

Steve Hickok welcomed all to the meeting and introduced the proxies. He extended a special welcome to Maureen Borkowski as the newest member of the MRC representing the Independent Operator Utility sector. He reminded the committee that dial-in capabilities were provided for this meeting and two members and a proxy had chosen to participate by phone. Additionally, Mr. Hickok stated that this would be his last meeting as Chair of the MRC as officer elections are slated as the first business item on today's agenda.

Officer Elections

Steve Hickok reminded the committee the nominating period for the two officer positions of the Member Representative Committee for 2009 opened on September 2, 2008 and

closed October 3 after a 30-day nominating period. He reported the 2009 Officer nominees were Steve Naumann for Chairman and Ed Tymofichuk for Vice Chairman. The committee approved a motion to elect. Chairman Hickok also explained the 60-day nominating period for sector members continues through October 31, 2008.

Critical Infrastructure Protection Program

Michael Assante, vice president and chief security officer, gave a presentation on the Critical Infrastructure Protection (CIP) program (**Exhibit F**). He began by explaining the new chief security officer (CSO) position serves in CIP and Situation Awareness (SA) capacities, works with the regions, ES-ISAC, and in various other roles. Mr. Assante discussed the CIP Enhancement plan to mobilize executive participation and guidance, establish the NERC CIP program, formalize NERC-led assessment and initial Cyber Risk Preparedness (CPR) evaluation, and enhance the ES-ISAC through improved alert reporting, process maturity and streamlining, and regular-testing of notification lists.

Mr. Assante explained to the committee the Cyber Security Risk Preparedness Evaluation Project will focus on investigating the existing capabilities that prevent, detect, respond to, and limit the potential damage of existing/emerging attack techniques. Mr. Assante explained the selected approach is to devise several realistic, but challenging, cyber scenarios and conduct a series of table-top exercises with entities using a process to evaluate key criteria for determining preparedness.

Further in his presentation, Mr. Assante described the three levels of alerts — advisories, recommendations, and requests for essential actions — as vehicles to communicate to the industry, and the relevant industry sectors to receive the alerts. These alerts will be issued to advise the industry, when a security risk (threat or vulnerability) arises, to evaluate the risk and take action to correct issues affecting critical infrastructure protection and reliability. After some discussion among the committee, Mr. Assante emphasized NERC's commitment to communicating quickly but also communicating properly, as there is value in assessing how vulnerability impacts critical control functions. He called upon the Critical Infrastructure Protection Committee to bring expertise to the table.

2009 Performance Assessment

David Cook delivered a presentation on the 2009 Performance Assessment (**Exhibit G**). He explained NERC is required to file a performance assessment three years following its certification as the ERO and every five years thereafter. Mr. Cook also provided an overview of the process, content, and timetable for filing the assessment. He explained the filing must include a performance assessment for each Regional Entity along with an explanation of how NERC satisfies the requirements for original certification as the ERO, recommendations by stakeholders for improvement of NERC's operations, activities, oversight, and procedures, and NERC's response to such recommendations. The first assessment is due July 20, 2009.

Cross-Border Items

Chairman Hickok explained in the future this item would be discussed during the month-ahead preview of a regular quarterly meeting agenda. If determined to be necessary, it would then be added to the agenda.

Status Report on 2008/2009 Winter Assessment

David Nevius, senior vice president and director of reliability assessment and performance analysis, reported the normal assessment of the 2008/2009 winter peak season would be released mid November. The report will cover the three winter months (December–February) and identify any adequacy or reliability issues identified in the regions. This winter's report will reflect some improvements over what has been included in the past, including increased granularity of available capacity and demand response resources, fuel assessment, and greater attention to the impacts of wind generation on capacity margins. Mr. Nevius went on to discuss industry actions, key findings, and regional highlights as found in his presentation (**Exhibit H**).

NERC/Regional Entity Improvements to Compliance and Enforcement Program

NERC and the Regional Entities have established a two-fold strategy to improve implementation of the compliance and enforcement program by quickly reducing backlogged cases of alleged and confirmed violations and promoting more consistency and transparency. Rick Sergel, president and CEO, started the discussion with NERC's perspective stating the backlog varies Region to Region and is of great concern to all, but explained the backlog is symptomatic of growth and does not reflect a steady state. He further explained plans for reorganization of NERC staff to address the problem and increase output. Dan Skaar, President of MRO, and Louise McCarron, CEO of WECC, spoke on behalf of the Regional Entities. The other Regional Entity Executives were also available for comments and questions.

Comments by Observers

Jim Fama (Edison Electric Institute) stated his appreciation for Mike Assante's presentation, and expressed that EEI supports many of the initiatives referenced in the presentation, in particular the table-top exercises. He added that based on the spirited discussion following Mr. Assante's presentation, a focused and tailored table-top exercise would be a good approach.

David Mohre (National Rural Electric Cooperative Association) stated it is unfortunate to have to truncate the meeting with so much to discuss and suggested the committee revert back to its original meeting structure to enable free-flow discussion.

Allen Mosher (American Public Power Association) thanked Chairman Hickok for his service as chair of the MRC.

Other Business

Chairman Hickok read the background of the FERC order on NERC's 2009 business plans and budgets and asked for comments and questions. Discussion ensued as to how NERC should respond to the order. Rick Sergel stated this would be discussed further in the board of trustees meeting. He informed the committee that comments would be accepted until November 2. NERC will provide its view of how it should best respond to the order by November 10, and would then begin a process allowing for stakeholder comments on NERC's proposed response. Additionally, there will be two meetings of the Finance and Audit committee to review comments and to make recommendations to the board.

Adjournment

There being no further business, Chairman Hickok adjourned the meeting at 3:15 p.m.

Submitted by,

David Whiteley
Secretary

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NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Conference Call Draft Minutes
Member Representatives Committee

November 14, 2008 | 11 a.m. EST
Dial-In: 866-503-3045

Member Representatives Committee (MRC) Chairman Steve Hickok called to order a duly noticed conference call meeting of the North American Electric Reliability Corporation Member Representatives Committee on November 14, 2008 at 11 a.m., EST. The meeting announcement, agenda, and list of attendees are attached as **Exhibits A**, **B**, and **C**, respectively.

NERC Antitrust Compliance Guidelines
David Cook, vice president and general counsel, called attention to the NERC Antitrust Compliance Guidelines (**Exhibit D**).

NERC's Proposed Response to Address Program Directives from FERC's Order on the 2009 Business Plan and Budget
Chairman Hickok informed the committee that the main purpose of the call was to review and discuss NERC's proposed response to address the program directives from FERC's order on the *2009 Business Plan and Budget*. He proposed the committee walk through the working draft of NERC's response to FERC's budget order (**Exhibit E**), as it is presented in the background material to the agenda, and comment on each of the program areas as they are presented in the document.

Chairman Hickok began his discussion of NERC's draft response by first briefing the committee on the Board of Trustees' November 13, 2008 conference call in which the board approved a request for clarification of the budget order, to be filed by NERC, and summarized the request for clarification. The request for clarification is due November 15, 2008. Also, NERC must make a compliance filing on a number of issues raised in FERC's order by December 15, 2008. NERC is working with the Regional Entities and the Member Representatives Committee in preparation of that compliance filing.

After lengthy discussion among the members of the committee as to why NERC is seeking clarification rather than rehearing, David Cook, vice president and general counsel, explained that NERC had received suggestions from several entities on seeking rehearing and made a judgment to seek clarification of certain language rather than

seeking a rehearing. Mr. Cook further explained this action does not restrain other parties from seeking relief from the Commission. Other entities can still seek intervention and rehearing. David Whiteley, executive vice president, encouraged all entities to seek their own counsel on this matter.

Chairman Hickok summarized the general consensus among the members of the committee is that NERC should file for rehearing. He then called attention to the executive summary of the working draft and asked NERC to revise it to include language from the request for clarification. Mr. Cook agreed the language of the compliance filing would reflect the language found in the request for clarification, as it relates to the Reliability Standards development process.

David Whiteley informed the committee the Board of Trustees Finance and Audit Committee would be meeting by conference call on November 24 at 1:00 pm EST to discuss NERC's response, and again in early December to approve the response. Material for the November call will be made available around November 21 or 22. He encouraged stakeholders to send additional comments to him or Bruce Walenczyk, chief financial officer, by November 19, 2008.

Chairman Hickok closed the discussion on the request for clarification by reiterating that there is strenuous recommendation by members of the committee that they would have preferred NERC to file for rehearing. Additionally, Chairman Hickok encouraged members to make suggestions on strengthening the language in NERC's response to paragraphs 24–25 of FERC's budget order addressing technical expertise in the Reliability Standards Program, to be included in the compliance filing.

Reliability Standards Program and CMEP

Chairman Hickok returned the discussion to the response on program area issues in FERC's budget order. Several committee members expressed concern that NERC provide more detailed explanation of changes in resources and staff needed as a result of changed circumstances since filing the *2009 Business Plan and Budget*, and reaffirm the appropriateness of the original budget. Many supported NERC using its $2.5M reserve rather than increasing assessments.

David Whiteley reassured the committee NERC will explain thoroughly the areas that have changed since the budget was finalized in late spring/early summer of 2008, and support the original filing of the budget.

In the Reliability Readiness Program area, David Cook explained FERC wants further explanation to justify NERC's decision to phase out the program and that NERC will work to provide that additional information as to why the program is being discontinued.

Chairman Hickok concluded the discussion by reminding the committee to send comments to David Whiteley and Bruce Walenczyk by November 19, and informed

members the next draft of NERC's response to the Budget Order would also include material on the Regional finance and accounting issues from the FERC order.

Adjournment

There being no further business, Chairman Hickok adjourned the meeting at 12:29 p.m.

Submitted by,

David Whiteley
Secretary

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NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Conference Call Draft Minutes
Member Representatives Committee

January 13, 2009 | 11 a.m. EST
Dial-In: 866-520-7751

Member Representatives Committee (MRC) Chairman Steve Hickok called to order a duly noticed conference call meeting of the North American Electric Reliability Corporation Member Representatives Committee on January 13, 2009 at 11 a.m., EST. The meeting announcement, agenda, and list of attendees are attached as **Exhibits A**, **B**, and **C**, respectively.

NERC Antitrust Compliance Guidelines

David Cook, vice president and general counsel, called attention to the NERC Antitrust Compliance Guidelines (**Exhibit D**).

Agenda Review

Chairman Hickok started the meeting and immediately turned it over to the Chairman-Elect for 2009, Steve Naumann. Chairman-Elect Naumann took roll of members and proxies. A quorum was not reached; therefore approval of the November 14, 2008 minutes will be moved to the February 9, 2009 meeting.

Corporate Governance and Human Resources Committee Mandate Update

David Nevius, senior vice president and director of reliability assessment and performance analysis, presented an update of the Corporate Governance and Human Resources Committee (CGHR) Mandate. One issue still open is what should be the process by which NERC develops and approves VRFs and VSLs associated with NERC standards. The committee is planning to post a final draft for action on a conference call scheduled for Thursday, January 22 or Friday, January 23. That document will serve as the agenda background for the February 10, 2009 Board of Trustees meeting. Written comments to Dave Nevius are due by January 21, 2009.

2009 Performance Assessment Update

David Cook, vice president and general counsel, provided an update on the 2009 Three-Year Performance Assessment. NERC is planning to post several documents on January 14, 2009 including an on-line survey containing a series of questions and an opportunity for comment. In addition, NERC will post a background piece on what it has done over

the last three years, and evaluations prepared by each of the regions. Mr. Cook stated he anticipates a six-week comment period and expects to produce a revised set of documents based on comments and recommendations received, in advance of the May 2009 MRC meeting. Mr. Cook expects to post recommendations from NERC some time in mid-April with the intention of discussing at the May meeting. NERC is due to file the 2009 Performance Assessment with FERC by July 20, 2009 on its three-year anniversary of certification. After some discussion among the committee members, Mr. Cook stated that NERC will make an information filing with the Canadian Authorities

Overview of Preliminary Agendas for February 9 and 10 — Board of Trustees and the Member Representatives Meetings

Chairman-elect Naumann gave an overview of the preliminary agenda for the February 10, 2009 Board of Trustees meeting (**Exhibit E**). The MRC discussed the agenda and NERC staff provided input on the material that would be covered as part of each item. Mr. Cook noted that an item on amendments to RFC's Bylaws will be added to the agenda. Chairman Hickok reminded the committee they will hold another face-to-face meeting with the Board of Trustees Compliance Committee immediately following the MRC meeting.

