Introduction and Chair’s Remarks

NERC Antitrust Compliance Guidelines and Public Announcement*

Agenda Items

1. Topics and Schedule for the Board of Trustees, Board Committees and MRC Meetings* - August 9-10, 2017

2. Overview of Items Included in the Policy Input Letter
   a. Supply Chain Risk Management*

3. Informational Items
   a. Level II Alert: Loss of Solar Resources During Transmission Disturbances Due to Inverter Settings*
   b. Compliance Monitoring and Enforcement Program (CMEP) Technology Project*

*Background materials included.
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.
Member Representatives Committee (MRC)

Pre-Meeting and Informational Webinar
July 12, 2017
Objectives - Pre-Meeting and Informational Session

- Review preliminary agenda topics for August 9 MRC meeting
- Review preliminary agenda topics for Board of Trustees (Board) and Board Committee meetings (August 3 and August 9-10)
- Receive updates on emerging and informational issues as part of today’s webinar
### Schedule of Quarterly NERC Meetings and Conference Calls

#### Conference Calls in Advance of the Onsite Meetings

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Time</th>
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<tbody>
<tr>
<td>July 20, 2017</td>
<td>Finance and Audit Committee Conference Call and Webinar—Open</td>
<td>11:00 a.m.—1:00 p.m.</td>
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<tr>
<td>August 3, 2017</td>
<td>Standards Oversight and Technology Committee Conference Call—Open</td>
<td>2:00–3:00 p.m.</td>
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#### Wednesday, August 9, 2017

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:30-8:30 a.m.</td>
<td>Breakfast</td>
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<tr>
<td>Room name: TBD</td>
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<tr>
<td>8:30–9:30 a.m.</td>
<td>Corporate Governance and Human Resources Committee Meeting —Open</td>
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<td>Room name: TBD</td>
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<tr>
<td>9:45-11:00 a.m.</td>
<td>Finance and Audit Committee Meeting—Open</td>
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<tr>
<td>Room name: TBD</td>
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<tr>
<td>11:15 a.m. -12:30 p.m.</td>
<td>Compliance Committee Meeting—Open</td>
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<td>Room name: TBD</td>
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<tr>
<td>12:30–1:30 p.m.</td>
<td>Lunch</td>
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<tr>
<td>Room Name: TBD</td>
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<tr>
<td>1:30–4:30 p.m.</td>
<td>Member Representatives Committee Meeting—Open</td>
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<td>Room name: TBD</td>
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<td>5:00 p.m.</td>
<td>Reception</td>
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#### Thursday, August 10, 2017

<table>
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<tr>
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<td>Room name: TBD</td>
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<tr>
<td>8:30 a.m.–11:30 a.m.</td>
<td>Board of Trustees Meeting—Open</td>
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<td>Room name: TBD</td>
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• Finance and Audit Committee Webinar, July 20 (11:00 a.m. Eastern)
  ▪ Review NERC and Regional Entity proposed 2018 Business Plans and Budgets and Associated Assessments

• Standards Oversight and Technology Committee, August 3 (2:00 p.m. Eastern)
  ▪ Registered Entities and ERO Enterprise IT Applications
  ▪ CMEP Technology Project
  ▪ CIP-013-1 – Cyber Security - Supply Chain Risk Management
  ▪ Reliability Standards Quarterly Status Report
• 2017 ERO Enterprise and Corporate Performance Metrics
• Approve Nominating Committee Mandate Revisions
• Annual Board Effectiveness Assessments Update
• Employee Reporting and Document Retention Policies
• Human Resources and Staffing Update
• CMEP Technology Project
• Second Quarter Unaudited Financial Statements
• NERC and Regional Entity Proposed 2018 Business Plans and Budgets and Associated Assessments
• Consistency Framework
• Critical Infrastructure Protection Version 5
• Compliance Monitoring and Enforcement Program Quarterly Report
• Schedule for MRC Officer and Sector Elections
• Board of Trustees Nominating Committee Update
• Overview of Policy Input Letter Items
  ▪ Supply Chain Risk Management
• Additional Policy Discussion of Key Items from Board Committee Meetings
• ERO Enterprise Long-term Strategy, Operating Plan, and Metrics
• Technical Rationale (Guidelines and Technical Basis)
• Update on Security Issues
• Update on FERC Reliability Matters
• Accountability Matrix
• Regulatory Update
• Committee Membership and Charter Changes
• Proposed Revisions to the Southwest Power Pool, Inc. Bylaws Relating to the Regional Entity Function
• Report on Board of Trustees and Canadian Regulators Meeting
• Report on Board of Trustees August 8, 2017 Closed Session
• Board Committee Reports
  ▪ Approve committee mandate revisions
  ▪ Accept second quarter unaudited financial statements
  ▪ Approve NERC and Regional Entity Proposed 2018 Business Plans and Budgets
• Standards
  ▪ Adopt CIP-013-1, Hydro Quebec Interconnection variance for PRC-006-3, BAL-502-RF-03, and PRC-006-SERC-02

