NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Agenda
Member Representatives Committee

July 29, 2008 | 12:30–5 p.m.
Hyatt Regency
1255 Jeanne-Mance Street
Montréal, Québec
514-982-1234

Introductions and Chairman's Remarks

Antitrust Compliance Guidelines

1. **Minutes**

   May 6, 2008 Meeting
   June 30, 2008 Conference Call

*2. **Future Meetings**

Regular Agenda

*3. **Amendments to NERC Bylaws — Approve**

***4. 2008 Long-Term Reliability Assessment — Discussion**

*5. **Status of Efforts in Canada — Discussion**

*6. **Follow Up to February 11, 2008 Discussion of NERC Priorities and Emphasis — Discussion**

7. **2009 NERC Business Plan and Budget — Discussion**

*8. **Proposed Changes to NERC Rules of Procedure Section 500 and Appendix 5 — Discussion**

*9. **Events Analysis & Information Exchange — Discussion**

10. **Structure of MRC-BOT Interaction — Discussion**

*11. **Update on Regulatory Matters — Information**

12. **Upcoming Issues for MRC — Information**
    a. **MRC Officer Elections**
    b. **Sector Elections of Representatives to the MRC**

13. **Other Business**

14. **Comments by Observers**

Information Only — No Meeting Time Intended

*15. **Situational Awareness and Infrastructure Security**

*16. **Training, Education, and Personnel Certification**

*17. **Reliability Readiness and Benchmarking**

*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.

Agenda Item 2
MRC Meeting
July 29, 2008

Future Meetings

MRC Action Required

Approve August 4–5, 2009 (T–W) in Winnipeg, Manitoba, Canada as a future meeting date and location

Information

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

- October 28–29, 2008 — Washington, D.C. (T–W)
- February 9–10, 2009 — Phoenix, Arizona (M–T)
- May 5–6, 2009 — Washington, D.C. (T-W)

Agenda Item 3
MRC Meeting
July 29, 2008

Amendments to NERC Bylaws

MRC Action Required

Approve proposed amendments to NERC Bylaws. These amendments must also be approved by the Board of Trustees, which will consider them at its July 30, 2008 meeting.

Background

These proposed amendments to the NERC Bylaws contain two substantive provisions and several technical and conforming amendments. The complete text of the bylaws, redlined to indicate the changes, is attached (**Attachment 1**). Article XIV, Section 1 of the bylaws requires that amendments to the bylaws be approved by a majority vote of both the Board of Trustees and the Member Representatives Committee in respective meetings at which a quorum is present.

Substantive Provisions

(1) NERC proposes to provide a short period of time after being elected for a newly elected trustee to resolve any conflicts of interest (10 days for any employee, officer, or director positions and 60 days for financial interests). The member would be required to recuse himself or herself from any particular matter involving the source of the conflict in the meantime. The amendment occurs in Article III, Section 3, and reads as follows:

> Provided, that upon initial election to the board, an independent trustee shall within ten (10) days terminate any employee, officer, or director position that conflicts with this subparagraph and shall within sixty (60) days terminate any financial interest or other relationship that conflicts with this subparagraph, and prior to such termination shall not participate in discussion of or voting on any matter involving the entity of which the trustee is an employee, officer or director or in which the trustee has the financial interest or other relationship giving rise to the conflict.

During last year's nominating process, members of the Board of Trustees Nominating Committee were concerned that the current NERC Bylaws require a new nominee to resolve any conflicts (employee, officer, or director positions or financial interests) prior to the time the new nominee knows whether he or she will be elected by the Member Representatives Committee. The board's Corporate Governance and Human Resources Committee discussed the matter and agreed that a new nominee should have a short period of time after the election to resolve such conflicts.

The proposed amendment to the bylaws would provide for such a short period of time: 10 days to resign from any conflicting positions and 60 days to resolve any financial conflicts. In the meantime, the newly elected trustee would recuse himself or herself from any particular matter involving the source of the conflict. David Cook, NERC General Counsel, discussed the issue informally with FERC staff, and they do not see this as a problem, so long as the period is short and the trustee recuses in the meantime.

(2) The second substantive amendment addresses the method for selecting one or more additional Canadians for the Member Representatives Committee should that become necessary. At present, the bylaws direct that the additional Canadian is "the candidate who received the

highest vote total among those candidates who would have qualified as Canadian voting representatives but were not elected." Certain members of the MRC have expressed a concern that the current method of selecting the additional Canadian may not prove satisfactory in the future. The following hypothetical illustrates the point: Suppose there is an unelected Canadian in a large (100-entity) sector who finished a distant fourth (and last) place in that sector with just eight votes, and there is an unelected Canadian in a "small" (15-entity) sector who finished a close second place in that sector with seven votes (almost half the sector). Which one gets the additional seat on the MRC?

The bylaws say "the candidate who received the highest vote total". If "highest vote total" means the candidate with the highest raw number of votes, then the candidate who finished dead last with just 8 percent of the votes in the large sector will get the seat. Whereas, if "highest vote total" means the candidate with the highest fraction of the vote, then the candidate who finished second by a hair's breadth (47 percent of the vote) in the small sector will get the seat.

The latter outcome seems fairer. To ensure the latter outcome obtains in some future election of Member Representatives, the proposed amendment would substitute "highest fraction of the sector vote" for "highest vote total" in Article VIII, Section 4.

Technical Amendments

(1) We propose to delete the definition of "regional reliability organization" from the bylaws as well as the many references to "regional reliability organization." As events have unfolded, we do not need that term, and some report confusion over the role of regional reliability organization to regional entity by continuing to maintain the term in the bylaws. "Regional Entity" remains as a defined term. The deletions occur throughout the bylaws.

(2) The statement in Article III, Section 3 regarding the identity of the independent trustees at NERC's start-up is no longer accurate, with the election of new trustees and subsequent effective dates for revised bylaws. To make the sentence accurate for historical purposes, we propose to insert the word "original" in the second sentence of subparagraph b. of Section 3 and change the verb tense to match, as follows:

> As of the original effective date of these Bylaws, the independent trustees of the Corporation and the date the term of each independent trustee expires were as follows:

BYLAWS

OF THE

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

ARTICLE I
Definitions

Section 1 — Definitions — As used in these Bylaws of the North American Electric Reliability Corporation (hereinafter referred to as "the Corporation"), the terms set forth in this Article I shall have the meanings set forth herein.

"Applicable governmental authority" means the Federal Energy Regulatory Commission within the United States and the appropriate governmental authority with subject matter jurisdiction over reliability within Canada and Mexico.

"Board" means the Board of Trustees of the Corporation.

"Bulk power system" means facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof) and electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy.

"Commission" means the Federal Energy Regulatory Commission.

"Electric reliability organization" or "ERO" means the organization that is certified by the Commission under Section 39.3 of its regulations, the purpose of which is to establish and enforce Reliability Standards for the bulk power system in the United States. The organization may also have received recognition by applicable governmental authorities in Canada and Mexico to establish and enforce reliability standards for the bulk power systems of the respective countries.

"Member" means a member of the Corporation pursuant to Article II of these Bylaws.

"Net Energy for Load (NEL)" means net generation of an electric system plus energy received from others less energy delivered to others through interchange. It includes system losses, but excludes energy required for storage of energy at energy storage facilities. Calculations of net energy for load for all purposes under these Bylaws shall be based on the most recent calendar year for which data on net energy for load of applicable regions of the United States, Canada, and Mexico is available.

"Regional entity" means an entity having enforcement authority pursuant to 18 C.F.R. § 39.8.

~~"Regional reliability organization" means each of the following organizations or any successor organizations: Electric Reliability Council of Texas, Florida Reliability Coordinating Council, Midwest Reliability Organization, Northeast Power Coordinating Council, Reliability*First* Corporation, SERC Reliability Corporation, Southwest Power Pool, and Western Electricity Coordinating Council.~~

"Reliability standard" means a requirement to provide for reliable operation of the bulk power system, including without limiting the foregoing requirements for the operation of existing bulk power system facilities, including cybersecurity protection, and the design of planned additions or modifications to such facilities to the extent necessary for reliable operation of the bulk power system, but shall not include any requirement to enlarge bulk power system facilities or to construct new transmission capacity or generation capacity.

"Reliable operation" means operating the elements of the bulk power system within equipment and electric system thermal, voltage, and stability limits so that instability, uncontrolled separation, or cascading failures of the bulk power system will not occur as a result of a sudden disturbance, including a cybersecurity incident, or unanticipated failure of system elements.

"Sector" means a group of members of the Corporation that are bulk power system owners, operators, or users or other persons and entities with substantially similar interests, including governmental entities, as pertinent to the purposes and operations of the Corporation and the operation of the bulk power system, as defined in Article II, Section 4 of these Bylaws. Each sector shall constitute a class of members for purposes of the New Jersey Nonprofit Corporation Act.

Section 2 — Additional Defined Terms — Additional terms not defined in this Article I are defined in the remainder of these Bylaws.

Section 3 — Technical Terms — Technical terms not defined in these Bylaws shall have the definitions set forth in the Federal Power Act, Part 39 of the regulations of the Commission, or the "Glossary of Terms Used in Reliability Standards", in that order of precedence, and if not defined in any of those sources, shall be defined in accordance with their commonly understood and used technical meaning in the electric power industry, including applicable codes and standards.

ARTICLE II
Membership

Section 1 — Members — Membership in the Corporation is voluntary and is open to any person or entity that has an interest in the reliable operation of the North American bulk power system and that registers with the Corporation as a member, maintains its registration

in accordance with this Article II, and complies with the other conditions and obligations of membership specified in these Bylaws. Membership in a ~~regional reliability organization or~~ regional entity shall not be a condition for membership in the Corporation. The secretary of the Corporation shall maintain a roster of the members of the Corporation.

Section 2 — Registration as a Member — Any person or entity that is eligible to be a member of the Corporation in accordance with Article II, Section 1 may become a member by completing, and submitting to the secretary of the Corporation, a membership registration on a form prescribed by the board. If not a natural person, the member shall designate a representative and an alternative representative with authority to receive notices, cast votes, and execute waivers and consents on behalf of the member. The secretary of the Corporation shall maintain a current roster of the members of the Corporation including each member's designated representative and alternative representative. From time to time, the board shall establish a date by which members shall submit their registration renewals. All members shall be required to renew their registrations within 30 calendar days of a request by the secretary of the Corporation, using a registration renewal form prescribed by the board. The secretary of the Corporation shall remove from the roster of members of the Corporation any member that has not submitted a registration renewal within 30 days following a date established by the board. The secretary shall notify any member that is removed from the roster of members of such removal, by notice sent to such former member's last known address on the records of the Corporation.

Section 3 — Obligations and Conditions of Membership

a. Each member shall agree, in writing, to accept the responsibility to promote, support, and comply with the purposes and policies of the Corporation as set forth in its Certificate of Incorporation, Bylaws, Rules of Procedure, and Reliability Standards as from time to time adopted, approved, or amended.

b. As an additional condition of membership in the Corporation, each person or entity registering as a member shall be required to execute an agreement with the Corporation, in a form to be specified by the board, that such person or entity will hold all trustees, officers, employees, and agents of the Corporation, as well as volunteers participating in good faith in the activities of the Corporation, harmless, to the extent permitted by Federal or provincial laws, regulations and rules, for any injury or damage to that member caused by any act or omission of any trustee, officer, employee, agent, or volunteer in the course of performance of his or her duties on behalf of the Corporation, other than for acts of gross negligence, intentional misconduct, or a breach of confidentiality.

Section 4 — Membership Sectors

a. Each member shall elect to be assigned to one of the following membership sectors: (i) investor-owned utility; (ii) state/municipal utility; (iii) cooperative utility; (iv) federal or provincial utility/power marketing administration; (v) transmission-dependent utility; (vi) merchant electricity generator; (vii) electricity marketer; (viii)

large end-use electricity customer; (ix) small end-use electricity customer; (x) independent system operator/regional transmission organization; (xi) ~~regional reliability organization/~~regional entity; or (xii) government representatives. The composition of each sector shall be as follows:

i. Investor-owned utility — This sector includes any investor-owned entity with a substantial business interest in ownership and/or operation in any of the asset categories of generation, transmission or distribution. This sector also includes organizations that represent the interests of such entities.

ii. State/municipal utility — This sector includes any entity owned by or subject to the governmental authority of a state or municipality, that is engaged in the generation, delivery, and/or sale of electric power to end-use customers primarily within the political boundaries of the state or municipality; and any entity, whose members are municipalities, formed under state law for the purpose of generating, transmitting, or purchasing electricity for sale at wholesale to their members. This sector also includes organizations that represent the interests of such entities.

iii. Cooperative utility — This sector includes any non-governmental entity that is incorporated under the laws of the state in which it operates, is owned by and provides electric service to end-use customers at cost, and is governed by a board of directors that is elected by the membership of the entity; and any non-governmental entity owned by and which provides generation and/or transmission service to such entities. This sector also includes organizations that represent the interests of such entities.

iv. Federal or provincial utility/Federal Power Marketing Administration — This sector includes any U.S. federal, Canadian provincial, or Mexican entity that owns and/or operates electric facilities in any of the asset categories of generation, transmission, or distribution; or that functions as a power marketer or power marketing administrator. This sector also includes organizations that represent the interests of such entities.

v. Transmission-dependent utility — This sector includes any entity with a regulatory, contractual, or other legal obligation to serve wholesale aggregators or customers or end-use customers and that depends primarily on the transmission systems of third parties to provide this service. This sector also includes organizations that represent the interests of such entities.

vi. Merchant electricity generator — This sector includes any entity that owns or operates an electricity generating facility that is not included in an investor-owned utility's rate base and that does not otherwise fall within any of sectors (i) through (v). This sector includes but is not limited to cogenerators, small power producers, and all other nonutility electricity

producers such as exempt wholesale generators who sell electricity at wholesale. This sector also includes organizations that represent the interests of such entities.

vii. Electricity marketer — This sector includes any entity that is engaged in the activity of buying and selling of wholesale electric power in North America on a physical or financial basis. This sector also includes organizations that represent the interests of such entities.

viii. Large end-use electricity customer — This sector includes any entity in North America with at least one service delivery taken at 50 kV or higher (radial supply or facilities dedicated to serve customers) that is not purchased for resale; and any single end-use customer with an average aggregated service load (not purchased for resale) of at least 50,000 MWh annually, excluding cogeneration or other back feed to the serving utility. This sector also includes organizations that represent the interests of such entities.

ix. Small end-use electricity customer — This sector includes any person or entity within North America that takes service below 50 kV; and any single end-use customer with an average aggregated service load (not purchased for resale) of less than 50,000 MWh annually, excluding cogeneration or other back feed to the serving utility. This sector also includes organizations (including state consumer advocates) that represent the interests of such entities.

x. Independent system operator/regional transmission organization — This sector includes any entity authorized by the Commission to function as an independent transmission system operator, a regional transmission organization, or a similar organization; comparable entities in Canada and Mexico; and the Electric Reliability Council of Texas or its successor. This sector also includes organizations that represent the interests of such entities.

xi. Regional ~~reliability organization/regional~~ entity — This sector includes any ~~regional reliability organization or~~ regional entity as defined in Article I, Section 1.

xii. Government representatives — This sector includes any federal, state, or provincial government department or agency in North America having a regulatory and/or policy interest in wholesale electricity. Entities with regulatory oversight over the Corporation or any regional entity, including U.S., Canadian, and Mexican federal agencies and any provincial entity in Canada having statutory oversight over the Corporation or a regional entity with respect to the approval and/or enforcement of reliability standards, may be nonvoting members of this sector.

b. A member may elect to be assigned to any sector so long as membership in that sector is consistent with the member's business or other activities. A corporation and its affiliates shall be considered a single member and may register in only one sector, which may be any single sector for which the corporation or any of its affiliates is eligible. A consultant, attorney, agent, vendor, trade or industry association, state, provincial or local consumer advocate organization that provides services to or otherwise represents the interests of the members of one or more sectors may elect to be assigned to one such sector.

Section 5 — Term of Membership — Membership in the Corporation shall be retained as long as a member meets its respective qualifications, obligations, and conditions of membership as set forth in this Article II.

Section 6 — Removal — In addition to termination of membership in accordance with Article II, Section 2, the board, following notice to the member and exercise of appropriate due process procedures, may terminate the membership of a member if in the judgment of the board that member has violated its obligations and responsibilities to the Corporation. This termination shall require a two-thirds vote of the trustees present and voting at a meeting of the board at which a quorum of the board entitled to vote is present. Within thirty (30) days following the action of the board terminating the membership of a member, the member shall be entitled to appeal such termination to the Commission or to the applicable governmental authority in Canada or Mexico.

ARTICLE III
Board of Trustees

Section 1 — Board of Trustees — The business and affairs of the Corporation shall be managed by a Board of Trustees. The board shall consist of eleven members (the "trustees"). Ten (10) of the trustees shall be "independent" trustees nominated and elected in accordance with the requirements and procedures specified in Sections 2, 3, 4, and 5 of this Article III (the "independent trustees"). The remaining trustee shall be the person elected by the board, in accordance with Article VI, Section 1, of these Bylaws, to serve as president of the Corporation (the "management trustee"). Each trustee, including the management trustee, shall have one (1) vote on any matter brought before the board for a vote. All trustees are expected to serve the public interest and to represent the reliability concerns of the entire North American bulk power system.

Section 2 — Composition of Board Based on Country Participation

a. The board shall consist of a number of trustees from the United States and from Canada. The number of trustees from Canada shall not be less than the percentage of the NEL of Canada to the total NEL of the United States and Canada, times eleven, rounded up to the nearest whole number. For purposes of this board composition requirement, the management trustee shall be counted as a trustee from Canada if he or she is a Canadian citizen.

b. When the Corporation receives recognition by appropriate regulatory authorities in Mexico as its electric reliability organization, the number of independent trustees will be increased by at least one, and the board composition requirement in subsection (a) will be expanded to include Mexico.

Section 3 — Independent Board Members — The independent trustees shall be elected, shall have the qualifications specified, and shall serve in the manner provided in this section.

a. An independent trustee is a person (i) who is not an officer or employee of the Corporation, a member or an officer, director, or employee of a member of the Corporation, or an officer, director, or employee of any entity that would reasonably be perceived as having a direct financial interest in the outcome of board decisions and (ii) who does not have any other relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a trustee. Provided, that upon initial election to the board, an independent trustee shall within ten (10) days terminate any employee, officer, or director position that conflicts with this subparagraph and shall within sixty (60) days terminate any financial interest or other relationship that conflicts with this subparagraph, and prior to such termination shall not participate in discussion of or voting on any matter involving the entity of which the trustee is an employee, officer or director or in which the trustee has the financial interest or other relationship giving rise to the conflict.

b. Independent trustees shall be elected to terms expiring at the annual election of independent trustees occurring in the third year after their election. As of the original effective date of these Bylaws, the independent trustees of the Corporation and the date the term of each independent trustee expires werearе as follows:

Name	Term Expires
John Q. Anderson	2007
Paul F. Barber	2008
Thomas W. Berry	2007
Richard Drouin	2009
James M. Goodrich	2008
Donald P. Hodel	2008
Sharon L. Nelson	2007
Bruce A. Scherr	2009
Kenneth G. Peterson	2009
Fred Gorbet	2008

c. Independent trustees shall be nominated and elected pursuant to the nomination and election procedures specified in Sections 4, 5, and 6 of this Article III.

Section 4 — Vacancies on the Board —Should any vacancy on the board arise from the death, resignation, retirement, disqualification, or removal from office of any independent

trustee, or from any other cause, such vacancy shall be filled by electing a trustee at the next annual election of trustees to fill the remainder, if any, of the term of the departed trustee. Provided, that the board by resolution may in its discretion call a special election to fill any such vacancy for the remainder, if any, of the term of the departed trustee. Any vacancy shall be filled so as to maintain the composition of the board in accordance with country participation pursuant to Section 2 of this Article III.

Section 5 — Nominating Committee — The board shall appoint, on an annual basis, or more frequently if needed in the event of a special election pursuant to Article III, Section 4, a nominating committee (the "nominating committee") to recommend candidates (i) to succeed the independent trustees whose terms expire during the current year and (ii) to serve the remainder of the term of any independent trustee who ceased to serve as a trustee subsequent to the last annual election of trustees. The nominating committee shall consist of those independent trustees whose terms do not expire during the current year and such number of other persons with such qualifications as the board shall specify, provided, that the nominating committee shall be chaired by an independent trustee whose term does not expire during the current year and shall include at least three persons who are also members of the Member Representatives Committee, and provided further, that the nominating committee formed for the purpose of recommending candidates to stand for election as trustees at the election to be held on or about February 1, 2007, pursuant to Article III, Section 6 shall not include any members of the Member Representatives Committee but shall include three persons each of whom at the time of his or her appointment by the chair of the Stakeholders Committee of the North American Electric Reliability Council to the nominating committee shall be a member of that Stakeholders Committee. The board shall establish, by resolution, the procedures to be followed by the nominating committee in identifying and recommending candidates to serve as independent trustees; provided, however, that such procedures shall include a means of permitting members of the Corporation to recommend to the nominating committee candidates for consideration as nominees for independent trustees. The nominating committee shall nominate candidates for election to the board consistent with the requirements of Article III, Section 2 for board composition by country participation, and shall also endeavor to nominate candidates for election to the board consistent with the objectives that the board as an entirety reflects expertise in the areas of technical electric operations and reliability, legal, market, financial, and regulatory matters, and familiarity with regional system operation issues; and reflects geographic diversity.

Section 6 — Election of Independent Trustees — The Member Representatives Committee of the Corporation shall elect the persons (i) to succeed those independent trustees whose terms expire each year and (ii) to serve the remainder of the term of any independent trustee who ceased to serve as a trustee subsequent to the last annual election of independent trustees. The annual election of independent trustees shall be scheduled to be conducted on or about February 1 of each year or as soon thereafter as is reasonably possible. Any special election pursuant to Article III, Section 2 shall be held as expeditiously as possible consistent with the time required for a nominating committee to be appointed and to nominate one or more candidates for the special election. All independent trustees shall be elected from nominees proposed by the nominating committee. A nominee shall be elected an independent trustee if such person receives the affirmative vote of two-thirds of the members of the Member

Representatives Committee. Each nominee receiving the necessary two-thirds vote of the Member Representatives Committee shall take office immediately upon election. In the event that the voting fails to elect a nominee to fill any of the positions of independent trustee to be filled in an annual election of independent trustees, the nominating committee shall as promptly as reasonably possible consider and propose one or more additional nominee or nominees for that position, and a vote by the Member Representatives Committee on the election of such nominee or nominees shall be conducted as quickly as possible. For avoidance of doubt, the independent trustees shall be elected by the Member Representatives Committee in accordance with this Section 6 and shall not be elected by vote of the members of the Corporation.

