Meeting Minutes
Operating Committee
June 5-6, 2018
Ritz-Carlton New Orleans
921 Canal Street
New Orleans, Louisiana 70112

A regular meeting of the NERC Operating Committee (OC) was held on June 5-6, 2018, in New Orleans, Louisiana. The meeting agenda and the attendance list are affixed as Exhibits A and B, respectively; and individual statements and minority opinions as Exhibits C and D, respectively. The meeting presentations are posted in a separate file at OC Presentations.

OC Chair Lloyd Linke convened the meeting at 1:00 p.m. CDT on Tuesday, June 5, 2018. Secretary Stephen Crutchfield announced that a quorum was present, read the Notice of Public Meeting and referred the committee to the NERC Antitrust Compliance Guidelines.

Chair’s Opening Remarks
Chair Linke welcomed members and observers to the meeting and recognized NERC Board of Trustees (Board) Chair Roy Thilly.

Consent Agenda (Item 2)
Chair Linke noted that there were no changes to the minutes and he requested a motion to approve. Alan Bern made the motion to approve the minutes which carried without dissent. By consent, the committee approved the minutes of the March 6-7, 2018 meeting.

Chair’s Remarks (Item 3)
Chair Linke reported on the May 9, 2018 Member Representatives Committee (MRC) Meeting and the May 10, 2018 Board meeting. The major

Meeting Highlights
1. Chair Linke appointed Doug Peterchuck (state/muni) as the Vice Chair of the OC Nominating Committee.
2. Reliability Coordinator Reliability Plan Reference Document: The Operating Reliability Subcommittee (ORS) recommended approving the Reference Document. OC members discussed the contents of the Reference Document and had concerns about actions for Reliability Plans that were deemed inadequate or lacking. The OC assigned the ORS to revise the Reference Document to address these concerns.
4. At OC request, the ORS examined the “non-BES” language in requirements in TOP-001-4 (R 10.3 and 10.6). The ORS feels that the requirements are intended to address cases where non-BES facilities are being evaluated as possible BES facilities through the BES Exception process. This rationale for the requirement was highlighted in FERC Order 817 (November 19, 2015). The new requirements provide a “stop-gap” that ensures monitoring during the assessment period. ORS recommends that no further compliance guidance is required and the action item was closed.
5. The Event Analysis Subcommittee (EAS) is reviewing the Reliability Guideline: Generating Unit Operations During Complete Loss of Communications. The EAS is planning to approve changes and forward the approved document to the OC by June 30. Chair Linke noted that the OC will hold an e-mail ballot to authorize posting the document for public comment.
6. With the documents that were approved in March by the OC and PC, the Essential Reliability Services Working Group (ERSWG) has completed its charge and is recommending the disbandment of the ERSWG. This was approved by the OC (the PC also voted to disband the ERSWG). Chair Linke will ask each OC subcommittee to look at ERSWG report recommendations and see if there are any recommendations that the subcommittees need to follow and if so, make appropriate revisions to their scope/charter.
7. Jake Schmitter, E-ISAC, provided an overview of GridEx IV activities and Lessons Learned. GridEx IV was held in November 2017.
8. Vice Chair Zwergel reported that the review team believes the OC and ERO plans are fully aligned but the team suggested a few revisions to the OC Strategic Plan to address emergent issues.
10. Brandon Harrington (AECI) provided a presentation covering an alarm management tool developed to help system operators during time of excessive amounts of alarms.
discussion items included the increase in the ERO budget and Effectiveness/Efficiency of Standards. There was a lengthy budget discussion regarding the 9.5 percent increase. Most of that increase is for the E-ISAC expansion of roles and duties.

Chair Linke appointed Doug Peterchuck (state/muni) as the Vice Chair of the OC Nominating Committee. He also reminded OC members to cast their vote regarding endorsement of the *State of Reliability 2018* Report.

**OC Action Item Review (Item 4)**
Vice Chair Zwergel reviewed the list of action items and reported that several have been completed or are on the agenda for this meeting. The revised action item list is attached as **Exhibit E**.

**Operating Reliability Subcommittee (ORS) Status Report (Item 5a)**
ORS Chair David Devereaux summarized the subcommittee’s status report which was included in the agenda package. Highlights of the report include:

- The ORS approved minor changes to the TVA and MISO Reliability Plans. The MISO change was due to a new 765 kV line built in Indiana. The TVA change reflects 24/7 RC staffing at their former backup control center. The ORS continues to monitor pending changes to the MISO and PJM Reliability Plans. These expected minor changes are required due to the OVEC Balancing Area moving from MISO to the PJM RC area. ORS will provide an update at the September OC meeting.

- As part of the 2018 work plan, the ORS has formed a task team that will review and revise the ORS Scope document. Changes are required due to the transition of reliability tools away from NERC.

- The Chairs of ORS and RS presented overviews of the activities of their respective subcommittees at each other’s recent meetings. Both groups received a presentation on the status of BAL-004 (Time Error Correction) from NERC Staff. The groups will continue to look at ways to assist each other with their work plans.

- ORS continues to receive updates from the EIDSN Steering Committee on the IDC Tool enhancements. Specifically, the Parallel Flow Visualization (PFV) project is intended to improve the data quality used by the IDC during curtailment of transactions and may eventually result in changes to both NERC Reliability Standards and NAESB Business Practices. The 12-18 month field trial began on schedule in September 2107. Throughout the field trial, ORS will receive updates on tool performance from the IDCWG.

- **Net Actual and Net Scheduled Interchange** - There are current plans to move this initiative to a web based portal application hosted by EIDSN. EIDSN has indicated that this transition may be delayed into late 2018.

- ORS members discussed operational impacts and observations related to severe weather events through spring 2018.

- ORS Members discussed best practices related to wind/solar forecasting and dispatch. Reliability Coordinators (RC) discussed how each area manages operating flexibility to allow for limitations in forecast accuracy.
Reliability Coordinator Reliability Plan Reference Document (Item 5ai)
ORS Chair Devereaux led a discussion regarding RC Reliability Plans no longer being required by a standard (*note – the ORS has been working on this topic for 2.5 years). The question was does the OC/ORS want to still have purview over these plans or to leave it to NERC Certification. He noted the Reference Document was approved by 2/3 vote. Minority report: Some voted against it because they didn’t think the guide was appropriate. Others felt it was too watered down. Chair Devereaux recommend approval of the document and encouraged discussion.

OC members discussed the contents of the Reference Document and had concerns about actions for Reliability Plans that were deemed inadequate or lacking. The OC assigned the ORS to revise the Reference Document to include a process for OC communication to NERC/Regions and Certification Teams, where applicable, in cases where ORS members raised concerns with RC Reliability Plans that remained unresolved. Include language regarding cases where the RC plan was not brought to the ORS for endorsement for either a new RC or an RC went beyond the three year review of the plan per the Reference Document.

Reliability Guideline: Cyber Intrusion Guide for System Operators (Item 5aii)
ORS Chair Devereaux reviewed the timeline for this guideline. It was posted after the December 2017 OC meeting for a 45-day comment period. Comments received as well as ORS responses were included in the agenda package. The guideline was developed by a joint CIPC/ORS team with some assistance from the Personnel Subcommittee. The ORS recommends OC approval of the guideline. Gerry Beckerle made a motion to approve. The motion was approved without dissent.

TOP-001-4, Requirements R10.3 and 10.6 Guidance (Item 5aiii)
ORS Chair Devereaux discussed the action item regarding guidance for TOP-001-4 R10.3 and 10.6. At OC request, the ORS examined the “non-BES” language in requirements in TOP-001-4 (R 10.3 and 10.6). The group feels that the requirements are intended to address cases where non-BES facilities are being evaluated as possible BES facilities through the BES Exception process. This rationale for the requirement was highlighted in FERC Order 817 (November 19, 2015). The new requirements provide a “stop-gap” that ensures monitoring during the assessment period. ORS recommends that no further compliance guidance is required and that the action item be closed out. Chair Linke agreed and closed the action item.

