

Agenda Member Representatives Committee Pre-Meeting Informational Session Conference Call and Webinar

April 10, 2018 | 1:00 p.m. – 2:00 p.m. Eastern

Dial-in: 1-888-205-6786 | Conference ID: 561309

Click here for: [Webinar Registration](#)

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* - May 9-10, 2018**
2. **Overview of Policy Input Letter**
3. **Informational Items**
 - a. Plan for Addressing Reliability Standard and Guideline Recommendations from Recent Reliability Assessments*
 - b. Update on Special Reliability Assessment: Conventional Generation Retirements and BPS Reliability Impacts*

*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.

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Member Representatives Committee (MRC)

Pre-Meeting and Informational Webinar
April 10, 2018

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- Review preliminary agenda topics for:
 - Open Board of Trustees (Board) Committee conference calls prior to May meetings
 - May 9 MRC meeting
 - May 9-10 Board and Board Committee meetings
- Receive updates on emerging and informational issues

Schedule of Quarterly NERC Meetings and Conference Calls

Conference Calls Before On-site Meetings	
May 3, 2018 2:00-3:00 p.m. Eastern	CGHRC Conference Call — <u>Open</u>
Wednesday, May 9, 2018	
7:30-8:30 a.m. Room name:	Breakfast
8:30-9:30 a.m. Room name:	Finance and Audit Committee Meeting — <u>Open</u>
9:45-10:45 a.m. Room name:	Compliance Committee Meeting — <u>Open</u>
11:00 a.m.-12:00 p.m. Room name:	Technology and Security Committee Meeting — <u>Open</u>
12:00–1:00 p.m. Room name:	Lunch
1:00–5:00 p.m. Room name:	Member Representatives Committee Meeting — <u>Open</u>
5:15 p.m. Room name:	Reception
Thursday, May 10, 2018	
8:00–9:00 a.m. Room name:	Public Breakfast
8:30 a.m.–12:00 p.m. Room name:	Board of Trustees Meeting— <u>Open</u>

**Times are tentative and subject to change*

- Corporate Governance and Human Resources Committee,
May 3 (2:00 p.m.)
 - 2017 Board Committees' self-assessment results
 - 2018 ERO Enterprise and Corporate Metrics update
 - Annual review of Trustee compensation
 - Staffing and recruiting update

- Review self-assessment results
- 2017 financial statement audit results
- First quarter statement of activities
- 2019 business plan and budget update

- Review self-assessment results
- Critical infrastructure protection themes and lessons learned
- Compliance Monitoring and Enforcement Program quarterly report

- Committee cadence
- IT technology update
 - CMEP technology project
 - NERC and ERO Enterprise technology projects
 - Preliminary 2019 IT budget forecast
- E-ISAC update
 - Preliminary 2019 E-ISAC budget forecast
- Misoperations application demo

- Approve revisions to NERC Bylaws
- Responses to the Board's request for policy input
- Additional policy discussion of key items from Board Committee meetings
- Framework and work plan for evaluating and improving ERO Enterprise effectiveness and efficiency
- Standards efficiency review
- Resilience framework
- Technical committee highlights: Operating Committee
- Inverter-based Resource Performance Task Force update

- 2018 Summer Reliability Assessment preview
- 2018 State of Reliability preview
- Update on FERC reliability matters
- Accountability matrix
- Regulatory update

- Committee membership and charter changes
- Report on Board and Regional Board Officers joint meeting
- Report on Board April 17 and May 8 closed sessions
- Board Committee reports
 - Accept 2017 audit results and financial statements
 - Accept first quarter 2018 unaudited statement of activities
- Standards quarterly report and actions
 - Adopt PER-003-2
 - Retire PER-004-2
 - Supply chain activities update

- Approve MRO Bylaws
- Update on plan for addressing Reliability Standard and Guideline recommendations from recent reliability assessments
- Update on Reliability Coordinator footprints in the Western Interconnection
- E-ISAC Code of Conduct update
- Committee, forum, and group reports