Section 7 — Management Trustee — The president of the Corporation shall be, ex officio, the management trustee of the Corporation, effective as of the date of his or her election by the board as president of the Corporation in accordance with Article VI, Section 1, of these Bylaws, to serve until such time that he or she ceases to hold the position of president.

Section 8 — Committees of the Board — The board shall by resolution create and appoint all committees of the board as the board deems necessary to perform its responsibilities; provided, that the management trustee shall not be a member of the audit committee or of the human resources committee, if any. All committees of the board shall have such duties as are prescribed by the board. Notice to the public of the dates, places, and times of meetings of board committees, and all nonconfidential material provided to committee members, shall be posted on the Corporation's Web site within 24 hours of the time that notice is given to committee members. Meetings of board committees shall be open to the public, subject to reasonable limitations due to the availability and size of meeting facilities; provided, that the meeting may be held in or adjourn to closed session to discuss matters of a confidential nature, including but not limited to personnel matters, compliance and enforcement matters, litigation, or commercially sensitive or critical infrastructure information of any entity.

ARTICLE IV
Meetings of Members of the Corporation

Section 1 — Meetings of Members — Meetings of members of the Corporation may be called for any purpose or purposes by the chairman of the board or by a number of members constituting at least ten (10) percent of the members on the roster of members maintained by the secretary of the Corporation, which number shall include members in at least three of the sectors. Meetings of members shall be held at the principal office of the Corporation or at such other place fixed by the board as shall be specified in the notice of meeting. Meetings shall be called upon written notice of the time, date, place, and purposes of the meeting given to all members on the roster of members maintained by the secretary of the Corporation not less than ten (10) nor more than sixty days (60) prior to the date of the meeting.

Section 2 — Quorum and Voting Requirements for Meetings of Members — At any meeting of the members of the Corporation, attendance in person or by proxy by one-half of the members in each of at least two-thirds of the sectors on the roster of members maintained by the secretary of the Corporation shall constitute a quorum. Except as otherwise expressly

provided in the Corporation's Certificate of Incorporation, these Bylaws or applicable law, actions by the members of the Corporation shall be approved upon receipt of seven affirmative votes at a meeting of the members of the Corporation at which a quorum is present, where (i) each sector of the Corporation shall have one vote, except that if less than one-half of the members in a sector are present, in person or by proxy, at the meeting, the vote of that sector shall be weighted by a percentage equal to the number of members of the sector present in person or by proxy at the meeting divided by one-half of the members in the sector; (ii) the vote of each sector of the Corporation shall be allocated for and against the proposed action based on the respective percentages of votes cast for and against the proposed action by the members in that sector voting in person or by proxy; and (iii) the proportions of the votes of each sector allocated for and against the proposed action shall be summed to determine the total number of votes for and against the proposed action.

Section 3 — Waivers of Notice of Meetings of Members; and Member Meeting Adjournments — Notice of a meeting of members need not be given to any member who signs a waiver of notice, in person or by proxy, whether before or after the meeting. The attendance of any member at a meeting, in person or by proxy, without protesting prior to the conclusion of the meeting the lack of notice of such meeting, shall constitute a waiver of notice of the meeting by such member. When any meeting of members is adjourned to another time or place, it shall not be necessary to give notice of the adjourned meeting if the time and place to which the meeting is adjourned are announced at the meeting at which the adjournment is taken, and if at the adjourned meeting only such business is transacted as might have been transacted at the original meeting.

Section 4 — Action Without a Meeting of Members — Any action, required or permitted to be taken at a meeting of members, may be taken without a meeting if the action is consented to in writing by the minimum number of members that would be required to approve the action at a meeting of the members at which all members were present. The call for action without a meeting of members may be initiated by the chairman of the board or by a number of members constituting at least ten (10) percent of the members on the roster of members maintained by the secretary of the Corporation, which number shall include members in at least three of the sectors. Notice of the proposal for action without a meeting shall be provided to all members on the roster of members maintained by the secretary of the Corporation at least ten (10) days prior to the date established for the tabulation of consents. The members shall receive written notice of the results, and the results shall be posted on the Corporation's Web site, within ten (10) days of the action vote, and all written responses of the members shall be filed with the minutes of proceedings of members.

Section 5 — Meetings of the Members to be Open — Notice to the public of the dates, places, and times of meetings of the members, and all nonconfidential material provided to the members, shall be posted on the Corporation's Web site within 24 hours of the time that notice is given to the members. Meetings of the members shall be open to the public, subject to reasonable limitations due to the availability and size of meeting facilities; provided, that the meeting may be held in or adjourn to closed session to discuss matters of a confidential nature, including but not limited to personnel matters, compliance and enforcement matters, litigation, or commercially sensitive or critical infrastructure information of any entity.

ARTICLE V
Meetings of the Board of Trustees

Section 1 — Regular Meetings of the Board — A regular meeting of the board for such business as may come before the meeting shall be held on or about February 1 of each year. By resolution adopted at any meeting of the board, the board may provide for additional regular meetings that may be held without further notice to the trustees.

Section 2 — Special Meetings of the Board — Special meetings of the board for any purpose or purposes may be called at any time by the chairman or by any two trustees. Such meetings may be held upon notice given to all trustees not less than five (5) days prior to the date of the meeting. Such notice shall specify the time, date, place, and purpose or purposes of the meeting and may be given by telephone, telegraph, or other electronic media, or by express delivery.

Section 3 — Quorum and Voting Requirements for Meetings of the Board — Unless otherwise expressly provided in the Corporation's Certificate of Incorporation, these Bylaws or applicable law, (i) the quorum necessary for the transaction of business at meetings of the board shall be a majority of the trustees, and (ii) actions by the board shall be approved upon receipt of the affirmative vote of a majority of the trustees present and voting at a meeting at which a quorum is present.

Section 4 — Meetings of the Board to be Open — Notice to the public of the dates, places, and times of meetings of the board, and all nonconfidential material provided to the board, shall be posted on the Corporation's Web site, and notice of meetings of the board shall be sent electronically to members of the Corporation, within 24 hours of the time that notice or such material is given to the trustees. Meetings of the board shall be open to the public, subject to reasonable limitations due to the availability and size of meeting facilities; provided, that the board may meet in or adjourn to closed session to discuss matters of a confidential nature, including but not limited to personnel matters, compliance and enforcement matters, litigation, or commercially sensitive or critical infrastructure information of any entity. Any or all of the trustees, or members of a committee, may participate in a meeting of the board, or a meeting of a committee, by means of a communications system by which all persons participating in the meeting are able to hear each other.

Section 5 — Waivers of Notice of Board Meetings; and Board Meeting Adjournments — Notice of a board meeting need not be given to any trustee who signs a waiver of notice, in person or by proxy, whether before or after the meeting, or who attends the meeting without protesting, prior to the conclusion of the meeting, the lack of notice of such meeting. Notice of an adjourned board meeting need not be given if the time and place to which the meeting is adjourned are announced at the meeting at which the adjournment is taken and if the period of adjournment does not exceed ten (10) days.

Section 6 — Action Without a Meeting — Any action, required or permitted to be taken at a meeting of the board or of any committee thereof, may be taken by the board or by the committee without a meeting if the action is consented to in writing by the number of trustees or members of the committee, as the case may be, entitled to vote on the action that would be required to approve the action at a meeting of the board or committee with all members of the board or committee present. The call for action without a meeting of the board may be initiated by the chairman or by any two trustees. Notice of the proposed call for action without a meeting, and all nonconfidential material provided to the board in connection with the call for action without a meeting, shall be posted on the Corporation's Web site within 24 hours of the time notice of the call for action without a meeting or such material is provided to the board. The call for action without a meeting of a committee of the board may be initiated by the chairman or by any two members of the committee. The trustees or members of the committee shall receive written notice of the results, and unless the action was confidential the results shall be posted on the Corporation's Web site, within seven (7) days of the action vote. All written responses of the trustees shall be filed with the minutes of the Corporation, and all written responses of members of a committee shall be filed with the minutes of such committee.

ARTICLE VI
Officers

Section 1 — Officers — At its regular meeting held on or about February 1 of each year in accordance with Section 1 of Article V of these Bylaws, the board shall elect a chairman, a vice chairman, a president, a secretary, a treasurer, an assistant secretary-treasurer, and such other officers of the Corporation (collectively, the "officers") as it shall deem necessary. The chairman and the vice chairman must each be independent trustees prior to their election to such offices. The chairman, vice chairman, and president shall each be nominated and elected by the board. All of the remaining officers shall be appointed or removed by the board based upon the recommendation of the president. The duties and authority of the chairman, the vice chairman, and the president shall be determined from time to time by the board, and the duties and authority of the other officers of the Corporation shall be determined from time to time by the president. Subject to any such determination, the officers shall have the following duties and authority:

a. The chairman shall preside at all meetings of the members and at all meetings of the board. The chairman, in consultation with the other trustees, shall be responsible for the efficient operation of the board and its committees. The chairman shall be an ex officio member of each committee of the board. The chairman may delegate from time to time any or all of the aforesaid duties and authority to the vice chairman, another trustee, the president, or any other officer.

b. The vice chairman shall have such duties and possess such other powers as may be delegated to him or her by the chairman. The vice chairman shall act as the chairman at such times as the chairman may request. In the event the chairman is unable to discharge the duties and powers of that office by reason of incapacity and during any vacancies in the office of the chairman, the vice chairman shall act as

chairman until the cessation of such incapacity or the filling of such vacancy.

c. The president shall be the chief executive officer of the Corporation. He or she shall be responsible for the day-to-day ongoing activities of the Corporation and shall have such other duties as may be delegated or assigned to him or her by the chairman. The president may enter into and execute in the name of the Corporation contracts or other instruments not in the regular course of business that are authorized, either generally or specifically, by the board.

d. The secretary shall maintain the roster of members of the Corporation; shall cause notices of all meetings to be served as prescribed in these Bylaws; shall keep or cause to be kept the minutes of all meetings of the members and the board; and shall have charge of the seal of the Corporation. The secretary shall perform such other duties and possess such other powers as are incident to his or her office or as shall be assigned to him or her by the president.

e. The treasurer shall have custody of the funds and securities of the Corporation, and shall keep or cause to be kept regular books of account for the Corporation. The treasurer shall perform such other duties and possess such other powers as are incident to his or her office or as shall be assigned to him or her by the president.

f. The assistant secretary-treasurer shall have such duties and possess such other powers as may be delegated to him or her by the president.

ARTICLE VII
Committees of the Corporation

Section 1 — Committees of the Corporation — In addition to those committees specified by these Bylaws, to which the board shall appoint members in accordance with the requirements of these Bylaws, the board may by resolution create standing committees of the Corporation; and may in addition by resolution appoint such other committees as the board deems necessary to carry out the purposes of the Corporation. The board shall appoint standing committees and other committees of the Corporation that are representative of members, other interested parties and the public, that provide for balanced decision making, and that include persons with outstanding technical knowledge and experience. All appointments of committees of the Corporation shall provide the opportunity for an equitable number of members from the United States and Canada (and from Mexico after the Corporation receives recognition by appropriate governmental authorities in Mexico as its electric reliability organization) to be appointed to each committee in approximate proportion to each country's percentage of the total NEL. All committees shall have such scope and duties, not inconsistent with law, as are specified in these Bylaws and the Rules of Procedure of the Corporation or otherwise determined by the board.

ARTICLE VIII
Member Representatives Committee

Section 1 — Member Representatives Committee — The Corporation shall have a Member Representatives Committee that shall have the following rights and obligations:

a. to elect the independent trustees, in accordance with Article III, Section 6;

b. to vote on amendments to the Bylaws, in accordance with Article XVI; and

c. 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.

Because it is elected by the members of the Corporation and not appointed by the board, the Member Representatives Committee shall not be a standing committee of the Corporation, but is authorized to provide its advice and recommendations directly to the board.

Section 2 — Composition of the Member Representatives Committee — The Member Representatives Committee shall consist of (i) two representatives from each sector except the government representative sector and the ~~regional reliability organization/~~regional entity sector, (ii) two voting representatives from the ~~regional reliability organization/~~regional entity sector, with the remaining members of that sector being non-voting members of the Member Representatives Committee, (iii) the chairman and vice chairman of the Member Representatives Committee, (iv) any additional Canadian representatives as are selected pursuant to Section 4 of this Article VIII, and (v) the following representatives of the government representatives sector: two representatives of the United States federal government, one representative of the Canadian federal government, two representatives of state governments, and one representative of a provincial government, all of whom shall be nonvoting members of the Member Representatives Committee except the two representatives of state governments. The representatives of each sector shall be members of the Corporation, or officers or executive-level employees, agents or representatives of members of the Corporation, in that sector; provided, that at any time only one officer, employee, agent, or representative of a member in a sector may be a representative from that sector. No member of the board shall be a member of the Member Representatives Committee. The board may by resolution create additional nonvoting positions on the Member Representatives Committee at the written request of any group of members of the Corporation that believes its interests are not adequately represented on the Member Representatives Committee.

In order to provide that the terms of approximately one-half of the members of the Member Representatives Committee expire each year, on the initial Member Representatives Committee one-half of the representatives from each sector shall serve a term expiring at the next annual meeting, and one-half of the representatives from each sector shall serve a term expiring at the second succeeding annual meeting, in each case held pursuant to Section 7 of this Article VIII.

Following the expiration of the terms of the members of the initial Member Representatives Committee as provided above, each member of the Member Representatives Committee shall thereafter serve a term of two years commencing at an annual meeting held pursuant to

Section 7 of this Article VIII and ending at the second succeeding annual meeting. There shall be no limit on the number of terms that a member of the Corporation, or an employee, agent, or representative of a member of the Corporation, may serve on the Member Representatives Committee.

Section 3 — Election of Members of the Member Representatives Committee

a. Unless a sector adopts an alternative election procedure, the annual election of representatives from each sector to the Member Representatives Committee, and any election to fill a vacancy, shall be conducted in accordance with the following process, which shall be administered by the officers of the Corporation. During the period beginning approximately ninety (90) days and ending approximately thirty (30) days prior to an annual election, or beginning approximately forty-five (45) days and ending approximately fifteen (15) days prior to an election to fill a vacancy, nominations may be submitted for candidates for election to the Member Representatives Committee, provided that for the initial election the period may begin as soon as these bylaws are made effective and may end approximately fifteen (15) days prior to the election. A nominee for election as a sector representative must be a member, or an officer, executive-level employee or agent of a member, in that sector. No more than one nominee who is an officer, executive-level employee or agent of a member or its affiliates may stand for election in any single sector; if more than one officer, employee or agent of a member or its affiliates is nominated for election from a sector, the member shall designate which such nominee shall stand for election. The election of representatives shall be conducted over a period of ten (10) days using an electronic process. Each member in a sector shall have one vote for each representative to be elected from the sector in that election, and may cast no more than one vote for any nominee. The nominee receiving the highest number of votes in each sector shall be elected to the representative position to be filled from that sector; if there is more than one representative position to be filled from a sector, the nominee receiving the second highest number of votes shall also be elected, and so forth. Provided, that to be elected a nominee must receive a number of votes equal to a simple majority of the members in the sector casting votes in the election. If no nominee in a sector receives a simple majority of votes cast in the first ballot, a second ballot shall be conducted which shall be limited to the number of candidates receiving the two (2) highest vote totals on the first ballot (or to the number of candidates receiving the four (4) highest vote totals on the first ballot if two representative positions remain to be filled, and so forth). The nominee or nominees receiving the highest total or totals of votes on the second ballot shall be elected to the representative position or positions remaining to be filled for the sector.

   A sector may adopt an alternative procedure to the foregoing to nominate and elect its representatives to the Member Representatives Committee if (i) the alternative procedure is consistent in principle with the procedures specified in the preceding paragraph of this Section 3a, and (ii) the alternative procedure is approved by vote of at least two-thirds of the members in the sector. Any alternative procedure is

subject to review and disapproval by the board.

Section 4 — Adequate Representation of Canadian Interests on the Member Representatives Committee — In addition to the requirements for composition of the Member Representatives Committee specified in Section 1 of this Article VIII, the Member Representatives Committee shall contain a number of Canadian voting representatives equal to the percentage of the NEL of Canada to the total NEL of the United States and Canada, times the total number of voting members on the Member Representatives Committee, rounded up to the next whole number. If the annual selection of members of the Member Representatives Committee pursuant to Section 3 of this Article VIII does not result in the number of Canadian voting representatives provided for herein on the Member Representatives Committee, then the candidate who received the highest ~~vote total~~fraction of the sector vote among those candidates who would have qualified as Canadian voting representatives but were not elected to the Member Representatives Committee shall be added to the Member Representatives Committee. Additional Canadian voting representatives shall be added to the Member Representatives Committee through this selection process until the Member Representatives Committee includes a number of Canadian voting representatives equal to the percentage of the NEL of Canada to the total NEL of the United States and Canada, times the total number of voting members on the Member Representatives Committee, rounded up to the next whole number. Provided, that no more than one such additional Canadian voting representative shall be selected from a sector, except that if this limitation precludes the addition of the number of additional Canadian voting representatives required by the previous sentence, then no more than two Canadian voting representatives may be selected from the same sector. Such additional Canadian voting representatives shall be representatives of the sectors in which they stood for election, and shall serve terms expiring at the next annual meeting of the Member Representatives Committee pursuant to Section 7 of this Article VIII. For purposes of this Section 4, "Canadian" means one of the following: (a) a company or association incorporated or organized under the laws of Canada or of a province of Canada that is a member of the Corporation, or its designated representative irrespective of nationality; (b) an agency of a federal, provincial, or local government in Canada that is a member of the Corporation, or its designated representative irrespective of nationality; or (c) a person who is a Canadian citizen residing in Canada and is a member of the Corporation.

When the Corporation receives recognition from appropriate governmental authorities in Mexico as the electric reliability organization, this provision will be expanded to provide for adequate representation of Mexican interests on the Member Representatives Committee.

Section 5 — Officers of the Member Representatives Committee — At the initial meeting of the Member Representatives Committee, and annually thereafter prior to the annual election of representatives to the Member Representatives Committee, the Member Representatives Committee shall select a chairman and vice chairman from among its voting members by majority vote of the members of the Member Representatives Committee to serve as chairman and vice chairman of the Member Representatives Committee during the upcoming year; provided, that the incumbent chairman and vice chairman shall not vote or otherwise participate in the selection of the incoming chairman and vice-chairman. The newly

selected chairman and vice chairman shall not have been representatives of the same sector. Selection of the chairman and vice chairman shall not be subject to approval of the board. The chairman and vice chairman, upon assuming such positions, shall cease to act as representatives of the sectors that elected them as representatives to the Member Representatives Committee and shall thereafter be responsible for acting in the best interests of the members as a whole.

Section 6 — Vacancies on the Member Representatives Committee — In the event that any member of the Member Representatives Committee ceases to serve as a member of the Member Representatives Committee as a result of his or her death, resignation, retirement, disqualification, or removal or other cause, the members in the sector of which such member was a representative shall elect, as soon thereafter as reasonably possible, and in accordance with the procedures in Sections 3 and 4 of this Article VIII, a new member to replace the member of the Member Representatives Committee who ceases to serve. Except with regard to the selection of the chairman and vice chairman at the initial meeting of the Member Representatives Committee, the vacancies in the sector representatives created by the selection of the chair and vice chair pursuant to Section 5 of this Article VIII shall be filled at the annual election of representatives to the Member Representatives Committee that is next held following the election of the chairman and vice chairman. In the case of the selection of the chairman and vice chairman at the initial meeting of the Member Representatives Committee, the sector representative vacancies created thereby shall be filled as soon thereafter as reasonably possible in accordance with the procedures in Section 3 of this Article VIII for sector representative vacancies.

Section 7 — Annual Meeting of the Member Representatives Committee — An annual meeting of the Member Representatives Committee for the election of independent trustees and to conduct such other business as may come before the meeting shall be held on or about February 1 of each year or as soon thereafter as is reasonably possible. By resolution adopted at any meeting of the Member Representatives Committee, the Member Representatives Committee may provide for additional regular meetings that may be held without further notice to the members of the Member Representatives Committee.

Section 8 — Special Meetings of the Member Representatives Committee — Special meetings of the Member Representatives Committee for any purpose or purposes may be called by the chair of the Member Representatives Committee or by any five (5) members of the Member Representatives Committee, which number shall include representatives from at least three sectors, and require notice given to all members of the Member Representatives Committee not less than seven (7) days prior to the date of the meeting. Such notice shall specify the time, date, place, and purpose or purposes of the meeting and may be given by telephone, telegraph, or other electronic media, or by express delivery.

Section 9 — Quorums and Voting for Meetings of the Member Representatives Committee — The quorum necessary for the transaction of business at meetings of the Member Representatives Committee shall be two-thirds of the voting members of the Member Representatives Committee attending the meeting in person or by proxy. A member of the Member Representatives Committee may give a proxy only to a person who is a

member, or an officer, executive-level employee, agent or representative of a member, registered in the same sector. Each voting member of the Member Representatives Committee shall have one (1) vote on any matter coming before the Member Representatives Committee that requires a vote. Except as otherwise expressly provided in the Corporation's Certificate of Incorporation, these Bylaws or applicable law, actions by members of the Member Representatives Committee shall be approved upon receipt of the affirmative vote of a majority of the voting members of the Member Representatives Committee present and voting, in person or by proxy, at any meeting at which a quorum is present.

Section 10 — Meetings of the Member Representatives Committee to be Open — Notice to the public of the dates, places, and times of meetings of the Member Representatives Committee, and all nonconfidential material provided to the Member Representatives Committee, shall be posted on the Corporation's Web site, and notice of meetings of the Member Representatives Committee shall be sent electronically to all members of the Corporation, within 24 hours of the time that notice or such material is given to the Member Representatives Committee. Meetings of the Member Representatives Committee shall be open to the public, subject to reasonable limitations due to the availability and size of meeting facilities; provided, that the Member Representatives Committee may meet in or adjourn to closed session to discuss matters of a confidential nature, including but not limited to personnel matters, compliance and enforcement matters, litigation, or commercially sensitive or critical infrastructure information of any entity. Any or all members of, and any other participants in, the Member Representatives Committee may participate in a meeting of the Member Representatives Committee by a means of a communications system by which all persons participating in the meeting are able to hear each other.