Resources Subcommittee (RS) Status Report (Item 5b)
RS Chair Tom Pruitt and ORS Chair Devereaux noted coordination between the subcommittees regarding Time Error Correction (TEC) and BAL-004/NAESB business practices. BAL-004 and NAESB WEQ Standard are both retired and the RS recommends no further action by the OC at this time. It was noted that entities receiving a TEC from a RC are considered to have received an Operating Instruction which requires action under NERC standards. This will ensure that all Balancing Authorities (BAs) participate in TEC.

RS Chair Pruitt provided an overview of subcommittee’s status report which was included in the agenda package. Highlights of the report include:
• **BAL-003 SDT/LBNL** – The initial standard drafting team (SDT) meeting was held on April 23-24 immediately prior to and at the same location as the RS meetings on April 25-26 in St Paul, MN. The Lawrence Berkeley National Laboratory (LBNL) presented jointly to the BAL-003 SDT and RS on the FERC commissioned report on Frequency Control Requirements for Reliable Interconnection Frequency Response that was released on 2/14/18. In addition to the formal presentations, discussions with members of both groups provided additional insight and support for trends noted by the RS.

• **NERC Primary Frequency Response Guideline Document** – A subteam (led by Daniel Baker, SPP) had already been formed to update this document. Based on the additional information provided by the LBNL report and in discussions with team members, additional guidance on sustained performance and response from non-synchronous resources is being expanded. Roughly bi-weekly calls of the subteam have been scheduled to address the increased effort. Target completion date remains end of 2018.

• **Retirement of NERC BAL-004 and NAESB WEQ-006** – Howard Gugel, NERC covered the developments that caused retirement of BAL-004 effective 4/1/2017. After much discussion, the recommendation at the RS was to continue to use the existing practices for MTECs for each Interconnection pending further discussion by the ORS and possibly the OC.

**RS Frequency Working Group (FWG)** – the FWG selected M4 and BAL-003-1 frequency events for December 2017, January 2018, and February 2018 for the Interconnections. The FWG also reviewed the 2017 Operating Year events for each Interconnection and Form 1 and Form 2 for 2018 Operating Year. The FWG discussed the M-4 event criteria process and reviewed a revised draft of a systematic approach to event selection.

**RS Inadvertent Interchange Working Group (IIWG)** – an update on the Interconnection Inadvertent Interchange was provided and balances continue to trend down. 2017 outreach has been successful in both managing time error and reducing balances in coordination.

**Reserves Working Group (RWG)** — RWG Chair Tony Nguyen reviewed the voluntary DCS submittal process for BAL-002-2. A summary of the first submittal (first quarter 2018) was presented and reviewed.

**Generator Survey** – the Western Interconnection (WI) Generator Operator (GO) survey has been completed and analysis of the information is in progress. Compilation of the EI results is complete and analysis of data submitted has begun.

**BA Performance Data** – The RS reviewed the BAL-001 CPS1 and BAAL Data submitted for the first quarter of 2018. Additional outreach will continue to help BA reconcile issues with CPS 1 and BAAL calculations.

**Time Error** – RS reviewed the four Interconnection time error reports for the first quarter of 2018. Manual TEC for the EI and WI continues to experience mostly fast corrections. The RS will continue to monitor time error, BA’s inadvertent balance changes, and mismatches of NI₅ and NI₆, between BAs.
Quarterly review of ERS Measures – Matthew Varghese, NERC reviewed the Measure 1 Interconnection Inertia Reports and Measure 2 RoCoF and the MW analysis. Brad Gordon, NERC reviewed the current draft of the related portions of the *State of Reliability 2018* report.

Quarterly Review of Interconnection Frequency Performance - Terry Bilke reviewed the performance for all the Interconnections. Representatives from each Interconnection were tasked to review the largest outliers.

Changes in BA Area Footprints – in the EI, integration of OVEC into PJM Balancing Area RC has been delayed. In the WI, a resource will move from BPA to GRID and required transfer of FBS between the BAs. Also in the WI, a new BA will be formed from certain other BPA BA resources; date of this change is still TBD.

The draft of the BA Footprint Change reference is under additional revision prior to review/revision by NERC staff and the ORS. Pending revisions from those reviews, the document will be submitted for endorsement by the RS and, if endorsed, subsequent submittal for approval by the OC.

Event Analysis Subcommittee (EAS) Status Report (Item 5c)

EAS Chair Rich Hydzik summarized the subcommittee’s status report which was included in the agenda package. He highlighted the following topics:

Lessons Learned:

- Three Lessons Learned to be published since last OC meeting
  - LL20180601 – Back Office EMS Support Tools Impact Real-Time Situational Awareness
    - Reliability Coordinator (RC) contacted entity about a particular contingency
    - Entity identified that half of the contingency lists in the EMS list were disabled
    - Back-office study user had opened and modified the contingency list control display
    - Inadvertently impacted the contingencies being displayed in the real-time environment
  - LL20180602 - Loss of Communication to Multiple SCADA RTU’s at a Switching Center
    - Grid Operations lost communication with 87 RTUs for 78 minutes
    - Primary station service power source was taken out of service for maintenance
    - UPS general alarm that was acknowledged by operators but not investigated
    - 5.5 hours later UPS batteries failed
    - UPS auto/manual restart switch had been left in the factory default setting: manual – tripping AC breaker
  - LL20180603 - External Model Data causing State Estimator (SE) to not converge
    - Several entities have experienced SE outages involving Inter-Control Center Communications Protocol (ICCP) data received from neighboring entities
• Topology of the neighboring system had changed but the receiving entities had not updated their representation
  • ICCP data no longer matched with the older model, and the SE was unable to converge
• Details on the Lessons Learned have been included in OC Materials
• EAS has contacted Mark Child (CIPC Chair) to establish a CIPC resource
  ▪ Lessons Learned development as needed
  ▪ TOP-001-4 R20 group
    • Network SME
    • CIP SME
On-going activities:
• OC Assignment to review TOP-001-4 R20 and R21 as requested to clarify “redundant and diversely routed” language as well as testing requirements
  ▪ Group has formed membership, developed scope, and is investigating issue
  ▪ Indications that Regional Entities are not entirely consistent in guidance
  ▪ Ryan Mauldin (NERC Compliance) is working with group
  ▪ Group is evaluating whether they will pursue a guideline or guidance
• Review of Reliability Guideline: Generating Unit Operations During Complete Loss of Communications
  ▪ EAS is planning to approve changes and forward this to OC by June 30
  ▪ Chair Linke noted that the OC will receive this and hold an e-mail ballot to authorize posting the document for public comment.
• EMSWG
  ▪ Met last week in Atlanta to develop October conference materials
  ▪ Extended to one and one-half days based on attendee feedback
  ▪ Focus is “Evolution of EMS Systems”
    • New standards like TOP-001/TOP-010
    • Highlight new tools/innovations regarding voltage stability analysis, alarm tools, etc.
    • Include telecom vendors
New items:
• Event Analysis Process Review – Issues for consideration
  ▪ Categories for Inverter Disturbances and DC Asynchronous Tie Events
- EAP Changes to Category 1.h?
  - Change 30 minutes to 45 minutes?
  - What does the data say?
  - Will we miss something?
- Near Miss Category?
  - Question from Performance Analysis Subcommittee (PAS) (Paul Kure)

- EAS Scope Document Revisions
  - SPP RE changes
  - Review scope overall

**Personnel Subcommittee (PS) Status Report (Item 5d)**
PS Chair Rocky Williamson summarized the subcommittee’s status report which was included in the agenda package.