- Overview of policy input letter
- Plan for addressing Reliability Standard and Guideline recommendations from recent reliability assessments
- Update on *Special Reliability Assessment: Conventional Generation Retirements and BPS Reliability Impacts*

- **April 4:** Policy input letter issued
- **April 25:** Written comments due on policy input topics and preliminary May agenda topics
- **April 26:** May Board and MRC agenda packages and policy input letter comments posted
- **May 3:** May Board and MRC presentations posted



Questions and Answers

Plan for Addressing Reliability Standard and Guideline Recommendations from Recent Reliability Assessments

Action
Update

Background

Two reliability assessments published in 2017 recommended industry and NERC consider potential Reliability Standard improvements and/or Reliability Guideline development. The recommendations made in each assessment are provided below:

- **Special Reliability Assessment: Potential Bulk Power System Impacts Due to Severe Disruptions on the Natural Gas System (Natural Gas Disruption Assessment):**¹ NERC, with industry support, should enhance its Reliability Guidelines and/or Standards as necessary to include additional planning and operating requirements for analyzing disruptions to the natural gas infrastructure and their impacts on the reliable operation of the bulk power system (BPS). The standards should include developing and deploying mitigation plans to address reliability risks caused by outages of significant natural gas infrastructure.
- **2017 Long-Term Reliability Assessment (LTRA):**² NERC should conduct a comprehensive evaluation of its Reliability Standards to ensure compatibility with nonsynchronous and distributed energy resources, as well as for completeness related to essential reliability services, generator performance, system protection and control, and balancing functions.

Activities

- **Recommendation from Natural Gas Disruption Assessment:**
The Operating and Planning Committees are addressing the recommendations through the following actions:
 - NERC requested the Planning Committee establish an advisory group³ to identify potential enhancements to the existing transmission planning documents. This includes potentially altering Reliability Standard TPL-001-4 and developing reliability guidelines. This activity will emphasize planning for natural gas pipeline, storage, compressor station, liquefied natural gas (LNG) or supply disruptions. A report assessing the potential enhancements will be developed and distributed to the NERC MRC and Board of Trustees.
 - As part of its review of potential enhancements to the existing transmission planning Reliability Standards, the Planning Committee Advisory Group has decided to

¹ http://www.nerc.com/pa/RAPA/rs/Reliability%20Assessments%20DL/NERC_SPOD_11142017_Final.pdf

² http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_LTRA_12132017_Final.pdf

³ The NERC Planning Committee is looking for additional industry members to join this ad hoc Advisory Group. If interested, please submit your nomination to the PC Secretary, Mark Olson. The Advisory Group meets periodically monthly and the schedule provides for meetings through 2018.

- conduct a Natural Gas and Electric Reliability Workshop in the June/July 2018 time period. The objective of the workshop would be to convene subject matter experts in both the power and gas industries with the intent to determine how to adequately address NERC standards and/or guidelines to ensure that disruptions to natural gas supply are adequately included in planning studies. Subject matter experts from industry will include members of the NERC Planning Committee, electric utilities, and natural gas industry trade organizations such as the American Gas Association, Natural Gas Supply Association, and American Petroleum Institute.
- In December 2017, the Operating Committee approved the Gas and Electrical Operational Coordination Considerations Guideline.⁴ This guideline provides a set of principles and strategies that may be adopted should close coordination be required as a result of increased interdependencies.
 - The above activities, with the exception of the Gas and Electrical Operational Coordination Considerations Guideline which is already complete, are expected to be completed by the fourth quarter of 2018.