Member Representatives Committee

Chairman-Elect Naumann provided an overview of the Member Representatives Committee agenda (**Exhibit F**) and briefly touched on each agenda item. An additional agenda item to discuss Priorities and Emphasis for 2009 was suggested and added to the agenda. Chairman-Elect Naumann informed the committee a closed meeting of the MRC will take place at noon on February 9 to hold the election of new trustees. General Counsel David Cook will be in the room to certify the vote along with the Board of Trustees Nominating Committee (BOTNC) Chairman Fred Gorbet to report from the BOTNC. Non-voting members are also invited to attend this closed session. Chairman-Elect Naumann reminded the committee members of the importance of a quorum being reached. Chairman Hickok noted that the orientation session for new MRC members would take place a 9 am prior to the MRC meeting. Dial-in capability will once again be made available for the MRC meeting, as well as the closed session, to those members and their proxies unable to attend in person.

Adjournment

There being no further business, Chairman-elect Naumann adjourned the meeting at 12:12 p.m.

Submitted by,

David A. Whiteley

David Whiteley
Secretary

Agenda Item 4
MRC Meeting
February 9, 2009

Future Meetings

MRC Action Required

Approve February 15–16, 2010 (M–T) in Phoenix, Arizona as a future meeting date and location

Information

The MRC has approved the following future meeting dates and locations:

- May 5–6, 2009 — Washington, D.C. (Tu–W)
- August 4–5, 2009 — Winnipeg, Manitoba, Canada (Tu–W)
- November 4–5 — Atlanta, Georgia (W–Th)

Agenda Item 7
MRC Meeting
February 9, 2009

Annual Priorities-and-Emphasis Discussion for the Upcoming Year

MRC Action Required
Discussion

Attachments
1. Framework Paper from the February 2008 Discussion
2. Four Discussion Outlines Developed for the May and August 2008 Meetings

Background
Following the February 2008 discussion, the MRC focused on four areas, using the discussion outlines of Attachment 2. In the first two areas — Reliability Standards Development, and Compliance Monitoring and Enforcement — issue statements presenting policy questions were formulated by the NERC CEO, and assigned to two committees of the board of trustees for their development of recommendations for the board's consideration.

The discussion today could be launched with three questions:

1. Are there aspects of the "desired future states" described in Attachment 2 on which adequate progress is not being made?

2. Are there unexamined areas from Attachment 1 that should be teed up for development in 2009? Examples might be "the health of the business model" (Is the stakeholder role in the ERO diminishing? Is the ANSI process serving us well? Is the role of the Regional Entities under the delegation agreements maturing adequately?), and "resiliency of the bulk power system against disruptive forces" (Are the CIP standards adequate to mitigate these threats? What kind of extraordinary executive authority should be considered for FERC and the Canadian Provinces to deal with fast-developing new threats to the reliability of the bulk power system?).

3. Are there other areas that would warrant priority attention of the MRC, the board of trustees, and NERC management?

Framework for the February MRC Discussion of NERC Priorities and Emphasis in 2008

NERC's *Strategic Plan 2008-2013*, adopted by the Board of Trustees on November 12, 2007, is comprised of a mission statement, a vision statement, six values statements, and five strategic direction statements. Together they guide the organization in its decisions and actions — particularly and especially in its development of three-year work plans for each of NERC's major program areas, which in turn guide the development of the annual business plan and budget.

During the MRC discussion of the draft strategic plan document on October 22, 2007, members asked if strategic objectives (destinations) or strategic initiatives (sets of actions designed to get NERC to the destinations) would be identified. NERC management suggested that we should look to the next iteration of the three-year work plans to see such initiatives. The MRC vice chairman suggested that the MRC use the priorities-and-emphasis discussion session planned for the February 11, 2008, meeting to address the question of explicit objectives and possible initiatives in a manner that could provide grist for the three-year work planning mill. The intent of such discussion would be to help fill the gap between the strategic plan's general direction statements and the details of work planning in the program areas — i.e., to provide input to the work planning process.

The strategic plan's direction statements generally speak to (1) desired future qualities of the bulk power system, (2) desired future effectiveness of the NERC organization, and (3) desired future states of some critical relationships. Informed and guided by the direction statements, the MRC could attempt to help the trustees and NERC management advance the development of clear objectives in these three areas.

What follows is a suggested framework for the February 11 discussion:

1) Future sufficiency of the bulk power system
   a) Adequacy of the physical resources (as may be measured, e.g., by LOLP; and by that quality's relative consistency across the integrated North American bulk power system)
   b) Reliability of the operation of the physical resources (as may be measured, e.g., by frequency and severity of voltage and stability excursions, and frequency and severity of reliability standards violations)
   c) Resiliency of the operations and the resources against disruptive forces (as may be measured, e.g., by resistance to disruption and by rapidity of recovery capability)

2) Future effectiveness of the organization and its programs
   a) Short-range and long-range sufficiency assessments (e.g., clarity, accuracy, and value in support of making decisions and taking action)

b) Real-time state monitoring (e.g., clarity, accuracy, and value in support of making decisions and taking action)
c) Reliability standards development (as may be measured, e.g., by the practicality, effectiveness, and cost-efficiency of the standards in ensuring reliable operations; their compatibility with sound business practices; and the inclusiveness and technical soundness of the development process)
d) Compliance monitoring and enforcement (as may be measured, e.g., by the reduction in frequency of violations; and by the consistency, accuracy, and fairness of standards interpretations, violations determinations, remediation requirements, and sanctions/fines applications)
e) Readiness program (e.g., helpfulness to users, owners and operators of the bulk power system)
f) Technology advancement and tools development (as may be measured, e.g., by value added -- increased adequacy, reliability or resiliency -- through acceleration of their application to the bulk power system)

3) Future quality of key relationships
   a) FERC (as may be measured, e.g., by FERC's respect for and technical deference to NERC; and by FERC's cooperation with provinces)
   b) Provinces (as may be measured, e.g., by the provinces' respect for and technical deference to NERC; by their establishment of parallel compliance/enforcement systems; and by their cooperation with FERC)
   c) Electric utility industry (as may be measured, e.g., by industry's trust of NERC; and by industry's technical engagement and support of the NERC programs and budget)
   d) NAESB (as may be measured, e.g., by the level of mutual support and cooperation between NAESB and NERC, and the industry's trust in that relationship, especially in establishing the boundary between reliability and market requirements)
   e) Regional Reliability Organizations (as may be measured, e.g., by the level of mutual support and cooperation between NERC and the RROs, especially in implementation of the delegation agreements)
   f) Consumers and other stakeholders (as may be measured, e.g., by their respect and political support for NERC)

The strategic plan's strategic direction statements would guide development of explicit strategic objectives and initiatives through the suggested discussion framework, above.

The "Business Model" strategic direction statement commits NERC to sustaining the industry's active and broad participation and to engaging the industry's expertise (3c, above), recognizes the importance of compatibility with sound business practices (2c, 3d), and recognizes the integral and essential role that the RROs play in reliability assurance under the delegation agreements (3e).

The "Relationships" strategic direction statement commits NERC to seeking comparable application of and compliance with its reliability standards across the entirety of the integrated North American bulk power system (2d).

The "Operations" strategic direction statement focuses NERC on improving the efficiency and effectiveness of its programs, modifying or adding to them as needed to improve reliability, and striking an appropriate balance between service provider and standards enforcer (2a-f).

The "Assessments" strategic direction statement commits NERC to a pro-active role in promoting, through assessment activity, the future sufficiency of the bulk power system to sustain reliable service (1a-b, 2a).

The "Technology and Tools" strategic direction statement describes a NERC role in identifying the need for new technology and tools; and then in leading, where appropriate, the advancement of the technology and tools (2f).

The February 11 discussion would attempt to reach, in each selected area of the framework, at least a description of the destination (desired future state) that would be measurable and testable; and perhaps also to reach a sense of the kinds of initiatives we may expect to see developed in the three-year work plans.

For example, in area 1a, we may explore the feasibility and usefulness of employing an adequacy measurement or measurements (such as "loss-of-load probability" — the likelihood of losing service to firm load as the result of insufficient bulk-power-system resources) in order to locate and describe more clearly the nature and size of impending adequacy gaps. Then, from time to time in regular meetings of the MRC (with the trustees), we would be able to hear from NERC management on our collective progress in advancing the bulk power system toward the desired future state (achieving the strategic objective) of a targeted adequacy level, with no gaps in any region or locality.

For another example, in area 2a, we may explore the future qualities or attributes of NERC's assessments (especially in the consistency and clarity of measurement) that we believe would be most important to pinning down the nature and location of impending deficiencies of the bulk power system in a way that would compel the kind of debate (among the users, owners and operators) that leads to appropriate and timely action.

For another example, in area 3b, we may explore the kinds of initiatives that could be undertaken to accelerate accomplishment among the provinces of compliance regimes that will ensure consistent and comparable reliability across the interconnected system.

Steve Hickok
December 18, 2007

Discussion Outline (Draft 4/24/08)

Reliability Standards Development

Desired future state

1) Standards if met assure adequate level of reliability (ALR)
   a) Each standard plugs a hole in ALR
      i) A failure to meet the standard results in inadequate level of reliability
      ii) Magnitude of departure from the standard can be understood in terms of magnitude of the threat to reliability
2) Standard is cost-effective means to ALR
3) Standard sets out unambiguous requirements as clear obligations of a party to take and record specific actions
4) Technical soundness, administrative feasibility, enforceability, and operational consequences for other functions are thoroughly vetted before approval and imposition of standards

Current state

1) Too many standards
   a) Diverts focus, harms reliability
   b) Overlaps
   c) Low- and no-consequence requirements
   d) Results in many low-priority compliance issues getting in the way of high-priority operations
2) Poorly organized from standpoint of interdependencies
3) Ambiguity
   a) Multiple interpretations possible
4) Too many SARs in play at the same time
   a) Workload is preventing thorough review by industry prior to voting
5) FERC's demands are disrespecting (4), above
   a) Failure of standard to pass did not hinder its progression to FERC (recent VSL)
6) "Drive for perfect compliance with imperfect standards"
7) Is NERC enforcement role beginning to overwhelm its assistance roles?

Compliance Monitoring and Enforcement

Desired future state

1) Culture of compliance
   a) Across all jurisdictions
   b) Participants …
      i) …accept importance of meeting reliability standards
      ii) …are aware of their responsibilities
      iii) …know performance is being monitored
      iv) …appreciate that consequences of failure are very serious
      v) …are acting to achieve compliance (low # of violations)
   c) Necessary attributes (shortcomings here are killers to a culture of compliance)
      i) Fairness
      ii) Consistency
      iii) Transparency
      iv) Timeliness

Current state

1) Post-June-18 violations
   a) Is the number high?
   b) Is this just the "watermelon" we swallowed?
2) Self reporting vs. caught by compliance audit
3) Problems that may jeopardize culture of compliance
   a) Fairness
      i) Appropriateness of remedies and penalties (Can jaywalking get the death penalty? Are industry responses recognizing importance of compliance?)
   b) Consistency
      i) Differing interpretations of requirements
      ii) Different compliance audit methods
      iii) Canadian vs. US enforcement?
      iv) Penalties application, use of mitigating and aggravating factors, etc.?
   c) Transparency
      i) Non-disclosure of penalty calculator
      ii) Non-use of interpretation process
      iii) Non-disclosure of investigations, violations, remedies (including "no action" outcomes), mitigation tracking
   d) Timeliness
      i) Postings lag
      ii) Prioritized dealing with issues is lacking
      iii) Overload of immature systems and shortage of qualified staff
4) Balance between promotion of compliance and enforcement of compliance

Reliability Assessments and the Adequacy of Resources

Desired future state

1) Understand and measure the **ability** of system resources -- the generating and transmitting facilities and demand management operations available to the bulk-power system -- to meet the firm electricity requirements of the consumers at all times, taking into account reasonably expected outages of system components.
2) Understand and measure the **likelihood** that the operation of the system will be sustained within control limits.
3) The clarity, accuracy, and granularity (sufficiency of detail) of these measurements suitably support decision making (including the ordering of priorities) and action taking by policy makers, regulators, and system owners and operators concerned about the adequacy of system resources and operational reliability.
4) These measurements treat resource characteristics and operational-reliability characteristics consistently across the integrated North American bulk-power system.
5) Measurements of this **ability** and **likelihood** are able to pinpoint the nature and location of present inadequacies of system resources and operational reliability.
6) Forecasts of this **ability** and **likelihood** are able to pinpoint the nature and location of potential future inadequacies of system resources and operational reliability.
7) Forecasts of this **ability** and **likelihood** include scenario analyses to understand the potential impacts of legislation, policy changes, regulatory actions, fuel limitations, and economic trends.
8) The estimated costs of providing higher levels of resources and operational reliability are compared with the estimated economic impacts of resource inadequacy and operational unreliability so that a cost-effective balance between these costs and impacts can be attained.