- The PS is working on a comprehensive evaluation of adult learning principles and instructional design concepts in order to develop program criteria that results in quality learning events.
- The PS is recruiting new members for the Continuing Education Review Panel (CERP).
- Audits of Continuing Education courses and providers.
  - There were 34 providers being audited in 2018Q2. The audits are complete and all providers and courses successfully completed the audits.

**PS Work Plan**

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<thead>
<tr>
<th>Description</th>
<th>Status</th>
<th>Due</th>
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<tbody>
<tr>
<td>CE Program Manual 5.0</td>
<td>In progress</td>
<td>TBD</td>
</tr>
<tr>
<td>• Review, restructure, simplify, and produce CE Manual.</td>
<td>In progress</td>
<td>Q3 2018</td>
</tr>
<tr>
<td>• Review, restructure, and produce corresponding guidelines.</td>
<td>In progress</td>
<td>Q4 2018</td>
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<tr>
<td>Industry Outreach</td>
<td></td>
<td></td>
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<tr>
<td>• Develop and implement communication plan for CE manual project</td>
<td>Not started</td>
<td>Q4 2018</td>
</tr>
<tr>
<td>• Develop training plan for CE manual project</td>
<td>Not started</td>
<td>Q4 2018</td>
</tr>
<tr>
<td>• SOCCED (Clarus) update: communication and training support</td>
<td>In Progress</td>
<td>Based on SOCCED SOW</td>
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<tr>
<td>• Provide regular updates to NATF Training Working Group</td>
<td>Ongoing</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Description</td>
<td>Status</td>
<td>Due</td>
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<td>-----------------------------------------------------------------------------</td>
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<tr>
<td>Outreach and coordination with other subcommittees and working groups – EAS.</td>
<td>Ongoing</td>
<td>Ongoing</td>
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<tr>
<td>Recruiting new members for the CERP</td>
<td>Ongoing</td>
<td></td>
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<tr>
<td>Develop benefits of membership document</td>
<td>In Progress</td>
<td>Q1 2018</td>
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<tr>
<td>CERP Training on New SOCCED audits</td>
<td>Planning</td>
<td>Q2 2018</td>
</tr>
<tr>
<td>Reliability Guidelines and Reference Documents - Develop summary for each</td>
<td>In Progress</td>
<td>on-going</td>
</tr>
<tr>
<td>document and conduct webinars as needed for each revised document.</td>
<td></td>
<td></td>
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<tr>
<td>Review and coordinate with PCGC regarding survey of certification credentials results.</td>
<td>In progress</td>
<td>Q4 2018</td>
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Continuing Education Program Statistics

Reliability Assessment Subcommittee (RAS) (Item 5e)
Tim Fryfogle provided an update on RAS activities. Highlights include:

2018 Summer Reliability Assessment
Most assessment areas demonstrate resource adequacy by maintaining sufficient Anticipated Resources to meet and exceed their planning Reference Margin Levels for this summer.

- The Anticipated Reserve Margin for ERCOT falls to 10.9 percent, below their Reference Margin Level of 13.75 percent for this summer. During extreme weather, there is an increasing risk of operational issues when reserve margins are tight. If forecasted summer conditions materialize, ERCOT may
need to rely on emergency operating procedures (EOPs) and import capabilities from neighboring Areas.

**2018 LTRA** – The development schedule was included in the presentation. Draft narratives and final data are due to NERC on June 22. Narratives will be posted for peer reviews on 25.

**PAWG**

  - PC vote June - approved
- 2018 Core ProbA
  - High priority in 2018
  - RAS Approved Scenario
  - Base Case Integration into LTRA
  - RAS full report review by November 2018
  - PC Approval 4Q, 2018
- Data Collection Approaches and Recommendations Report
  - Moderate priority in 2019
- The final report will be issued in December, 2018

**Essential Reliability Services Working Group (ERSWG) Status Report (Item 5f)**

ERSWG Co-chair Todd Lucas – with the documents that were approved in March by the OC and Planning Committee (PC), the ERSWG has completed its charge and is recommending the disbandment of the ERSWG. It was noted that the PC has not disbanded the ERSWG yet but that subject is on the PC agenda. Gerry Beckerle made a motion to disband the ERSWG.

OC members discussed the committee having an interest in DER and that the OC had considered forming a subcommittee or working group on this topic a few years ago. What should the OC do now to keep up with DER issues/concerns/evolution on a more permanent basis? Chair Linke will ask each OC subcommittee to look at ERSWG report recommendations and see if there are any recommendations that the subcommittees needs to follow. If so, come back to the OC with appropriate revisions to their scope/charter for approval.

The motion passed without dissent. It was noted that the PC still needs to act on this task.

NOTE: The NERC PC also voted to disband the ERSWG.

**Joint Meeting Topic discussion (Item 6)**

Chair Linke recapped the Joint OC/PC meeting topics and opened the floor for any discussion by the OC. The Joint meeting topics were:

1. Standards Efficiency Review and Standards Grading Project
2. Level 2 NERC Alert: Loss of Solar Resources during Transmission Disturbances due to Inverter Settings – II
3. 2018 State of Reliability Report
4. NERC Rules of Procedure Section 1600 Data Request for Geomagnetic Disturbance (GMD)

There were some discussions regarding standards and E-ISAC topics:

- Jim Fletcher - MOD-026/027 are proposed for retirement. How does NERC expect to gather the data required in those standards? Howard Gugel (NERC Standards) suggested that OC members submit comments on the posted SAR expressing the need for that data and recommend retaining the requirements.
- E-ISAC budget increase – Chair Linke indicated this followed the plans for the E-ISAC. Activities are not expected to increase burden of work for regions. Entities may see increased information sharing if they are E-ISAC members.

**Reliability Issues Steering Committee (RISC) Status Report (Item 7)**

Vice Chair Zwergel presented an update on the activities of the RISC. The committee has completed the annual RISC report for the Board. They are working on the resiliency framework and responding to comments on that item. Preparations are under way for the March 2019 Summit (held every two years). Pete Brandien, RISC Chair reported that the RISC has looked at the draft resiliency framework, the definition of Adequate Level of Reliability and other related documents. The initial assessment is that the ERO Enterprise has resiliency addressed.

**Resilience Framework update (Item 8)**

Vice Chair Zwergel reviewed the input from the OC to the RISC regarding the Resilience Framework. The following input was provided:

**March 2018 NERC OC – Resilience Framework Assignment**

**Categories**
1. Robustness – the ability to absorb shocks and continue operating;
2. Resourcefulness – the ability to skillfully manage a crisis as it unfolds;
3. Rapid Recovery – the ability to get services back as quickly as possible; and
4. Adaptability – the ability to incorporate lessons learned from past events to improve resilience.