- **Recommendations from 2017 LTRA:**

The following actions are being taken to address the recommendations:

- **Distributed Energy Resources:** The LTRA identified the need to revise the MOD-032 Reliability Standard to ensure its applicability to Distribution Providers requiring the provision of any pertinent data related to distributed resources with Transmission Planners and Planning Coordinators. This is presently being addressed with Project 2017-07 Standards Alignment with Registration, which reassigns Load Serving Entity responsibilities to the Distribution Provider.
- **Inverter-Based Resources:** The Inverter-Based Resources Task Force is exploring the performance characteristics of utility-scale inverter based resources directly connected to the BPS. This task force continues to develop recommended performance characteristics along with recommendations related to inverter-based resource performance, analysis, and modeling.
- **Frequency Control and Balancing:** Under the direction of the Operating Committee, the Resources Subcommittee is actively addressing potential changes to the BAL-003 Reliability Standard to ensure sufficient generator and system performance during frequency excursions. A Standard Authorization Request (SAR) is in place and a project is identified in the Reliability Standards Development Plan for 2018-2020.⁵
- **Reactive Power Requirements:** The 2017 LTRA identified a potential trend with increasing amounts of reactive power being supplied by nonsynchronous resources such as inverter-based generating resources and transmission-connected dynamic reactive power electronic devices such as static VAR compensators or static synchronous compensators. This trend is resulting from replacement of reactive power support from conventional synchronous resources and classical reactive power sources (e.g., fixed and switched shunts) with inverter based controllers. NERC Reliability Standards should be reviewed to ensure they actively account for

⁴http://www.nerc.com/comm/OC_Reliability_Guidelines_DL/Gas_and_Electrical_Operational_Coordination_Considerations_20171213.pdf

⁵http://www.nerc.com/pa/Stand/Standards%20Development%20Plan%20Library/2018-2020_RSDP_For_Board_Adoption_10192017.pdf

the performance of emerging technologies that supply reactive power support on the BPS. Performance specifications and coordination of the controls of these devices are needed. Inventory, device projections, and performance data are needed to evaluate the risk. In 2018 within the Planning Committee:

- The Reliability Assessment Subcommittee is collecting projections of reactive resources to understand the magnitude of risk exposure.
- The System Analysis and Modeling Subcommittee is tasked with assessing Reliability Standards for applicability to transmission-connected reactive controllers, address any potential reliability gaps and identify potential areas for enhancement.
- On March 7, 2018, the NERC Planning Committee conducted a distributed energy resource (DER) brainstorming session to consider next steps beyond those previously identified by the Essential Reliability Services Working Group and Distributed Energy Resources Task Force. The Planning Committee is evaluating the information gathered and will assess how to complete any additional work tasks.

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2017 Reliability Assessments

Standard and Guideline Recommendations

Mark Lauby, Senior Vice President and Chief Reliability Officer
MRC Informational Session
April 10, 2018

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- Key assessments from 2017
 - Special Reliability Assessment: Potential Bulk Power System Impacts Due to Severe Disruptions on the Natural Gas System
 - 2017 Long-Term Reliability Assessment
- Recommendations aligned with RISC priorities

- **Objective of report:** Evaluate disruptions of key natural gas facilities and their impact to BPS reliability
- **Recommendation:** NERC, with industry's support, should enhance its Reliability Guidelines and/or Standards as necessary to include additional planning and operating requirements for analyzing disruptions to the natural gas infrastructure and their impacts on the reliable operation of the BPS

- **Current Plan of Action:**
 - Planning Committee (PC) advisory group forming
 - Review current requirements (e.g., TPL-001-4)
 - Identify the need and scope for a Reliability Guideline
 - Determine if existing controls are in place to assure extreme conditions due to natural gas disruptions are considered in planning
 - Conduct industry workshop in conjunction with natural gas industry representatives to assist in the development of strategy for guidelines and/or standards
- **Next Step:**
 - Conduct industry workshop
 - Develop recommendations

- **Objective of report:** Review, assess, and report on the overall electric generation and transmission reliability of the BPS
- **Recommendation:** NERC should conduct a comprehensive evaluation of its Reliability Standards to ensure compatibility with nonsynchronous and distributed energy resources, as well as for completeness related to essential reliability services, generator performance, system protection and control, and balancing functions.