Issues

1) Non-centralized nature of the effort
   a) Guidebook being developed for use in the Regions
2) Inconsistencies among data definitions and collections
   a) PC's Reliability Assessment Improvement Task Force working on this
3) PC and OC engagements
   a) Latter now engaged in reviews of seasonal and long-term assessments
4) Reliability metrics under development by RM Working Group
5) Specific problem areas
   a) Committed vs. uncommitted resources
      i) Resolution is in hand
   b) Treatment of intermittent renewables

    i) Assigned to PC subgroup
  c) Treatment of DSM programs, energy efficiency programs, distributed resources (in direct applications on the consumer side of the meter)
    i) Assigned to PC subgroup
  d) Data needs
6) $$, staff, and industry volunteers
7) Opportunity to learn from Events Analysis Program
8) Who should establish the desired levels of resource adequacy and operational reliability?

Irony

We can't yet measure the level of operational reliability (see "likelihood" above), but the accountability for maintaining operational reliability is clear.

We can now measure the level of resource adequacy (see "ability" above), but the accountability for correcting inadequacy is unclear.

NERC-FERC-Provinces Relationships

Desired future state

1) Formal cooperation and collaboration among and between the regulatory bodies -- the seven Provinces and FERC -- in the approval of reliability standards that are proposed by/through NERC.
2) Mechanisms for this cooperation and collaboration are established and sustained.
3) The regulatory bodies are responsive to each other's issues and achieve a high level of mutual trust.
4) NERC is viewed by all regulators as a competent and trusted administrator of reliability standards development and enforcement.
5) The mandatory reliability standards, with fair and effective compliance and enforcement, are in place in all regulatory jurisdictions.

Issues

1) The eight jurisdictions have very different regulatory scopes, structures and authority.
2) Aggressive FERC rulemakings, which can dive into deep details without sufficient consideration for needed collaboration with the Provinces, risk creating regulatory gulfs and operational gulfs among and between the jurisdictions -- which gulfs the integrated North American grid would not long tolerate.
3) Eight-body collaboration is difficult, staff-intensive, and often slow.
4) Responses to threat emergencies may require extraordinary, swift joint actions by the regulatory bodies.

CIP – Review of New Alert Procedure Including International Cross-Border Requirements

MRC Action Required

None

Information

One of the initial priorities of the Critical Infrastructure Protection (CIP) program was to work with NERC's Events Analysis and Information Exchange Program and NERC's support organizations to enhance the NERC Rules of Procedure Section 810 notification and response process[1], conduct exercises, provide training for recipients of Alerts, and employ the process to address security risks. NERC has developed and executed an improvement program focused on standardizing, educating, and enabling entities to develop processes to meet their obligations and, most importantly, to demonstrate the use of those processes. NERC has invested in a dedicated staff member to manage the Alert process and work with recipients to address issues and develop a planned approach for implementing improvements.

The CIP program developed and implemented a pilot to better leverage industry expertise in the evaluation, validation, and mitigation of security risks. The pilot began in October of 2008 and has already engaged industry technical experts in the evaluation of eight cyber vulnerabilities and drafting of the last five ES-ISAC-issued Alerts. The pilot, with an initial subject matter expert pool, has provided valuable expertise and knowledge directly increasing the quality of ES-ISAC notifications.

Alerts Process Improvements

NERC had intended to conduct an exercise of the Alert system at the level of a Recommendation to Industry for a Critical Infrastructure Protection subject in order to test the capability to send and receive responses from recipients. The issuance of a Critical Infrastructure Information Notice # CIIN-08-270-01 pertaining to a vulnerability in an ABB Process Communication Unit (PCU) 400 by the U.S. CERT drove NERC to prepare and send a Recommendation to industry in lieu of its planned Alert exercise. NERC expected to identify issues that would need to be addressed to improve its ability to notify bulk power system entities and receive the necessary responses to monitor mitigations and accurately understand the risk to system reliability. The real-world example has borne that out.

NERC identified where it can address process weaknesses and better communicate and educate registered entities on what formal notifications are used for, their obligations to acknowledge and respond, how the process works, and how to resolve problems. NERC has conducted two Alert webinars that reached an audience of over 1,500 and has made Alerts a topic for all interactions with industry.

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[1] Section 810.4 of the NERC Rules of Procedure states: "The bulk power system owners, operators, and users to which Level 2 (Recommendations) and Level 3 (Essential Actions) notifications apply are to evaluate and take appropriate action on such issuances by NERC. Such bulk power system owners, operators, and users shall also provide reports of actions taken and timely updates on progress towards resolving the issues raised in the Recommendations and Essential Actions in accordance with the reporting date(s) specified by NERC."

The key to success is taking industry feedback and implementing suggestions in an effective manner. NERC has received excellent input and has made corresponding improvements to enhance recipient flexibility and address some of the usability issues. Standardization is a good example of an effort to afford recipients the necessary flexibility to easily identify NERC Alerts and to establish e-mail rules to internally send Alerts to work groups or operations and security centers that are capable of acknowledging receipt:

- Subject lines for Alerts are now standardized based on recipient. Alerts will always come from the alerts@nerc.net e-mail address. Primary compliance contacts will see the subject lines listed below:
  - ADVISORY: (Title) (NO RESPONSE REQUIRED)
  - RECOMMENDATION: (Title) (ACKNOWLEDGMENT/REPORTING REQUIRED)
  - ESSENTIAL ACTION: (Title) (ACKNOWLEDGMENT/REPORTING REQUIRED)
  - Example: RECOMMENDATION: CIP: Microsoft Out-of-Band Security Bulletin MS08-069 (ACKNOWLEDGEMENT REQUIRED)

NERC's use of Alerts in 2008 to manage CIP-related risk across the North American bulk power system included issuing seven Level-1 CIP Advisories and two Level-2 CIP Industry Recommendations — one in September and another in October. There has been significant improvement to NERC's Alerts process and industry's performance from an Alert response rate of just over 58 percent from a pool of approximately 1,200 recipients in October, to the most recent response rate of over 94 percent from a pool of approximately 1,800 recipients.

2009 improvement efforts will include:

1. Additional training provided in January 2009 with specific invitations to non-respondent entities. Existing FAQ document to be updated and expanded.
2. Technology and security improvements, to include:
   a. The use of an electronic signature to give recipients assurance that future Alerts are coming from NERC;
   b. Ongoing verification and improvements to NERC's contact database, including monthly "tests" of the Alerts system; and
   c. Improving online acknowledgement tools and security encryption, such that CEII data can be collected electronically.
3. Improve clarity of instructions and questionnaires.
4. Improve quality of these reports to better fulfill the guidelines listed in NERC's Rules of Procedure Section 810.5 (Reporting to governmental authorities).

Engaging Industry Expertise in the process

The ES-ISAC processes for engaging experts and evaluating technology vulnerabilities is being matured to achieve consistency and quality. This effort, called "network Hydra", is a program to identify and manage security knowledge resources and weave them into the fabric of the ES-ISAC's business processes and workflows. The ES-ISAC, as a hierarchical organization, must develop focused bridges and touch points into the broad social network of security, technology, and infrastructure experts that exists in our industry. The program is designed to engage the right people with the right process at the right time to dynamically protect the electricity sector.

Cross-Border Coordination

NERC's use of Alerts is applied across the bulk power system. NERC is coordinating with Canadian federal authorities and integrating work processes to assist in achieving Canadian CIP goals. The Alert capability is seen as an important tool for communicating threat and vulnerability information. The threat and vulnerability evaluation and Alert generation process includes participation from Public Safety Canada and the Royal Canadian Mounted Police (RCMP). NERC as the ERO is committed to demonstrating how the Alert process provides both U.S. and Canadian Authorities with a means to address urgent and material security risks. Continued improvement will result in a verifiable ability to communicate critical warnings and actions to over 1,800 bulk power system entities. This capability represents a strong commitment on the part of the industry and provides for an effective and comprehensive approach for North America.

Three-Year Performance Assessment

Action Required

None

Background

NERC is required to submit an assessment of the performance of NERC and the Regional Entities to the Federal Energy Regulatory Commission (Commission) three years from the date of certification as the Electric Reliability Organization. The initial performance assessment report is due at the Commission by July 20, 2009. As the first step in developing the performance assessment filing, NERC and the Regional Entities have sought input from users, owners, and operators of the bulk-power system, and other interested parties.

To facilitate stakeholders and other interested persons in providing focused input to the performance assessment, NERC and the Regional Entities (REs) have prepared self-assessment documents and an on-line survey. These documents, along with a cover sheet that more fully explains the approach to developing the performance assessment filing, and the instructions for the on-line survey can be found at the following Web site: http://www.nerc.com/page.php?cid=1|8|303. NERC and the REs encourage each entity to complete the on-line survey and to provide written comments to pa2009@nerc.net.

The deadline for completing the on-line survey and submitting written comments is **February 25, 2009**. Questions about the performance assessment process should be sent to pa2009@nerc.net.

Projected timeline for the remainder of the project:

- April 22 - NERC posts evaluation and responses to stakeholder recommendations and Regional Entity responses
- May 8 - Discussion of NERC response and Regional Entity responses at MRC meeting
- June 1 - "Final" (i.e., subject to review and approval of NERC and Regional Entity Boards) versions of NERC and Regional Entity statements of activities, accomplishments, assessments, recommendations for improvements, and responses to recommendations from stakeholders
- June 30 - Deadline for final approval by the board of each Regional Entity of its response to NERC evaluation, recommendations, and proposed changes to bylaws, rules, and procedures
- July 10 - NERC BOT approval of performance assessment
- July 20 - File performance assessments of NERC and eight Regional Entities at FERC and an informational filing with the Canadian Jurisdictions.

Feedback to Board and Board Committees between MRC Meetings

MRC Action Required
Discussion

Background
One of the responsibilities assigned to the MRC by the NERC By-Laws is "… to provide advice and recommendations to the board with respect to the development of annual budgets, business plans and funding mechanisms, and other matters pertinent to the purpose and operations of the Corporation." The MRC normally provides policy input to the board of trustees at quarterly MRC meetings, which board members attend. However, due to the increasing number of issues that the board must consider and the time constraints of its quarterly face-to-face meetings, the board and its committees have to meet more frequently by conference calls between these quarterly meetings. Many of these conference calls are scheduled on short notice and scheduled for short periods of time, which necessitates short comment periods and limits participation to only board or board committee members on the calls.

Process to Provide Input
In an effort to provide input to the board and its committees on conference calls, MRC members and other stakeholders should send written comments to the MRC officers and the NERC staff person coordinating that board committee's activities, no later than two days prior to the conference call. The NERC staff coordinator will have the responsibility to pass these comments on to the board or board committee as well as other involved NERC staff. Depending on the issue and comments received, the board chairman or committee chairman may request that some stakeholders directly participate in the call.

In addition, a special meeting of the MRC could be called in accordance with Article VIII, Section 8 of the NERC Bylaws to provide the input of the MRC as a whole. However, given the short time periods often involved, and the need for a quorum in order for the MRC to take action, this alternative should be used only sparingly.

Agenda Item 14
MRC Meeting
February 9, 2009

Changes to Section 500 of NERC Rules of Procedure – Organizational Registration and Certification

MRC Action Required
None

Background
The Compliance and Certification Committee (CCC) Charter provides guidance on the CCC's involvement in making recommendations for changes to the NERC Rules of Procedure taking into account input from stakeholders. Specifically Section 2 of the CCC charter details "Compliance and Certification Committee Functions":

2. Provides comments and recommendations to the NERC Board and NERC compliance staff:

a. Provides comments to NERC with respect to stakeholders' perception of the policies, practices and effectiveness of the Compliance program, Registration program, and Certification program.

b. Recommends revisions of the ERO Rules of Procedure related to the Compliance program, Registration program, and Certification program to the NERC Board.

7. Organization registration and certification.

Provides assistance to NERC and the Regional Entities to implement the Compliance and Organization Registration and Certification programs.