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<thead>
<tr>
<th>No.</th>
<th>Category</th>
<th>Activity</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>1,2,3,4</td>
<td>Ensure quality of training for System Operators to reliably manage normal and disturbance conditions</td>
<td>PS provides oversight on Continuing Education Program requirements for System Operators and performs audits of Continuing Education providers and training activities to ensure activities meet the requirements.</td>
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<tr>
<td>No.</td>
<td>Category</td>
<td>Activity</td>
<td>Description</td>
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<tr>
<td>2</td>
<td>1,2,4</td>
<td>Develop/Maintain/Communicate Reliability Guidelines and technical reference documents to disseminate Good Industry Practices to ensure reliability/resiliency.</td>
<td>Gas &amp; Electric Operational Coordination Considerations</td>
</tr>
<tr>
<td>3</td>
<td>2,3</td>
<td>Develop/Maintain/Communicate Reliability Guidelines and technical reference documents to disseminate Good Industry Practices to ensure reliability/resiliency.</td>
<td>Generating Unit Operation During Complete Loss of Communications</td>
</tr>
<tr>
<td>4</td>
<td>1,4</td>
<td>Develop/Maintain/Communicate Reliability Guidelines and technical reference documents to disseminate Good Industry Practices to ensure reliability/resiliency.</td>
<td>Generating Unit Winter Weather Readiness (Conduct annual Webinar prior to cold weather)</td>
</tr>
<tr>
<td>5</td>
<td>2,3</td>
<td>Develop/Maintain/Communicate Reliability Guidelines and technical reference documents to disseminate Good Industry Practices to ensure reliability/resiliency.</td>
<td>Loss of Real Time Reliability Tools Capability</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>Develop/Maintain/Communicate Reliability Guidelines and technical reference documents to disseminate Good Industry Practices to ensure reliability/resiliency.</td>
<td>Operating Reserve Management</td>
</tr>
<tr>
<td>7</td>
<td>1,2</td>
<td>Develop/Maintain/Communicate Reliability Guidelines and technical reference documents to disseminate Good Industry Practices to ensure reliability/resiliency.</td>
<td>Situational Awareness for the System Operator</td>
</tr>
<tr>
<td>8</td>
<td>1,2,3</td>
<td>Develop/Maintain/Communicate Reliability Guidelines and technical reference documents to disseminate Good Industry Practices to ensure reliability/resiliency.</td>
<td>Work in Progress: Cyber Intrusion Guide for System Operators</td>
</tr>
<tr>
<td>9</td>
<td>1,2,3</td>
<td>Develop/Maintain/Communicate Reliability Guidelines and technical reference documents to disseminate Good Industry Practices to ensure reliability/resiliency.</td>
<td>Guideline for Primary Frequency Control</td>
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### Resilience Framework Response

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<th>No.</th>
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<th>Description</th>
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<tbody>
<tr>
<td>11</td>
<td>1,4</td>
<td>OC Strategic Plan Goal #1: Investigate, review, and assess existing and emerging issues to identify gaps impacting the reliability of the BES.</td>
<td>ERSWG investigated and developed methods to assess the impacts of the changing resource mix. Ongoing assessment efforts, primarily by the RS, to identify potential issues or emerging trends related to inertia, frequency response, ramping and load/resource balancing.</td>
</tr>
<tr>
<td>12</td>
<td>4</td>
<td>OC Strategic Plan Goal #1: Investigate, review, and assess existing and emerging issues to identify gaps impacting the reliability of the BES.</td>
<td>Inverter-based Resource Performance Task Force investigating Inverter based resource capabilities, performance characteristics and behavior under abnormal conditions. Addressing recommendations from prior disturbances. Developing recommendations for performance characteristics.</td>
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<tr>
<td>13</td>
<td>1</td>
<td>OC Strategic Plan Goal #1: Investigate, review, and assess existing and emerging issues to identify gaps impacting the reliability of the BES.</td>
<td>The OC engages with the RISC to assist in the identification and prioritization of emergent issues. Also, engagement with RISC and other appropriate parties to identify and develop mitigation processes or solutions.</td>
</tr>
<tr>
<td>14</td>
<td>4</td>
<td>OC Strategic Plan Goal #2: Promote Events Analysis Processes and utilize the results to improve reliable operation of the BES</td>
<td>EAS and NERC Staff review operational events for cause determination and the development of Lessons Learned for industry dissemination. Routine communication of new lessons learned to the industry (through documents, presentations and webinars) and routine presentations to the OC on recent events and lessons learned.</td>
</tr>
<tr>
<td>15</td>
<td>1,2,3,4</td>
<td>OC input/participation in the development of Special Assessments to provide operational feedback and good industry practice feedback</td>
<td>OC provided input to the NERC Special Assessment: Potential Bulk Power System Impacts Due to Severe Disruptions on the Natural Gas System</td>
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</table>
Additional activities the committee believes should be undertaken:

The RISC might want to consider recommending existing groups or committees address or enhance reliability in the following areas:

- Distributed Energy Resources Bulk Electric System operational impacts, i.e., impacts to Load Forecasting, System Restoration, State Estimation, RTCA results, etc.
- Fuel assurance to promote resiliency
- Quality of emergency preparedness, such as the characteristics of good “communications protocols” or “emergency plans”
- Interconnection-wide transmission loading relief procedures, such as TLR, to be more timely and precise in order to manage extreme events more effectively
- Incorporate lessons learned from past events to improve resilience
- High Impact, Low Frequency (HILF) events
- Severe Impact Resilience events
- GridEX
- New technologies such as synchrophasors to improve operations and analysis

GridEx Review and Lessons Learned (Item 9)
Jake Schmitter, E-ISAC, provided an overview of GridEx IV held in November 2017. The exercise participants included:

- 6,500 individuals
- 450 organizations
- 206 utilities
- 15 cross-sector partners
- 20 states (2 full-scale – Wisconsin and South Carolina)

The exercise included pre-exercise activities, two days of exercise (called Distributed Play) and a half day Executive Tabletop. The Distributed activities Lessons Learned included:

- Increase Proactiveness of Lead Planners
- Increase Participation from Law Enforcement and Other Critical Infrastructures
- Strengthen E-ISAC Portal Functionality
- Enhance Public Affairs and Corporate Communications
- Enhance Reliability Coordinator Communications
  - RCIS
- Increase Communications Resilience
  - WPS, GETS, HF Radio, etc.
- Increase Cyber Mutual Assistance Program Participation
- Enhance Move 0 Development (cyber intrusion)

At the end of the exercise, an Executive Tabletop was held to assess the effectiveness of the exercise and to develop Lessons Learned including:

- Increase Utility Coordination with State and Local Governments
- Enhance ESCC and EGCC communications
- Increase Coordination with Federal Government
- Ensure Unity of Public Messages
- Increase Grid Emergency Response Capabilities
- Increase Timeliness of NERC and E-ISAC Information
- Develop ESCC Process for Emergency Orders
- Ensure Utilities have Access to Sensitive Information
- Ensure Financial Needs are Met during Recovery
- Identify State and National Priorities
- Continue to Promote the Large Power Transformer Transportation Program

Anyone interested in participating in the GridEx Working Group (GEWG) is requested to contact Mr. Schmitter. The GEWG is meeting June 6, 2018, 1-5 PM.

The GridEx V Initial Planning Meeting will be held September 6, 2018.


Task team chair Sidney Jackson reviewed the team activities. The team met a few times and developed a framework for communications. This document was sent to OC members on June 1, 2018 for review. The team reviewed the OC Strategic Plan and other documents to develop the proposed process. Amy Desselle and Kimberly Mielcarek of NERC provided an overview of the types of outreach that NERC actively pursues on a routine basis. The result of this effort leverages existing avenues for communications and roll out of Reliability Guidelines and Technical Reference Documents. The team developed a Communication Form for use in disseminating the appropriate information through the appropriate communications channels. The team suggests including the procedure as Appendix 4 of the OC Charter. The OC had no questions and consensus was to include this in the OC Charter.
NERC Communications (Item 11)
Sandy Shiflett discussed the communications tools that NERC has and uses to make broad industry notification. She noted that there is a single page for Reliability and Security Guidelines for OC, PC and Critical Infrastructure Protection Committee (CIPC) guidelines. Draft guidelines that are under comment are posted on this page. Once the guideline is approved it is posted under the “Current/Approved Guidelines” section of the web page. An e-mail announcement is also sent to the NERC Roster, reaching over 3,000 participants.