Section 11 — Waivers of Notice of Meetings of the Member Representatives Committee; and Meeting Adjournments — Notice of a meeting of the Member Representatives Committee need not be given to any member of the Member Representatives Committee who signs a waiver of notice, in person or by proxy, whether before or after the meeting, or who attends the meeting without protesting, prior to the conclusion of the meeting, the lack of notice of such meeting. Notice of an adjourned meeting of the Member Representatives Committee need not be given if the time and place to which the meeting is adjourned are announced at the meeting at which the adjournment is taken and if the period of adjournment does not exceed ten (10) days.

Section 12 — Action Without a Meeting of the Member Representatives Committee — Any action required or permitted to be taken at a meeting of the Member Representatives Committee may be taken by the Member Representatives Committee without a meeting if the action is consented to in writing by the number of members of the Member Representatives Committee entitled to vote on the action that would be required to approve the action at a meeting of the Member Representatives Committee with all of its members present. The call for action without a meeting of the Member Representatives Committee may be initiated by the Chair of the Member Representatives Committee or by any five (5) members of the Member Representatives Committee, which number shall include representatives from at least three (3) sectors. Notice of the proposed call for action without a meeting, and all nonconfidential material provided to the Member Representatives Committee in connection

with the call for action without a meeting, shall be posted on the Corporation's Web site within 24 hours of the time notice of the call for action without a meeting or such material is provided to the members of the Members Representative Committee. The members of the Member Representatives Committee shall receive written notice of the results, and the results shall be posted on the Corporation's Web site, within seven (7) days of the action vote, and all written responses of voting members of the Member Representatives Committee shall be filed with the minutes of the Corporation.

Section 13 — Other Procedures of the Member Representatives Committee — The chairman of the board in office on November 1, 2006, shall preside at the initial meeting of the Member Representatives Committee, until a chairman is selected in accordance with Section 5 of this Article VIII. Except as to any matter as to which the procedure to be followed by the Member Representatives Committee is expressly set forth in these Bylaws, the Member Representatives Committee may adopt such additional procedures, not inconsistent with these Bylaws, as it deems appropriate.

ARTICLE IX
Reliability Standards

Section 1 — Development of Reliability Standards — The Corporation shall develop, implement and, in all regions in which necessary governmental approvals have been obtained or authority has been provided, enforce, reliability standards that provide for reliable operation of the bulk power systems of North America. All reliability standards shall be approved by the board. All reliability standards of the Corporation shall be posted on its Web site. Nothing in this Article shall be deemed to invalidate any standard of the Corporation that was in effect on November 1, 2006.

Section 2 — Procedures for Development of Reliability Standards — The Corporation shall develop reliability standards pursuant to procedures and processes that shall be specified in the Rules of Procedure of the Corporation. The Rules of Procedure shall provide for the development of reliability standards through an open, transparent, and public process that provides for reasonable notice and opportunity for public comment, due process, and balancing of interests and is designed to result in reliability standards that are technically sound. Participation in the process for development of reliability standards shall not be limited to members of the Corporation but rather shall be open to all persons and entities with an interest in the reliable operation of the bulk power system.

Section 3 — Procedures for Determinations of Violations of Reliability Standards and Imposition of Sanctions for Violations — In all regions in which regulatory approval has been obtained or governmental authority has been provided, the Corporation shall consider and make determinations that an owner, operator, or user of the bulk power system has violated a reliability standard, and shall impose sanctions for such violations, pursuant to procedures and processes that shall be specified in the Rules of Procedure of the Corporation. Such procedures and processes shall provide for reasonable notice and opportunity for hearing. Any sanction imposed for a violation of a reliability standard shall bear a reasonable relation to the seriousness of the violation and shall take into consideration efforts of the

owner, operator, or user of the bulk power system to remedy the violation in a timely manner. Subject to any necessary action by any applicable governmental authorities, no sanction imposed for a violation of a reliability standard shall take effect until the thirty-first (31) day after the Corporation, where authorized by law or agreement, files with the Commission or other applicable governmental authority notice of the sanction and the record of the proceedings in which the violation and sanction were determined, or such other date as ordered by the Commission or other applicable governmental authority or as prescribed by applicable law.

ARTICLE X
Agreements with Regional Entities

Section 1 — Delegation Agreements with Regional Entities — The Corporation may, in accordance with appropriate governmental authority, enter into agreements with regional entities pursuant to which a regional entity shall be delegated the authority of the Corporation to enforce reliability standards within a geographic region of North America and may develop and propose reliability standards to be in effect within such region. All delegation agreements with regional entities shall be approved by the board. No delegation agreement with a regional entity shall be effective with respect to a region until the agreement has received any necessary approval from an applicable governmental authority.

Section 2 — Standards for Delegation Agreements — The Corporation shall be permitted to enter into a delegation agreement with a regional entity only if the board determines that (i) the regional entity has agreed to promote, support, and comply with the purposes and policies of the Corporation as set forth in its Certificate of Incorporation, Bylaws, Rules of Procedure, and Reliability Standards as from time to time adopted, approved, or amended; (ii) the regional entity satisfies the criteria set forth in Sections 39.3(b) and 39.8 of the Commission's regulations, or other criteria specified by applicable governmental authorities, and (iii) the delegation agreement will promote effective and efficient administration of the reliability of the bulk power system.

ARTICLE XI
Rules of Procedure

Section 1 — Development of Rules of Procedure — The Corporation shall develop and implement such Rules of Procedure as in the judgment of the board are necessary or appropriate to carry out the purposes of the Corporation and to govern its operations, including without limiting the foregoing, Rules of Procedure relating to (i) registration of owners, operators, and users of the bulk power system; (ii) development of reliability standards; (iii) procedures for standing committees of the Corporation, subgroups of standing committees, and other committees, subcommittees, task forces, and sector-specific forums of the Corporation; (iv) critical infrastructure protection; (v) conduct of readiness ~~audits~~evaluations and reliability assessments; (vi) enforcement of compliance with reliability standards and determinations of violations of reliability standards by owners, operators, and users of the bulk power system; (vii) impositions of sanctions for violations of reliability standards; (viii) development, implementation, and administration of delegation agreements

with regional entities; (ix) personnel certification; (x) event analysis and information exchange; (xi) real-time monitoring of the bulk power system; and (xii) development and administration of budgets, business plans, and funding mechanisms of the Corporation. All Rules of Procedure of the Corporation shall be posted on its Web site.

Section 2 — Adoption, Amendment, and Repeal of Rules of Procedure — Except as provided in Section 2 of Article XII, all Rules of Procedure, amendments thereto and repeals thereof shall be approved by the board. Proposals to adopt new Rules of Procedure or to amend or repeal existing Rules of Procedure may be submitted by (i) the Member Representatives Committee, (ii) any fifty (50) members of the Corporation, which number shall include members in at least three sectors, (iii) a committee of the Corporation to whose purpose and functions the Rule of Procedure pertains, or (iv) an officer of the Corporation. Unless the board determines that exigent conditions exist requiring adoption of a new Rule of Procedure or amendment or repeal of an existing Rule of Procedure in a shorter time, all proposals for adoption, amendment and repeal of Rules of Procedure shall be posted on the Corporation's Web site and subject to public comment for a minimum of forty-five (45) days prior to action by the board. All Rules of Procedure and amendments to and repeals of Rules of Procedure approved by the board shall be submitted to the Commission and to other applicable governmental authorities for approval, and shall not be effective in the United States until approved by the Commission or in Canada or Mexico until approval is obtained from any governmental authority from which approval is required in those countries and subject to any conditions, limitations, or modifications required by the Commission or other governmental authority. Nothing in this Article shall be deemed to invalidate any Rule of Procedure of the Corporation that was in effect on November 1, 2006.

ARTICLE XII
Personnel Certification Governance Committee

Section 1 — Personnel Certification Governance Committee — There shall be a Personnel Certification Governance Committee of the Corporation, which shall be a standing committee of the Corporation. The purpose of the Personnel Certification Governance Committee shall be to provide oversight to the policies and processes used to implement and maintain the integrity and independence of the Corporation's System Operator Certification Program. The governance authority and structure of the Personnel Certification Governance Committee shall be implemented and maintained so that policies and procedures are established to protect against undue influence that could compromise the integrity of the System Operator Certification process.

Section 2 — Appointment and Reporting of the Personnel Certification Governance Committee — The members of the Personnel Certification Governance Committee shall be appointed by the board from candidates selected and presented by a nominating task force in accordance with Rules of Procedure for the Personnel Certification Governance Committee. Nominations and appointments shall take into account the need to include representatives of all geographic regions of North America on the Personnel Certification Governance Committee. The Personnel Certification Governance Committee shall report directly to the board and the president of the Corporation regarding governance and administration of the

System Operator Certification Program; provided, however, that the Personnel Certification Governance Committee shall have autonomy in developing and implementing system operator certification eligibility requirements, the development, administration, and scoring of the system operator assessment instruments, and operational processes for the System Operator Certification Program. The Personnel Certification Governance Committee shall provide to the board periodic assessments, no less frequently than every two (2) years, of the effectiveness of the System Operator Certification Program.

Section 3 — Administration of the Personnel Certification Governance Committee — In order to maintain the independence of the Personnel Certification Governance Committee, staff of the Corporation shall administer the System Operator Certification program on behalf of the Personnel Certification Governance Committee on a fee for service basis.

ARTICLE XIII
Budgets and Funding

Section 1 — Compensation of the Board and Member Representatives Committee — The board shall have the right to fix from time to time, by resolution adopted by a majority of the independent trustees then serving as trustees, the amount of the annual retainer fee or other compensation to be paid to the independent trustees for their services to the Corporation, including any fees to be paid for each meeting of the board or any board committee attended by an independent trustee. No compensation shall be paid to the management trustee for his or her services on the board, other than the compensation paid to the management trustee for services as president of the Corporation. No compensation shall be paid by the Corporation to the members of the Member Representatives Committee for their services on the Member Representatives Committee.

Section 2 — Preparation and Adoption of Annual Budget, Business Plan, and Funding Mechanism — The board shall prepare or cause to be prepared an annual budget for the administrative and other expenses of the Corporation, including the expenditures for the fiscal year for any material special projects undertaken by the Corporation and reasonable and proper reserves and provisions for contingencies, an accompanying business plan for the Corporation, and a funding mechanism, for each fiscal year. The annual budget, business plan, and funding mechanism of the Corporation shall be for a fiscal year commencing on January 1 and ending on December 31. Each annual budget, business plan, and funding mechanism (including the annual budget, annual business plan, and annual funding mechanism for each regional entity) shall be approved by the board at a regular meeting or a special meeting of the board duly called for that purpose. The board shall approve each annual budget, business plan, and funding mechanism at least 135 days before the start of the fiscal year in order to allow for timely submittal of the approved annual budget, business plan, and funding mechanism to the applicable governmental authorities.

Section 3 — Criteria for Funding Mechanisms — The annual funding mechanism shall be designed to recover, over the course of the fiscal year, the sum of (i) the annual budget, (ii) less revenues projected to be received by the Corporation from other sources such as sales of services and materials and registration, application and certification fees for programs

conducted or administered by the Corporation, and (iii) plus or minus the estimated deficiency or excess of the Corporation's revenues compared to its expenditures for the current fiscal year. The annual funding mechanism shall consist of such assessments as determined by the board that result in an equitable allocation of the Corporation's funding requirement among end users of the North American electric utility system as established in the Corporation's Rules of Procedure.

Section 4 — Consultation in Preparation of Annual Budget, Business Plan, and Funding Mechanism — In preparing the annual budget, business plan, and funding mechanism, the board shall consult with the members of the Member Representatives Committee, and shall post a draft budget and business plan for review and comment by the members of the Corporation and the Member Representatives Committee and the standing committees of the Corporation for at least thirty (30) days prior to the date of the meeting of the board at which the annual budget, business plan, and funding mechanism are to be adopted.

Section 5 — Modified or Supplemental Funding Mechanisms — During the course of a fiscal year, the board may modify the approved funding mechanism or develop and approve a supplemental funding mechanism if determined by the board to be necessary due to such factors as a shortfall in revenues of the Corporation from projected levels, incurred or anticipated expenditures or new projects not provided for in the annual budget, or such other factors as in the judgment of the board warrant modification of the funding mechanism for the fiscal year or development of a supplemental funding mechanism. In preparing a modified or supplemental funding mechanism, the board shall follow the provisions of Section 4 of this Article XIII to the extent possible in the judgment of the board in light of the exigency of the circumstances necessitating preparation and approval of the modified or supplemental funding mechanism. Each modified or supplemental funding mechanism shall be approved by the board at a regular meeting or a special meeting of the board duly called for that purpose.

Section 6 — Submission of Annual Budgets, Business Plans, and Funding Mechanisms to the Governmental Authorities — Each annual budget, annual business plan, and annual, modified, or supplemental funding mechanism approved by the board (including the annual budget, annual business plan, and annual, modified, or supplemental funding mechanism for each regional entity) shall be submitted by the Corporation to the applicable governmental authorities for approval in accordance with its regulations, except as otherwise provided by applicable law or by agreement, and shall not be effective until it has received any necessary approval by the applicable governmental authorities. If a governmental authority by order modifies or remands an annual budget, business plan, or annual, modified, or supplemental funding mechanism, the board shall promptly following such order adopt such modifications to the budget, business plan, or funding mechanism as are required or directed by the order of the governmental authority.

ARTICLE XIV
Amendments to the Bylaws

Section 1 — Amendments to the Bylaws — These Bylaws may be altered, amended, or

repealed by a majority vote of both the board and the Member Representatives Committee at respective meetings of the board and the Members Representative Committee at which a quorum is present. Written notice of the subject matter of the proposed changes to the Bylaws shall be provided, as appropriate, to the trustees or to the Member Representatives Committee not less than ten (10) nor more than sixty (60) days prior to the date of the meeting of the board or of the Member Representatives Committee at which the vote is to be taken. Notwithstanding the provisions of this Article XIV, the members of the Corporation voting by sector shall have the right to alter, amend, or repeal Bylaws adopted by the board and the Member Representatives Committee and to adopt new Bylaws, provided that any such alteration, amendment, or repeal or the adoption of new Bylaws is approved by vote of two-thirds of the sectors at a meeting of Members called for that purpose, or by written consent of two-thirds of the sectors, where the number of votes for and against the proposed alteration, amendment, repeal, or adoption of Bylaws shall be determined in accordance with Section 2 of Article IV. Any alteration, amendment, repeal, or adoption of Bylaws shall be subject to any applicable requirements for filing with or approval by the Commission and any other applicable governmental authority.

ARTICLE XV
General

Section 1 — Indemnification — The Corporation shall indemnify its officers, trustees and other corporate agents to the full extent from time to time permitted by the New Jersey Nonprofit Corporation Act and other applicable law. Such right of indemnification shall inure to the benefit of the legal representative of any such person. The foregoing indemnification shall be in addition to, and not in restriction or limitation of, any privilege or power that the Corporation may have with respect to the indemnification or reimbursement of its trustees, officers, or other corporate agents. The Corporation shall also pay or advance expenses incurred by an officer, trustee, or other corporate agent in connection with a proceeding in advance of the final disposition of the proceeding upon receipt of an undertaking by or on behalf of the officer, trustee, or other corporate agent to repay the amount unless it shall be ultimately determined that the officer, trustee, or other corporate agent is entitled to be indemnified by the Corporation.

Section 2 — Parliamentary Rules — In the absence of and to the extent not inconsistent with specific provisions in these Bylaws, meetings or other actions pursuant to these Bylaws shall be governed by procedures that the board may, from time to time, establish by resolution.

Section 3 — Dissolution — Upon dissolution of the Corporation, in accordance with paragraph TENTH of the Certificate of Incorporation, the remaining assets of the Corporation after payment of debts shall be distributed in the manner determined by the board, provided, (i) that no part of the assets shall be distributed to any trustee of the Corporation, and (ii) that the distribution of assets shall be consistent with the requirements of Section 501(c)(6) of the United States Internal Revenue Code of 1986, as amended.

Agenda Item 4
MRC Meeting
July 29, 2008

2008 Long-Term Reliability Assessment

MRC Action Required
None

Information
The Reliability Assessment Program conducts and reports the results of its independent assessments of the overall reliability and adequacy of the interconnected North American bulk power systems, both existing and as planned. The results of the reliability assessments are documented in three annual reports: the long-term (10-year) assessment; the summer assessment; and the winter assessment. NERC also conducts special reliability assessments as circumstances warrant. All reliability assessment reports are approved for publication by the board.

NERC will hold an open workshop on July 30–31, 2008 concentrating on the preliminary results of the *2008 Long-Term Reliability Assessment*, discussing specific issues identified in the draft summary and obtaining feedback from stakeholders.

NERC expects to publish the report in October 2008.

Bill Bojorquez, chairman of the NERC Reliability Assessment Subcommittee, will present the preliminary key findings and observations for discussion by the Member Representatives Committee.

Preliminary Key Findings and Observations
Enhanced capacity categorization in 2008 has provided a more accurate depiction of future resource margins for each of the regional entities and their subregions. Based on these reviews, the following preliminary findings have been identified:

- The California-Mexico subregion (U.S. and Mexico) of WECC requires more resource additions before 2017 summer peak conditions to remain adequate.
- Resources appear tight (capacity margins less than 10 percent for Total Potential Resources) in New York and RFC-MISO for the 2017 summer peak conditions as well as WECC-Canada and Québec for the 2017 winter peak conditions.
- Over 19,500 transmission circuit miles (230 kV and above) are expected to be built during the 2008–2017 study period. This is 3,000 more miles than reported in last year's report for the 2007–2016 study period.

Emerging Issues
Seven emerging issues have been selected and approved by NERC Planning Committee (PC) for discussion in the *2008 Long-Term Reliability Assessment* (LTRA):

1. Greenhouse gas reductions
2. Fuel storage and transportation
3. Rising global demand for energy and equipment, increased off-shore manufacturing of raw and finished materials

4. Increased adoption of demand-side and distributed generation resources
5. Replacing and upgrading transmission infrastructure for the 21st century
6. Water usage
7. Mercury emissions

Operational Reliability

NERC has re-established the Operational Reliability section in the 2008 LTRA. The goal of this section is to present long-term trends that may indicate long-term reliability issues. This section will be reviewed by the NERC Operating Committee in concert with the PC's review.

Assessment Improvement Initiatives

NERC has launched several initiatives to improve its Reliability Assessment Program, led by Mark Lauby, NERC Manager of Reliability Assessments. The PC, which is the program support committee for the NERC Reliability Assessment program, has established several new initiatives to improve NERC's reliability assessments, as described below.

Reliability Assessment Subcommittee: In conjunction with NERC staff, responsible for developing the data and information collection requirements for regional self-assessments, conducting peer-review of these self-assessments, and preparing NERC's long-term and seasonal reliability assessment reports. Also developed seven emerging issues for emphasis in the *2008 Long-Term Reliability Assessment* (see above).

Reliability Assessment Improvement Task Force: Developed both a vision and a plan to improve NERC reliability assessments. Based on the task force's recommendations, the PC approved the following improvements for 2009–2011:

- Implement increased resource categorization, with improvements by September 2008.
- Develop a Reliability Assessment Guidebook for Regional Entities, Version 1.0 to be completed by September 2008.
- Study emerging demand and capacity technologies.
- Evaluate incorporating more detailed reliability analyses.
- Develop more metrics (beyond capacity margins) to identify reliability trends.
- Conduct risk-based emerging issue analysis and scenario selection.

The final report outlining the vision and plan is expected before the end of the third quarter of 2008.

Demand Response Data Task Force: Develop data collection forms and database requirements for the demand response availability data system (DADS) used to analyze the impacts of demand response programs. Results will provide assessment of the demand response performance as capacity, energy, and operating resources.

Integration of Variable Generation Task Force: Over 50 industry experts are developing a report that deals with ensuring the reliability of the bulk power system as variable resources are added to the system. The report and recommendations are expected in the third quarter of 2008.

Reliability Metrics Working Group: Develop new metrics in support of reliability assessments.