The CCC established the Organization Registration and Certification Subcommittee (ORCS) to manage the posting and incorporation of the proposed changes into NERC's Rules of Procedure Section 500 and Appendix 5. The ORCS has been working on modifications to Section 500 that eliminate transitional certifications, incorporate guidance on joint registration organization and coordinated functional registration, add process flow diagrams for appeals of registration/certification, create provisional certification, and lists questionnaires for transmission operator, balancing authority, and reliability coordinator. The initial public posting for public comments can be found at http://www.nerc.com/page.php?cid=3|25|173. Due to follow-up comments from the CCC, the proposed changes will be posted for public comment for 30 days after undergoing NERC legal review.

Patti Metro, chair of the ORCS, will present an update on the efforts to revise Section 500 and Appendix 5.

Generator Owner/Operator — Transmission Owner/Operator Survey

MRC Action Required

Discussion

Some industry stakeholders continue to express considerable concern with regard to the applicability of certain Transmission Owner/Transmission Operator (TO/TOP) reliability standard requirements to Generator Owners/Generator Operators (GO/GOP) by virtue of their interconnection facilities to the bulk electric grid. These concerns have manifested themselves in GO/GOP appeals to their inclusion on NERC's Compliance Registry as TOs/TOPs. During the discussions that ensued in the disposition of these appeals and in subsequent discussions with interested stakeholders, NERC was asked to review this interface issue and determine if a better approach is appropriate to address the issue in the long-term.

In response to this request, NERC conducted a survey from October 1–30, 2008 that provided the opportunity for stakeholder input to help shape the issues and identify potential courses of action to better address this interface issue in the long-term. In response to the request for input, NERC received 113 sets of comments from representatives from each of the ten industry segments as outlined below:

Responses by Type

Total Respondents	113
Individual Respondents	88
Group Respondents	25

Responses by Segment

Segment	Description	Individual	Group	Total
1	Transmission Owners	23	10	33
2	RTOs and ISOs	4	3	7
3	Load-Serving Entities (LSEs)	21	9	30
4	Transmission Dependent Utilities (TDUs)	6	2	8
5	Electric Generators	59	18	77
6	Electricity Brokers, Aggregators, and Marketers	10	8	18
7	Large Electricity End Users	1	1	2
8	Small Electricity Users	2	0	2
9	Federal, State, and Provincial Regulatory or other Government Entities	1	0	1
10	Regional Reliability Organizations and Regional Entities	1	1	2
	N/A	7	0	7
	None listed	0	3	3
Total		135	55	190

The survey contained the following 11 questions with a high-level summary of the comments received. The summary comments do not suggest an accepted approach to resolve the issues but are presented for informational purposes to reflect the comments received.

1. Describe the circumstances or interconnection configurations under which you believe it would be appropriate to assign the GO/GOP as an applicable entity for certain current TO/TOP standards requirements.
    - Facilities must have a material impact on the bulk electric system to be considered
    - Determination must be conducted through a formal and specific process, on a case-by-case basis
    - TO/TOP requirements should not apply to a GO/GOP
    - Modify reliability standards instead of applying the TO/TOP requirements to GO/GOPs
    - Assign only if there is an identified reliability gap between the GO/GOP and the TO/TOP

2. Is there a general criteria that may be offered to describe these circumstances or configurations for the assignment of certain TO/TOP requirements to a GO/GOP?
    - The use of a wholesale approach will not result in improved reliability
    - Criteria must be specific and not be applied universally
    - Cannot apply general criteria; must be on a case-by-case basis
    - TO/TOP requirements generally would not apply to a GO/GOP
    - Apply only if there is an identified reliability gap in the current reliability standards
    - Others offered suggested qualifying criteria
        - Size in MW or kV
        - Based on distance from generating facility to transmission grid
        - According to reliability impact
        - According to ownership of or responsibility for assets

3. Please identify the specific subset of current TO/TOP requirements in NERC's Reliability Standards that should also apply to GOs/GOPs as a general practice with respect to their transmission interconnection facilities. Use the attached Excel spreadsheet to identify these requirements and submit as an attachment to this survey. (Requirements for which the GO/GOP is already an applicable entity have been excluded.)
    - Data will be compiled for future consideration.

4. Describe your concerns, if any, with respect to extending the applicability of TO/TOP requirements to GOs/GOPs for transmission interconnection facilities with the bulk electric grid.

    - Would likely create undue burden
    - Would result in very limited or no enhancement to reliability
    - Many requirements are not applicable to GOs/GOPs
    - A specific basis should be used as opposed to a global application of requirements
    - TO/TOP requirements should not apply at all
    - Could cause loss of accountability and increase reliability gaps if applied literally because GO/GOPs would be responsible for reporting information to themselves, and for issuing and responding to directives from themselves

5. Please suggest how these concerns could be best addressed in the long-term.

    - Use a full industry-based process to determine the applicability and modify standards accordingly
        - Identify reliability gaps and determine appropriate requirements
        - Customize the standards
        - Solidify definitions
    - Focus needs to be placed on the registry process
    - Multiple views on criteria to use as the basis
    - Requirements should not apply at all

6. Please identify the additional activities, tasks, or functions that a GO/GOP should have an obligation to perform with respect to its transmission interconnection facilities with the bulk electric grid that it currently is not held to as an applicable entity (e.g. vegetation management, taking corrective action if a relay or equipment failure reduces system reliability, etc.).

    - Use a defined process to identify reliability gaps and tailor the standards to address the gaps
    - Vegetation management (FAC-003)
    - Treat the interconnection facility as part of the generating facility definition
    - Do not include anything unless the facility is deemed critical to the reliability of the system
    - Protection system and control for systems that interface with the bulk electric system
    - Taking corrective action if a relay or equipment failure reduces system reliability
    - Planning and design

- Training and certification
- None

7. Do you believe that the TO/TOP requirements (or subset thereof) that a GO/GOP should be responsible for depend on the specific interface configuration? If so, please explain.
    - 62 commenters supported the statement; 37 disagreed
    - Application must be tied to a specific reliability concern; identify gaps and develop specific approach to address the gap
    - Exceptions exist and must be accommodated without requiring all other registered entities to be responsible for requirements that should not apply to them
        - For example, if applicable to a GO/GOP, are there controls that tie into the bulk electric system, if deemed critical to a restoration plan, and maintaining control of flows on the system
        - Should not be held responsible for system restoration requirements or for load shedding requirements of a TOP
        - May be applicable if there are networked transmission connections
    - Consideration must include GO/GOP facilities and responsibilities that go beyond the interface configuration

8. Describe the impact of assigning all existing TO/TOP requirements to the GO/GOP.
    - There was no support for assigning all TO/TOP requirements to the GO/GOP
    - Would be extremely expensive, especially for small entities, and would result in rate increases
    - Is unnecessary and duplicative and would add confusion on roles and responsibilities
    - Would punish all properly registered users, owners, and operators of the bulk electric system for the improper registration of a few
    - No benefit to reliability

9. Describe the benefits or drawbacks of assigning none of the existing TO/TOP requirements to the GO/GOP.
    - Benefits:
        - Results in avoided increase in cost without reliability benefit
        - Properly focuses the responsibilities and requirements on entities assigned to the function
        - Less burdensome to GOs/GOPs
        - More efficient use of standards and compliance processes
    - Drawbacks:
        - Would create reliability gaps

        - None of the requirements are expanded to address identified reliability gaps
            - Vegetation management
            - Relay coordination
            - Communication and coordination gaps
            - Maintenance of interconnection facilities
            - Clarifying who is responsible for the transmission facilities from the step-up transformer to the bulk electric system interconnection

10. Please suggest an alternate approach that could be taken with NERC's Reliability Standards to best address the GO/GOP vs. TO/TOP interface issues.

    - Customize standards using the standards development process to determine reliability gaps and modify standards and requirements accordingly
        - Determine proper applicability and responsibility
            - Consider creating new functions or subsets of functions
            - Modify existing applicability sections
            - Develop separate standards for GOs/GOPs to eliminate confusion in training, vegetation management, special protection systems, etc.
            - Define more specifically the GOP and TOP jurisdictional interface
        - Target more specific areas
            - Configuration of the interconnection facilities
            - Vegetation management, training, and communications
        - Address related issues
            - Refine or expand definitions (Transmission, Transmission Line, Transmission Owner, Transmission Operator, Bulk Electric System to include transmission facilities either owned or operated by GOs/GOPs if deemed critical to bulk electric system reliability
    - Assign more responsibility to TO/TOP and implement formalized agreements
        - Generator Operators should be taking reliability directives where appropriate from the Transmission Operator responsible for integrated operations in the area
        - Have ISOs and Balancing Authorities perform impact-based studies for reliability
        - If equipment is an impact to the reliability of the bulk electric system, control of the equipment could be turned over to the TO/TOP
        - Develop operating agreements in a manner similar to the agreements required in NUC-001-1

11. Please share any additional comments regarding this issue or proposed resolutions to it.

    - The main themes have been captured in the responses to the previous questions.

The NERC survey achieved its primary objective to help shape the issues and potential actions to resolve the Generator Owner/Operator reliability standard requirements. Industry stakeholders expressed significantly divergent views regarding appropriate actions to address the concerns. Upon reflection on the information, the significant level of interest in the topic, and the sensitivity of the issues, NERC believes it appropriate to assemble an ad hoc technical group primarily comprising industry stakeholders. The main priority of the group will be to thoroughly vet the issues raised and propose an action plan to resolve the issues for the long-term that may include proposed standards authorization requests for standards modifications.

The attached draft scope document (Attachment A) is intended to capture the intent of the ad hoc group, and identify the list of main issues the team will address.

NERC Reliability Standards
Ad Hoc Group for Requirements Pertaining to Generator Owners/Generator Operators at the Transmission Interface

Objective:
Evaluate existing NERC Reliability Standard requirements and develop a recommendation and possible standards authorization request to address gaps in reliability for interconnection facilities of the Generator Owner and expectations for the Generator Operator in operating those facilities. Propose strategies to address or resolve other related issues as appropriate.

Background:
Prompted by FERC's ruling on the Harquahala registration appeal as a Transmission Owner and Transmission Operator and with considerable industry support to clarify the issue in NERC's Reliability Standards, NERC conducted a survey in the fall of 2008 to collect stakeholder input regarding the issues surrounding the interconnection facilities between the generating plants and the bulk electric system. The specific focus of the survey was to gain information on the appropriateness of extending all, some, or none of the existing Transmission Owner and Transmission Operator standards requirements to the Generator Owner and Generator Operator.

There were over 100 respondents to the request for input with strong opinions on both sides of this highly important and sensitive issue. Upon reflection of the large number of comments, NERC agrees with many of the commenter's that an appropriate next step is to perform a more thorough vetting of the issues at the interconnection between generators and the transmission grid through a technical study group comprising industry participants. This group would be charged with evaluating the existing body of NERC Reliability Standard requirements applicable to Generator Owners and Generator Operators to identify gaps in reliability coverage, determine how best to address those deficiencies using the compendium of comments as a guide to this effort, and offer its recommendations in the form of a standards authorization request that could then be forwarded to the Standards Committee for consideration.

Participants:
Participants in the technical study group would be drawn from a cross section of industry technical experts, with representation of transmission owners and operators, generator owners and operators, and others. NERC staff will facilitate this group.

List of Issues to be Addressed:
The following issues were offered by the commenters in response to the NERC request for input and should be addressed by the ad hoc group in its evaluation. No priority is implied by the order in which they are presented, nor is the list intended to limit the scope of the group review. It is offered as a starting point based on the comments received.

1. Identify what is needed to ensure the reliable supply of real and reactive power to the grid; determine the goal of the GO and GOP requirements (bulk electric system reliability vs. interconnection reliability)

2. Effect of interconnection configuration on standard requirements and applicability
3. Review existing GO/GOP requirements to identify reliability gaps
4. Defining functional lines of demarcation between the generator and the transmission owner
5. Impact of operational control or ownership of equipment in the transmission substation containing the generator interconnection facilities
6. Effect of FERC-filed interconnection agreements and other agreements between the GO/GOP and the TO/TOP
7. Bifurcated review of GO and GOP requirements
8. Review NERC Glossary definitions for Transmission, Generator Owner, Generator Operator, Transmission Owner, and Transmission Operator
9. NERC Compliance Registry Guidance
10. Material impact test for interconnection facilities
11. Functionality test — does the facility function as part of the generation function or the transmission function
12. Approach for multi-unit plants interconnected through a single transmission line
13. Generic application of requirements vs. case-by-case determination
14. Effect on applicability if generators provide ancillary services (blackstart, reactive control, regulation, reserves, etc.)
15. Consideration of generators that are included in:
    a. special protection scheme or remedial action scheme
    b. coordinated underfrequency program
    c. coordinated undervoltage program
    d. blackstart
    e. SOL or IROL limits
    f. Provision of firm energy
16. Need additional maintenance based Generator Owner requirements on interconnection facilities when generators already have financial incentive to remain as available as possible
17. Develop new transmission functional category — Generator-Tie

Agenda Item 16
MRC Meeting
February 9, 2009

Update on Regulatory Matters
(as of January 21, 2009)

MRC Action Required

None

Matters in Canada

1. December 2, 2008 — NERC signs an MOU with the New Brunswick System Operator (NBSO) and NPCC that implements the October 3, 2008 MOU signed by NERC, the New Brunswick Department of Energy, and the NBSO. The December 2 MOU sets forth the relationship among the parties, insofar as reliability matters are concerned, and recognizes NERC as a "standards authority" within the meaning of the New Brunswick *Electricity Act*.