- NERC Webinar for industry or targeted audiences
- Regional Staff, NERC Committees, Board of Trustees
- Other Utility Organizations (NAGF, NATF, IEEE, etc.)
- Federal organizations (FERC, DOE, etc.)
- State Organizations (PUC, etc.)
- Primary Compliance Contact at entities
- NERC e-mail announcements
- Posted on NERC website

OC Strategic Plan Review (Item 13)
Vice Chair Zwergel reported on the small team tasked to review the OC Strategic plan to coordinate with ERO Strategic plan to ensure alignment between the plans. After a thorough review, the team believes the OC and ERO plans are fully aligned. In the process of conducting the review, the team noted a few observations on the OC Strategic Plan as follows:

- There is an opportunity to make clarifying changes to improve the plan without making substantive changes.
- There is an opportunity to enhance the plan by adding metrics.
- With the rapidly changing resource portfolio, including increasing Distributed Energy Resources (DERs), the team recommends the OC reviews progress on and consider being more proactive in achieving Goal – OC 1.

This recommendation came from recognizing the evolving issue of DERs and their potential impact on BES reliability along with removing “conventional” resources from the grid. Further, potential BES reliability impacts at certain DERs penetration levels. The suggestion is the OC should consider having a strategic discussion with the PC and also perhaps the CIPC regarding DERs penetration reliability risks and potential mitigation strategies.

For reference, the following is Goal – OC 1:

“This investigate, review, and assess existing and emerging issues to identify gaps impacting the reliability of the BES and associated NERC Reliability Standards.”
The OC will engage in the identification and communication of reliability risks and potential mitigation strategies. These activities will include close coordination with the RISC as well as taking steps to create industry wide awareness.”

**Effectiveness and Efficiency Review (Item 14)**
Chair Linke – The MRC asked their Business Practice and Budget Input group to lead the Effective and Efficiency Review effort. The ERO is seeking ways and means to achieve their functions more efficiently and effectively. It has been almost 11 years since standards became mandatory and it was suggested that it would be prudent to have this sort of review, including a review of the committee structure. The group has developed a series of questions to help them in the thought process of committee structure and whether there should be any changes to the structure, organization, meeting frequency, etc. Regional Entities are also conducting a review of their committee structures. Do we need to meet four times a year or is three enough? Do all committees need to meet at the same time? The discussions are on-going.

**Adjourn and reconvene**
The OC adjourned at 4:29 p.m. CDT and reconvened the following morning at 8:00 a.m. CDT.

**Lessons Learned (Item 12)**
Glenn Dooley, Duke Energy Florida, reviewed the impacts of and lessons learned from Hurricane Irma which struck the state of Florida September 10 - 11, 2017. The highlights include:

- **FRCC Hurricane Plan**
  - Daily Calls
    - BA/TOP Reporting to RC
    - TM Status
    - Gen Status – Planned Shutdowns
    - Coordination with NG Pipelines
  - Post Storm Calls
    - Damage
    - Tie Lines
    - Customers Out
    - Facilities Out (Lines, Subs, Generation)
    - Restoration
  - This information relayed to NERC and other agencies through FRCC RE representative

- **Additional preparations:**
  - Communications with Neighbors
- Additional Staffing
- Generation Planned Shutdowns and Prep
- Mutual Aid Assistance Efforts
  - Largest MAA effort ever in Florida
- >6M Customers without Power
- Over 6.5M Mandatory Evacuations

- Operations and Restoration:
  - 500-kV lines (1)
  - 230-kV lines (48)
  - 138-kV lines (48)
  - 115-kV lines (21)
  - BES substations (12*)

- Customer outages: Peak number of outages was 6.3 million customers on 9/11/2017

- Lessons Learned:
  - Pre-staging of equipment streamlined restoration
  - Preemptively removing generation protected equipment from damage which shortened restoration
  - Continuous communications between the RC, TOPs and BAs in the FRCC Region
  - Advanced meters and intelligent grid devices were effective to pinpoint outages and operate equipment remotely
  - Flood monitors in substations located within the 100 year flood plain allowed utilities to de-energize substations at notification of rising water
  - Leveraging social media provided customers with the most current outage and restoration information
  - Aerial drones helped assess damage, evaluate work conditions, and enable real-time situational awareness
    - Infrared capabilities helped identify equipment that needed further inspection
  - Hardening and resiliency programs implemented prior to the hurricane significantly reduced the storm damage due to high winds and storm surge

**Reliability Coordinator Updates (item 15)**
- Mountain West – CJ Brown, SPP
SPP is still working with 28 entities for RC services. Coordination meetings with Peak and CAISO for data exchange and operations coordination are on-going. SPP now have the west wide model in their EMS. The next meeting is June 25-26 in Denver. They are ramping up for decisions by prospective entities in September for membership.

- California ISO – Eric Schmitt, California ISO
  CAISO formed a steering committee consisting of all entities that signed an NDA and letter of intent. This group provides oversight of the various working groups that are in process of establishing the RC capabilities. They are working on a tariff for filing. CAISO is looking for commitments in November. They will provide more clarity on oversight, etc. as the process unfolds. They are expecting RC Certification in Q1, 2019 and will perform shadow operations with Peak in 2019. They expect to go live for all services in September, 2019. Cooperation and coordination has been very good among entities.

- Peak RC – Terry Baker, Peak RC
  RC-RC coordination – there is an executive committee providing oversight of the transition period including Operations planning, operations coordination, wide-area view, and data sharing. Looking for commitments by end of July for budgeting purposes. Only “known” at this point is CAISO will become RC for its footprint and Alberta will provide their own RC services.

Human Performance – Alarm Management Distilled (Item 16)
Brandon Harrington (Associated Electric Cooperative) provide a presentation covering an alarm management tool developed to help system operators during time of excessive amounts of alarms due to system faults. Using Excel, AEC built a spreadsheet with pivot tables, column filtering and various formulas to filter alarms. The spreadsheet uses Power Query to pull directly into Excel from alarm archive SQL database. The spreadsheet contains four color coded sections that sort alarms and prioritize them.

Real-time Assessments Task Force (RTATF) update (Item 17a)
Doug Peterchuck, chair of the RTATF, provided an update on the endorsement of Implementation Guidance by the ERO. The guidance was accepted in May, 2018. Next step is to form a new task force with existing members and some new ones to work on RTA quality action item.

Methods for Establishing IROL Task Force (MEITF) (Item 17b)
Ryan Quint provided an update on the MEITF. He reported that the TF has been working on revising the framework based on comments received. They are revisiting the technical aspects of IROL framework and coordinating with the standard drafting team. They are working on standards for IROL that they believe FERC will support, pros/cons of the frameworks and quantitative and qualitative analysis of the frameworks. They are finalizing a white paper that lays out the competing frameworks with recommendation for path forward. The team is working through the comments on the guideline and making conforming revisions to the document which they plan to bring the guideline to OC for approval in September. The next meeting is in July. With completion of framework and guideline, the MEITF will have completed their tasks.
Inverted-baser Resources Performance Task Force (IRPTF) (Item 17c)
During the Joint OC/PC/CIPC meeting, Ryan Quint provided an update on momentary cessation improvements made by industry since the inception of the IRPTF. It was discovered at one plant that it took 98 seconds to fully return to normal after a momentary cessation. The plant changed some parameters and their response time dropped to 0.25 seconds. This is a vast improvement for reliability.

The IRPTF also noted that there was a new NERC Alert, Loss of Solar Resources during Transmission Disturbances due to Inverter Settings – II, as a result of the Canyon II fire. The alert contained a data collection worksheet for industry to provide NERC with relevant data by July 31, 2018.