• Approve Special Reliability Assessment: Single Points of Disruption on Natural Gas Infrastructure

• E-ISAC Quarterly Update
  ▪ E-ISAC Long-term Strategic Plan

• Committee, Forum, and Group Reports
• Overview of Policy Input Letter Items
  ▪ Supply Chain Risk Management
• Level II Alert: Loss of Solar Resources During Transmission Disturbances Due to Inverter Settings
• CMEP Technology Project
• **July 5:** Policy Input Letter issued
• **July 26:** Policy Input Letter responses due
• **July 27:** August Board and MRC agenda packages posted
• **July 27:** Policy Input responses posted
• **August 3:** August Board and MRC presentations posted
Questions and Answers
Supply Chain Risk Management

Action
Information

Summary
On July 21, 2016, the Federal Energy Regulatory Commission (FERC) issued Order No. 829, directing NERC to develop a new or modified Reliability Standard that addresses supply chain risk management for industrial control system hardware, software, and computing and networking services associated with Bulk Electric System (BES) operations. FERC established a filing deadline of one year from the effective date of Order No. 829, which is September 27, 2017.

Following the issuance of Order No. 829, NERC staff and the Standards Committee initiated Project 2016-03 to develop a supply chain risk management standard, which NERC expects to present to the NERC Board of Trustees (Board) for adoption at the August 10 meeting.

The Board has requested policy input on how NERC should support effective implementation of the new and modified standards, how NERC should evaluate the effectiveness of the standards going forward, whether NERC should continue to review the risk of not including low impact BES Cyber Systems, and if there are actions NERC should take to address additional potential supply chain risks.
Supply Chain Risk Management

Howard Gugel, Senior Director of Standards and Education
MRC Informational Session
July 12, 2017
Cyber Security Supply Chain Standard

- FERC issued Order No. 829 on July 21, 2016
- Second ballot ended June 15, 2017: 88.6% (CIP-013-1)
- Final ballot underway
- Expect to present at August Board meeting
- FERC filing deadline of September 27, 2017
• High and medium impact Bulk Electric Systems (BES) Cyber Systems
• No requirements for low impact BES Cyber Systems
• NERC is committed to addressing supply chain risks
  ▪ Identify best practices
  ▪ Develop guidance resources
  ▪ Support common understanding of compliance obligations
• How should NERC support effective implementation?
• How should NERC evaluate effectiveness of the standards going forward?
• Should NERC continue to review the risks from low impact risk cyber assets?
• Are there actions NERC should take to address additional potential supply chain risks?
Questions and Answers
Level II Alert: Loss of Solar Resources during Transmission Disturbances due to Inverter Settings

Action
Information

Background
On June 20, 2017, NERC issued a Level II Alert, Industry Recommendation, identifying a characteristic exhibited by some inverter-based resources, particularly utility-scale solar photovoltaic (PV) generation, which reduces power output during fault conditions on the transmission system. An example of this behavior was observed during recent bulk power system (BPS) disturbances, highlighting potential risks to BPS reliability. With the recent and expected increases of utility-scale solar resources, the causes of this reduction in power output from utility-scale power inverters needs to be widely communicated and addressed by the industry. The industry should identify reliability preserving actions in the areas of power system planning and operations to reduce the system reliability impact in the event of widespread loss of solar resources during faults on the power system.

The four recommendations were:

1. Generator Operators and Generator Owners should ensure that their installed inverter controls will not trip due to an erroneous instantaneous frequency measurement during transients on the power system.