2. December 4, 2008 — NERC received a letter signed by FERC staff and the staff of the Manitoba Department of Science, Technology, Energy, and Mines outlining governmental/regulatory staff participation and confidential information management relating to the September 18, 2007 cross-border disturbance in the MRO region.

Significant FERC Orders Issued Since the Update for the October 28-29, 2008 Meetings

1. October 16, 2008 — Order No. 716, approving the Nuclear Plant Interface Coordination Reliability Standard NERC submitted for approval on November 19, 2007. *Docket No. RM08-3-000*

2. October 16, 2008 — Notice of Proposed Rulemaking proposing to approve three revised FAC Standards NERC submitted on June 30, 2008. *Docket No. RM08-11-000*

3. October 16, 2008 — Order Approving Revisions to Statement of Compliance Registry Criteria V5.0, short-term measure to address the possible reliability gap that would result if retail power marketers were not registered as LSEs. *Docket Nos. RC07-4-003, RC07-6-003 and RC07-7-003*

4. October 16, 2008 — Order Conditionally Accepting 2009 Business Plans and Budgets for NERC, the Regional Entities, and WIRAB. *Docket Nos. RR08-6-000 and RR07-14-001*

5. October 16, 2008 — Policy Statement on Compliance, providing additional guidance to the public on compliance with FERC's governing statutes, regulations, and orders. *Docket No. PL09-1-000*

6. November 20, 2008 — Order Remanding Compliance Registry Determination regarding Constellation Energy Commodities Group, Inc. for further consideration and additional information. *Docket No. RC08-7-000*

7. November 20, 2008 — Notice of Proposed Rulemaking proposing to approve a regional Reliability Standard, BAL-004-WECC-01. *Docket No. RM08-12-000*

8. November 20, 2008 — Order on Rehearing and Clarification and Accepting Compliance Filing in Response to Violation Severity Level Order, accepting NERC's July 21, 2008 Compliance Filing for certain VSLs and directing a further compliance filing. *Docket Nos. RR08-4-001 and RR08-4-002*

9. November 20, 2008 — Notice of Proposed Rulemaking proposing to approve an Interpretation of BAL-003-0, but proposing to remand an Interpretation of VAR-001-1 for additional clarification. *Docket No. RM08-16-000*

10. December 18, 2008 — Order Directing the Submission of Data regarding a comprehensive list of bulk electric system facilities within the United States portion of the NPCC region. *Docket No. RC09-3-000*

11. December 18, 2008 — Order Upholding Compliance Registry Determination and Conditionally Directing Additional Registration; denying the Southeastern Power Administration's appeal of a June 2008 compliance registry decision and concluding that the U.S. Army Corps of Engineers should be co-registered as a transmission operator. *Docket No. RC08-1-001*

12. December 19, 2008 — Order Accepting Compliance Filings in response to FERC's March 21, 2008 order, including revisions to NERC's *Pro Forma* delegation agreement, Compliance Monitoring and Enforcement Program, hearing procedures, and the individual delegation agreements between NERC and each of the eight Regional Entities, and ordering a further compliance filing. *Docket Nos. RR06-016 and RR06-1-017, et al.*
13. December 22, 2008 — Letter Order Accepting Status Report, regarding the arrangement between NERC and WECC to assure that WECC is not monitoring compliance for its own reliability coordination function.

14. January 9, 2009 — Order Accepting Notice of Penalty, determining not to engage in further review of NERC's two Notices of Penalty filed on December 12, 2008 (Edgecombe Operating Services, LLC and E.ON U.S. Services, Inc.). *Docket Nos. NP09-1-000 and NP09-2-000.*

15. January 15, 2009 — Order Approving Audit Report, Determining Issue of Separation of Functions and Directing Actions with respect to FERC's audit of Southwest Power Pool, Inc.'s (SPP's) Regional Entity (RE) function. *Docket No. PA08-2-000*

16. January 15, 2009 — Guidance Order on Conducting Compliance Audits by the ERO and Regional Entities. *Docket No.AD09-3-000*

17. January 15, 2009 — Order Granting NERC's November 14, 2008 request for clarification of the October 16 Budget Order regarding the proper role of NERC staff in the standards development process. *Docket No. RR08-6-001 and RR07-14-002*

18. January 16, 2009 — Letter Order accepting NERC's November 17, 2008 Compliance Filing providing timeline for revising Nuclear Plant Interface Coordination Reliability Standard. *Docket No. RM08-3-002*

NERC Filings Since the Update for the October 28–29, 2008 Meetings

1. October 15, 2008 — NERC requested that FERC accept the Violation Risk Factors filed for the FAC-010-1, FAC-011-1 and FAC-014-1 as the applicable VRFs for version 2 of the FAC Reliability Standards. *Docket No. RM08-11-000*

2. October 24, 2008 — NERC submitted a petition for approval of formal interpretations to requirements of two Reliability Standards, requirements R1.3.2 and R1.3.12 of TPL-002-0 and TPL-003-0. *Docket No. RM06-16-000*

3. October 31, 2008 — NERC submitted a compliance filing in response to Paragraph 951 of Order No. 693 setting out the results of the Interconnection Reliability Operating Limit survey conducted from August 18, 2007 through August 17, 2008. *Docket No. RM06-16-006*

4. October 31, 2008 — NERC submitted the Quarterly report regarding Analysis of Reliability Standards Voting Results, July–September 2008. *Docket No. RR06-1-003*

5. November 14, 2008 — NERC submitted a request for clarification of Paragraphs 24–25 of October 16, 2008 on 2009 Business Plan and Budget. *Docket No. RR08-6-001, et al.*

6. November 17, 2008 — NERC submitted a compliance filing in response to Paragraph 107 of Order No. 716 that required NERC to submit a timeline for developing and filing a modification to Requirement R9.3.5 of Reliability Standard NUC-001-1. *Docket No. RM08-3-002*

7. November 21, 2008 — NERC and WECC submitted a further status report in response to Paragraph 226 of FERC's March 21, 2008 Order. The status report included the agreement NERC and WECC have entered into pursuant to which NERC will perform all CMEP responsibilities with respect to the WECC RC and IA functions. *Docket Nos. RR06-1-012, RR06-1-018, RR07-7-002, RR07-7-006 and RR09-1-000*

8. November 21, 2008 — NERC submitted a request for approval of proposed Reliability Standard MOD-004-1, which is the last major piece of the ATC requirements contained in Order No. 890. *Docket No. RM05-17-000 and RM05-25-000*

9. December 12, 2008 — NERC submitted two Notices of Penalty for Edgecombe Operating Services, LLC and E.ON U.S. Services, Inc. *Docket Nos. NP09-1-000 and NP09-2-000*

10. December 15, 2008 — NERC submitted a compliance filing in response to FERC's October 16 Order Conditionally Accepting the 2009 Business Plan and Budget filing. *Docket Nos. RR08-6-00 and RR07-14-001*

11. December 19, 2008 — NERC submitted a Notice of Penalty for Duke Energy Carolinas. *Docket No. NP09-3-000*

12. December 19, 2008 — NERC submitted a compliance filing containing the 31 remaining CIP VRFs that FERC directed NERC to change in Order No. 706 (the CIP Standards Rule). *Docket No. RM06-22-000*

13. December 19, 2008 — NERC submitted a compliance filing that provides a justification for the inconsistencies in the single Violation Severity Level assigned to binary requirements, in response to the June 19, 2008 Order on Violation Severity Levels. *Docket Nos. RR08-4-000, RR08-4-001 and RR08-4-002*

14. December 20, 2008 — NERC submitted a compliance filing containing six modified VSLs in response to Paragraph 76 of the November 20, 2008 VSL Order. *Docket Nos. RR08-4-001 and RR08-4-002*

15. December 31, 2008 — NERC submitted a status report on submitting the revised Violation Severity Levels for TOP-004-2. *Docket Nos.* RM06-16-000 and RD09-1-000

16. January 7, 2009 — NERC submitted six Notices of Penalty for SUEZ Energy Generation NA Inc.; Wise County Power Company, LP; Hopewell Cogeneration Limited Partnership; Choctaw Gas Generation, LLC; Choctaw Generation Limited Partnership; and Hot Spring Power Company. *Docket Nos. NP09-4-000, NP09-5-000, NP09-6-000, NP09-7-000, NP09-8-000 and NP09-9-000*

17. January 21, 2009 — NERC submitted five Notices of Penalty for City of Conway, AR; City of Ruston, LA; Batesville Balancing Authority; Union Power Partners, LLC; and City of West Memphis, AR. *Docket Nos. NP09-10-000, NP09-11-000, NP09-12-000, NP09-13-000 and NP09-14-000*

Anticipated NERC Filings

1. January 31, 2009 **—** Quarterly report due in response to January 18, 2007 Order regarding Analysis of Reliability Standards Voting Results, October–December 2008. *Docket No. RR06-1-003*

2. February 17, 2009 **—** Compliance filing in response to FERC's December 19, 2008 order approving the revisions to NERC's *Pro Forma* delegation agreement, Compliance

Monitoring and Enforcement Program, hearing procedures, and the individual delegation agreements. *Docket Nos. RR06-016 and RR06-1-017, et al.*

3. February 24, 2009 — Compliance filing addressing the VRFs of the NUC-001-1 Reliability Standard. *Docket No. RM08-3-000*

4. April 1, 2009 — True-up of 2008 expenditures to the 2008 budget for NERC and the eight Regional Entities.

5. July 20, 2009 — NERC must submit an assessment of its performance and the performance of the eight Regional Entities, including comments from stakeholders and recommendations for improvements, on the three-year anniversary of its certification as the Electric Reliability Organization. *Docket No. RR06-1-000*

Training, Education, and Personnel Certification Programs

MRC Action Required
None

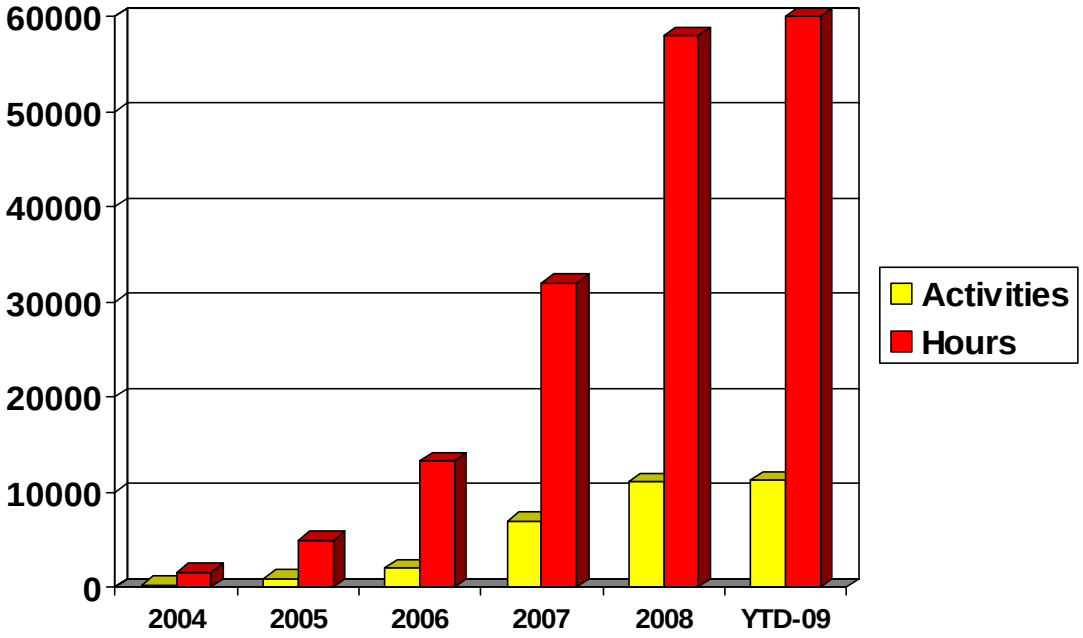
Training and Education Program
The Training and Education program develops and maintains appropriate training and education activities for NERC staff, regional entity staff, industry participants, and regulators affected by new or changed reliability standards or compliance requirements.