North American Transmission Forum (Item 18a)
Ken Keels discussed the recent activities of the NATF which include:

Development and Publication of Practices and Reference Documents”
- Risk and Controls Matrix Examples for Transmission Operations
- Governance: Impacting Effective Oversight within Your Organization
- How to Design and Develop a Risk Assessment, Internal Controls, and Compliance Metrics Program
- Distributed Energy Resource (DER) Modeling and Study Practice Reference Document (Public version coming soon!)
- Vegetation Management Clearances
- Vegetation Management – Managing Off-Right of Way Hazard Trees

Practices and reference documents nearing completion
- Control Center Design, Construction and Operations Environment Practices
- Contingency Analysis Performance Monitoring Practices
- Risk Assessment, Internal Controls, and Compliance Peer Team Effectiveness Training
- SF6 Breaker Insulation Testing
- Lines Inspection
- Cyber Supply Chain Risk Management Guidance White Paper
- CIP-013-1 Compliance Implementation Guidance

Practices and reference documents under development (related to system operations)
- Human Performance Observation and Coaching Practices
- Conservative Operations and Emergency Tools Practices
- Situational Awareness Key Elements White Paper
• Situational Awareness Tools Practices
• Systematic Approach to Training

**Spare Tire Project:**

• **Formalize Knowledge Sharing**
  - Compile individual NATF member "Spare Tire" and “Conservative System Operations” plans
  - Compile various industry "Spare Tire" type activities (i.e., EPRI, EIDSN, NERC PRASE, DOE, etc.)
  - Schedule targeted assistance visits to several companies to review Conservative Operations plans and "Spare Tire" plans
  - GridEx IV
  - Share learnings from related member exercises and drills
  - Identify, document and share best practices and best ideas with all NATF members.

• **Establish Formal Strategies and Plans**
  - Develop Conservative Operations Reference Document
    - “Conservative Operations and Emergency Tools Practices”
  - Develop a "Spare Tire" plan Reference Document
  - Hold webinar/workshop to share these best practices
  - Collaborate with EPRI on Spare Tire Project:
    - “Assessment of Extreme Contingencies Affecting EMS-Control Center Functionalities”

• **Conservative Operations and Emergency Tools Practices**
  - Identify Conditions to Enable and Disable
  - Roles and Responsibilities
  - Internal Communications
  - Common Conservative Operations Strategies
  - Emergency Communications
  - Load Management

**NATF Changing Resource Mix Activities**

• Key topic area covering several practice groups
  - System Operations
  - Modeling and Planning
  - System Protection
Resiliency

- Presentations at workshops and web meetings
  - Example: Joint NATF-EPRI-NERC-UVIG webinar series
- Not yet a formal practice area or initiative

**NERC Standards (Item 18b)**
This item was previously addressed in the Joint session as well as OC discussion earlier in the meeting.

**Next Meeting**
The next meeting of the Operating Committee will be on September 11-12, 2018 in Minneapolis, MN.

**Adjourn**
There being no further business before the Operating Committee, Chair Linke adjourned the meeting on Wednesday, June 6, 2018 at 10:28 a.m. CDT.

**Stephen Crutchfield**
Stephen Crutchfield
Secretary
Agenda
Operating Committee

**Joint Session: Operating Committee (OC)/Planning Committee (PC)/ Critical Infrastructure Protection Committee (CIPC): March 6, 2018 | 10:00 a.m. – Noon CDT

June 5, 2018 | 1:00 – 5:00 p.m. CDT
June 6, 2018 | 8:00 a.m. – Noon CDT

Ritz-Carlton New Orleans
921 Canal Street
New Orleans, Louisiana 70112

Call to Order

NERC Antitrust Compliance Guidelines and Public Announcement

Introduction and Chair’s Remarks

1. Administrative items
   a. Arrangements
      i. Safety Briefing and Identification of Exits (Hotel Staff)
   b. Announcement of Quorum
   c. Background Information
   d. OC Membership 2017-2019
      i. OC Roster
      ii. OC Organizational Chart
      iii. OC Charter
      iv. Parliamentary Procedures*
      v. Participant Conduct Policy
   e. Future Meetings
      i. Please note that Joint OC/PC/CIPC meetings will be scheduled from 10:00 a.m. to Noon on the first day of the Committee meetings.

<table>
<thead>
<tr>
<th>2018 Meeting Dates</th>
<th>Time</th>
<th>Location</th>
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<tr>
<td>September 11, 2018</td>
<td>1:00 to 5:00 p.m.</td>
<td>Minneapolis</td>
<td>Hyatt Regency</td>
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<td>September 12, 2018</td>
<td>8:00 a.m. to Noon</td>
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<td>December 11, 2018</td>
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<td>December 12, 2018</td>
<td>8:00 a.m. to Noon</td>
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2019 Meeting Dates (proposed) | Time | Location | Hotel |
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Consent Agenda – Approve

2. Minutes*
   a. March 6-7, 2018 Meeting

Regular Agenda

3. Remarks and Reports
   a. Remarks by Lloyd Linke, Operating Committee (OC) Chair
   b. Report of May 9, 2018 Member Representatives Committee (MRC) Meeting and the May 10, 2018 Board of Trustees (Board) Meeting

4. OC Action Items Review* – Vice Chair Zwergel - Information

5. Subcommittee Status Reports - Review
   a. Operating Reliability Subcommittee (ORS)* – Chair David Devereaux
      i. Reliability Coordinator Reliability Plan Reference Document* - Approve
      iii. TOP-001-4, Requirements R10.3 and 10.6 Guidance - Update
   b. Resources Subcommittee (RS)* – Chair Tom Pruitt
   c. Event Analysis Subcommittee (EAS)* – Chair Rich Hydzik
   d. Personnel Subcommittee (PS)* – Chair Rocky Williamson
   e. Reliability Assessment Subcommittee (RAS)* – Chair Tim Fryfogle
   f. Essential Reliability Services Working Group (ERSWG)* – Co-Chair Todd Lucas

6. Joint Meeting Topic discussion – Review and Discussion – Chair Linke
   a. Standards Efficiency Review and Standards Grading Project
   b. Level 2 NERC Alert: Loss of Solar Resources during Transmission Disturbances due to Inverter Settings – II
c. 2018 State of Reliability Report

d. NERC Rules of Procedure Section 1600 Data Request for Geomagnetic Disturbance (GMD) Data

e. North American Generator Forum Update

7. Reliability Issues Steering Committee (RISC) Status Report – Review and Discussion – Vice Chair Zwergel

8. Resilience Framework update – Vice Chair Zwergel

9. GridEx Review and Lessons Learned – Jake Schmitter, NERC Staff


11. NERC Communications – Sandy Shiflett, NERC Staff


13. OC Strategic Plan Review – Information – Vice Chair Zwergel

14. Standards Efficiency Review – Information – Chair Linke

15. WECC Reliability Coordinator Updates – Information and Discussion
   a. Mountain West – CJ Brown, SPP
   b. California ISO – Eric Schmitt
   c. Peak RC – Terry Baker

16. Human Performance – Alarm Management Tool – Information - Brandon Harrington, AECI

17. Task Force Updates
   a. Real-time Assessments Task Force (RTATF) Guidance – Information and Discussion – Doug Peterchuck, RTATF Chair
   b. Methods for Establishing IROL Task Force (MEITF) – Information and Discussion – Ryan Quint, NERC Staff
   c. Inverter-based Resources Performance Task Force (IRPTF) – Information and Discussion – Allen Schriver, IRPTF Chair

18. Forum and Group Reports - Information
   b. NERC Standards – Howard Gugel, NERC Staff

19. Chair’s Closing Remarks

20. Adjournment

*Background materials included.
## Attendees
### Operating Committee Meeting
### June 5-6, 2018