Status of Efforts in Canada

MRC Action Required

None

JURISDICTION	STATUS
Alberta	**Recognition:** The Minister of Energy recognized NERC as the electric reliability organization by letter dated December 28, 2007. **Standards:** The NERC and WECC reliability standards are to be effective in Alberta to the extent the Alberta Independent System Operator makes them effective under the Transmission Regulation. Under the Transmission Regulation, the Alberta ISO gives notice to the Alberta Energy Board of proposed standards, with a recommendation to approve or reject them. **Enforcement:** The Alberta ISO is responsible for enforcement of reliability standards within the province.
British Columbia	**Recognition:** The British Columbia Utilities Commission (BCUC) is without authority to formally recognize NERC as the electric reliability organization, but has stated its willingness to discuss development of an MOU. **Standards:** The Utilities Commission Amendment Act creates a mechanism for introducing a mandatory reliability standard for British Columbia's bulk electricity system. The BCUC is empowered to determine whether the rules established by the North American Electricity Reliability Corporation and the Western Electricity Coordinating Council, in contemplation of being enacted as mandatory reliability standards for planning and operating the North American power system, are in the public interest and whether they should be adopted in British Columbia. It is contemplated that British Columbia Transmission Corporation would file the application for approval of standards. No standards are currently in force in British Columbia, although BCTC remains bound under the WECC Reliability Management System agreement. **Enforcement:** Enforcement of rules adopted by the BCUC would be by the BCUC. The BCUC would also expect to make use of WECC procedures.
Manitoba	**Recognition:** In May 2008 NERC, MRO, and Manitoba Hydro signed an interim agreement by which NERC reliability standards are made legally enforceable against Manitoba Hydro. **Standards:** Reliability standards are currently mandatory and enforceable as to Manitoba Hydro, but

	not others within the province. Legislative authority does not currently exist to bind others within the province. Manitoba is considering legislation that would extend mandatory standards to others within the province. **Enforcement:** MRO monitors compliance with standards for Manitoba Hydro. By agreement with the province, compliance matters in dispute would be referred to the Manitoba Utilities Board.
New Brunswick	**Recognition:** NERC has nearly completed negotiations on two MOUs. The first MOU is between NERC, the New Brunswick Department of Energy, and the New Brunswick System Operator and details the roles and responsibilities of the parties, including recognizing NERC as a "standards authority" under the New Brunswick *Electricity Act*. NERC, NPCC, and the New Brunswick System Operator have nearly completed negotiations on second MOU that implements the first MOU. **Standards:** NERC reliability standards become mandatory in New Brunswick at the time they are approved by the NERC board, as part of the New Brunswick market rules. **Enforcement:** Under the draft MOU, NPCC would monitor compliance of the New Brunswick System Operator. NPCC would not have authority to make findings or impose sanctions, but could make recommendations to the New Brunswick Energy and Utilities Board, which does have authority to make findings and impose sanctions. The reliability standards are enforced within New Brunswick for market participants by the New Brunswick System Operator as part of the market rules.
Nova Scotia	**Recognition:** NERC and the Nova Scotia Utilities and Review Board (NSUARB) signed an MOU in December 2006. NERC, NPCC, and Nova Scotia Power are developing a further MOU to specify roles and responsibilities. **Standards:** The NSUARB states it has the authority to adopt NERC reliability standards and make them mandatory within the province. The NSUARB also has the authority to adopt its own reliability standards. No standards have yet been made mandatory. **Enforcement:** The NSUARB retains the authority within the province to enforce reliability standards and to impose sanctions for non-compliance. The MOU contemplates that NERC and NPCC would make recommendations to the NSUARB, and the NSUARB would conduct hearings. The NERC and NPCC recommendations could be evidence at the hearings.
Ontario	**Recognition:** NERC and the Ontario Energy Board (OEB) signed an MOU in October 2006. On November 28, 2006 the Ontario Minister of Energy recognized NERC as the successor in Ontario to the North American Electric Reliability Council as the international electric reliability standards authority in accordance with the definition of "standards authority" found in the *Electricity Act, 1998*

	(Ontario). NERC, NPCC, and the Ontario IESO have signed an MOU to implement the NERC/OEB MOU. **Standards:** Under the *Electricity Act, 1998* (Ontario), NERC's reliability standards are made mandatory and enforceable on Ontario market participants as market rules. In general, the standards take effect when the OEB and the IESO receive notice that NERC has adopted them. Under a recent amendment to the *Electricity Act*, the OEB has been given the authority to remand reliability standards in certain circumstances. **Enforcement:** Enforcement of reliability standards for entities within Ontario is carried out by the compliance division of the IESO. NERC and NPCC only monitor compliance with reliability standards applicable to the IESO itself.
Québec	**Recognition:** NERC and the Régie de l'énergie du Québec signed an MOU in November 2006 that recognizes NERC's role as the ERO and that at the time, the Régie did not have the authority to approve mandatory reliability standards for Québec. **Standards:** In December 2006 the *Act respecting the Régie de l'énergie* was amended to provide the Régie with authority to approve reliability standards that are proposed by a reliability coordinator designated by the Régie and adopted by a standards setting body, with which the Régie has an agreement. The reliability coordinator may propose variants to the NERC standards. The Régie has designated Trans Energie as the reliability coordinator. NERC, NPCC and the Régie are negotiating an agreement to, among other things, provide a compliance monitoring and enforcement program for Québec. Once that agreement is in force, Trans Energie will submit reliability standards to the Régie for approval. **Enforcement:** The Régie retains final authority to find violations and impose sanctions. Under the draft agreement, NERC, and NPCC will conduct the compliance monitoring program and make recommendations to the Régie for action. The Régie may impose a fine of up to $500,000 or other sanctions.
Saskatchewan	**Recognition:** Saskatchewan does not have a regulatory body over electricity matters. By provincial law, Saskatchewan Power has responsibility for reliability within the province. NERC, MRO, and Sask Power have reached agreement in principle on an MOU under which Sask Power would be subject to NERC reliability standards, with compliance issues to be reported to a non-operating group within Sask Power. **Standards:** Sask Power has authority to adopt reliability standards. In general NERC reliability

	standards would be effective in Saskatchewan unless one was remanded in any jurisdiction or the Saskatchewan Authority (the non-operating group within Sask Power) determines not to adopt a particular standard. **Enforcement:** Enforcement would be the responsibility of the Saskatchewan Authority, which could make use of NERC and MRO for any of its compliance monitoring activities. There would not be financial penalties within Saskatchewan for violations of standards.
National Energy Board	**Recognition:** NERC and the National Energy Board (NEB) signed an MOU in September 2006 that recognizes NERC's role as the electric reliability organization and recognizes that, under the *National Energy Board Act*, the NEB does not have authority to approve NERC's bylaws and rules of procedure and further recognizes that the NEB has jurisdiction only with respect to international power lines (IPLs). **Standards:** No reliability standards are currently mandatory for IPLs. In April 2008 the NEB announced an intention to make reliability standards mandatory for IPLs through a condition to the IPL license or some other means. **Enforcement:** Because no standards are yet applicable, no enforcement program currently exists for violations of reliability standards with respect to IPLs. NERC is in discussion with the NEB on developing ways of reporting compliance-related information regarding IPLs.

Agenda Item 6
MRC Meeting
July 29, 2008

Follow Up to February 11, 2008 Discussion of NERC Priorities and Emphasis

MRC Action Required
Discussion

Attachments
Framework for the February 2008 MRC Discussion of NERC Priorities and Emphasis in 2008 (**Attachment 1**); Reliability Assessments and the Adequacy of Resources draft discussion outline (**Attachment 2**); and the NERC-FERC-Provinces Relationships, draft discussion outline (**Attachment 3**).

Background
On February 11, 2008, the MRC discussed the attached framework document in five subject areas. These areas were:

1. Reliability standards development (attachment 1 at 2.c.)
2. Compliance monitoring and enforcement (attachment 1 at 2.d.)
3. Short and long range adequacy assessments (attachment 1 at 2.a.)
4. Adequacy and reliability levels (attachment 1 at 1.a-c.)
5. NERC-FERC-Provinces relationship (attachment 1 at 3.a-b.)

On May 6, 2008 the MRC continued discussion of the first two areas, reliability standards development and compliance monitoring and enforcement, in greater detail.

During this meeting, the MRC will continue discussion of the final three areas in the list above, with areas 3 and 4 combined as “Reliability Assessments and the Adequacy of Resources” and area 5 focused on NERC’s and FERC’s engagements of the Canadian regulatory situations.

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

Item 6
Attachment 2

Discussion Outline (Draft 7/9/08)

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.

Item 6
Attachment 3

Discussion Outline (Draft 7/10/08)

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.

August 3, 2005

PRINCIPLES FOR AN ELECTRIC RELIABILITY ORGANIZATION THAT CAN FUNCTION ON AN INTERNATIONAL BASIS

The Bilateral Electric Reliability Oversight Group ("Bilateral Group") which is comprised of representatives from the U.S. Department of Energy (DOE), the U.S. Federal Energy Regulatory Commission (FERC), the Federal-Provincial-Territorial Electricity Working Group (FPT Group) in Canada, developed draft principles for an Electric Reliability Organization (ERO) for comment by stakeholders.

Based on the comments received from stakeholders at workshops the FPT Group and DOE endorse the attached principles. These principles are intended to guide the establishment of a reliability organization that can function effectively in the U.S. and Canada. There will be a need to explore other issues as the reliability organization evolves over time.

PRINCIPLES

Governance of the ERO

- The ERO Board of Trustees (the Board) should maintain independence from the electric utilities and entities that own, operate or use assets comprising the North American bulk power system.

- Regulatory authorities or government representatives should not appoint members or be appointed to the Board.

- Each country participating in the ERO should have the opportunity to have Board members from that country. The number of Board members from each country should be in approximate proportion to that country's percentage of Net Energy for Load. However, where the number of Board members from that country would be less than 25 percent of the Board, the number of Board members allocated to that country should not be less than the percentage of its Net Energy for Load.

- Each country should have the opportunity to have an equitable number of members from that country on all ERO committees, in approximate proportion to that country's percentage of Net Energy for Load.

- An organization applying to become the ERO should take appropriate steps to gain recognition in Canada at the same time the application for ERO status is filed with FERC, and in Mexico as appropriate.

Membership

- All owners, operators, or users of the North American bulk power system must comply with the approved reliability standards, regardless of whether the entity is a member of the ERO.

- Membership in the ERO should not be a condition for participation in the ERO standards development process.

Funding

- "Net Energy for Load" should be the primary basis upon which the costs of the ERO are assigned. Costs incurred for one region or entity may be directly assigned to that region or entity.
- Funding mechanisms, budget direction and budget level should reflect consultation with stakeholders and the appropriate authorities in each country.
- The appropriate authorities in each country should be responsible for approving and ensuring cost recovery by the ERO and Regional Entities within their respective jurisdictions, in a timely manner.

Remand

- The ERO should consult with the appropriate authorities in each country with regard to reliability standards under development, to minimize the likelihood of a remand being exercised.
- If a standard is remanded by a regulatory authority, the ERO should notify all relevant regulatory authorities, and should work to ensure that all concerns of such regulatory authorities are addressed prior to the resubmission of the standard to FERC and authorities in Canada.

Enforcement

- The appropriate authorities in each country should have the option of either enforcing standards directly or relying on the ERO or the respective Regional Entity to which enforcement has been delegated.
- Compliance with reliability standards should be monitored and evaluated.
- All confirmed violations of such standards should be promptly reported to the relevant regulatory authorities by the ERO or Regional Entity.
- Throughout the ERO, the penalty should be similar for a particular violation and set of circumstances, and should be the same within an interconnection regardless of where the violation occurred or who set the penalty.
- The penalties should be sufficient to maintain reliability and corrective action should be sufficient to ensure that reliability of the grid is restored.
- The ERO should be notified of any enforcement actions taken by a Regional Entity.
- Dispute resolution procedures should be established within the ERO for issues arising from alleged standards violations.
- Violations of ERO and Regional Entity standards should be made public.

Audits

- The ERO and Regional Entities should conduct rigorous audits to ensure both the capability to comply (Readiness Audits) and actual compliance with reliability standards (Compliance Audits). The audits should meet relevant auditing standards.
- The ERO should take steps to ensure that auditors are properly trained and that the same audit standards apply to all audits conducted by the ERO and Regional Entities.

Regional Entities

- When considering the delegation of authority to a proposed Regional Entity, the ERO, FERC and regulatory authorities in Canada should take into consideration whether the size or scope of the proposed Regional Entity would result in difficulty in conducting cross-border trade.
- A Regional Entity that has cross-border scope should ensure that each country represented in the region has the opportunity to have members from the country on the Board in numbers that reflect the country's approximate percentage of its Net Energy for Load in that region.
- Where possible, the boundaries of Regional Entities should encompass boundaries of other transmission organizations, such as Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs).
- Regional Transmission Organizations and Independent System Operators should not become Regional Entities. The Regional Entity should be distinct from the operators of the system, such as RTOs and ISOs.
- If stakeholders serve on the governing bodies of Regional Entities, no single sector should be able to veto and no two sectors should be able to control the outcome of a particular decision, where sector voting is used.
- The ERO should have the authority to oversee implementation of standards within regions to ensure that such implementation is sufficiently stringent and compatible with ERO standards.
- The ERO should ensure that regional standards do not compromise the reliability of interconnected neighbouring regions.

Canadian Electricity
Association

CEA Positions Regarding the Establishment of an Effective International Electric Reliability Organization

July 2004
Canadian Electricity Association

Contact: Timothy Egan, 416-535-2815
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Canadian Electricity Association
Association canadienne de l'électricité

- **CEA Positions Regarding the Establishment of an Effective International ERO**

The Canadian Electricity Association (CEA) is an active participant in the deliberations on electric reliability presently under way in Canada and the United States. It is CEA's view that mandatory uniform North American reliability standards that allow for regional differences are essential to assure long term reliability.

This document is intended as CEA's latest contribution to ongoing discussions in the United States and Canada regarding the establishment of an electric reliability organization. CEA is the national forum and voice of the evolving electricity business in Canada through its core membership that accounts for 95% of Canada's installed generating capacity and nearly all of its transmission capacity.

The establishment of an effective international electric reliability organization (ERO) should allow for the development and enforcement of such standards. The effectiveness of the international ERO is dependent upon a complex and inter-related reliability management framework that involves:

- International Agreements
    - Governance
    - Regulatory Oversight
- Scope and Nature of Reliability Standards
- Funding
- Canadian Representation in the ERO and Regional Reliability Organizations
- Compliance Monitoring
- Enforcement
- Violations Disclosure
- The Role of Regional Reliability Organizations
- Participation in Regional Reliability Organizations
- Improvements/Alternatives to ANSI

Although legislation has yet to pass at this point in the United States, CEA is of the opinion that the discussion around the design and operations of the ERO to ensure its effectiveness needs to proceed. It offers the following recommendations to officials in government in Canada and the United States as they continue their ongoing deliberations.

For the purposes of this paper, except where the specific context suggests NERC or the ERO, the term ERO refers to both NERC as it evolves, and the electric reliability organization that could be established pursuant to legislation if and when it passes. Similar considerations apply to today's regional reliability councils and future regional reliability organizations.

- **CEA Positions Regarding the Establishment of an Effective International ERO**

International Agreements

To achieve the objectives of mandatory uniform North American standards and respect for national sovereignty, CEA believes that international agreements between appropriate authorities will be necessary to create the framework for an international ERO. These agreements must ensure that a single regulatory agency or group of agencies from one country should not take unilateral action, where such action would have cross-border implications.

The content of international agreements should address:

(1) the governance of NERC/ERO and the regional reliability organizations, and

(2) the principles for regulatory oversight.

(i) Governance

With respect to governance, CEA recommends a structure that provides for the following:

- ensuring the independence of the ERO from entities which regulate electric utilities, own or operate assets comprising the North American Interconnections, or schedule transactions on North American Interconnections.
- effective participation by Canadian authorities in the development of governance bylaws for the ERO and regional reliability organizations;
- designated representation for each country on all NERC/ERO/regional reliability organization development committees, decision-making bodies and voting protocols, based on Net Energy for Load (as currently defined by NERC)[1]
- ensure that the delegation of ERO authority to a regional entity does not disrupt cross-border trade
- a funding mechanism and budget direction for NERC and regional reliability organizations as currently constituted that reflect Canadian input and concerns. (This would include provisions for any future changes to such mechanisms).
- primary appeals process (appeals would be conducted first within NERC and/or the regional reliability organizations, with provision for subsequent appeal to the appropriate authority)

(ii) Regulatory Oversight

With respect to regulatory oversight, the CEA recommends that any agreement provide for the following:

- identification of the authorities that will act as legal backstop for matters related to electric reliability;
- approval/remand of proposed ERO/regional reliability organization governance rules (bylaws) by appropriate authorities in both countries to make sure principles of the agreement are upheld;
- approval/remand of proposed standards by appropriate authorities;
- chartering and certification of the ERO;
- enforcement of standards;
- secondary appeals process (appeals would be conducted first within NERC and the regional reliability organizations, with provision for subsequent appeal to the appropriate authority).

In this paper, CEA further examines a number of the issues identified above.

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[1] Defined by NERC as system net generation, plus energy received from others, less energy delivered to others through interchange. It includes system losses but excludes energy required for storage at energy storage facilities. (NERC Glossary of Terms, 1996)

- **CEA Positions Regarding the Establishment of an Effective International ERO**

Scope and Nature of Reliability Standards

Reliability standards should be mandatory and uniform across North America and allow for regional variances, consistent with the recommendations contained in the discussion later in this paper on the role of regional reliability organizations.

The ERO should focus on standards for operating the interconnected grid. In particular, the ERO should avoid developing standards that would affect equipment performance, unless such equipment would impact reliability and such impact cannot be adequately mitigated by an operating or planning standard.

The level of detail in ERO standards should be commensurate with their reliability impacts. That is, factors that have a direct and critical impact on interconnected reliability (e.g. operator qualifications) should have prescriptive requirements.

Funding

In the final report of the U.S.-Canada Power System Outage Task Force, the Task Force recommended the implementation of a new funding mechanism for NERC and the regional councils based on a surcharge in transmission rates. Such a mechanism would involve recovery of ERO/NERC/ regional council costs from customers through transmission tariffs. End users would therefore be the ultimate funders of NERC, and potentially the regional reliability organizations.

"Net Energy for Load"[2] should be used as the basis upon which funding is assigned. However, to the extent that the NERC budget increases in the future, and before the ERO is established, the funding mechanism should be reviewed and consideration could be given to the following additional factors: (1) the relative loading of transmission facilities; (2) the type and capacity of interconnections (3) assignment of the costs of programs and tools only to the beneficiaries; and (4) demonstrated reliability performance or impact. Within each country, the subsequent allocation to individual entities will be determined by the appropriate authorities.

Each country's allocated charges should be collected either directly or indirectly from end-use customers, with the collection mechanism being left to the discretion of the appropriate authorities. Consistency is desirable, but not essential, and these collection mechanisms may include, but are not limited to, non-bypassable transmission tariffs and uplift charges.

With respect to funding for regional reliability councils, CEA believes it is desirable, but not essential, to have the same collection mechanism as that used to fund NERC. It is more important that any changes to funding for regional reliability councils be devised in a manner that does not involve any significant cost-shifting among regions.

The current NERC budget is about $13 million U.S. The budgets of the three regional reliability organizations (i.e. regional councils) having Canadian members have budgets totalling about $26 million U.S. (net of fees paid to NERC). Given the expected enhanced responsibilities of NERC (and ultimately the ERO) and the regional reliability organizations, the budgets of these entities are expected to grow significantly.

As FERC and the Canadian provincial authorities exercise greater authority over NERC and the regional reliability organizations, these authorities will be reviewing the portions of the budgets of these entities that will be the basis for the respective funding requests. This is particularly the case once the mechanisms for funding the

[2] See definition as per footnote 1.

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different entities are established. Given that Canadian entities will be paying their fair share of the costs of these reliability organizations, CEA believes it is critical that governance and bylaws of the ERO and regional reliability organizations allow for an effective Canadian voice in the development and approval of these budgets.

Any positions respecting funding should be revisited once the other issues are resolved, with the intention of developing an integrated view that incorporates all aspects of the ERO.

Canadian Representation in the ERO and Regional Reliability Organizations

Adequate Canadian representation in ERO and the regional reliability organizations is necessary in order for these entities to be truly international organizations. Currently, NERC has specified Canadian representation on a number of its committees. For example, 4 of 35 voting members of each of the standing committees (Operating Committee, Planning Committee and Market Committee) have designated Canadian representation. However, recent changes to the NERC standards development process have diluted the influence of such representation because the standing committees are no longer approval authorities for standards and policies. In addition, there is no designated Canadian representation on the Standards Authorization Committee (SAC) that now oversees the development of standards.

Within the ERO and the relevant regional reliability organizations, CEA is concerned about ensuring an effective voice and approval in the standard setting process, and therefore recommends the following specifics as to standard-setting within the ERO:

1. The jurisdictional authority to adopt or remand at the level of the individual province affords a "backstop" measure to protect Canadian interests, and this backstop needs to be explicit.
2. The seeking of an appropriate proportion of designated Canadian representatives should apply to both NERC and the regional reliability organizations. Canadian representation on formal standing committees and the relevant boards of reliability organizations should follow, in principle, a ratio comparable to the Net Energy for Load ratio between the two countries, and within regions as appropriate.
3. Section 2d of the NERC Bylaws recognizes knowledge and experience in Canada that should be retained. However, it is recommended this section be amended by the bracketed insertions as follows: "The Board must at all times include at least one Independent Trustee [from the U.S.] with appropriate knowledge and experience of the industry, regulatory, and legal systems in the U.S. and at least one Independent Trustee [from Canada] with similar knowledge and experience in Canada." This amendment would make explicit the residency of these two trustees.
4. These principles suggest the NERC Standards Authorization Committee (SAC) should have two designated Canadian representatives over and above the current membership of 18 representatives from the 9 sectors.
5. A "national approval requirement" should be added to the current approval process. Any proposed standard would require 66.7% approval, on a weighted segment basis, from both the U.S. and Canadian participants in the ballot pool. This would in effect split a current single global requirement into separate requirements for U.S. and Canadian participants.

Compliance Monitoring

Reliability audits are an essential element of the standards compliance process. In

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order to ensure consistency in the auditing process, CEA believes it is necessary for NERC/ERO and the regional reliability organizations to be staffed appropriately to conduct the audits.

Effective reliability audits require independence on the part of the auditing team. Accordingly, reliability audits should be undertaken by technical experts independent of the audited entity.

This independence must be extended to the relevant regulators or equivalent authorities. U.S. and Canadian provincial regulators currently may participate in NERC's readiness audits. Given that the audit team would be reaching conclusions and making recommendations, the regulators' position on the audit team may compromise their ability to review any proposed sanctions resulting from the audit team's determinations. Accordingly, in order to preserve the independence of authorities, regulatory staff should not participate in these audits.

Enforcement

At present, NERC's ability to enforce standards is unclear. Nevertheless, both Canadian and U.S. government officials are working to establish a process that will enable NERC and ultimately the ERO to enforce mandatory reliability standards. CEA supports the ERO having the authority and ability to enforce reliability standards.

Once ERO authority to enforce standards is established and because both ERO and the U.S./Canadian authorities will have enforcement authority, it will be important to establish a process for the exercise of their respective authorities. Determining the timing for regulators' involvement in the enforcement process is important in assuring that the ERO is effective in its enforcement role. CEA recommends the ERO take the lead in ensuring that reliability standards are effectively monitored and consistently enforced. This will allow the ERO to utilize its various approaches to enforcing standards (including imposition of operating restrictions and issuance of letters of reprimand), as well as its expertise. Moreover, this will enable the respective regulators to serve as appellate bodies, stepping in only if ERO is unable to exercise its enforcement authority or if an entity is appealing a NERC determination.

Along with NERC's enforcement of standards, the regional reliability organizations should exercise appropriate enforcement authority, as delegated to them from an ERO. CEA supports the regional reliability organizations exercise of such delegated authority. However, with the evolution of NERC also comes an evolution of existing regional reliability organizations, i.e. regional councils. Consistent with efforts to establish a top-down organization, CEA recommends that NERC should be notified of any enforcement actions taken by a regional council. However, this notice should be limited, serving mainly as a step in the appeal of such a decision to the relevant authority

Violations Disclosure

NERC has approved interim disclosure guidelines that provide for public disclosure of violations of NERC standards. CEA approves of efforts by NERC to disclose confirmed violations to ensure greater transparency. Public disclosure of violations should occur only after all rights of appeal have been exhausted.

The Role of Regional Reliability Organizations

The ERO will be responsible for setting reliability standards. Nevertheless, the different regions of the North American grid have unique characteristics and unique needs that will necessitate flexibility in the implementation of such standards. Accordingly, regional reliability organizations are necessary to respond to the reliability needs of each region – and develop

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reliability standards that reflect regional circumstances.