2. If inverters are identified as among those that momentarily cease to inject current for voltages above 1.1 per unit or below 0.9 per unit during abnormal voltage conditions, Generator Operators and Generator Owners should ensure the time to restore output of the inverter to the state prior to the abnormal voltage conditions is as soon as practical, but no greater than 5 seconds. Inverters may continue producing real and reactive power outside of the ride-through operation conditions defined by PRC-024-2, unless other actions are required as part of a special protection scheme to protect the inverter from damage or to isolate the faulted equipment directly connected to the inverter.

3. If the equipment identified in recommendations 1 and 2 are left unmitigated, Reliability Coordinators and Balancing Authorities should identify which inverter based plants in the operating area are unmitigated and consider in their daily resource plan the potential for the loss of these resources during transmission faults on the power system. Reliability Coordinators and Balancing Authorities should take appropriate mitigating measures.

4. Generator Operators and Generator Owners should provide their responses to the questions in this Alert for each plant in service to NERC and to their Reliability Coordinator, Balancing Authority, and Transmission Operator for each respective site(s) area where the plant is located.
As required by the NERC Rules of Procedure, NERC registered entities are required to:

- Acknowledge receipt of the recommendation within the NERC Alert System.
- Review and complete the reporting instructions included in the alert.

For more information, see the 1,200 MW Fault Induced Solar Photovoltaic Resource Interruption Disturbance Report.
Level II Alert
Loss of Solar Resources during Transmission Disturbances due to Inverter Settings

James Merlo, Vice President, Reliability Risk Management
MRC Informational Session
July 12, 2017
NERC Distributed a Level 2 Alert on June 20, 2017

- Initial Distribution Included:
  - Balancing Authorities
  - Generator Owners and Operators
  - Transmission Owners and Operators
  - Reliability Coordinators
Recommendation Number 1: Generator Operators (GOP) and Generator Owners (GO) should ensure that their installed inverter controls will not trip due to an erroneous instantaneous frequency measurement during transients on the power system.
Recommendation Number 2: If inverters momentarily cease to inject current during abnormal voltage conditions, ensure the time to restore output of the inverter is no greater than 5 seconds.
Recommendation Number 3: Reliability Coordinators (RC) and Balancing Authorities (BA) should consider in their daily resource plans, the potential for this widespread resource loss during transmission faults on the power system and take appropriate measures.
Recommendation Number 4: Generator Operators and Generator Owners should provide their responses to the questions in this Alert to NERC and to their Reliability Coordinator, Balancing Authority, and Transmission Operator (TOP).
• Responses to the questions are required to be submitted via the NERC Alert System by **August 31, 2017 Midnight Eastern**

• The questions should be answered and submitted in the attached worksheet

• All applicable registered entities (GO, GOP, RC, BA, TOP) are required to respond to the questions in the alert

• Transmission Owners (TO) are not required to submit a response to the questions

• http://www.nerc.com/pa/rrm/bpsa/Pages/Alerts.aspx
Questions and Answers
Compliance Monitoring and Enforcement Program Technology Project Webinar

**Action**
Information

**Background**
NERC will host a stakeholder webinar on July 17, 2017, at 3:30-4:30 p.m. Eastern, that will focus on the high-level benefits to the ERO Enterprise that are expected from the Compliance Monitoring and Enforcement Program (CMEP) Technology Project. The project will provide the ERO Enterprise with a singular tool and interface from which to conduct CMEP activities with the Regional Entities and registered entities.

Once implemented, the new technology and common process solution will give NERC and the Regional Entities an increased level of visibility into reliability risk. The solution will also provide broad views of reliability across the ERO Enterprise, leading to data-informed reliability risk management insights. Such visibility is essential to the continuing maturation of the ERO Enterprise and the achievement of our reliability mission.

The July 17 webinar will give stakeholders the opportunity to learn more about the program and have questions answered. A link to an informational video on the CMEP Technology Project is provided for information: CMEP Video.
Compliance Monitoring and Enforcement Program (CMEP) Technology Project

Dee Humphries, Director, ERO Project Management Office
MRC Informational Session
July 12, 2017
• July 17 webinar
• Singular tool and interface to conduct CMEP activities
• Increased level of visibility for NERC and the Regional Entities into reliability risk
• Lead to data-informed reliability risk management insights
Questions and Answers