- Significant activity in progress:
 - Revisions planned for MOD-032 to address data sharing
 - Inverter-Based Resources Task Force (Reliability Guideline and Alert)
 - Standard Authorization Request in place to address frequency control and balancing
 - PC assessment of BES-connected dynamic reactive devices
- Next Steps:
 - Standing Committee Coordinating Group monitoring progress across technical committees



Questions and Answers

Special Reliability Assessment on Accelerated Generation Retirements

Action

Information

Background

In May 2017, NERC solicited policy input from stakeholders on future special reliability assessments and discussed these topics with the Member Representatives Committee (MRC). NERC proposed conducting an assessment of the potential impacts on Bulk Power System reliability that could be caused by accelerated retirements of large amounts of predominantly coal-fired and nuclear generation resources. The assessment topic was selected to align with the work of the Reliability Issues Steering Committee (RISC) and other NERC reliability assessments.

NERC is conducting a two-part assessment:

- Part I: Review regional processes for managing reliability impacts of generation retirements, identify potential issues, and develop recommendations for NERC, policymakers, and industry stakeholders. Part I will be based on regional planning processes and narrative input provided by Regional Entities and NERC assessment areas.
- Part II: Analyze system studies of the potential effect of accelerated coal-fired and nuclear generation retirements on Bulk Power System reliability during various conditions such as system events (N-1 planning contingencies, generator fuel-supply contingencies) and extreme weather conditions including polar vortex. System studies are being performed in partnership with system planners from various stakeholder entities in areas where coal-fired and nuclear generation are significant to the resource mix.

NERC staff worked with ERO Enterprise reliability assessment and performance analysis leadership to develop the assessment scope and solicited feedback from the NERC Planning Committee (PC) in December 2017. In January 2018, NERC staff engaged a variety of stakeholders, including PSE&G, Exelon, ReliabilityFirst, PJM, Texas RE, and ERCOT for participation in the assessment.

Status

NERC staff provided a questionnaire to Regional Entities in March to obtain information for developing retirement processes (Part I) and anticipates responses by April 18. Coordinated stakeholder studies of retirement scenarios (Part II) are in progress. NERC staff anticipates discussing a draft report with Regional Entities and the PC in June, and providing a final report to the NERC Board in August 2018.

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Accelerated Generation Retirements

Special Assessment Update

Mark Olson, Senior Engineer Reliability Assessments
MRC Informational Session

April 10, 2018

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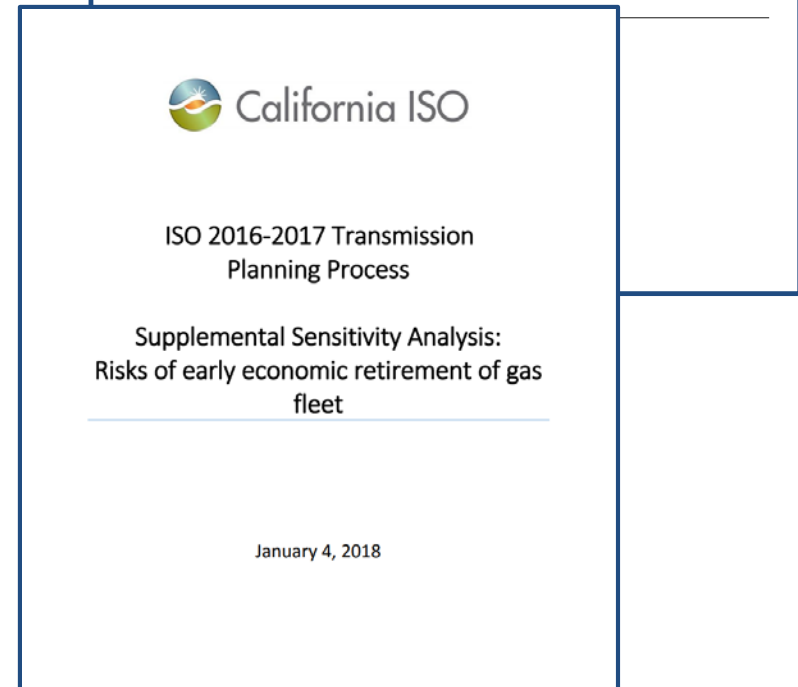
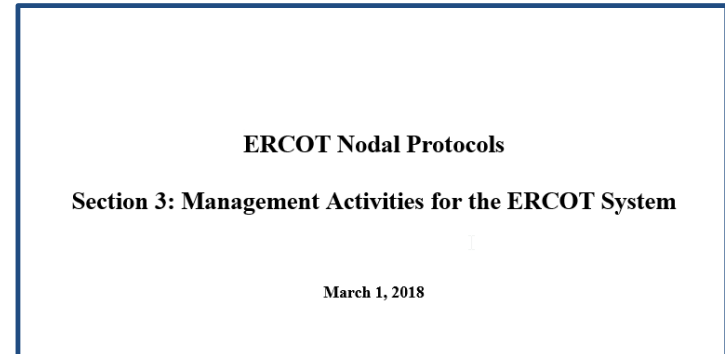