Compliance Auditor Training
NERC is delivering a training program for compliance auditors on interview techniques, correct protocols, processes, investigation techniques, and other necessary skills. An initial fundamentals course is delivered to team leaders quarterly. An initial fundamentals course for industry volunteers who participate on compliance audits is also being delivered. A complete program with continuing learning activities will continue to be developed over the next three years to equip NERC compliance auditors with the necessary skills to effectively perform audits.

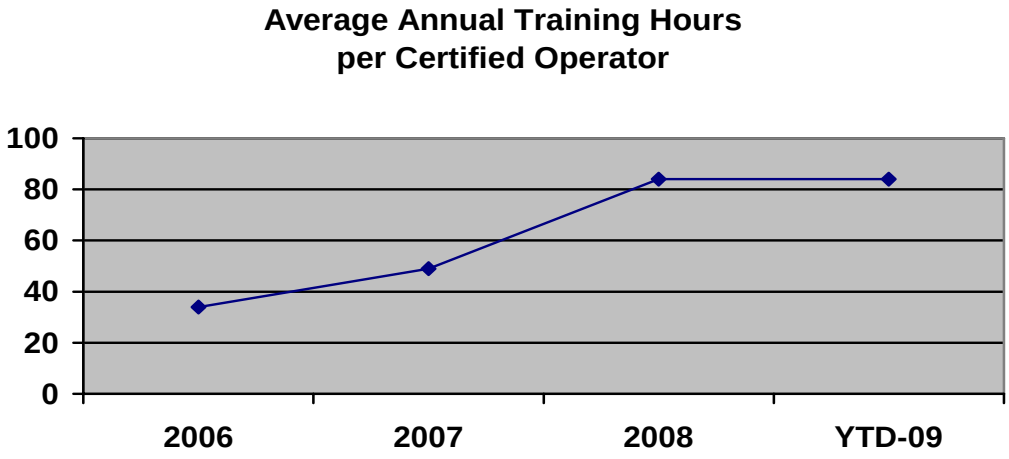
Deliverables	Status
One NERC auditing fundamentals course for industry volunteers.	Volunteer e-learning training program was launched on October 31, 2007. Course modules have been taken by over 400 users.
One advanced skills Evidence Gathering e-learning module for audit team leaders and audit team members.	Completed and delivered on-schedule. Delivered on demand since April 30, 2008. As of January 21, 2009, the course has been completed by 225 users.
One e-learning course on how to develop compliance elements for reliability standards (partnering with standards group) for compliance element development resource pool volunteers.	Job aid developed and delivered on schedule August 31, 2008. As of January 21, 2009, this course has been completed by 10 users.
One e-learning course on CMEP Timelines and Time Management for audit team leaders and audit team members.	Expanded to 10 job aids, 5 of which were completed on September 5 and available to industry participants 24/7 via NERC's website.
One classroom-based Compliance Violation Investigation course.	Course completed and currently under managerial review. To be delivered in Q1 2009.
One instructor-led IT Auditing course on CIP Standards for audit team leaders.	As of January 21, 2009, 46 participants have completed this course. Three additional sessions are scheduled before June 2009.
One instructor-led fundamentals course for regional entity compliance lead auditors.	Delivered once a quarter with 4 scheduled in 2009.

Continuing Education Program

Since the Continuing Education (CE) Program started as the chart below shows, the number of providers has increased from 48 offering 294 approved learning activities and 1,634 CE hours of instruction, to 210 now offering over 11,240 approved learning activities and over 60,000 CE hours of instruction to system operators. Most of the growth is due to NERC's 2006 approval to use CE hours to maintain a certification credential. We expect to see continued growth in the number of courses and CE hours of instruction as system operators' transition into three-year credentials.



Approximately 152,000 hours were awarded in 2006, over 280,000 hours were awarded in 2007, and over 399,000 hours were awarded in 2008. Since January 1, 2009, system operators have earned 11,500 CE hours. We anticipate continued growth of the CE program as increasing numbers of NERC-certified system operators use CE hours to maintain their credentials. The average annual training hours received by the population of approximately 5,750 operators is over 80 hours through December 2008.



Audits of CE activities started on May 23, 2008 to ensure the quality of the activities matched the description in the application. As of the end of 2008, 152 audits were performed out of 150 scheduled. We anticipate over 200 activities will be audited in 2009.

Continuing Education Program Manual

The Continuing Education Program Manual has been updated to include clarifications on seven items that have required providers to contact NERC staff. The clarifications were needed because many provider-submitted applications were being returned for incompleteness and lack of organization, causing extra administrative work for both NERC and the providers. NERC staff receives many calls seeking clarification of various aspects of the program, and in the process of answering these calls some gaps were identified. The clean version of the manual is available at:
http://www.nerc.com/files/Continuing%20Education%20Program%20Administrative%20Manual%20(Ver%203.0).pdf

A redline version of the manual changes can be downloaded from:
http://www.nerc.com/files/Redline%202009%20CEProgram_Admin_Guide3%20xx%20draft%206.pdf

The proposed changes were posted for a 30-day industry comment period from September 24 to October 30. One comment was received and the change was made.

The changes to the manual are technical and administrative in nature and do not address program policy. The changes are:

- Clarification as to how to assign CE hours for piloted activities that are being completed.
- Clarification for acceptable means for proctoring tests.
- Descriptions regarding how to assign CE hours for specialized activities such as on-the-job training, backup control centers drills, and field visits.
- Descriptions to learning assessments and language added to require learning assessments to correlate to learning content and learning objectives.
- Clarification to the probationary provider status to address an existing gap that occurs when a provider fails an audit.

The results of the changes will reduce the amount of time NERC staff and training providers spend on administrative actions by reducing the number of errors on submitted applications. The probationary status explains how the program will handle training providers that fail audits.

Reliability Readiness Evaluation and Improvement Program

MRC Action Required
None

Program Information
The Reliability Readiness Evaluation and Improvement Program carries out on-site evaluations of reliability coordinators (RC), balancing authorities (BA), transmission operators(TOP), and other entities with responsibilities for operating the bulk power system reliably on a three-year cycle. The principal objectives of this program are to promote operational excellence in reliability readiness, capabilities, and performance of evaluated entities, identify areas for improvement, and highlight examples of excellence that can help entities and the industry improve its readiness.

Program Status
After the approval of NERC's *2009 Business Plan and Budget*, the readiness program shifted its efforts to phasing out the program. To facilitate the transition, all RCs, BAs, and TOPs initially scheduled for an evaluation between September and December of 2008 were cancelled.

Due to the Provisional Certification Process, it was necessary to schedule evaluations for any RC, BA, and/or TOP that has never had a readiness evaluation. After review of the compliance registry and discussions with the regional entities, the registry showed 15 entities needing a readiness evaluation to fulfill the readiness requirement of the Provisional Certification Process. Of these entities, seven are still under review for their registration requirements and are not expected to be scheduled. The other eight evaluations were scheduled between October 2008 and March 2009, with five being completed in 2008. The three evaluations scheduled for 2009 will be completed by the end of March.

As a result of the transition, the staff has been transferred to other departments and will continue their tasks in the readiness program until it comes to a close.

NERC has been tracking the implementation of recommendations developed by the readiness evaluation teams and will continue to do so until the close of the program. Since the November 2008 report to the board of trustees, NERC has added 26 recommendations to its tracking database. At present, 3,585 recommendations are being tracked.

Figure 1: Reliability Readiness Evaluation Recommendations Tracking Status

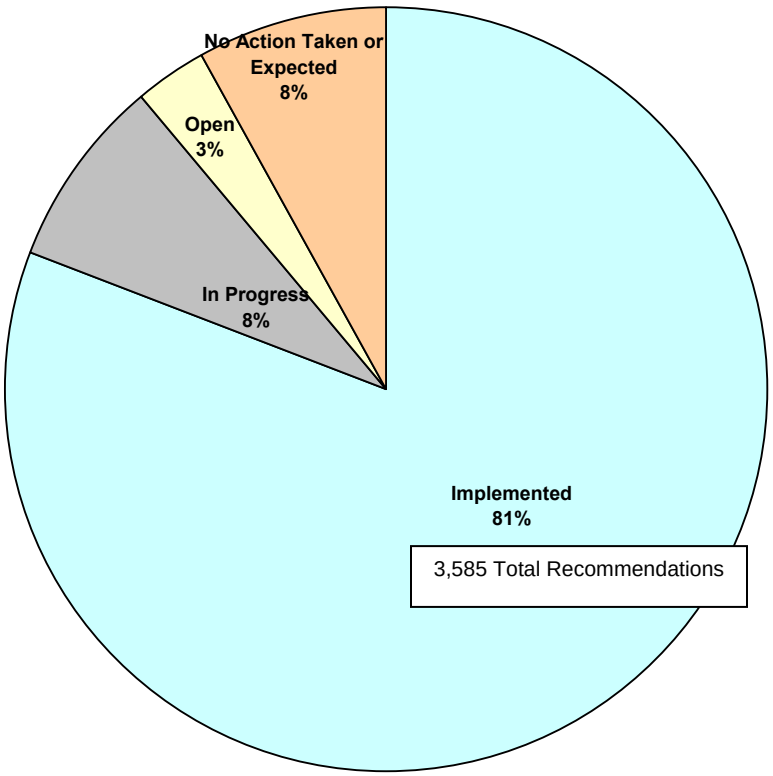
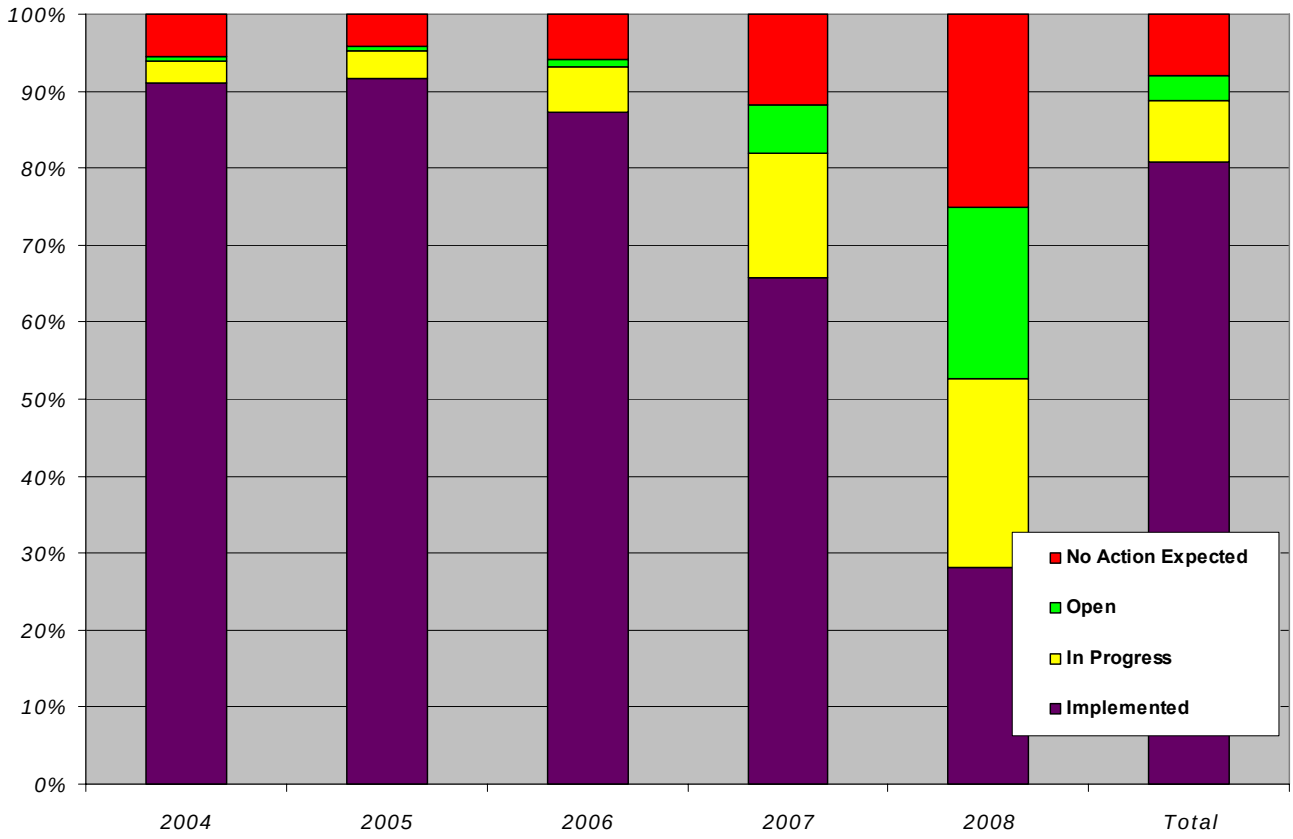


Figure 2 presents the implementation status of readiness evaluation recommendations for each year since the program inception.