The nature of the future relationship of such entities with ERO needs to be addressed. As a minimum, the roles, practices and structures of regional reliability organizations must be consistent and compatible to avoid seams issues.

NERC's review of a regional difference should be limited to ensuring that it is compatible with NERC standards, and is compatible with neighbouring interconnected regions' standards and will not compromise the reliability of interconnected neighbouring regions. NERC must have an expedited process for the review of regional differences.

Participation in Regional Reliability Organizations

As a general matter, CEA believes that all operating and planning entities participating in electricity transmission and generation must comply with reliability standards developed by the ERO. Moreover, CEA believes that all operating and planning entities must comply with any reliability requirements established by the regional reliability organization in the region in which that entity is located.

CEA believes that all participating entities should be encouraged to be members of regional reliability organizations. Membership affords such entities the ability to participate in actions taken by the regional reliability organizations. However, CEA does not believe that an entity should be directed to become members. Assuming such an entity is required to comply with reliability standards (and the funding of regional reliability organizations is not based on membership), failure to become a member of such an organization only limits that entity's ability to influence outcomes of the organization's decision-making processes.

Improvements/Alternatives to ANSI

CEA members remain concerned regarding the effectiveness and efficiency of NERC's ANSI-approved standards development process. Accordingly, on-going consideration should be given to assessing the effectiveness and efficiency of the ANSI process for the development of standards. Specifically, existing processes required by the Standards Council of Canada and other Canadian standards development organizations should be examined to identify improvements to the ANSI requirements. In addition, CEA recommends the exploration of an alternative standard-setting process to be used in the event that the ANSI framework ultimately proves unworkable.

CEA is prepared to participate in any review efforts to enhance the ANSI standard-setting process, or in discussions of alternative processes.

Canadian Electricity Association
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July 24, 2008

Congressman John Dingell
Chairman, House Energy and Commerce Committee
2328 Rayburn House Office Building
Washington, D.C. 20515-2215

Congressman Joe Barton
Ranking Member, House Energy and Commerce Committee
2109 Rayburn House Office Building
Washington, D.C. 20515-4306

Congressman Jim Langevin
Chairman, Subcommittee on Emerging Threats
Cybersecurity, and Science and Technology
Committee on Homeland Security
109 Cannon House Office Building
Washington, D.C. 20515-3902

Congressman Michael T. McCaul
Ranking Member, Subcommittee on Emerging Threats
Cybersecurity, and Science and Technology
Committee on Homeland Security
131 Cannon House Office Building
Washington, D.C. 20515-4310

Dear Chairman Dingell and Chairman Langevin and Ranking Member Barton and Ranking Member McCaul:

I am writing to you on behalf of the member utilities of the Canadian Electricity Association (CEA), the national forum and voice of the evolving electricity business in Canada. CEA's members account for most of Canada's installed generating capacity and high voltage transmission. U.S. and Canadian utilities are interconnected to one another and form the greater part of the North American transmission grid. This interconnected system allows for cross-border trading, assuring, amongst other things, a higher level of reliability for consumers, efficiencies in fuel management, and efficiencies in system operation. These benefits, and the activities of companies investing and participating in markets on both sides of the border, serve citizens of the United States and Canada very well. Canadian utilities are therefore critical to the energy security of the United States, and the reliability of the North American transmission grid.

We understand that the House Homeland Security Committee Subcommittee on Emerging Threats, Cybersecurity, and Science and Technology has conducted hearings on recent cybersecurity challenges in the U.S. and that both the House Energy and Commerce Committee and the House Homeland Security Committee are exploring whether legislation is required to address such challenges. I am writing to you today to request that any actions taken by the House be mindful of the interconnected nature of the North American transmission grid and the impact such actions could have on the reliability of the grid and on cross-border trade. CEA believes that actions to address cybersecurity issues must be accomplished in a manner that takes advantage of our interconnected systems, and does not, at the same time, unintentionally erect barriers to reliability or trade.

CEA is very supportive of the standard-setting model included in section 215 of the Federal Power Act. The NERC reliability standard setting process allows for a balance of interests that protects the organization from being unduly subject to any one government, thereby allowing for the development of standards with continental application that can be approved on both sides of the border. And the remand provision in the existing NERC standard setting model is critical to assuring that no governmental authority has the ability to directly modify standards that would apply on the North American grid and that any variances are identified through the NERC standard setting process. This model provides Canadian governmental authorities with the confidence that standards developed through that process reflect the concerns of Canadian interests.

FERC staff has shared with us language it has forwarded to your respective Committees to provide FERC with increased cybersecurity authority. The language includes a provision providing FERC with authority to order emergency measures or actions necessary to protect reliability against a cybersecurity threat. At present, the Canadian provinces have authority to address cybersecurity emergencies. For example, Ontario's Independent Electricity System Operator has the authority to develop, issue and monitor compliance of market participants via new urgent rule amendments necessary to support reliable operations. CEA understands the need for authority to address emergency situations, although we believe that such authority must be limited only to cybersecurity emergencies and must be of a limited duration.

We are more troubled with the proposed FERC language that gives FERC the authority to establish, within 120 days of the enactment of the section, mandatory interim measures as are necessary to protect against known cybersecurity threats. Such interim measures are to supplement, replace and/or modify existing cybersecurity standards that FERC determines are inadequate, and can be replaced by new cybersecurity standards developed following enactment of the provision. As such, the language gives FERC the ability to directly modify or replace an existing NERC standard, thereby avoiding the use of the remand function or the NERC standard setting process This new authority is especially troubling since FERC would be modifying or replacing standards that are already in effect in a number of Canadian provinces, raising questions about the impact of the modifications or replacements in those Canadian provinces and on the North American grid as a whole. In fact, this new authority would enable FERC to establish interim measures that could thus have the effect of establishing differing requirements on both sides of the border. Such differing requirements could have both reliability impacts on the system and impacts on cross-border trade.

A process that allows for the unilateral development of cybersecurity standards by FERC would undermine the confidence the Canadian provincial authorities have placed on the NERC standard-setting process, likely forcing Canadian governmental authorities to develop alternative and separate processes to develop cybersecurity standards and thereby leading to even greater differences in standards across the international grid. In fact, some provinces such as British Columbia and Ontario have enacted legislation that restricts the governmental authority to adopting standards that are developed only through the standards development process of a standard-making body, such as NERC or the relevant regional entity. Further, this reduction in cooperation would also likely be felt in the elimination of, or reduction in, the willingness of the U.S. and Canadian governments to share information with each other and industry that today routinely shares critical information without regard to nationality -- not a good result at a time when the sharing of information is becoming more and more important.

CEA agrees that, given the nature of cyber security threats and the need to respond quickly, it makes sense to treat cyber security standards differently from operating and planning standards and to allow cybersecurity standards to be developed in a less public manner and in a way that allows for quick action to respond to ever-changing threats. In other words, NERC could establish an alternative standard setting process that would allow it to be more nimble in addressing cybersecurity issues. Such a process was suggested in a letter forwarded by NERC to NERC's Board of Trustees and Stakeholders on July 7, 2008. In that letter, NERC suggests the establishment of a task force to review "and where appropriate recommend, a standard setting process for Cyber Security that will include an emergency/crisis standards setting process." We would support NERC's efforts to establish a separate process for addressing cybersecurity issues. Importantly, this process would follow the NERC standard-setting model, thereby allowing for the development of cybersecurity standards that are respectful of Canadian jurisdictional sovereignty and allowing for the development of standards that can be approved by Canadian governmental authorities. In addition, CEA is encouraged by NERC's proposals to establish a Critical Infrastructure Protection Program, to increase its cybersecurity expertise and to better coordinate with governmental authorities. We believe that such steps would allow NERC to better respond to cybersecurity issues.

I thank you for this opportunity to provide comments and would be happy to answer any questions you may have and provide you with any additional information you may need.

Yours sincerely,

Pierre Guimond
President and Chief Executive Officer

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July 24, 2008

Senator Jeff Bingaman
Chairman, Senate Energy and Natural Resources Committee
SH-703 Hart Senate Office Building
Washington, D.C. 20510-3102

Senator Pete Domenici
Ranking Member, Senate Energy and Natural Resources Committee
SH-328 Hart Senate Office Building
Washington, D.C. 20510-3101

Dear Senator Bingaman and Senator Domenici:

I am writing to you on behalf of the member utilities of the Canadian Electricity Association (CEA), the national forum and voice of the evolving electricity business in Canada. CEA's members account for most of Canada's installed generating capacity and high voltage transmission. U.S. and Canadian utilities are interconnected to one another and form the greater part of the North American transmission grid. This interconnected system allows for cross-border trading, assuring, amongst other things, a higher level of reliability for consumers, efficiencies in fuel management, and efficiencies in system operation. These benefits, and the activities of companies investing and participating in markets on both sides of the border, serve citizens of the United States and Canada very well. Canadian utilities are therefore critical to the energy security of the United States, and the reliability of the North American transmission grid.

We understand that language was drafted by Senate Energy and Natural Resources Committee staff to provide FERC and the Department of Energy with increased authority to address cybersecurity issues. I am writing to you today to request that any actions taken by the Senate be mindful of the interconnected nature of the North American transmission grid and the impact such actions could have on the reliability of the grid and on cross-border trade. CEA believes that actions to address cybersecurity issues must be accomplished in a manner that takes advantage of our interconnected systems, and does not, at the same time, unintentionally erect barriers to reliability or trade.

CEA is very supportive of the standard-setting model included in section 215 of the Federal Power Act. The NERC reliability standard setting process allows for a balance of interests that protects the organization from being unduly subject to any one government, thereby allowing for the development of standards with continental application that can be approved on both sides of the border. And the remand provision in the existing NERC standard setting model is critical to assuring that no governmental authority has the ability to directly modify standards that would apply on the North American grid and that any variances are identified through the NERC standard setting process. This model provides Canadian governmental authorities with the confidence that standards developed through that process reflect the concerns of Canadian interests.

With respect to the Senate language, FERC would be given broad authority to issue rules or orders necessary to protect critical electric infrastructure from cybersecurity threats. FERC and the Department of Energy would also each be given authority to issue a rule or order without prior notice or hearing to protect against a cybersecurity threat. Emergency rules or orders shall remain effective for not more than 90 days, unless, during the period, FERC gives interested persons an opportunity to comment and affirms, amends, or repeals the rule or order. The Senate language sets out a new model without any reference to the fact that NERC will continue to have cybersecurity standard responsibility. FERC is given authority to issue rules or orders to protect against cybersecurity threats and both FERC and DOE are given emergency authority to protect against imminent cybersecurity threats, and yet there is no reference to existing NERC authority or an explanation of how such new FERC/DOE authority can be reconciled with NERC's responsibility to set CIP standards. Further, both FERC and DOE have emergency authority, and yet there is nothing in the language to explain how such dueling authorities will operate. Such new authority ignores the value of the NERC standard setting process, an international process that is respectful of jurisdictional sovereignty and that allows for the setting of reliability standards that can be approved on both sides of the border. And this new authority is especially troubling since FERC or DOE could be issuing orders or rules affecting standards that are already in effect in a number of Canadian provinces, raising questions about the impact of the FERC or DOE rule or order in those Canadian provinces and on the North American grid as a whole. In fact, this new authority would enable FERC or DOE to take actions that could thus have the effect of establishing differing requirements on both sides of the border. All of the concerns noted above are heightened by the fact that the language does not clarify the working relationship between FERC and DOE in this context, thus creating the possibility that differing requirements could emerge from the two entities. This new proposal from the Senate staff would not only add confusion to the NERC standard setting process, but would likely lead to both reliability and cross-border trade problems.

A process that allows for the unilateral development of cybersecurity standards by FERC would undermine the confidence the Canadian provincial authorities have placed on the NERC standard-setting process, likely forcing Canadian governmental authorities to develop alternative and separate processes to develop cybersecurity standards and thereby leading to even greater differences in standards across the international grid. In fact, some provinces such as British Columbia and Ontario have enacted legislation that restricts the governmental authority to adopting standards that are developed only through the standards development process of a standard-making body, such NERC or the relevant regional entity. Further, this reduction in cooperation would also likely be felt in the elimination of, or reduction in, the willingness of the U.S. and Canadian governments to share information with each other and industry that today routinely shares critical information without regard to nationality -- not a good result at a time when the sharing of information is becoming more and more important.

CEA agrees that, given the nature of cyber security threats and the need to respond quickly, it makes sense to treat cyber security standards differently from operating and planning standards and to allow cybersecurity standards to be developed in a less public manner and in a way that allows for quick action to respond to ever-changing threats. In other words, NERC could establish an alternative standard setting process that would allow it to be more nimble in addressing cybersecurity issues. Such a process was suggested in a letter forwarded by NERC to NERC's Board of Trustees and Stakeholders on July 7, 2008. In that letter, NERC suggests the establishment of a task force to review "and where appropriate recommend, a standard setting

process for Cyber Security that will include an emergency/crisis standards setting process." We would support NERC's efforts to establish a separate process for addressing cybersecurity issues. Importantly, this process would follow the NERC standard-setting model, thereby allowing for the development of cybersecurity standards that are respectful of Canadian jurisdictional sovereignty and allowing for the development of standards that can be approved by Canadian governmental authorities. In addition, CEA is encouraged by NERC's proposals to establish a Critical Infrastructure Protection Program, to increase its cybersecurity expertise and to better coordinate with governmental authorities. We believe that such steps would allow NERC to better respond to cybersecurity issues.

I thank you for this opportunity to provide comments and would be happy to answer any questions you may have and provide you with any additional information you may need.

Yours sincerely,

Pierre Guimond
President and Chief Executive Officer

Summary of Canadian / Provincial Adoption of Reliability Standards Framework:

Alberta:

The Alberta Utilities Commission (AUC) is an independent, quasi-judicial agency of the Government of Alberta that is responsible to ensure that the delivery of Alberta's utility services take place in a manner that is fair, responsible, and in the public interest. The AUC regulates investor-owned natural gas, electric, and water utilities and certain municipally owned electric utilities to ensure that customers receive safe and reliable service at just and reasonable rates.

The Independent System Operator (ISO) operating as the Alberta Electric System Operator (AESO) is responsible for providing for the safe, reliable and economic operation of the interconnected electric system and to promote a fair, efficient and openly competitive market for electricity. The AESO is also responsible for long-term planning and operation of the transmission system so that it meets the requirements contained within Alberta reliability standards and ensuring that transmission facilities adhere to those reliability standards. The AESO may make rules with regard to the Alberta interconnected electric system, and must file such rules with the Alberta Utilities Commission (AUC) for approval. All market participants are required to comply with ISO rules.

The Market Surveillance Administrator (MSA) has the mandate to carry out surveillance with regard to the supply, generation, transmission, distribution, trade, exchange, purchase or sale of electricity, electric energy, and electricity services or ancillary serves, and investigate matters related to contravention of the Electric Utilities Act and its regulations or with AESO rules.

The Transmission Facility Owners (TFO's) have a direct reliability obligation regarding the operation, maintenance, integrity and capability of their assets and day-to-day operation of their portion of the transmission system. Alberta legislation places a duty upon owners to maintain their systems at a level suitable to ensure safe and reliable delivery of electricity and to comply with ISO rules.

Alberta Legislative and Policy Framework

The Alberta Transmission Regulation (Reg 255/2007) outlines the framework for mandatory reliability standards in Alberta, the requirement for compliance monitoring and enforcement of Alberta-approved reliability standards and the process for approval of these standards.

The Minister of Energy signed a Ministerial Order on December 28th, 2007 granting recognition to the North American Electric Reliability Corporation (NERC) as the Electric Reliability Organization. To the extent the reliability standards developed by NERC are adopted by the AESO and approved by the AUC, as well as any other reliability standards adopted by the AESO and approved by the AUC, those standards become the reliability standards that apply in Alberta.

Implementation of Mandatory Reliability Standards in Alberta

The AESO is leading a project to implement mandatory standards in Alberta. This includes the review of NERC/WECC standards for applicability in Alberta, creation of a standards development and approval process and a compliance program for the province of Alberta. The project includes a comprehensive stakeholder process to gather input on standards and associated processes.

As mandated by legislation, the AESO has established the AESO Reliability Committee to serve as a forum for owners, operators and users of the transmission system in Alberta to provide advice to the AESO respecting standards, criteria, procedures, rules and processes regarding maintenance, security and reliability matters. The Committee has established working groups who are reviewing NERC reliability standards for applicability in Alberta and to determine the appropriate entities to comply with those standards. Applicable standards will be approved through the AESO Rules Process and then submitted to the AUC for approval. The first set of standards is expected to be submitted for approval by the end of 2008. In addition, the AESO is working with the AUC and MSA with regard to establishing a compliance monitoring and enforcement program for the province.

Alberta entities, including the AESO, are not registered in the NERC Compliance Registry however the AESO is a member of NERC. The AESO has negotiated a Membership and Coordinating Operating Agreement (Agreement) with the WECC. This Agreement outlines processes and practices for the business relationship, including AESO's continued participation as a member of the WECC and the role of the WECC in monitoring the AESO with regard to Alberta-approved reliability standards. The WECC Board of Directors approved the Agreement in April of 2008, and the AESO has filed the Agreement with the AUC seeking the AUC's consent as required by legislation.

British Columbia

The 2007 provincial Energy Plan committed British Columbia (BC) to "ensure that the province remains consistent with North American transmission reliability standards." In March 2008, the government introduced Bill 15, the Utilities Commission Amendment Act (the Act), which became law on May 1. The Act identifies the British Columbia Utilities Commission (the Commission) as the appropriate entity to determine, set, and enforce mandatory reliability standards in the province, and recognizes the North American Electric Reliability Corporation and the Western Electricity Coordinating Council (WECC) as standard making bodies.

Although utilities in BC have subscribed to industry-based reliability standards on a voluntary basis for years, prior to the passing of Bill 15 there was no legal framework in the province to make these standards mandatory for all users, owners, and operators of the bulk transmission system in B.C.

Bill 15 lays out how a reliability standard becomes mandatory and enforceable in BC. The British Columbia Transmission Corporation (BCTC) will review each proposed standard and provide the Commission with a report assessing the standard's impact on BC transmission reliability, its suitability for BC, and the potential implementation cost. The Commission will post BCTC reports and consider any comments from other parties. If the standard is required to maintain or achieve consistency in BC with other jurisdictions that have adopted it, the Commission will adopt the standard unless the Commission determines in a hearing that it is not in the public interest. The Commission can accept or reject, but not modify or vary the standards. Adopted standards will apply to owners, operators and direct users of the bulk transmission system. It is expected that the Commission will contract with the WECC to monitor industry compliance with standards.

Manitoba

Manitoba Hydro is currently required to comply with NERC standards through its membership in the Midwest Reliability Organization ("MRO") and its membership in NERC, subject to exceptions based on provincial law. Pursuant to the requirements of *The Manitoba Hydro Act*, in 2004 Manitoba Hydro's membership in the MRO, and its obligation to adopt reliability standards, was approved by the Province of Manitoba through an Order in Council subject to

the exception that MRO and/or NERC standards are not binding on Manitoba Hydro to the extent suspended, disallowed or remanded by the Lieutenant Governor in Council.

Effective June 1, 2008, an agreement is in place between Manitoba Hydro, NERC and MRO which provides that the Public Utilities Board of Manitoba will be responsible for determining violations of reliability standards and imposing sanctions, upon recommendation by MRO and/or NERC. The agreement also departs from NERC's standard Compliance Monitoring and Enforcement Program by eliminating a formal hearing before the MRO and eliminating an appeal to NERC. Appeals from PUB decisions are heard by the Manitoba Court of Appeal.

National Energy Board

The NEB has statutory responsibility for authorizing the construction and operation of international power lines ("IPL") and designated inter-provincial power lines and electric exports across the international border, as provided in the National Energy Board Act and the National Energy Board Electricity Regulations. The NEB has certain authority under its current legislative framework to take enforcement measures in the case of non-compliance to the conditions of a permit or a certificate that was issued for an IPL, but the NEB does not have authority to levy any financial penalty. The NEB has no formal authority to approve NERC reliability standards with regard to the applicable IPLs, nor does it have the authority to remand such standards back to NERC.

The NEB and NERC have entered into an MOU. That MOU recognizes NERC as the ERO and commits the signatories to work together to promote a reliable bulk electric system and to provide information relating to the development and approval of and compliance with reliability standards.

The NEB is currently considering whether to enhance its authority with respect to mandatory reliability standards for IPLs.

New Brunswick

New Brunswick's structure is much like Ontario due to the similarity of the authorizing legislation and NBSO market rules.

The Electricity Act (New Brunswick) established the New Brunswick System Operator ("NBSO") on October 1, 2004. NBSO is responsible to direct the operation of the transmission grid, to maintain the adequacy and reliability of the integrated electricity system, to undertake and coordinate power system planning, and to facilitate the operation of a competitive electricity market. The Act also empowered the Public Utilities Board, which has since been replaced by the Energy and Utilities Board ("Board"), as the licensing authority, financial regulator of the Transmission Tariff, and monitoring authority of the electricity sector.

NERC reliability standards are currently referenced generically in the wholesale market rules that are developed and administered by the NBSO by means of a market rule obligation imposed on various market participants to comply with all applicable reliability standards. Compliance with the market rules (and thus with NERC reliability standards) is a condition of license of each market participant and of NBSO. NERC reliability standards therefore currently have effect in New Brunswick under the market rules, subject to the provisions of the market rules and of applicable legislation.

In terms of assuring compliance with NERC standards, NBSO has the authority to impose financial penalties for non-compliance with the market rules, in accordance with the provisions of the market rules. The Board also has the authority to impose administrative penalties for violation of license conditions in accordance with and subject to the limitations in the Electricity

Act (New Brunswick). Once the MOU between the NB government and NERC is signed, NBSO will be the sole New Brunswick entity accountable to NERC for compliance with NERC reliability standards by it or by market participants and will be subject to NERC's standards compliance monitoring and enforcement processes. [This MOU is expected to be signed in near term.]

While NERC reliability standards are mandatory and enforceable in New Brunswick, such standards are not yet subject to formal approval by NBSO for application in New Brunswick. NBSO is in the process of establishing a mechanism for reliability standards approval, enforcement and possible remand through its market rules. The role of the Board in this process is to act as an appeal and dispute resolution authority over conflicts and complaints. A MOU to recognize NERC as the ERO by the Province of New Brunswick and to document New Brunswick's reliability framework is being prepared but has yet to be executed. Further, NBSO, NERC, and NPCC have drafted an additional MOU to specifically outline the responsibilities of the various parties. NBSO will remain accountable for New Brunswick's compliance with NERC and NPCC reliability standards and criteria.