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<th>OFFICERS</th>
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<tr>
<td>Chair</td>
<td>Lloyd Link</td>
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<td>Vice Chair</td>
<td>Dave Zwerdel</td>
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<td>Secretary and Staff Coordinator</td>
<td>Stephen Crutchfield</td>
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<td>Cooperative</td>
<td>Jeff Harrison Keith Carman</td>
<td>State/Municipal</td>
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<td>Greg Darnell JT Thompson</td>
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<td>Michelle Rheault Jason Boniface Meg Albright Stephane Desbiens</td>
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<td>State Government</td>
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<td>Eric Schmitt Peter Brandien</td>
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<td>FRCC</td>
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<td>SERC</td>
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<tr>
<td>U.S Federal</td>
<td>Thanh Luong</td>
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## GUESTS

### Subcommittee Leadership

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<tr>
<td>EAS Chair</td>
<td>Rich Hydzik</td>
<td>EAS Vice Chair</td>
<td>Vinit Gupta</td>
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<tr>
<td>ORS Chair</td>
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<td>Rocky Williamson</td>
<td>PS Vice Chair</td>
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<tr>
<td>RS Chair</td>
<td>Tom Pruitt</td>
<td>RS Vice Chair</td>
<td>Sandip Sharma</td>
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### Regional Entity Guests

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<th>Region</th>
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<tr>
<td>FRCC</td>
<td>Hassan Hamdar</td>
<td>SERC</td>
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<td>RF</td>
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<td>Evan Paull</td>
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### Industry Guests

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<tr>
<td>Todd Lucas</td>
<td>Southern Company</td>
<td>Keith Steinmetz</td>
<td>LEG/KU</td>
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<td>Brett Koelsch</td>
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<td>Kenneth Lubbert</td>
<td>KCP&amp;L</td>
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<td>Amanda Underwood</td>
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<td>Charlotte Thompson</td>
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<td>We Energies</td>
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<td>Luke Weber</td>
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<td>Arash Zafari</td>
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<td>Greg Henrich</td>
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<td>John Simonelli</td>
<td>ISO-NE</td>
<td>Roy Thilly</td>
<td>NERC Board of Trustees</td>
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### NERC Staff

<table>
<thead>
<tr>
<th>Name</th>
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<th>Company</th>
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<tbody>
<tr>
<td>Sandy Shifletti</td>
<td>James Merlo</td>
<td>Jule Tate</td>
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<tr>
<td></td>
<td></td>
<td>Brad Gordon</td>
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<tr>
<td>Darrell Richardson</td>
<td>Bob Cummings</td>
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There were none.
Minority Opinions
Operating Committee Meeting
June 5-6, 2018

There were none.
## NERC Operating Committee Action Items

**Dated: June 5, 2018**

### March 2016 Meeting Action Items

<table>
<thead>
<tr>
<th>OC meeting and item number</th>
<th>Assignment</th>
<th>Description</th>
<th>Due Date</th>
<th>Progress</th>
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<tr>
<td>1603-06</td>
<td>Resources Subcommittee (RS)</td>
<td>Modify the Reliability Guideline: Primary Frequency Control to address asynchronous resources</td>
<td>December 2018</td>
<td>March 2017 - The RS is developing a draft Reliability Guideline. March 2018 – The RS will be revising the Primary Frequency Control guideline in 2018 and will incorporated this into the revision.</td>
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### June 2016 Meeting Action Items

<table>
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<tr>
<th>OC meeting and item number</th>
<th>Assignment</th>
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<tr>
<td>1606-01</td>
<td>ORS</td>
<td>Determine the continued need for reliability coordinator reliability plans. Consider standards IRO-001 and IRO-014.</td>
<td>March 2018</td>
<td>September 2016 – ORS presented a recommendation, which the OC approved regarding the continued development of reliability plans. The OC tabled a second recommendation from the ORS and asked NERC Staff to further evaluate the ORS proposal, since it involves a Rules of Procedure change. December 2016 - Dr. James Merlo discussed the ORS motion made in September to reinstitute some sort of oversight of the RC plans. NERC supports oversight of the RC plans since they require coordination and collaboration. NERC is supportive of a guideline change as it relates to oversight of RC plans and the ORS is pursuing such a revision under action item 1609-05 below. June 2017– The ORS developed a Reliability Coordinator Plan Reference Document and is requesting OC Comments on the document. The ORS will revise the document based on comments received and bring a request to the OC at its September meeting to post the documents for a 45-day industry comment period. September 2017 – The OC requested that the ORS coordinate development / approval of the guideline with the RC Checklist that is being developed by NERC Staff.</td>
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**On June Agenda**
NERC Operating Committee
Action Items
Dated: June 5May 21, 2018

March 2018 – The ORS has coordinated with NERC staff on the Assessment Master (RC Checklist) and the Reliability Coordinator Reliability Plan Reference Document. This work is complete and the reference document will be brought before the OC in June 2018 for approval.

June 2018 - OC members discussed the contents of the Reference Document and had concerns about actions for Reliability Plans that were deemed inadequate or lacking. The OC assigned the ORS to revise the Reference Document to include a process for OC communication to NERC/Regions and Certification Teams, where applicable, in cases where ORS members raised concerns with RC Reliability Plans that remained unresolved. Include language regarding cases where the RC plan was not brought to the ORS for endorsement for either a new RC or an RC went beyond the three year review of the plan per the Reference Document.

<table>
<thead>
<tr>
<th>OC meeting and item number</th>
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</thead>
</table>
| 1609-05                    | ORS        | Update the Guideline for Approving Regional and Reliability Coordinator Reliability Plans | March 2018 | September 2016 – The OC approved an ORS recommendation to update the Guideline for Approving Regional and Reliability Coordinator Reliability Plans.

December 2016 - Dr. James Merlo discussed the ORS motion made in September to reinstitute some sort of oversight of the RC plans (original action item 1606-01). NERC supports oversight of the RC plans since they require coordination and collaboration. NERC is supportive of a guideline change as it relates to oversight of RC plans and the ORS is pursuing such a revision under this action item.

In Progress
On June-agenda
June 2017 – The ORS developed a Reliability Coordinator Plan Reference Document and is requesting OC Comments on the document. The ORS will revise the document based on comments received and bring a request to the OC at its September meeting to post the documents for a 45-day industry comment period.

September 2017 – The OC requested that the ORS coordinate development / approval of the guideline with the RC Checklist that is being developed by NERC Staff.

March 2018 – The ORS has coordinated with NERC staff on the Assessment Master (RC Checklist) and the Reliability Coordinator Reliability Plan Reference Document. This work is complete and the reference document will be brought before the OC in June 2018 for approval.

June 2018 - OC members discussed the contents of the Reference Document and had concerns about actions for Reliability Plans that were deemed inadequate or lacking. The OC assigned the ORS to revise the Reference Document to include a process for OC communication to NERC/Regions and Certification Teams, where applicable, in cases where ORS members raised concerns with RC Reliability Plans that remained unresolved. Include language regarding cases where the RC plan was not brought to the ORS for endorsement for either a new RC or an RC went beyond the three year review of the plan per the Reference Document.