- **RISC Report:** Resource mix continues to evolve with addition of emerging technologies and energy policies
- Change is influenced by variety of policy and economic factors
- ERO Enterprise role is to provide independent technical assessment of potential risks from the changing resource mix
- MRC provided strong support for assessment selection

- Inform policymakers, regulators, and industry about potential impacts of accelerated generation retirements on reliability
- Implement RISC Report recommendations to provide technical assessments of impacts from the changing resource mix
- Recommend further actions to mitigate risks and inform decision makers

- Examine the potential impacts of retirements on:
 - Resource and transmission adequacy
 - BPS reliability in event scenarios (e.g., extreme weather, generator fuel supply disruptions)
- Recommend improvements to generator retirement planning processes to mitigate risks where appropriate
- Assessment focuses on at-risk generation, such as nuclear and coal-fired generators in market areas
- Understand long-term implications of decreased resource diversity

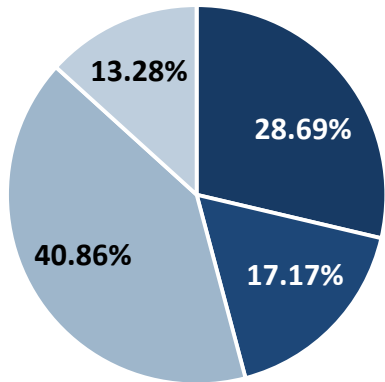
- Describe regional processes for managing generator retirements
 - Timelines and responsibilities for review and approval
 - Studies performed
- Identify recommendations to mitigate risks from accelerated generator retirements



- Analyze industry studies of the potential reliability impact of accelerated generator retirements
- Coordinate with utilities and RTOs to understand transmission implications through power flow studies
- Assess reserve margins in “polar vortex” scenario

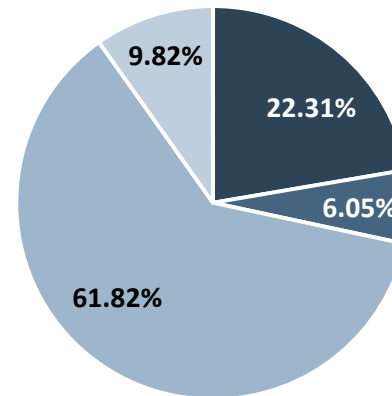
- Areas of interest include those with significant at-risk generation
 - Predominantly coal-fired and nuclear generation due to economic factors

2022 Resource Mix: PJM



Generation	MW
Coal	54,432
Nuclear	32,583
Gas	77,523
All others	25,202

2022 Resource Mix: ERCOT



Generation	MW
Coal	18,369
Nuclear	4,981
Gas	50,899
All others	8,088

Date	Milestone
November – December 2017	Planning Committee Scope Discussions
January – February 2018	Initiate entity studies and regional input
March – April 2018	Entity studies and Regional Entity assessment
May 2018	Report drafting
May – June 2018	Planning Committee Review
June – July 2018	NERC Senior Management Review
July 2018	MRC Review
August 2018	NERC Board Review

A stylized map of North America is centered on the page. The map is divided into three horizontal color bands: a light purple band at the top, a medium blue band in the middle, and a dark blue band at the bottom. The word "Questions?" is written in a large, bold, black sans-serif font across the middle of the map, overlapping the medium blue band.

Questions?