Nova Scotia

The Nova Scotia Utility and Review Board ("UARB") exercises general supervision over all electric utilities operating as public utilities within the Province, pursuant to the Nova Scotia Public Utilities Act.
In terms of reliability, electric utilities are required to provide service that is safe and adequate and in compliance with UARB approved rates and regulations.

The UARB and NERC have entered into a MOU. Pursuant to the MOU, NERC commits to filing proposed reliability standards with the UARB and will immediately notify the UARB if any other jurisdiction remands a proposed reliability standard. The MOU provides that the UARB may adopt a proposed reliability standard or may remand a proposed standard. The MOU further provides that, once a standard is approved by the UARB, compliance will be mandatory in Nova Scotia.

In addition, NSPI is a member of NPCC. Pursuant to the Bylaws of NPCC Inc., NPSI is bound by NERC's reliability standards.

Ontario

NERC Reliability standards are mandatory and enforceable in Ontario.

The Electricity Act, 1998 (Ontario) established the Independent Electricity System Operator ("IESO"). The IESO is responsible for managing Ontario's bulk electric system and operating the wholesale electricity market.
NERC reliability standards are referenced generically in the wholesale market rules that are developed and administered by the IESO by means of a market rule obligation imposed on various market participants to comply with all applicable reliability standards. Compliance with the market rules (and thus with NERC reliability standards) is a condition of license from the Ontario Energy Board ("Board") for each market participant and the IESO. NERC reliability standards therefore currently have effect in Ontario under the market rules, subject to the provisions of the market rules and of applicable legislation.

On May 14th, 2008, Schedule G of the Budget Measures and Interim Appropriation Act, 2008 ("Bill 44"), which amends the Electricity Act, 1998 became law in Ontario. Bill 44 provides a process whereby the Board can initiate a review, remand, and revoke the application of NERC

reliability standards in Ontario. Only standards approved by the NERC Board of Trustees on or after May 14th, 2008 are subject to provisions of the new law.

The Board may initiate a review of the standard within 120 days as permitted by regulation. If the Board finds upon completion of its review, that the standard is inconsistent with the purposes of the Act or unjustly discriminates against or in favour of a market participant or class of market participants, the Board shall make an order cancelling the operation of the NERC standard in Ontario and sending it back to the NERC for further consideration. The Board may also make the same order if it is necessary to do so in order to coordinate with other jurisdictions in North America that implement NERC reliability standards.

Under the new legislation, the IESO has the right to appeal to the Board an order, finding, or remedial action made or taken by NERC. The Board may make an order revoking or amending such NERC actions or may make any other order, finding, or decision or take any other remedial action that NERC could have made or taken.

In terms of assuring compliance with NERC standards, the IESO has the authority to impose financial penalties for non-compliance with the market rules, in accordance with the provisions of the market rules. The Board also has the authority to impose administrative penalties for violation of license conditions in accordance with and subject to the limitations in and under the Ontario Energy Board Act, 1998 (Ontario). The IESO is the sole Ontario entity accountable to NERC for compliance with NERC reliability standards by it or by market participants and is subject to NERC's standards compliance monitoring and enforcement processes up to but not including financial penalties.

The provincial government recognized NERC as the ERO on November 28, 2006. Further, the IESO, NPCC and NERC entered into a MOU, documenting the obligations of the parties respecting the Ontario reliability framework. This MOU complements an earlier MOU between the Board and NERC. The current MOU between the IESO and NERC will require updating to reflect the recent changes to the Electricity Act, 1998. Specifically, the legislation will affect the application, notification, and compliance aspects pertaining to NERC reliability standards in Ontario. As Ontario's energy regulator, the Board will oversee NERC's activities, and the IESO will remain accountable for Ontario's compliance with NERC and NPCC reliability standards and criteria.

Québec

On December 13, 2006, the Québec Government adopted legislation ("Bill 52") which gives the Régie de l'énergie du Québec jurisdiction regarding mandatory reliability standards in the Province of Québec. The Régie is responsible for ensuring that electric power transmission in Québec is carried out according to the reliability standards that it adopts.
Bill 52 allows the Régie, with Government approval, to enter into an agreement with a body that proves it has the expertise to establish or monitor the application of electric power transmission reliability standards in order to:

1. develop electric power transmission reliability standards for Québec;
2. carry out inspections or investigations as part of plans to monitor compliance with the reliability standards; and/or
3. provide the Régie with opinions or recommendations.

This agreement must set out the method of establishing remuneration and the terms of payment for achieving its objects. Discussions on such an agreement have been under way with NERC and NPCC since February 2007.

In August 2007, the Régie designated the CME (Direction – Contrôle des mouvements d'énergie (System Control unit) of Hydro-Québec TransÉnergie) as the reliability coordinator for Québec.

As the reliability coordinator, the CME must:

1. Carry out any duties devolved to it under a reliability standard adopted by the Régie and issue operating directives;
2. File with the Régie the reliability standards proposed by a recognized reliability body with which the Régie has entered into an agreement and any variant or other standard that the Reliability Coordinator considers necessary;
3. File an evaluation of the relevance and impact of the standards filed;
4. Submit to the Régie, for approval, a Register identifying the owners, operators and distributors subject to the reliability standards adopted by the Régie (forthcoming).

The Régie has jurisdiction to approve reliability standards that the reliability coordinator considers essential to ensure Québec control area reliability. The reliability standards that the reliability coordinator files with the Régie are NERC standards and only apply to the entities in the Register of entities subject to NERC standards (forthcoming).

With respect to the approval of standards, the Régie may request the reliability coordinator to modify a standard filed or submit a new one, on the conditions it sets, adopt reliability standards and set the date of their coming into force. The reliability standards may provide for a schedule of sanctions, including financial penalties that apply if standards are not complied with. The reliability coordinator must submit to the Régie guidelines describing criteria to be taken into account in determining sanctions for noncompliance with reliability standards.

If a body mandated by the Régie under the agreement referred to above considers that an entity subject to a reliability standard does not comply with the standard, the body must give the entity the opportunity to submit observations, and report to the Régie on its findings and may recommend the application of a sanction. After giving the entity the opportunity to be heard, the Régie is responsible for determining if the entity has failed to comply with a reliability standard, and impose, if appropriate, a sanction that may not exceed $500,000CAN a day. A sanction may include a letter of reprimand to be made public in an appropriate manner or conditions for carrying on certain activities, set by the Régie. The financial penalties collected by the Régie for the purpose of ensuring the reliability of electric power transmission are be deposited in a separate account at the Régie.

Saskatchewan

Prior to 2004 SaskPower generally followed accepted industry practice and would apply trade offs (due to the vast distances of Saskatchewan) using good engineering judgment. In 2004, following the 2003 eastern seaboard blackout, SaskPower committed itself formally to adopt NERC standards, having identified a $45.33 Million Capital / $7.624 O&M program to achieve the major elements of the transition. Almost all of these objectives have been completed, with SaskPower having joined Midwest Reliability Organization, been approved as a NERC certified control area, and achieved NERC approval as the Saskatchewan Reliability coordinator.

While reliability legislation remains a possibility, given the lack of a quasi-judicial regulator and the small size of the Saskatchewan jurisdiction, the current approach will be to utilize the current Power Corporation Act's unambiguous Authorities to set and enforce standards for the electric system. To accomplish this, a distinct reliability oversight authority and compliance program is being established within SaskPower to manage the Province's reliability framework.

A memorandum of Agreement (and respective processes) – developed by Midwest Reliability Organization, SaskPower, and NERC – was approved by both the MRO Board of Directors and SaskPower and is expected to be executed shortly. The MOU recognizes NERC as Saskatchewan's ERO and to the degree practicable will utilize NERC and MRO almost in an audit role. The Crown retains all formal authorities. No penalties are imagined at this point, however, as the program is extend to entities within Saskatchewan the potential use of methods of enforcement will be considered.

The Saskatchewan oversight authority is being established, with very specific authorities within a managed system framework, to enforce compliance and drive mitigation plans within the province.

The full-managed system established will include the three functions:
1. Oversight (including the remand, set aside, and finding authorities);
2. Standards development (including the coordination of assessment, communication, internal education and, development of mitigation plans, and;
3. Compliance and enforcement (the management of an internal and external bulk power system auditing, empowered to make the Saskatchewan formal findings of compliance and non compliance (either of its own volition or through external recommendations, i.e. NERC/MRO) and to order and enforce mitigation plans to be implemented.)

The creation of these functions represents (and is equivalent to) a full regulatory framework.

Aspect	SK	BC	AB	MB	ON	Que	NB	NS	NEB
Legislative Backstop	N	Y	Y	N-P	Y	Y	Y	N	N
Regulatory Authority	SPC	BCUC	AUC	PUB –T	OEB	RE	EUB	UARB	NEB
MOU or agreements with (NERC and DE)	Y	Y	Y	Y-T	Y		Y	Y	Y
Automatic Adoption	Y	Y	N	Y	Y	N	Y	N	Y
Remand / Challenge	Y	Y	Y	Y	N-T	Y	Y	Y	N
Monitoring & Compliance	SPC/ MRO	BCTC/ WECC	AESO	MH/ MRO	IESO	RE	NBSO	MCA	NEB
Enforcement	SPC	BCUC	AESO	MH	IESO	RE	NBSO	UARB	NEB
Penalties	N	N	Y	N	Y	Y	N	N	N
NERC Budget Approval	SPC	BCUC	AESO	MH	IESO	RE	NBSO	UARB	N/A
Y=Yes, N=No, P=Planned, A=automatic, T=Transition Basis, SPC=SaskPower, BCUC=British Columbia Utilities Commission, AUC=Alberta Utilities Commission,									

PUB=Public Utilities Board, OEB=Ontario Energy Board, RE=Regie de l'Energie, EUB= Energy Utilities Board, UARB=Utility and Review Board, NEB= National Energy Board

Sources: NERC March 19, 2007 Compliance Filing to FERC, Alberta Transmission Regulation 255/2007, BC Ministry of Energy, Mines and Petroleum Resources: "The BC Energy Plan," BCTC Nov 7, 2007 MRS workshop, Manitoba Legislative Assembly Bill Status, IESO ERO Website, Quebec Assembly, NBSO Market Rules

Agenda Item 8
MRC Meeting
July 29, 2008

Proposed Changes to NERC Rules of Procedure Section 500 and Appendix 5

MRC Action Required

Discussion

Background

During the September 12, 2007 joint meting of the Standards Committee (SC) and the Compliance and Certification Committee (CCC), the SC and CCC agreed to translate the work done on the following draft standards into a new certification process under the CCC:

1. Transmission Operator Certification Standards (ORG-001 through ORG-008)
2. Balancing Authority Certification Standards (ORG-009 through ORG-018)
3. Reliability Coordinator Certification Standards (ORG-020 through ORG-027)

The CCC's Organization Registration and Certification Subcommittee (ORCS) has translated the essential elements of the above draft certification standards into new entity certification processes to be included in a revision to the NERC Rules of Procedure. Draft revisions to the NERC Rules of Procedure Section 500, Appendix 5, and related TOP, BA, RC questionnaires, were posted for comment on June 23, 2008. Comments are due August 8, 2008. It is anticipated that the final revisions considering the comments received will be submitted to the NERC Board of Trustees for approval at a future date.

Lucius Burris, chairman of the ORCS, will present a summary of the subcommittee's work on this topic and revisions to the NERC Rules of Procedure currently posted for comment.

Events Analysis & Information Exchange

MRC Action Required
None

Information
Bob Cummings, director of NERC's Events Analysis & Information Exchange Program, will present the findings and recommendations from the event analysis of the August 4, 2007 Eastern Interconnection Frequency Disturbance. He will also present an overview of the industry alerts that will be issued by NERC as a result of that analysis to help improve system reliability. Potential alerts stemming from the MRO Disturbance of September 18, 2007 will also be highlighted.

Emerging and On-Going Trends
Event Analysis is in the process of completing the update of the observations from events from August 2005 to present. An update of the trends analysis of event causal and contributory elements will be presented to the board at its October 2008 meeting.

Current Event Analyses
The following events are currently being analyzed by NERC and the Regions.

Event	Status
Eastern Interconnection Disturbance — August 4, 2007	Finalizing technical report Finding and Recommendations to be presented to MRC/BOT Alerts to be presented to MRC/BOT
MRO Disturbance — Sept. 18, 2007	Second Interim Report with recommendations to be issued in late third quarter of 2008 Final report to be issued in late 2008
FRCC Southern Florida Disturbance — February 26, 2008	Interim report issued in late May — FRCC and NERC alerts issued to industry Preparing final technical report Final report expected
SPS Southwest Public Service Disturbance — June 17, 2008	SPP beginning detailed analysis, NERC participating in event analysis team

Events Tracking System
The current NERC Events Tracking System as of July 11, 2008 is attached (**Attachment 1**). 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.

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 five 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. System separation with no loss of load or generation.
c. SPS or RAS misoperation.
d. 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).
e. The loss of an entire generation station or 5 or more generators.
f. The loss of an entire switching station (all lines, 100 kV or above).
g. Complete loss of dc converter station.

Category 3

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

a. The 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 (less than 1,000 MW).
c. System separation or islanding with loss of load or generation (less than 1,000 MW).
d. UFLS or UVLS operation.

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.
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.

Tentative Alerts

The list of alerts NERC Events Analysis is considering for eventual release to the industry to help improve reliability is attached (**Attachment 2**). They have resulted from the work of the regional and NERC Events Analysis teams.

Considering the number of alerts under development, they will NOT all be issued over the next few weeks. Rather, NERC Events Analysis staff will continue to prioritize and issue the alerts that have maximum potential value to reliability enhancement.

Events Tracking System – As of July 11, 2008

Events Under Analysis or Review

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2008-06-23	FRCC	Progress	In Pinellas County, 113 MW and 35,000 customers were intentionally interrupted to manage an overload caused when equipment failed at a substation. A 230-kV breaker had failed earlier and a second problem on 69-kV equipment resulted in overloads.	3	Cummings	In Triage	
2008-06-17	SPP	SPS	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
2008-06-13	RFC	PEPCO	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	RFC abbreviated report to be reviewed by NERC	4th quarter 2008

Events Under Analysis or Review

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2008-06-04	WECC	BPA	On Wednesday, June 4, at approximately 1039 PDT, Pole #3 on the PDCI blocked subsequently causing the PDCI controller to run back the power order on the remaining Pole #4 from 2,538 MW N/S to 1,500 MW (1,550 max on Pole #4). This delta power change of approximately 1,000 MW did not meet the RAS generator tripping level; no Northwest generation was shed. At 1050 PDT, LDWP ramped Pole #4 to zero power order (due to limited time for operating in ground return). Initial report indicates a relay misoperation at Sylmar Converter Station. The PDCI released for normal scheduling for HE 16 PDT (2,990 MW N/S and 2,084 MW S/N).	2	Cummings	Triage – WECC OPS requesting additional information	
2008-06-02	MRO	Manitoba Hydro	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	4th quarter 2008

Events Under Analysis or Review

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2008-03-15-2	WECC	BPA	3Ø fault on Slatt – John Day 500-kV line cause commutation failure on PDCI, and generation trips and runbacks initiated by RAS.	2	Cummings	BPA and other involved companies are to produce abbreviated report for presentation to the WECC OPS.	4th quarter 2008
2008-02-26-1	FRCC	FRCC RC/ FPL	Faulted FPL circuit switcher with delayed clearing resulted in loss of 4,500 MW of load, and about 3,000 MW of generation.	4	Cummings	FRCC initiated detailed event analysis team. NERC participating.	4th quarter 2008
2008-01-26-1	WECC	BPA & PNSC	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	Prelim abbreviated report presented to OPS May 8, 2008. OPS called for an abbreviated report from the parties (BPA lead, LADWP, SCE, & CMRC).	4th quarter 2008
2007-12-12-1	WECC	SRP	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.	4th quarter 2008

Events Under Analysis or Review

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2007-12-12	ERCOT	Texas Genco II, LLP	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	4th quarter 2008
2007-12-11	SPP	Westar	During icy conditions, a static wire fell into the 345-kV switchyard at Jeffrey Energy Center, causing the tripping of the 345-kV and 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.	4th quarter 2008
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	In Progress – Interim report due out at end of March, 2nd interim report to be issued 3rd quarter 2008, with recommendations.	4th quarter 2008
2007-09-15	NPCC	Hydro Québec Trans-Énergie	Potential transformer fire on a Chateauguay bus and loss of generation/transfer capability.	2	Cummings	Reviewing implications to operations	4th quarter 2008
2007-08-18	WECC	APS and Nevada Power	Crystal – Navajo 500-kV line trip during switching of the Moenkopi – Eldorado 500-kV line.	2	Cummings	Reviewing findings – outstanding relay loadability question	4th quarter 2008

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	EI Frequency Disturbance – Loss of 4,200 MW of generation following tripping of 765-kV line.	3	Cummings	Final technical report and recommendations to be issued in August 2008.	August 2008

In Final Review by NERC Event Analysis Group

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2008-07-01	WECC	AESO	Two system separations – At 0150 MDT the Pacific Northwest Security Coordinator reported that at 0030 PDT the AESO system separated from the Western Interconnection due to a lightning strike on the Cranbrook – Langdon 500-kV line approximately 120 miles from Cranbrook. The Natell – Pocaterra & Natell – Coleman 138-kV lines relayed properly due to the RAS scheme. AESO's frequency returned to pre-disturbance level in 6 minutes. There was no loss of any firm load and there was no affect to the Western Interconnection. The AESO system reconnected to the Western Interconnection at 0100 PDT. PNSC Reliability Coordinator reported that at 1402 PDT the AESO system separated a second time from the Western Interconnection. The Path 1 is open between Alberta and British Columbia. AESO was reconnected to the Western Interconnection at 1423 through the 500-kV Path 1 line. Lightning has been determined to be the cause again.	2	Cummings	In final review	September 2008

In Final Review by NERC Event Analysis Group

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2008-06-11	WECC	BPA	Wildfires in Northern California resulted in two 500-kV lines tripping at 12:33 and 12:39 pm. About 2,600 MW of generation was lost as a result of RAS action. Frequency dropped to 59.7 Hz and recovered in 8 minutes. Lines were restored at 16:33 and 16:38.	3	Cummings	In final review	September 2008
2008-05-29	WECC	BPA / LADWP	At 11:36 PDT the Celilo – Sylmar 1000-kV line relayed with a loss of 2,800 MW of generation due to correct RAS operation. The DC line restarted immediately and went back in service. The frequency decline started at 11:36 and recovered to normal at 11:49. The relay action was due to a fault on pole #3, 211 miles north of Sylmar.	2	Cummings	In final review	September 2008
2008-05-20	WECC	BPA / LADWP	At 1309 PDT Pacific DC Interconnection (PDCI) blocked and restarted 2 times, initiated RAS tripping 2,800 MW of generation in Pacific Northwest. The frequency went to 59.707 Hz and recovered at 1322 PDT. The Path 66 (COI) was overloaded for about 5-6 minutes.	2	Cummings	In final review	September 2008
2008-03-15-1	SERC	Southern Company	Severe weather caused multiple transmission line outages in Georgia. Savannah area load lost due to resulting system collapse.	3	Cummings	Southern Company prepared abbreviated report for SERC and NERC review. Advisory being issued on blackstart testing.	SERC OC October 2008 meeting

In Final Review by NERC Event Analysis Group

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2007-12-01	WECC	PacifiCorp East	Multiple 345-kV lines and a 230-kV line tripped during a winter storm, causing overloads on Path 32.	2	Cummings	In final review	3rd quarter 2008
2007-11-27&30	WECC	PacifiCorp East	Multiple line trips in central Utah due to insulator contamination.	2	Cummings	In final review	3rd quarter 2008
2007-10-26	WECC	SCE and Riverside	Interruption of the City of Riverside's (RVSD) entire 66-kV system, due to loss of all seven 66-kV source lines and five substations on the Southern California Edison Company's (SCE) subtransmission system, as a result of multiple 66-kV and 115-kV subtransmission lines relaying at approximately 0644 hours PDT on October 26, 2007.	3	Cummings	In final review	3rd quarter 2008
2007-10-18	WECC	PacifiCorp East	Trip of about 1,554 MW generation at Jim Bridger	2	Cummings	In Progress – reviewing for generation tripping mode	4th quarter 2008
2007-10-15	WECC	PacifiCorp East	Three 138-kV lines tripped following the tripping of the Ben Lomond – Borah 345-kV line for a permanent fault. Interruptible loads and generation curtailed to relieve loadings.	2	Cummings	In final review	3rd quarter 2008
2007-07-15	SERC	TVA	Three phase lightning arrestor failure on 161/23-kV transformer caused voltage drop – 950 MW load lost, only 285 MW off after 15 min.	3	Cummings	In final review	3rd quarter 2008

In Final Review by NERC Event Analysis Group

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2007-07-06	WECC	Idaho Power Company	Multiple 345-kV lines tripped at Midpoint Substation due to wildfires. Path 17 capability impacted and EEA-2 declared by IPCO.	3, A2	Cummings	Final review of IPCO presentation to WECC OPS	3rd quarter 2008
2007-06-29-2	WECC	BCTC	Ashton Creek — Multiple line trips – Lightning	3	Cummings	In final review	3rd quarter 2008
2007-06-07	WECC	BPA	Human error caused 230-kV lines tripping & local RAS failed.	2	Cummings	In final review	3rd quarter 2008
2007-06-05	WECC	Idaho Power	240 MW Load Shed	3	Cummings	In final review	3rd quarter 2008
2007-05-23	WECC	BPA	Transformer fault & Reclose	2	Cummings	In final review	3rd quarter 2008
2007-04-10&11	WECC	North Western Energy Montana	Colstrip — multi-unit trips (two times)	3	Cummings	In final review	3rd quarter 2008
2006-12-22	ERCOT	TXU / Tenaska	Generation trips in eastern Texas	2-3	Cummings	In final review	3rd quarter 2008
2006-10-03	ERCOT	ERCOT	Gibbons Creek Outage	3	Cummings	In final review	3rd quarter 2008
2006-04-17	ERCOT	ERCOT	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	4th quarter 2008