### December 2016 Meeting Action Items

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<tr>
<th>OC meeting and item number</th>
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</thead>
<tbody>
<tr>
<td>1612-02</td>
<td>Dave Souder, John Stephens, Dan Woodfin, Durgesh Manjure,</td>
<td>Methods for Establishing IROLS Task Force (MEITF)</td>
<td>December 2017</td>
<td>December 2016 - The MEITF Scope document was approved by the OC and volunteers were assigned to participate on the Task Force.</td>
<td>In Progress</td>
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<td>March 2017 – A revised scope document was approved and an update on TF activities was presented at the joint OC/PC meeting.</td>
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</table>
**NERC Operating Committee**  
**Action Items**  
**Dated: June 5, May 21, 2018**

| **Nathan Schweighart** | **June 2017** – The team continues development of a Reliability Guideline. December 2017 – OC endorsed proposed Framework and related definitions. The documents are to be sent to the standard drafting team for their consideration. The OC also authorized posting the draft IROL Reliability Guideline for a 45-day comment period. March 2018 – The MEITF received 300 sets of comments on the Reliability Guideline and is reviewing the comments for inclusion in the guideline. The team is also considering revisions to the IROL framework to more closely align with the definition of Reliable Operation. The MEITF is performing a risk assessment that includes a survey to provide an inventory of existing IROLs and an assessment of impacts to existing IROLs for any proposed changes to IROL framework. June 2018 - Ryan Quint provided an update on the MEITF. He reported that the TF has been working on revising the framework based on comments received. They are revisiting the technical aspects of IROL framework and coordinating with the standard drafting team. They are working on standards for IROL that they believe FERC will support, pros/cons of the frameworks and quantitative and qualitative analysis of the frameworks. They are finalizing a white paper that lays out the competing frameworks with recommendation for path forward. The team is working through the comments on the guideline and making conforming revisions to the document which they plan to bring the guideline to OC for approval in September. The next meeting is in July. With completion of framework and guideline, the MEITF will have completed their tasks. |
| 1612-03 | **Doug Peterchuck (lead), Doug Hils, Alan Bern, Saad Malik, Paul Johnson, Michele Real** | **Real-time Assessments Task Force** | **September 2017** | **December 2016 – EAS Chair Hamdar noted that certain standards require perform of a Real-time Assessment. The EAS has concerns regarding these requirements when an entity loses their EMS capability. The OC appointed a task force to:**  
  - Discuss how Real-time Assessments are completed when there is a loss of EMS  
  - Investigate the compliance and reliability concerns  
  - Develop any necessary guidance | **In-Progress** | **Closed** |
### December 2017 Meeting Action Items

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<th>OC meeting and item number</th>
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<tbody>
<tr>
<td>1712-01</td>
<td>OC Executive Committee</td>
<td>Reliability Guideline and Reference Document outreach formalization</td>
<td>March 2018</td>
<td>December 2017 – The OC approved six Reliability Guidelines and Reference Documents at the December meeting. The NERC OC Executive Committee is to determine how this outreach will be achieved for these documents as well as going forward. March 2018 – The OC Executive Committee recommended forming a team to develop a formal roll-out process (see action item 1803-01)</td>
<td>closed</td>
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### March 2018 Meeting Action Items

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<tr>
<th>OC meeting and item number</th>
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June 2017 – The RTATF submitted proposed guidance to the OC for approval. The approval was obtained via e-mail ballot and the Implementation guidance was submitted on May 8, 2017 to NERC for approval. NERC and Regional Entity staff have provided feedback on the guidance for OC consideration. The RTATF is assessing the comments and will make appropriate revisions to the guidance.

December 2017 – The OC approved the guidance for submittal to the ERO as implementation guidance.

March 2018 – The guidance was submitted to NERC for endorsement. Concerns were noted by two Regional Entities and NERC staff is working to resolve these concerns.

June 2018 – Chair Peterchuck reported that the guidance was approved by NERC as compliance guidance.
### NERC Operating Committee Action Items

**Dated:** June 5, 2018

<table>
<thead>
<tr>
<th>Action Item</th>
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<th>Date/Time</th>
<th>Progress</th>
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<tbody>
<tr>
<td>1803-01</td>
<td>Reliability Guideline and Reference Document outreach formalization</td>
<td>December 2018</td>
<td>March 2018 – The team was formed to develop a formal roll-out process for new or revised Reliability Guidelines and Reference Documents. &lt;br&gt; June 2018 — The team developed a draft procedure and communication form for use in disseminating the appropriate information through the appropriate communications channels. The team suggests including the procedure as Appendix 4 of the OC Charter. The OC consensus was to include this in the OC Charter. The team will continue development.</td>
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<tr>
<td>1803-02</td>
<td>OC Strategic Plan Review</td>
<td>September 2018</td>
<td>March 2018 - Chair Linke committed to the NERC BOT that the OC would review its strategic plan and reference it back to NERC strategic plan to ensure alignment. This review to be completed by the September 2018 OC meeting. &lt;br&gt; June 2018 - Vice Chair Zwergel reported on that the review team believes the OC and ERO plans are fully aligned but the team suggested a few revisions to the OC Strategic Plan to address emergent issues as follows: &lt;br&gt; 1. ___ There is an opportunity to make clarifying changes to improve the plan without making substantive changes. &lt;br&gt; 2. ___ There is an opportunity to enhance the plan by adding metrics. &lt;br&gt; 3. ___ With the rapidly changing resource portfolio, including increasing Distributed Energy Resources (DERs), the team recommends the OC reviews progress on and consider being more proactive in achieving Goal – OC 1.</td>
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<tr>
<td>1803-03</td>
<td>Standards Efficiency Review</td>
<td>April 2018</td>
<td>March 2018 - Standards Efficiency Review – The OC has the opportunity to provide requirement grades to NERC for the standards efficiency review. The Executive Committee and subcommittee leadership will work with Chair Linke to develop</td>
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NERC Operating Committee
Action Items
Dated: **June 5**, 2018

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<thead>
<tr>
<th>Number</th>
<th>Subgroup</th>
<th>TLP</th>
<th>Requirement</th>
<th>Action Date</th>
<th>Description</th>
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<tbody>
<tr>
<td>1803-04</td>
<td>ORS</td>
<td>TOP-001-4, Requirements R10.3 and 10.6</td>
<td>June 2018</td>
<td>March 2018 – EAS Chair Hydzik noted that for R10.3, the TOP needs non-BES facility information and status for its TOP Area, and for R10.6, the TOP needs non-BES facility information outside its TOP Area as identified by the TOP. The ORS will review the development history of these requirements to determine the intent of this language and determine a course of action to address such as developing Compliance Guidance or a Reliability Guideline. ORS recommends that no further compliance guidance is required and that the action item be closed out. Chair Linke agreed and closed the action item.</td>
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<tr>
<td>1803-05</td>
<td>EAS</td>
<td>TOP-001-4, Requirements R20 and R21</td>
<td>September 2018</td>
<td>March 2018 - The EAS will review R20 and R21 as requested to clarify “redundant and diversely routed” language as well as testing requirements.</td>
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<tr>
<td>1803-06</td>
<td>RTATF</td>
<td>TOP-010 and IRO-018 requirements about data quality</td>
<td>September 2018</td>
<td>March 2018 – The RTATF will develop documentation (Compliance Guidance or similar) to address RTA quality as</td>
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<td>Action Item</td>
<td>Participants</td>
<td>Description</td>
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<td>1803-07</td>
<td>David Zwergel (lead), Todd Lucas, Michelle Rheault, Jeff Harrison, James Fletcher, Allen Schriver, and Tony Jankowski</td>
<td>Resiliency Framework</td>
<td>June 2018</td>
<td>Completed March 27, 2018 Closed</td>
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<td>June 2018 -- The RTA Guidance developed by the RTATF was accepted by the ERO in May, 2018. The RTATF will re-form and add members to now begin working on this action item.</td>
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<td>March 2018 - The RISC is requesting that the OC provide their views on how BPS resilience is currently being addressed within the scope of their committee’s responsibilities and recommend any additional activities they believe should be undertaken. This will include a review of the draft Resiliency Framework. Comments are due on or before March 28, 2018.</td>
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<td>June 2018 -- Comments from the OC were submitted on March 27, 2018. No further action is required.</td>
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