Figure 2: Reliability Readiness Evaluation
All Recommendations Tracking Status



Agenda Item 21
MRC Meeting
February 9, 2009

Reliability Metrics and Benchmarking Program

MRC Action Required
None

Information
Section 809 (Reliability Benchmarking) of NERC's Rules of Procedure requires NERC to identify and track key reliability indicators as a means of benchmarking reliability performance and measuring reliability improvements. This program includes assessing available metrics, developing guidelines for acceptable metrics, maintaining a performance metrics "dashboard" on the NERC Web site, and developing appropriate reliability performance benchmarks.

Program Progress
NERC launched its benchmarking dashboard in 2008 (visit the dashboard at http://www.nerc.com/page.php?cid=4|37). The site, featuring reliability trend and analysis, is designed to display information in an easy-to-understand format. The two performance indices and ten leading indicators on the dashboard are defined based on the Reliability Metrics white paper developed by NERC staff in 2007.

NERC performed its analysis of reliability metrics from the last seven years and results of historical trends of reliability are available on the dashboard. Understanding these trends can increase both operator's and regulator's awareness of the condition of the bulk power system, and lead to improved bulk power system reliability.

NERC's trend analysis also quantified leading root causes of disturbance events for 2006 and 2007, which revealed and prioritized current reliability issues. The three leading root causes identified are protection system misoperations, equipment failure, and human error. Protection system performance has caused or exacerbated a growing percentage of bulk power system outages over the past several years, contributing to over 40 percent of tracked disturbances in 2007. Preliminary figures suggest that the most violated standard reported in 2008 was PRC-005 – Transmission and Generation Protection System Maintenance and Testing. This trend will require additional analysis in 2009 and ultimately require new approaches to mitigate root causes. NERC is in the process of expanding the protection system performance initiative to address these issues in conjunction with the IEEE. This enhanced initiative will involve a number of NERC standards projects and increased efforts to raise the profile and priority of protection system performance in the industry.

Under the direction of the Planning Comm ittee and Operating Comm ittee, NERC and its Reliability Metrics W orking Group (RMWG) have begun devel opment of general m etrics, data collection, reporting guidelines, and an implementation plan for assessm ent of an Adequate Level of Reliability (ALR). The fo cus of the program in 2009 is to enhance and update m etrics definitions on the dashboard based on RM WG's recommendations. The continued reliability trend analysis w ill be a lso used to m easure effectiveness of reliability standards and the com pliance enforcem ent pr ogram that supports progress toward an Adequate Level of Reliability.

Events Analysis and Information Exchange Program

Event Analysis Coordination Group

The Event Analysis Coordination Group (EACG), a program support group, was formed in November and has begun work on a common event triage process, common event analysis templates, and other event analysis process improvements.

Manager of Alerts Hired

Doug Newbauer has joined the Events Analysis and information Exchange program staff as the Manager of Alerts. He will also serve a system operations subject matter expert on event analysis teams. Newbauer transferred from the Readiness program.

Current Event Analyses

The following events are currently being analyzed by NERC and the regions.

Event	Status
RFC PEPCO Disturbance – June 13, 2008	RFC Event Analysis Team – event analysis report being prepared.
SPS Southwest Public Service Disturbance – June 17, 2008	SPP report being reviewed by NERC Event Analysis staff.

Trends in Event Analysis

The following is the current top ten list of disturbance elements occurring in the events analyzed by NERC.

Top Ten Disturbance Elements	Number of Occurrences
Unexpected generator turbine control action	32
Protection system misoperations	16
Transmission equipment failures	16
Voltage sensitivity of generation auxiliary power systems	13
Generation vs transmission protection miscoordination	12
Human Error	11
Wiring errors	8
Protection equipment failures	7
Near-term load forecasting errors	6
Relay loadability	5 (1 in Europe)

Events Tracking System: As of January 22, 2009

The current NERC Events Tracking System as of January 22, 2009 is attached. A number of the analyses are in the final review stages, with lessons learned being documented for the NERC alert system and trending being recorded for benchmarking.

Note: Closed analyses were omitted for brevity.

Events Under Analysis or Review

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2009-01-02	NPCC	Hydro-Quebec TransÉnergie	**HQ Micoua Disturbance** – Tripping of one power transformer T-2 at Micoua substation resulted in the tripping of 1,971 MW of radial generation. Transient frequency deviation was 58.66 Hz. This was the largest first contingency at that time and the internal reserves were sufficient to cover it.	3	Cummings	In Triage	Unknown
2008-12-26	Hawaii	HECO	**HECO Oahu Disturbance** – Multiple lightning strikes and generation outages resulted in a blackout of the island of Oahu, Hawaii.	3	Cummings	In Triage – NERC offering technical assistance in Event Analysis.	Unknown
2008-12-20	WECC	Arizona Public Service	**AZPS Saguaro Disturbance** – A 115-kV line fault resulted in four transformers locking out at Saguaro. The locking out of the four transformers – Saguaro 500/115-kV Transformers T4 & T7 and Saguaro 230/115-kV transformers T1 and T10 caused the loss of the additional 500-kV and 230-kV lines.	2	Cummings	An Abbreviated Report has been requested from AZPS.	Est. 1st Quarter 2009

Events Under Analysis or Review

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2008-12-16	TRE	ERCOT	**FPLE Forney Disturbance** – The Forney Switch – Forney FPL Station 345-kV line connecting Forney FPL Block #2 generation tripped due to an "A" phase to ground fault causing the Block #2 generation to trip. At 15:45 CDT on 12/16/08, Forney Block 1 tripped with a load of 850 MW due to relay action. Forney Block 2 also tripped with a load of 722 MW due to relay action. No equipment damage occurred as a result of the trip. The total loss of generation was 1,572 MW. Frequency fell to 59.704 Hz, but recovered to 60.046 Hz.	3	Cummings	Abbreviated report being reviewed by NERC EA staff.	Est. 1st Quarter 2009
2008-12-09	RFC	FirstEnergy – Jersey Central area	**FE Ocean View Disturbance** – Ocean View 230/34.5 kV transformer bank #2 catastrophic failure. Local protection failure resulted in eight 230-kV lines tripping and 173,410 customer (542 MW) load lost.	3	Cummings	Abbreviated report being prepared by FirstEnergy.	Est. 1st Quarter 2009
2008-12-06	TRE	ERCOT	**FPLE Forney Gen. Trip**– At 06:31 CDT on 12/06/08, Forney Block 1 tripped with a load of 797 MW due to a fuel gas control valve malfunction. At 07:37 CDT, Forney Block 2 tripped with a load of 550 MW due to a fuel gas block valve response. No equipment damage occurred as a result of the trip. The total loss of generation was 1,347 MW.	3	Cummings	In Triage	Est. 1st Quarter 2009

Events Under Analysis or Review

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2008-11-07	WECC	CAISO/SCE	**CAISO Load Shedding** – Transmission emergency declared by CAISO after manually opening Imperial Valley – Miguel 500-kV line due to series capacitor fire at Imperial Valley. SCE manually shed 50 MW interruptible and 200 MW firm load at request of CAISO due to numerous path overloads.	3	Cummings	Abbreviated Report was presented at the January 2009 WECC OPS meeting. Additional changes to be made to the report, to be finalized at May OPS meeting.	2nd Quarter 2009
2008-10-25	NPCC	Hydro-Quebec TransÉnergie	**HQ SPS Misoperation** – The Teledelestage Nicolet (SPS - Type 2 # 114) shed 510 MW of load as a consequence of the trip of the ac-dc converter P1 at Nicolet. At that time, Nicolet was importing from Sandy Pond. Restoration was immediately started after the event which was easily identified as a malfunction. No impact on the security of the main power system. This SPS is out of service now during investigation	3	Allen	Referred to NPCC Task Force on System Protection.	Unknown
2008-10-14	RFC	Allegheny Power Company	**APS Disturbance** – A fault was initiated on Allegheny Power's Ft Martin – Ronco 500-kV line which also initiated tripping of the Hatfield – Ronco 500-kV line. After the fault cleared, Units #1 and #2 at Ft. Martin Power Station tripped off line.	2	Cummings	An abbreviated report by APS is being requested. Additional protection questions resulted from preliminary report.	1st Quarter 2009
2008-09-24	NPCC	ISO-NE	**ISO-NE SPS Misoperation** – Suspected misoperation of the Orrington T1 reverse power SPS.	2	Allen	Referred to the NPCC TFSP	1st Quarter 2009

Events Under Analysis or Review

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2008-09-11	WECC	APS	**APS Redhawk Disturbance** – the Redhawk 500/18-kV 1B and 2B transformers tripped during a lightning storm causing generation loss of 620 MW at Redhawk. At 1817 PDT, the Hassayampa – Arlington Valley 500-kV line tripped causing 460 MW of generation loss at Arlington. At approximately 18:17 PDT, the North Gila – Imperial Valley and Navajo – Westwing 500-kV lines tripped. As result of these line trips, 600 MW of generation was lost at Termoelectrica de Mexicali generation in the California Mexico Reliability Coordinator (CMRC) sub-region.	2	Cummings	Abbreviated report requested from APS by WECC. To be presented at the January 2009 WECC OPS meeting	1st Quarter 2009
2008-06-17	SPP	SPS	**Southwestern Public Service Separation** – Following a lightning strike on a 345-kV tie line, Southwest Public Service Company (SPS) separated from the Eastern Interconnection. A generation runback of about 646 MW dropped the system frequency in the island to about 59.3 Hz. That initiated the first stage of UFLS, dropping about 560 MW of firm load. Frequency rebounded to 60.3 Hz, causing the tripping of another 530 MW of generation.	3	Cummings	SPP is conducting a detailed event analysis with NERC participating.	1st quarter 2009

Events Under Analysis or Review

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2008-06-13	RFC	PEPCO	**PEPCO Disturbance** – Equipment problem at 10th St. sub resulted in outage to downtown DC. The outage began at 7:25 am and restoration began at 8:30 am with full restoration by 10:47 am. 12,000 Customers were affected.	3	Cummings	NERC EA participating RFC Report Preparation	1st quarter 2009
2008-06-02	MRO	Manitoba Hydro	**Manitoba DC Trips** – Smoke from a forest fire approximately 300 miles northwest of Winnipeg in Manitoba Canada caused flashover of MHEB HVDC poles 1, 2 (Dorsey to Radisson) and 4 (Dorsey to Henday) resulting in the loss of access to 1985 MW of Generation. The portion of the MHEB system where the 1985 MW originated is only connected to the Eastern Interconnection via HVDC lines	2	Cummings	MRO Requested an abbreviated report form MISO and MHEB. NERC to Review	1st quarter 2009
2007-12-12-1	WECC	SRP	**Palo Verde Breaker Failure** – Breaker Failure at Palo Verde tripped the 500 kV East Bus. This caused multiple 500 kV lines to trip and 306 MW of generation at Harquahala and Arlington Valley.	2	Cummings	Referred to WECC System Protection Working Group for protection operation review. NERC will Review.	1st quarter 2009
2007-09-18	MRO	OTP, NSP, GRE, ALTW, MP, and Sask Power	**System Separation —** Tripping of multiple 345 kV lines, others tripped on overload/voltage/out-of-step conditions. Northwestern MRO separated from Eastern Interconnection, and Saskatchewan formed a second separate island.	4	Cummings	Complete – writing Alerts and scoping follow-on analysis for MRO	1st quarter 2009

Events Under Analysis or Review

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2007-08-04	RFC/ SERC	AEP/ Ameren/ IP&L	**NERC EI Frequency Disturbance –** Loss of 4,200 MW of generation following tripping of 765 kV line	3	Cummings	Final technical report completed. Alerts being prepared.	1st quarter 2009