Analyses On Hold

Event ID	Region	ISO/RTO/ Company	Description	Event Class	NERC Lead	Status	Target Completion
2008-02-26-2	ERCOT	ERCOT	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
2008-01-31	NPCC	ISO New England and New Brunswick	New Brunswick and New England separated during 345-kV series capacitor switching at Orrington. Over 600 MW of generation tripped.	2	Cummings	NPCC Task Force on System Protection reviewing, NERC to review the report	Unknown
2007-10-14	WECC	North Western Energy Montana	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	Tree contact and loss of load	3	Cummings	On hold pending Event Analysis resource availability	Unknown
2007-06-12	NPCC	IESO	5 percent voltage reduction	A2	Cummings	On hold pending Event Analysis resource availability	Unknown
2007-02-24	ERCOT	ERCOT	Emergency Electric Curtailment Plan implementation	2	Cummings	On hold pending Event Analysis resource availability	Unknown
2007-02-06	WECC	WECC	Inter-area oscillations & resource adequacy	1 & A2	Cummings	On hold pending Event Analysis resource availability	Unknown
2006-07-24	WECC	WECC	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

Item 9
Attachment 2

Tentative NERC Alerts — As of 7-11-08			
Priority	**Proposed Alert Type**	**Tentative Release Date**	**Issue**
Ready to release	Advisory	July 31, 2008	**Blackstart Testing Advisory** 2008-03-15 SERC Savannah Disturbance
1	Recommendation	August 2008	**Single Point-of-Failure** 2004-06-14 WECC Westwing Disturbance 2007-08-25 SERC Broad River Disturbance 2008-02-14 WECC PACE Disturbance
1	Recommendation	August 2008	**Verification of Generator Dynamics Data and Models** 2007-08-04 EI Frequency Disturbance 2007-09-18 MRO Disturbance 2008-02-26 FRCC South Florida Disturbance
1	Recommendation	August 2008	**Testing and Error Checking of Dynamics Models for Each Interconnection** 2007-08-04 EI Frequency Disturbance 2007-09-18 MRO Disturbance
1	Advisory	3rd Quarter 2008	**Diligence In Engineering Review and Acceptance Testing** 2005-09-12 WECC LADWP Disturbance – Undersized exciter power supply cables 2007-08-25 SERC Broad River Disturbance – single-point-of-failure could have been detected during interconnection design review 2007-09-18 MRO Disturbance – Generator over-frequency trip set points left at factory settings FACTS device power supply design problems
1	Advisory	3rd Quarter 2008	**Handling of Bad or Missing Data by EMS and Ancillary Control Programs** 2007-06-29-1 SRP Load Shedding – missing data triggered automatic load shedding program

Tentative NERC Alerts — As of 7-11-08

Priority	Proposed Alert Type	Tentative Release Date	Issue
1	Advisory	3rd Quarter 2008	**Wind Power Plant Power Flow Modeling Guide – example of excellence** WECC Modeling and Validation Wok Group Wind Generator Modeling Group technical recommendation
2	Recommendation	3rd Quarter 2008	**Premature Tripping of Wind Generation and Distributed Generation** 2006-11-04 European Disturbance – DG tripping uncoordinated with UFLS systems
2	Recommendation	3rd Quarter 2008	**Auto-Restarting of Wind Generation and Distributed Generation During Over-Frequency Conditions** 2006-11-04 European Disturbance – DG & wind auto-restarted during over-frequency condition
2	Advisory	3rd Quarter 2008	**Third Party Communications Concerns for Protective Relaying** 2007-06-27 NPCC NYC Disturbance 2007-09-18 MRO Disturbance
2	Advisory	3rd Quarter 2008	**Incorporate Visual/Thermal Inspection of Full Tension Compression Conductor Splices for Installation Errors** 2007-09-18 MRO Disturbance – Prairie Island – Byron 345-kV line failed compression splice
2	Advisory	3rd Quarter 2008	**Emphasize 3-Party Communications and Good Communications Protocols** 2006-05-20 SERC Catawba Disturbance 2007-02-15 SERC Oconee Disturbance 2007-09-18 MRO Disturbance – BLAST call protocols
2	Advisory	3rd Quarter 2008	**Power Load Unbalance Generator Turbine Control Function – Behavior and Modeling** 2007-08-04 EI Frequency Disturbance 2007-09-05 ERCOT Big Brown 2008-02-14 WECC PACE Disturbance

Tentative NERC Alerts — As of 7-11-08

Priority	Proposed Alert Type	Tentative Release Date	Issue
2	Advisory	3rd Quarter 2008	**Keeping Current with Manufacturer's Technical Bulletins** 2006-05-25 Amtrak Disturbance 2007-02-15 SERC Oconee Disturbance – outdated bulletin used 2007-08-04 EI Frequency Disturbance – PLU updates not performed
2	Advisory	4th Quarter 2008	**Equipment Maintenance – High Duty-Cycle Breakers** 2007-02-15 SERC Oconee Disturbance
2	Advisory	4th Quarter 2008	**Uninterruptible Power Supplies Generator Control System** 2008-02-14 WECC PACE Disturbance – generator controls suffered low voltage during disturbance, possibly tripping 2 units
2	Advisory	4th Quarter 2008	**EMS / State Estimator System "Snapshots" for Disturbance Analysis** 2007-08-04 EI Frequency Disturbance 2007-09-18 MRO Disturbance 2008-02-14 WECC PACE Disturbance
2	Recommendation	4th Quarter 2008	**Analysis of Inter-Area Oscillation of the Eastern Interconnection** 2007-08-04 EI Frequency Disturbance 2007-09-18 MRO Disturbance 2008-02-26 FRCC South Florida Disturbance
2	Recommendation	4th Quarter 2008	**Analysis of Governor Response to System Disturbances** 2007-08-04 EI Frequency Disturbance 2007-09-18 MRO Disturbance 2008-02-26 FRCC South Florida Disturbance

Tentative NERC Alerts — As of 7-11-08

Priority	Proposed Alert Type	Tentative Release Date	Issue
3	Advisory	4th Quarter 2008	**Transferring of Distributed Generation-Served-Load to the System When Distributed Generation Units Trip Due to System Conditions** Observation of system behavior
3	Advisory	4th Quarter 2008	**Loss of SCADA/EMS Station Observability During Disturbances** 2006-03-29 NPCC IESO-NYISO Generation Tripping 2006-05-20 SERC Catawba Disturbance 2007-08-25 SERC Broad River Disturbance
3	Advisory	4th Quarter 2008	**Digital Fault Recorder / Disturbance Monitoring Equipment / Phasor Measurement Unit Locations Placement for Observability** 2007-09-18 MRO Disturbance 2008-02-14 WECC PACE Disturbance – insufficient observability of high-speed recorders
3	Advisory	4th Quarter 2008	**Solid-State Relays Sensitivity to Phase-Imbalance During Switching** 2005-05-27 NPCC IESO Milton Disturbance 2005-09-12 WECC LADWP Disturbance
Complete		Advisory Issued 6-26-08	**Relay Maintenance Practices** 2008-02-26 FRCC Disturbance
Complete		Advisory Issued 6-26-08	**Turbine Combustor Lean Blowout** 2008-02-26 FRCC Disturbance

Tentative NERC Alerts — As of 7-11-08

Priority	Proposed Alert Type	Tentative Release Date	Issue
Complete		Advisory Issued 6-26-08	**Unexpected Loss of Generation due to Low Voltage on the System** 2006-12-22 ERCOT East Texas Generation Trips 2007-08-25 SERC Broad River Disturbance 2008-02-14 WECC PacifiCorp East 2008-02-26 FRCC Disturbance
Complete		Issued 5-1-08	**Combined Cycle Unit Interdependencies Between Gas and Steam Turbines** 2006-02-18 WECC Excel Disturbance 2007-09-18 MRO Disturbance
Complete		Recommenda-tion and Advisory Issued 3-10-08	**Validity/ Currency of Models Used for Studies** 2007-09-18 MRO Disturbance – NERC recommendation issued
Complete		Advisory Issued 1-15-08	**Capacitor Bank Failures Protection** 2007-01-30 NPCC Richview Cap Bank

Update on Regulatory Matters

MRC Action Required

None

FERC Orders Issued Since the Update for the May 5–6, 2008 Meetings

1. May 15, 2008 — Notice of Proposed Rulemaking — Ex Parte Contacts and Separation of Functions. The Commission proposed to revise its regulations to clarify its rules governing ex parte contacts and separation of functions as they apply to proceedings arising out of investigations initiated under Part 1b of the Commission's regulations. *Docket No. RM08-8-000*

2. May 15, 2008 — Interpretative Order Modifying No-Action Letter Process and Reviewing Other Mechanisms for Obtaining Guidance. The Commission expands the scope of the "no-action" letter process through which entities subject to the Commission's authority may seeks a determination on whether staff would recommend enforcement action against the requestor if particular transactions, practices or situations were pursued. *Docket No. PL08-2-000*

3. May 15, 2008 — Submission to the Commission upon Staff Intention to Seek an Order to Show Cause — Order No. 711. The Commission amends its regulations to expand and clarify the right of an entity to submit a written request to the Commission in the event staff intends to recommend that the Commission initiate a proceeding governed by 18 CFR Part 385, or make the entity a defendant in a civil action to be brought by the Commission. *Docket No. RM08-10-000*

4. May 15, 2008 — Revised Policy Statement on Enforcement. The Commission issues revised policy statement to the regulated community as to the Commission's enforcement policies concerning the governing statutes, regulations and orders. *Docket No. PL08-3-000*

5. May 16, 2008 — Order Denying Rehearing and Granting Clarification — Order No. 706-A, approving eight Critical Infrastructure Protection (CIP) Standards. *Docket No. RM06-22-001*

6. May 16, 2008 — Order Denying Appeal of Electric Reliability Organization Compliance Registry Determination by Harquahala. The Commission denies an appeal by New Harquahala Generating Company, LLC. *Docket No.* RC08-4-000

7. May 16, 2008 — Supplemental NOPR - Modification of Interchange and Transmission Loading Relief Reliability Standards; and ERO Interpretation of Specific Requirements of Four Reliability Standards. The Commission proposes to approve NERC's proposed modified interpretation of Reliability Standard BAL-005-0. *Docket No. RM08-7-000*

8. June 2, 2008 — Order on Rehearing and Clarification. The Commission grants ISO/RTO Council's request for clarification and denies the alternative request for

rehearing of Order No. 705 regarding observance of SOLs and IROLs. *Docket No. RR06-1-0014, et al.*

9. June 17, 2008 — Order on Rehearing. The Commission grants NERC's request for rehearing regarding deletion of requirement of the March 21, 2008 Order to follow FOIA and also requires that the Delegation Agreement entered into between NERC and Reliability*First* Corporation be revised in a compliance filing. *Docket No. RR06-1-014, et al.*

10. June 19, 2008 — Order on Violation Severity Levels Proposed by the Electric Reliability Organization. The Commission approves the VSL assignments filed by NERC for the 83 Commission-approved Reliability Standards. The Commission also directs NERC to file modifications to VSLs relevant to five Reliability Standards. *Docket No. RR08-4-000*

11. June 19, 2008 — Order Conditionally Accepting Compliance Filing. The Commission conditionally accepts NERC's compliance filings on April 1, 2008. The filing included a true-up of actual 2007 costs incurred by NERC and the Regional Entities, and responses to other compliance directives in the 2008 Budget Order. *Docket No. RR07-16-003*

12. June 23, 2008 — Order on Rehearing and Clarification. The Commission affirms its basic determinations in Order Nos. 890 and 890-A, granting rehearing and clarification regarding certain revisions to its regulations and the pro forma open-access transmission tariff, or OATT, adopted in Order Nos. 888 and 889 to ensure that transmission services are provided on a basis that is just, reasonable, and not unduly discriminatory. The reforms affirmed in this order are designed to: (1) strengthen the pro forma OATT to ensure that it achieves its original purpose of remedying undue discrimination; (2) provide greater specificity to reduce opportunities for undue discrimination and facilitate the Commission's enforcement; and (3) increase transparency in the rules applicable to planning and use of the transmission system. *Docket Nos. RM05-17-003 and RM05-25-003; Order 890-B*

13. June 27, 2008 — Order Granting Request for Clarification. The Commission grants Harquahala's request for clarification regarding one aspect of the Commission-directed negotiations. *Docket No. RC08-4-00*1

NERC Filings Since the Update for the May 5–6, 2008 Meetings

1. April 21, 2008 — Request for rehearing and/or clarification of FERC's March 21, 2008 Order regarding requirement to follow FOIA. *Docket Nos. RR06-1-012, et al.*

2. May 1, 2008 — NERC submits the Quarterly report due in response to January 18, 2007 Order regarding Analysis of Reliability Standards Voting Results January–March 2008. *Docket No. RR06-1-003*

3. May 5, 2008 — NERC submits as an informational filing the definition of "adequate level of reliability." *Docket No. RR06-1-000*

4. May 13, 2008 — Comments of the North American Electric Reliability Corporation on the Notice of Proposed Rulemaking for Mandatory Reliability Standards for Nuclear Plant Interface Coordination. *Docket No. RM08-3-000*.

5. May 14, 2008 — Status Report of the North American Electric Reliability Corporation in response to the December 20, 2007 Order and April 4, 2008 Order regarding revisions to the registration criteria for LSEs. *Docket Nos. RC07-4-000, RC07-6-000, and RC07-7-000*

6. May 16, 2008 — NERC submits a compliance filing to address (1) Rule 1604 to require Regional Entity to submit procedure for requesting data or information to NERC (P 17), (2) what NERC intends to do if it requires certain data or information more quickly than its proposed rules currently allowed (P 16), and (3) work with BPA and other federal agencies on the compliance registry to develop procedures that would allow the review of requested information without risking waiver of FOIA protection (P 18). *Docket Nos. RM06-16-000 and RR08-1-000*

7. May 19, 2008 — Compliance Filing of the North American Electric Reliability Corporation and Northeast Power Coordinating Council and the North American Electric Reliability Corporation and Florida Reliability Coordinating Council in response to paragraphs 174 and 252 of the Commission's March 21, 2008 Order. *Docket Nos. RR06-1-012, RR07-8-002, and RR07-3-002*

8. May 23, 2008 — NERC submits the 2008 Summer Reliability Assessment Report. *Docket No. RC08-6-000*

9. May 28, 2008 — Comments of the North American Electric Reliability Corporation on the Notice of Proposed Rulemaking for Standards for Business Practices and Communication Protocols for Public Utilities. *Docket No. RM05-5-00*5

10. June 4–9, 2008 — NERC submits the first round of the Notices of Penalty. *Docket Nos. NP08-1-000 through NP08-37-000*

11. June 12, 2008 — Comments of the North American Electric Reliability Corporation on the Notice of Proposed Rulemaking on Modification of Interchange and Transmission Loading Relief Reliability Standards; and Electric Reliability Organization Interpretation of Specific Requirements of Four Reliability Standards. *Docket No. RM08-7-000*

12. June 12, 2008 — Motion to Intervene and Comments of the North American Electric Reliability Corporation in response to U.S. Department of Energy/Portsmouth Paducah Project Office's appeal of compliance registry determination. *Docket No. RC08-5-000*

13. June 20, 2008 — NERC submits a revised registration determination regarding Southeastern Power Administration. *Docket No. RC08-1-000.*

14. June 27, 2008 — Compliance Filing of the North American Electric Reliability Corporation of Revised Violation Risk Factors in response to the Paragraph 757 of Order No. 706 - Mandatory Reliability Standards for Critical Infrastructure Protection Submission. *Docket No. RM06-22-000*

15. June 30, 2008 — Petition of the North American Electric Reliability Corporation for approval of three Reliability Standards (FAC-010-2, FAC-011-2, and FAC-014-2). *Docket No. RM07-3-000*

Anticipated NERC Filings

1. July 15, 2008 — Compliance Filing due in response to the Commission's May 16 Order Denying appeal of Harquahala Generating Company, LLC. NERC must submit list of TO/TOP requirements that apply to Harquahala. *Docket No. RC08-4-000.*

2. July 19, 2008 — NERC is directed to file the modified Violation Severity Levels as identified in the Appendix of the June 19, 2008 Order. *Docket No. RR08-4-000*

3. July 21, 2008 — Compliance filing due in response to the November 2, 2007 Order on Filing of Reliability Enhancement Programs. *Docket No. RR07-14-000*

4. July 21, 2008 — Compliance filing regarding modifications to pro forma delegation agreement, the eight individual delegation agreements, and CMEP (including hearing procedures) in response to FERC's March 21, 2008 Order. *Docket Nos. RR06-1-012, et al.*
5. July 21, 2008 — NERC must submit a filing regarding revisions to WECC bylaws. Due date established in FERC's March 21, 2008 Order. *Docket Nos. RR06-1-012, et al.*

6. July 30, 2008 — NERC must submit a supplemental compliance filing of revised Violation Risk Factors in response to paragraphs 751 and 757 of Order No. 706 – Mandatory Reliability Standards for Critical Infrastructure Protection Submission. *Docket No. RM06-22-000*

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

8. August 14, 2008 — NERC is directed to submit a compliance filing of its work with Bonneville and other federal agencies listed on NERC's compliance registry to develop procedures that would allow the review of the requested information without risking waiver of FOIA protection.

9. August 22, 2008 — NERC will file the 2009 business plans and budgets for NERC and the eight Regional Entities in response to the Commission's June 19,

2008 Order. NERC is directed to submit modified document retention policies of MRO and NPCC with the 2009 budget filing. *Docket No. RR07-16-003*

10. August 29, 2008 — Revised deadline for NERC to submit five revised reliability standards (MOD-001, -008, -028, -029 and -030) regarding ATC calculations. *Docket Nos. RM05-17-000 and RM05-25-000*

11. September 21, 2008 — NERC must submit a status report regarding NERC and WECC addressing WECC's monitoring and enforcement responsibilities regarding its reliability coordinators (status report due every six months thereafter). Due date established in FERC's March 21, 2008 Order. *Docket Nos. RR06-1-012, et al.*

12. September 30, 2008 — Compliance filing in response to Paragraph 951 of Order No. 693, directing NERC to conduct a survey on IROL practices:

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

14. November 21, 2008 — Revised deadline to submit one or more standards related to Capacity Benefit Margin as required by paragraph 223 of Order No. 890. *Docket Nos. RM05-17-000 and RM05-25-000*

15. December 19, 2008 — NERC is directed to (1) submit a report to the Commission within six months documenting whether the Violation Severity Level assignments allow for a level of compliance lower than the historical performance; (2) file a compliance filing within six months either justifying the inconsistency in the single Violation Severity Level assigned to binary requirements, or revising those assignments to reflect a consistent approach; (3) review all Violation Severity Level assignments, with the exception of those for which the Commission directs modification in this order, for compliance with Guidelines 2b, 3, and 4 and submit a compliance filing either validating the current Violation Severity Level assignments or proposing revision within six months; and (4) submit a compliance filing submitting Violation Severity Levels for NUC-001-1 Reliability Standard. This is in response to the June 19, 2008 Order on Violation Severity Levels. *Docket No. RR08-4-000*

Agenda Item 15
MRC Meeting
July 29, 2008

Situational Awareness and Infrastructure Security

MRC Action Required
None

Information
The Situational Awareness and Infrastructure Security Program is a combination of awareness of conditions on the bulk power system and the initiatives necessary to increase the physical and cyber security of the electricity infrastructure. This program has three functions: critical infrastructure protection; the Electricity Sector Information Sharing and Analysis Center; security guidelines; and operating reliability support services.

New Critical Infrastructure Protection Initiative Announced
A new Critical Infrastructure Protection Initiative has been announced and will be implemented as quickly as possible. A Chief Security Officer (CSO) will be hired and will provide senior leadership to NERC's efforts to improve the security and reliability of the bulk power system, especially in light of heightened concerns about cyber security.

Electricity Sector Information Sharing and Analysis Center (ES ISAC)
This is a virtual, continuously-staffed, around-the-clock operation. The program works with government agencies in Canada and the United States as well as the interdependent infrastructures to share information in order to enhance incident management. A joint task force of the Board of Trustees and the Member Representatives Committee has recommended, and the NERC Board has approved the formation of, the Electricity Sector Steering Group (ESSG) to provide strategic leadership to the ES ISAC. The ESSG is in its organizational phase.

Security Guidelines
This function increases the physical and cyber security of the bulk power system by assessing threats and hazards, and using risk management principles, develops, updates, and maintains security guidelines. The program metric is shown below.

Security Guidelines

Years since update/issue	Number
Less than 1	5
1–2	0
3–5	4
More than 5	10

The goal is to update each guideline on a three or four-year cycle. Six are presently in process for updating and two new guidelines (Wireless Security and Emergency Planning) are under development.

Operating Reliability Support Services
This function supports a number of tools used by the reliability coordinators and other system operators. The program also develops new tools for use in the monitoring and control of the bulk power system. The tools currently in use include:

- Transmission Services Information Network (TSIN)

- Interchange Distribution Calculator (IDC)
- Interregional Security Network (ISN)
- Real-Time System Power Flows
- System Data Exchange (SDX)
- Central Repository for Curtailment Events (CRC)
- Reliability Coordinator Information System (RCIS)
- Area Control Error and Abnormal Frequency System Monitoring
- NERC Hotline

Another tool under development is the North American Synchro Phasor Initiative (NASPI).

Training, Education, and Personnel Certification

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 has also been developed. A complete program with continuing learning activities will be developed during the next five years to equip NERC compliance auditors with the necessary skills to effectively perform audits.

Audience	Deliverables	Schedule	Status
NERC compliance staff, Regional Entity compliance staff, contractors, and industry volunteers.	One fundamentals course for industry volunteers.	Volunteer e-learning training program was launched on October 31, 2007.	Volunteer course modules currently have over 317 users registered to take the course.
	One advanced skills Evidence Gathering e-learning module for audit team leaders and audit team members.	Deliver course by April 30.	Completed and delivered on schedule.
	One e-learning course on how to develop compliance elements for reliability standards (partnering with standards group) for compliance element development resource pool volunteers.	Deliver course by July 31.	Under development and on schedule.
	One e-learning course on CMEP Timelines and Time Management for audit team leaders and audit team members.	Job aid to be developed August 31.	Deliverable changed to a job aid instead of a course to be more useful. Under development and on schedule.
	One Compliance Violation Investigation course (platform TBD).	Deliver course by Dec. 31.	Under development.

	One instructor-led IT Auditing course for CIP Standards for audit team leaders.	Two courses to be offered in 2008, in November and December, to approximately 40 participants with 2 additional offerings in 2009.	Under development.

Readiness Evaluator Training

NERC developed a training program for readiness evaluators on the evaluation process, interview techniques, observation techniques, and other necessary skills. An initial fundamentals course for industry volunteers was released first.

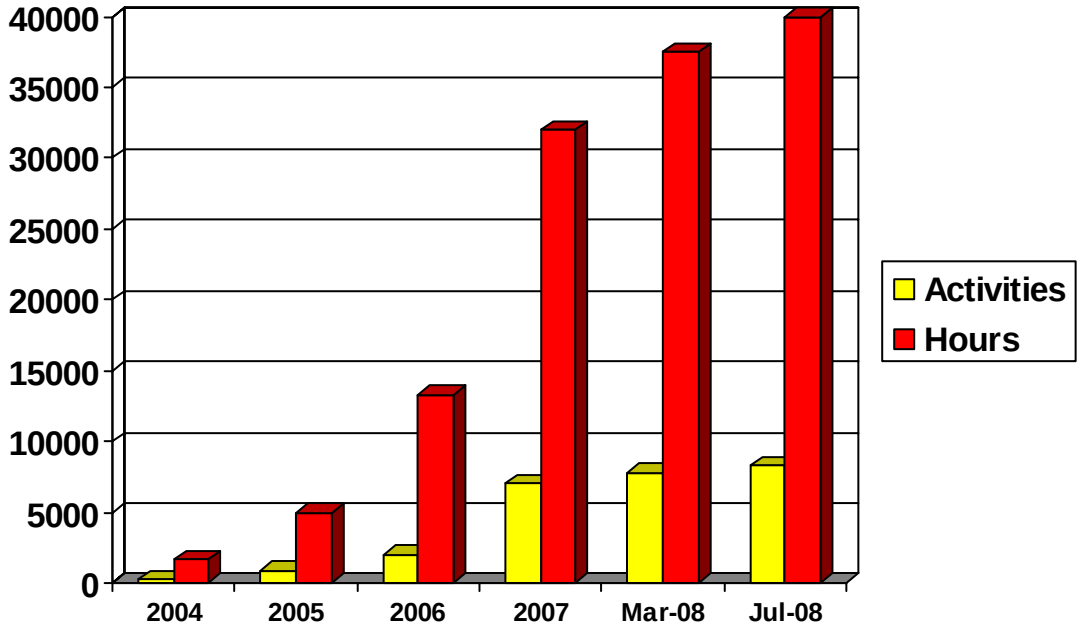
Audience	Deliverables	Schedule	Status
NERC readiness evaluator staff, Regional Entity readiness evaluation staff, contractors, and approximately 300 industry volunteers.	One internet-based course for industry volunteers.	Industry volunteer e-learning was launched on December 21, 2007.	197 industry volunteers have registered for the readiness evaluator e-learning course.

Continuing Education Program

Since the Continuing Education (CE) Program started, the number of providers has increased from 48 offering 294 approved learning activities and 1,634 CE hours of instruction, to 200 now offering over 8,300 approved learning activities and over 40,000 CE hours of instruction to system operators. Much of the growth in 2006 and 2007 is attributed to NERC's 2006 approval to use CE hours to maintain a certification credential. We will continue to see growth in the number of courses and CE hours of instruction as system operators transition into three-year credentials.

Since April 1, 2006 4,426 system operators have earned CE hours. Over 435,000 CE hours have been awarded to these system operators. Approximately 152,000 hours were awarded in 2006, and over 280,000 hours were awarded in 2007. Since January 1, 2008 system operators have earned 132,000 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.



CE providers delivered 1,072 unique activities from January 1–March 31, and 1,045 unique activities from April 1–June 30, 2008. A unique activity is identified as the singular delivery of an individual activity where CE hours are awarded to a system operator. Some activities are delivered multiple times during each quarter.

Auditing of CE activities started on May 23, 2008 to ensure the quality of the activities matches the description in the application. 80 activities from the first quarter were randomly chosen for audit. As of July 7, 2008 20 activity audits have been completed.

System Operator Certification Program

Since 1998 NERC has maintained a System Operator Certification Program that establishes minimum standards of competency for system operators with four specialized certifications. The Personnel Certification Governance Committee is responsible for maintaining the integrity and independence of the certification process and credential.

A system operator is awarded certification upon passing an examination that is based on a job analysis of their area of responsibility. The exam focuses on the knowledge and application of the NERC reliability standards and basic principles of interconnected bulk power system operation. A certification credential is maintained by earning continuing education hours through approved learning activities.

Certification and Continuing Education Database

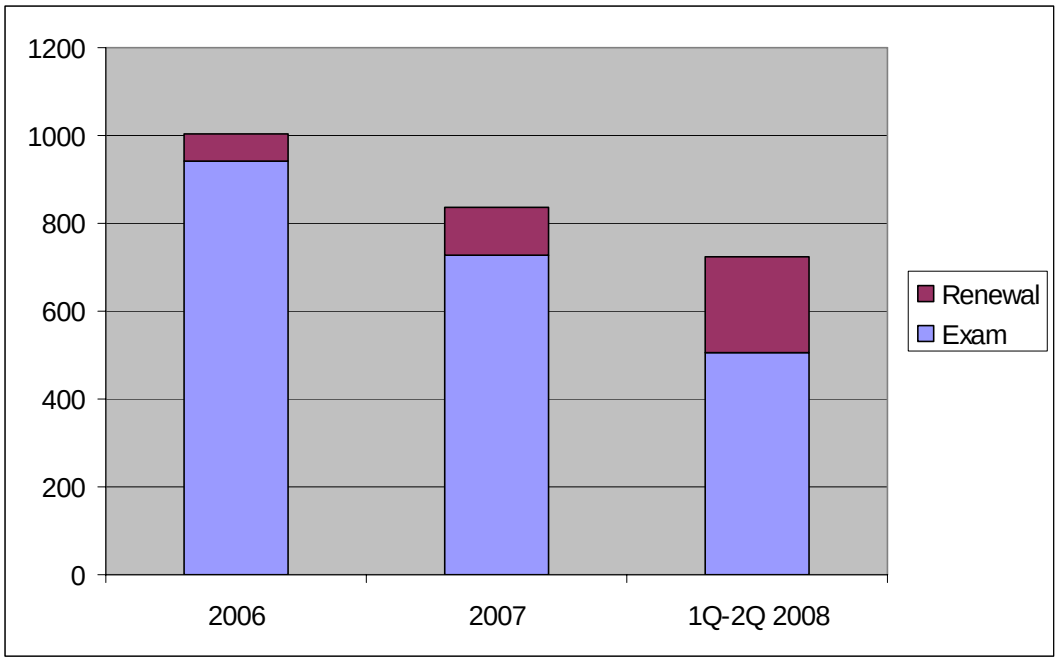
This database tracks certified system operators from their initial application, through certification examinations, to subsequent submissions of continuing education hours to maintain their credential. It provides a platform through which CE providers can manage the individual learning activities they offer. The database is currently in its sixth change order to upgrade functionality and reporting capabilities since it was implemented in June 2007.

System Operator Certification Examinations

The new exams were published on schedule on July 7, 2008. Exams were not available in June to facilitate the changeover to the new exams.

The PCGC has begun the process of creating the survey instrument that will be used in the 2009 system operator job analysis. It takes about two years to complete the process from job analysis through development of exam content outlines, to the final product, new exams. The results of this analysis will form the basis for new exams due in 2011.

In the first quarter of 2008, 723 system operator certifications were issued. The new database was only partially operational for the same period last year so comparison is not meaningful. Since expanding the certification program to include continuing education hours, a total of 386 credentials have been maintained (renewed) with 218 of those in the first half of 2008.



As the dark area of the chart above indicates, the use of continuing education to maintain a credential continues to increase since its introduction in October 2006. We are 21 months into a 36-month transition to maintaining a credential solely with Continuing Education Hours. During the first half of 2008, about 30 percent of the certificates were issued using this process. While we are unsure of the final numbers, the percentage of those maintaining their credential will continue to increase through the end of the transition period, October 1, 2009. There will always be a certain percentage of new system operators certifying by exam.

Advanced Certification
The PCGC is currently researching the feasibility of offering a voluntary advanced system operator certification. This certification ideally would require a demonstration of advanced knowledge, skills, and abilities and include job experience as a factor. The decision will be affected by the available population, interest in attaining the new credential, costs for developing and administering the credential, and how the credential will be viewed by the industry and regulators. If the decision is made to move forward with the credential, the earliest it could be available would be 2011.

Certification Program Accreditation
The PCGC has decided that formal accreditation of the certification program by an internationally recognized agency does not add value at this time. In the meantime, to maintain the integrity of the program, accreditation requirements will still be followed.

Relay Technician Certification
NERC staff and the PCGC are researching and drafting a white paper to present options to the industry regarding improving the performance of relay technicians relating to events over the past 10 years. Options will include variations on certification and training. The paper is expected to be presented for comment to the industry in the first quarter of 2009.

Agenda Item 17
MRC Meeting
July 29, 2008

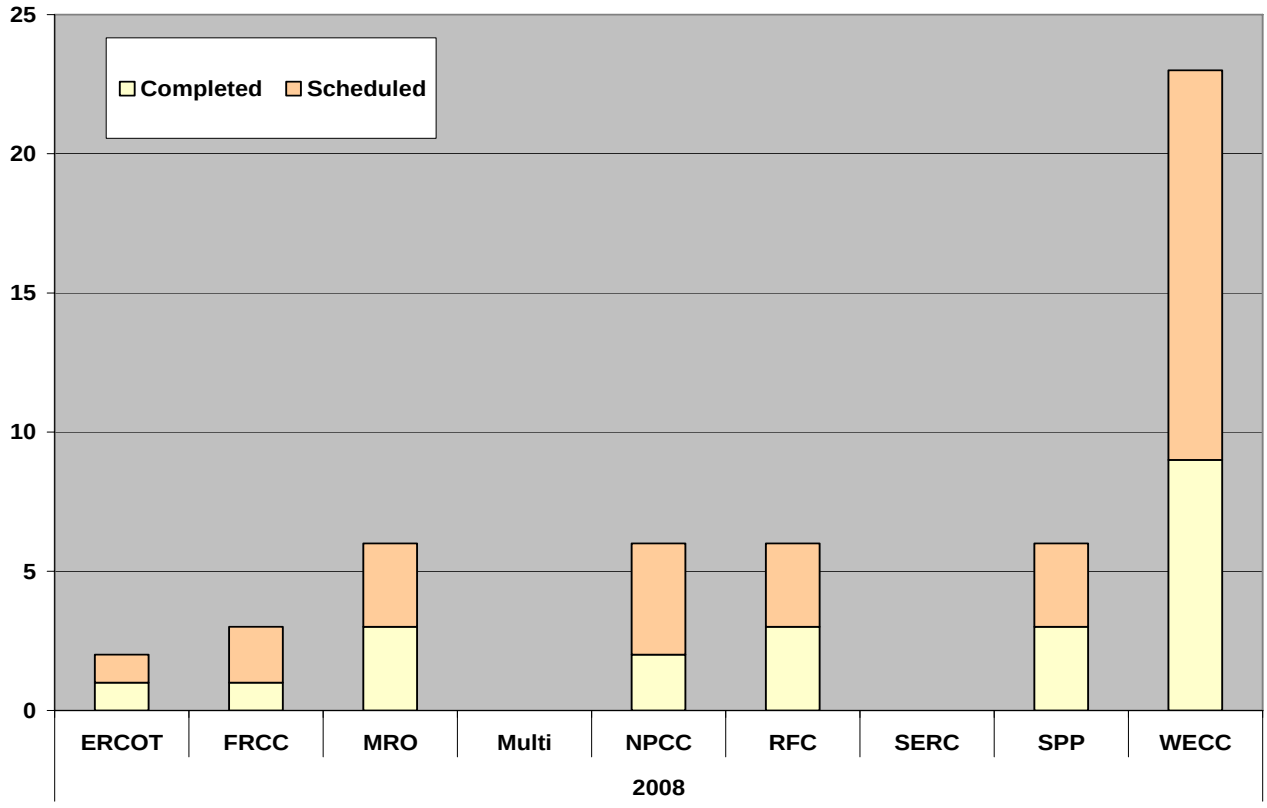
Readiness Evaluation and Benchmarking

MRC Action Required
None

Program Information
The Readiness Evaluation and Benchmarking Program carries out on-site evaluations of reliability coordinators, balancing authorities, transmission operators, 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.

2008 Program Status
As of July 8, 2008 NERC completed 22 readiness evaluations. Figure 1 shows a regional breakdown of readiness evaluations scheduled from January through August 2008.

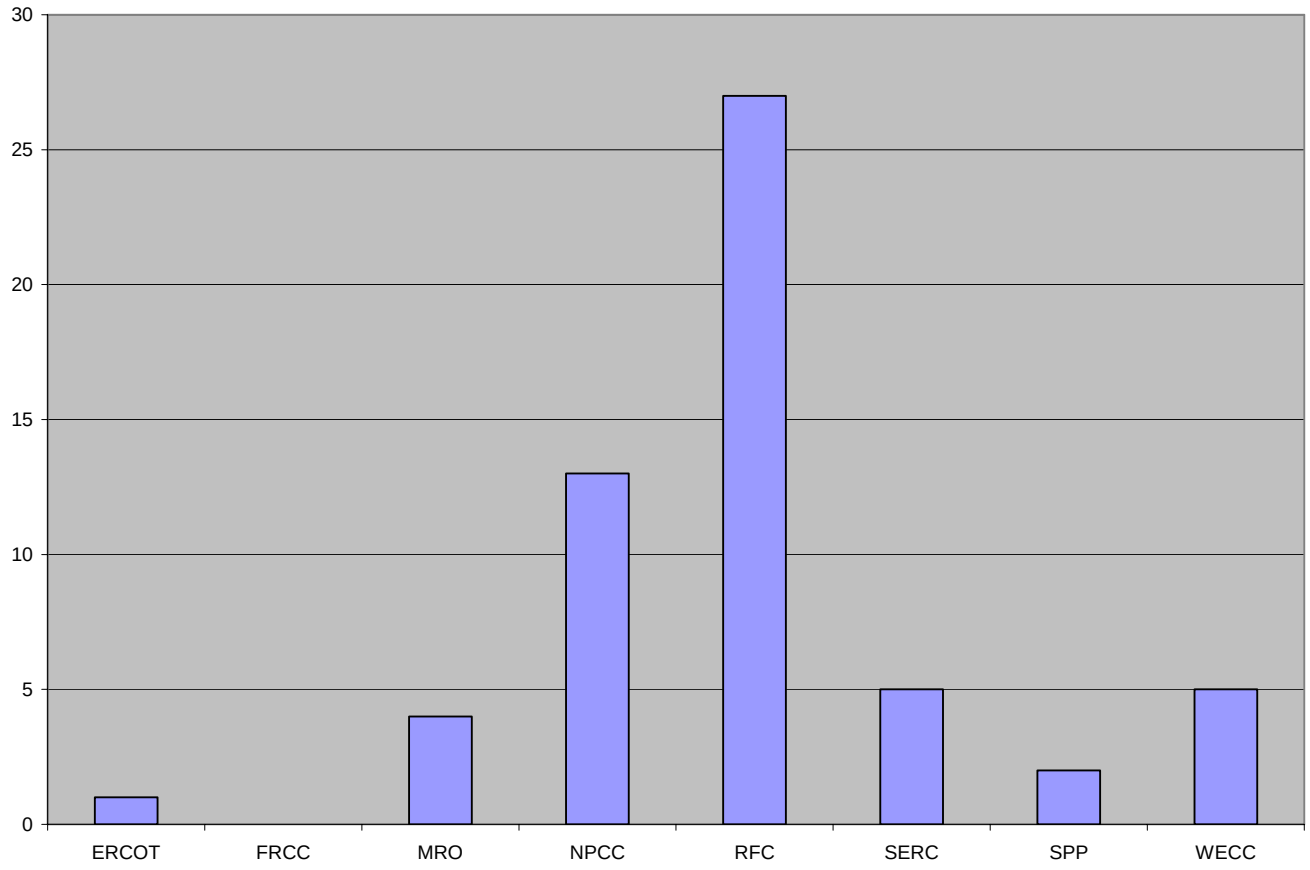
Figure 1: Reliability Readiness Evaluations by Region



To conduct the reliability readiness evaluations, NERC relies heavily on industry volunteers to comprise the evaluation teams. Regional entities identify volunteers to support evaluations of entities within their respective regions, and NERC solicits volunteers from outside each evaluated entity's region to balance the teams. As of July 8, 2008 62 out-of-region positions have been filled with industry volunteers for evaluations scheduled through August, 2008.

Figure 2 shows a breakdown of support by region.

Figure 2: 2008 Reliability Readiness Evaluations Out-of-Region Volunteers



NERC also tracks the implementation of recommendations developed by the readiness evaluation teams. Since the May 2008 report to the Board of Trustees, NERC has added 195 recommendations to its tracking database. At present, 3,366 recommendations are being tracked. There has been no significant change to the status percentages since the last report.

Figure 3: Reliability Readiness Evaluations Recommendations Tracking Status

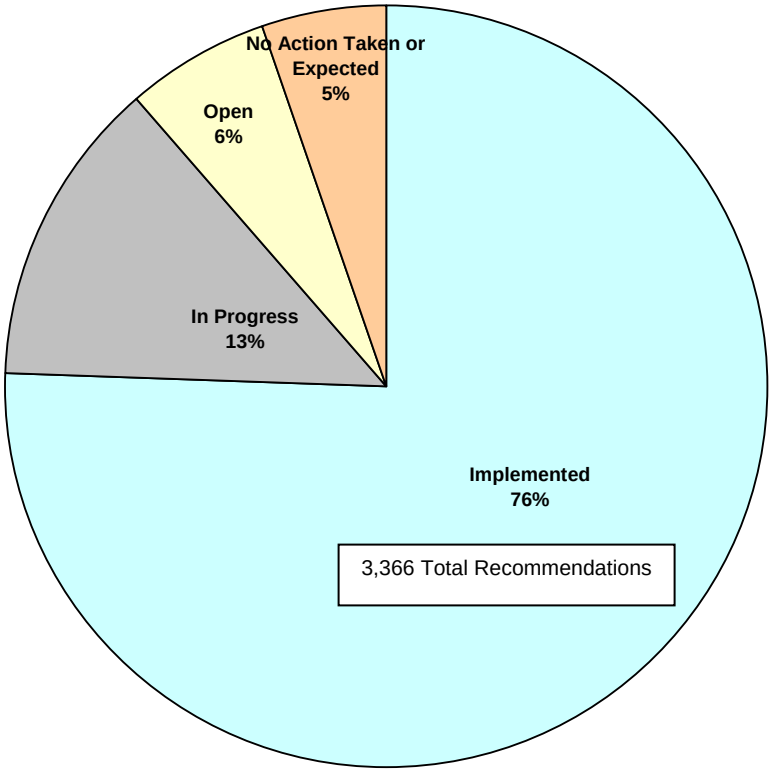
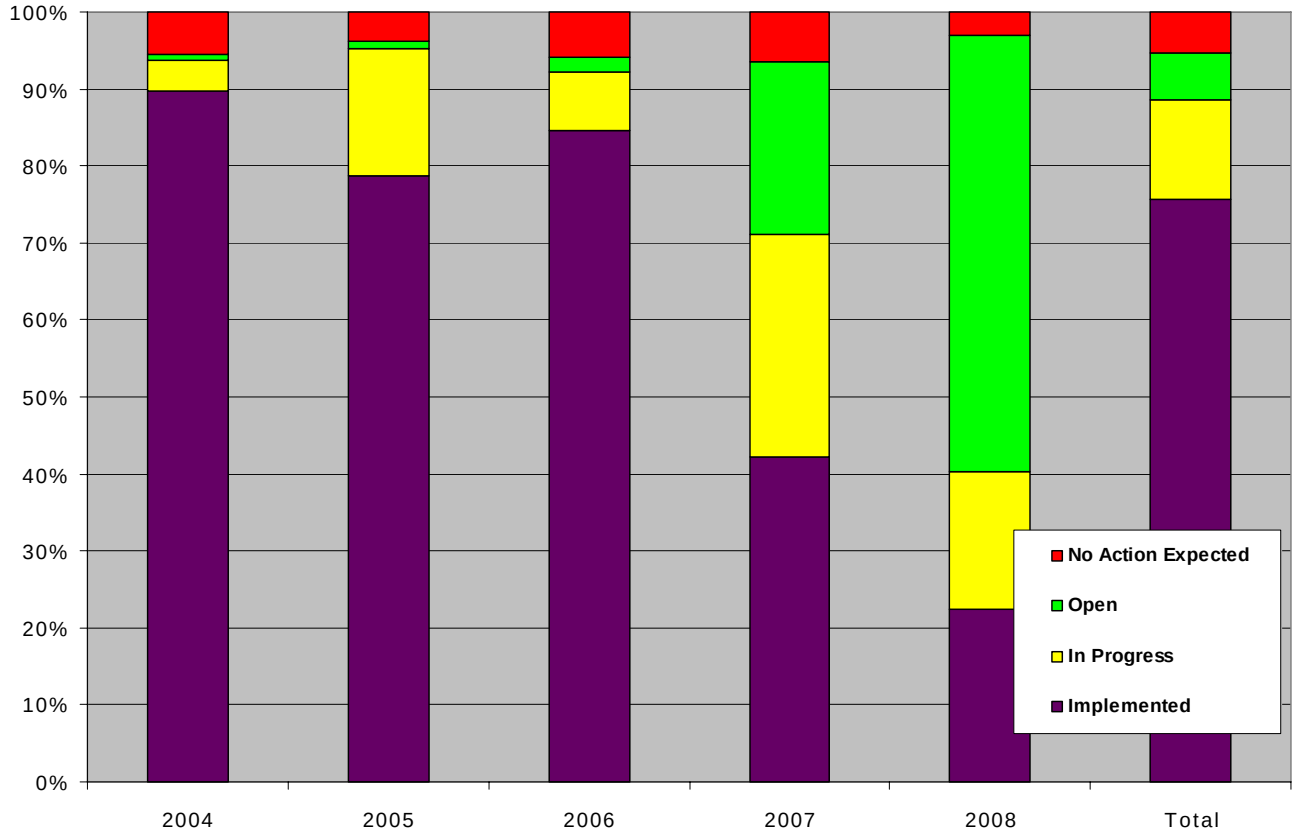


Figure 4 presents the implementation status of readiness evaluation recommendations for each year since the program inception.

Figure 4: Reliability Readiness Evaluation
All Recommendations Tracking Status



NERC and regional staff have collaboratively identified the most important recommendations from the readiness evaluations since the inception of the program. To date, 547 key recommendations have been identified with their status as shown in Figure 5.

Figure 5: Reliability Readiness Evaluations
Key Recommendations Tracking Status