In Final Review by NERC Event Analysis Group

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2008-11-15	WECC	LDWP	**LDWP Sylmar Fire** – Multiple lines and PDCI tripped/taken out of service during brush fire that swept through Sylmar Substation. 211 MW of load shed during transmission emergency.	3	Cummings	Abbreviated Report was approved at the January 2009 WECC OPS meeting. In Final Review by NERC EA.	1st Quarter 2009
2008-09-23	WECC	BCTC	**BCTC Separation** – BCTC system separated from the Western Interconnection north of Kelly Lake with loss of 1,340 MW of generation. Frequency dropped to 59.843 Hz. Caused by Human Error.	3	Cummings	Abbreviated Report was approved at the January 2009 WECC OPS meeting. In Final Review by NERC EA.	1st Quarter 2009

In Final Review by NERC Event Analysis Group

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2008-09-03	WECC	AESO	**AESO Separations –** Alberta Electric System Operator (AESO) separated at 0444 PAST on WECC Path 1 (ties to BCTC) interconnection due to Natal – Pocaterra and Natal – Coleman 138-kV lines relaying. BCTC Cranbrook-AESO Langdon 500-kV line was already line out of service for scheduled maintenance. No load drop. At 0542 PAST, Path 1 returned to normal, reconnecting AESO to the WI. AESO separated again at 0907 PAST on WECC Path 1 interconnection due to Natal – Pocaterra and Natal – Coleman 138-kV lines relaying. The Cranbrook – Langdon 500-kV line was already line out of service for scheduled maintenance. No load drop. Cause: equipment contamination. At 1013 PAST, Path 1 returned to normal, reconnecting AESO to the WI.	2	Cummings	In Final Review by NERC EA	1st quarter 2009

In Final Review by NERC Event Analysis Group

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2008-08-17	WECC	AESO	**AESO Separation –** Cranbrook-Langdon 500-KV Line tripped and 138-KV relayed due to RAS causing AESO to separate from WECC. AESO frequency went from 59.997 to 59.885 HZ. At 1723 PDT, BCTC and AESO synchronized. Cause is thought to be due to lightning. AESO reports no load was lost, as flows on the Path were only 88 MW from BCTC into AESO system	2	Cummings	In Final Review by NERC EA	1st quarter 2009
2008-08-06	WECC	APS	**Moenkopi Disturbance** – relay misoperation cleared 4-breaker ring at Moenkopi for line-to-ground fault on Moenkopi – Four Corners 500 kV line. No load or generation was lost and all lines were returned to service in 8 minutes.	2	Cummings	In Final Review by NERC EA	1st quarter 2009
2008-03-15-2	WECC	BPA	**PDCI Commutation Failure** – 3Ø fault on Slatt – John Day 500 kV line cause commutation failure on PDCI, and generation trips and runbacks initiated by RAS.	2	Cummings	In Final Review by NERC EA	1st quarter 2009

In Final Review by NERC Event Analysis Group

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2008-02-09	WECC	PG&E	**PG&E Separation** – On February 9, 2008, the Tiger Creek-Valley Springs 230-kV line relayed and the Tiger Creek – Electra 230-kV line open ended at Electra. At the time, the Electra – Bellota 230-kV line was open ended at Bellota due to previous trouble. Electra PH units #1, #2 and #3 and West Point PH #1 units separated on the trouble and the Electra PH was de-energized. Tiger Creek PH and Salt Springs PH remained operating and connected together by the Tiger Creek – Salt Springs 115-kV line to form an island serving local distribution load. No trouble was found and the island was synchronized to the grid at 15:33.	2	Cummings	In Final Review by NERC EA	1st quarter 2009
2008-01-26-1	WECC	BPA & PNSC	**Big Eddy - PDCI Disturbance** – Big Eddy 500/230 kV transformer failure caused oscillations in WECC and resulted in the Pacific DC Interconnection (PDCI) being removed from service.	2	Cummings	Abbreviated report prepared by BPA. In Final Review by NERC EA	1st quarter 2009
2007-12-01	WECC	PacifiCorp East	**PACE Disturbance** – Multiple 345-kV lines and a 230-kV line tripped during a winter storm, causing overloads on Path 32.	2	Cummings	In Final Review by NERC EA	1st quarter 2009
2007-11-27&30	WECC	PacifiCorp East	**PACE Disturbances** – Multiple line trips in central Utah due to insulator contamination.	2	Cummings	In Final Review by NERC EA	1st quarter 2009

In Final Review by NERC Event Analysis Group

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2007-10-18	WECC	PacifiCorp East	**Jim Bridger Trips** – Trip of about 1,554 MW generation at Jim Bridger	2	Cummings	In Progress – reviewing for generation tripping mode	1st quarter 2009
2007-06-29-2	WECC	BCTC	**BCTC Ashton Creek** – Multiple line trips – Lightning	3	Cummings	In Final Review by NERC EA	1st quarter 2009
2007-06-07	WECC	BPA	**BPA Switching Error** – Human error caused 230-kV lines tripping & local RAS failed	2	Cummings	In Final Review by NERC EA	1st quarter 2009
2007-06-05	WECC	Idaho Power	**Idaho Power Disturbance** – 240 MW Load Shed	3	Cummings	In Final Review by NERC EA	1st quarter 2009
2007-05-23	WECC	BPA	**BPA Transformer Fault** – Transformer fault & Reclose	2	Cummings	In Final Review by NERC EA	1st quarter 2009
2007-04-10&11	WECC	North Western Energy Montana	**Colstrip Trips** – multi-unit trips (two times)	3	Cummings	In Final Review by NERC EA	1st quarter 2009
2006-12-22	ERCOT	TXU / Tenaska	**East Texas Generation Trips –**	2-3	Cummings	In Final Review by NERC EA	2nd quarter 2009
2006-10-03	ERCOT	ERCOT	**Gibbons Creek Disturbance** –	3	Cummings	In Final Review by NERC EA	2nd quarter 2009
2006-04-17	ERCOT	ERCOT	**Load Forecast Error** – Unseasonable temperatures cause missed forecast. Inadequate committed generation, coupled with loss of 2,400 MW of generation resulted in ERCOT initiating Emergency Electric Curtailment Plan (EECP) Steps 1 and 2, shedding interruptibles and about 1,000 MW of firm load in rolling blackouts.	2, A3	Cummings	In Final Review – additional questions raised	2nd quarter 2009

Analyses On Hold

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2008-09-05	WECC	CFE	**Mexicali Earthquake** – At 14:55 an earthquake of magnitude 4.6 struck approximately 25 miles southeast of Mexicali, MX. knocked all 620 MW of online Cerro Prieto generation offline resulting in low system frequency (59.941 Hz, returned to pre-disturbance level at 15:05), COI (Path 66) + RATS over the North to South 4,769 MW Stability limit to a maximum of 4,869 for 9 minutes and SDGE/CFE (Path 45) over the North to South 408 MW Stability limit to a maximum of 627 MW for 13 minutes. Mitigation: CFE requested and received 375 MW of emergency assistance from the CISO. Given the intertie constraint, that was all that could be accommodated. CFE was forced to shed 140 MW of firm load at 14:58 to recover from the contingency.	2	Cummings	Awaiting further information.	Unknown
2008-02-26-2	ERCOT	ERCOT	**Be-calmed Wind Generation** – Sudden calm resulted in loss of most wind generation in ERCOT. ERCOT became generation deficient and shed interruptible load under EEA-2.	A2	Cummings	On hold pending Event Analysis resource availability	Unknown

Analyses On Hold

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2007-12-12	ERCOT	Texas Genco II, LLP	**Generation Trips** – Loss of Limestone #2, Frontier GT #2, and Frontier ST #4, totaling 1,022 MW. This was a potential NERC Disturbance Control Standard event. ERCOT frequency fell to 59.79 Hz, but recovered in 10 minutes.	2	Cummings	Examining Generation Trip Modes	Unknown
2007-12-11	SPP	Westar	**Westar Disturbance** – During icy conditions, a static wire fell into the 345 kV switchyard at Jeffrey Energy Center, causing the tripping of the 345 kV, 230 busses and all 3 generating units (2,077 MW).	3	Cummings	Referred to SPP System Protection Working Group for protection operation review. NERC EA reviewing Westar report. Additional clarification will be requested.	Unknown
2007-10-14	WECC	North Western Energy Montana	**Colstrip Inter-Area Oscillations** – Colstrip unit (780 MW) tripped following possible inter-area oscillations	1	Cummings	On hold pending Event Analysis resource availability	Unknown
2007-08-29	WECC	Turlock Irrigation District	**Turlock Disturbance** – Tree contact and loss of load	3	Cummings	On hold pending Event Analysis resource availability	Unknown
2007-06-12	NPCC	IESO	**IESO 5% Voltage Reduction** – 5% Voltage Reduction	A2	Cummings	On hold pending Event Analysis resource availability	Unknown
2007-02-24	ERCOT	ERCOT	**Emergency Electric Curtailment Plan** – Emergency Electric Curtailment Plan implementation	2	Cummings	On hold pending Event Analysis resource availability	Unknown

Analyses On Hold

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2007-02-06	WECC	WECC	**Inter-Area Oscillations –** Inter-area oscillations & resource adequacy	1 & A2	Cummings	On hold pending Event Analysis resource availability	Unknown
2006-07-24	WECC	WECC	**Inter-Area Oscillations –** Inter-area oscillations	1	Cummings	On hold Event Analysis resource availability	Unknown

Frequency Events Under Analysis (EA & RS)

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2008-02-03	NERC	Eastern, Western, and Texas Interconnections	Frequency disturbance including oscillations	1	Cummings	To be pursued by NERC Staff and the Resources Subcommittee	Ongoing
2007-10-18	EI	Eastern Interconnection	Low FTL Event	1	RS — Vandervort	In Progress	4th quarter 2008
2007-03-12	NERC	Eastern Interconnection	DST frequency event	1	RS — Vandervort	In progress	4th quarter 2008

Event Classifications

Events are broken into two general classifications: Operating Security Events and Resource Adequacy Events

Operating Security Events

Operating security events are those that significantly affect the integrity of interconnected system operations. They are divided into 5 categories to take into account their different system impact.

Category 1: An event results in any or combination of the following actions:

a. the loss of a bulk power transmission component beyond recognized criteria, i.e. single-phase line-to-ground fault with delayed clearing, line tripping due to growing trees, etc.
b. frequency below the Low Frequency Trigger Limit (FTL) more than 5 minutes.
c. frequency above the High FTL more than 5 minutes.
d. Partial loss of dc converter station (mono-polar operation).
e. inter-area oscillations.

Category 2: An event results in any or combination of the following actions:

a. the loss of multiple bulk power transmission components.
b. the loss of load (less than 500 MW)
c. system separation with no loss of load or generation.
d. SPS or RAS misoperation.
e. the loss of generation (between 1,000 and 2,000 MW in the Eastern Interconnection or Western Interconnection and between 500 MW and 1,000 MW in the ERCOT Interconnection).
f. the planned automatic rejection of generation through special protection schemes (SPS) or remedial action schemes (RAS) of less than 3,000 MW in the Western Interconnection, or less than 1,500 MW in the Eastern, Texas, and Québec Interconnections.
g. the loss of an entire generation station of 5 or more generators.
h. the loss of an entire switching station (all lines, 100 kV or above).
i. complete loss of dc converter station.

Category 3: An event results in any or combination of the following actions:

a. the unplanned loss of generation (2,000 MW or more in the Eastern Interconnection or Western Interconnection and 1,000 MW or more in the ERCOT Interconnection).
b. the loss of load (from 500 to 1,000 MW)
c. system separation or islanding with loss of load or generation (less than 1,000 MW).

d. UFLS or UVLS operation resulting in 300 MW or more load loss.

Category 4: An event results in any or combination of the following actions:

a. system separation or islanding of more than 1,000 MW of load or generation.
b. the loss of load (1,000 to 9,999 MW).

Category 5: An event results in any or combination of the following actions:

a. the occurrence of a blackout.
b. the loss of load (10,000 MW or more).

Resource Adequacy Events

Adequacy events are divided into three categories based on Standard EOP-002-0 (Capacity and Energy Emergencies).

Category A1: No disturbance events and all available resources in use.
a. Required Operating Reserves can not be sustained.
b. Non-firm wholesale energy sales have been curtailed.

Category A2: Load management procedures in effect.
a. Public appeals to reduce demand.
b. Voltage reduction.
c. Interruption of non-firm end per contracts.
d. Demand-side management.
e. Utility load conservation measures.

Category A3: Firm load interruption imminent or in progress.