Meeting Minutes
Reliability Metrics Working Group

April 13, 2011 | 2 p.m. – 4 p.m.

Conference Call

Convene
Chair William Adams convened the Reliability Metrics Working Group (RMWG) conference call meeting on April 13, 2011.

Meeting Agenda
The meeting agenda and the action items are found in Appendix A.

Members present, in addition to Chair, were Kevin Berent, Heide Caswell, Laura Couillard, Donald Davies, Isabel Flores, Nicholas Ingman, John Johnson, Robert Legault, Jeff Mitchell, Gregory Pieper, Jerry Rust, Jeff Schaller, and Howard Tarler. Present as an observer was Kurt Weisman and Eddy Lim. Present from NERC were Jessica Bian, Clyde Melton, Jim Robinson, and Rhaiza Villafranca.

NERC Antitrust Compliance Guidelines
Rhaiza Villafranca, NERC staff, directed the participants’ attention to the NERC Antitrust Compliance Guidelines, included as a part of the agenda package.

Action Items
Chair called in the action items for March 16.

Meeting Minutes
RMWG approved the March 16 meeting minutes.

Liaison Report
Canada Electricity Association (CEA)
Jeff Schaller reports that the enhancement to the existing Equipment Reliability Information System (ERIS) program is underway with the implementation of an Extended Line Terminal Set in 2011. This will augment the existing line outage statistics by including failures at line-tapped stations and in-line switches. Its implementation will ensure continuity with past results and reports.
1) Survey of membership – CEA transmission reliability and benchmarking programs widely used by the membership in their Asset Management decision processes. There is interest in expanding the programs to include additional asset and performance parameters to support a more rigorous approach to asset management decisions.

1a) Summary – Excerpt of Survey Results
Utilities are pursuing more analytical, systematic and quantitative approaches towards equipment maintenance, upgrades and replacements. The outputs of CEA programs such as ERIS and EPSRA support the direction that utilities are moving and provide valuable data whose use ranges from simple benchmarking to System Planning and Reliability Studies but there exists the opportunity to expand the data that the CEA collects to further support this industry trend. A common goal among utilities is the pursuit of a methodology that identifies and prioritizes work based on various criteria including Performance, Age, Risk, Criticality and Asset Health. Utilities are at various stages of development but are taking similar approaches and are eager to share with and learn from others. There is a high level of interest in attending a workshop dedicated to this topic where utilities can present and discuss their approaches.

RMWG Annual Report Timeline
The teams reviewed each respective sections contributing to the annual report. The report timeline was approved by the chair and the vice chair and the first draft of the report is scheduled on April 18th followed by a second draft on May 9th to prepare for a close to final draft on May 11th face-to-face meeting.

Team 1
Jerry Rust covered Team 1’s action items on behalf of Ed Pfeiffer team lead.
1) ALR1-3 Planning Reserve Margin aggregated by Interconnection. The scale compared by Interconnection and grouped by year will be kept consistent. The write-up will include an explanation that Quebec is based on winter peaking.
2) ALR2-3 Activation Under Frequency Load Shedding (UFLS)
The team decided to display the count of activation together with the MW loss. To further the analysis of this metric the team asks if the sheer numbers are true activations, the team will uncover the answers to how many of the activations reported are misreported, and if the said activations are actual misoperations.

Team 2
Jeff Mitchell covered the completed trending and made some suggested points to develop the following metrics:
1) ALR3-5 IROL/SOL; change the y axis to represent the number of exceedances; and the x to show duration. The chart will be combined to show each quarter as the data sample becomes longer.
2) ALR4-1 Automatic Transmission Outages Caused by Protection System Misoperations final metric will be in the report for the first time; after many revisions to produce what’s best represents transmission misoperations.
3) ALR6-11 – 14 Automatic Circuit Outages by four different causes will be presented for the first time in this annual report. The scales will be kept consistent and the bar charts are to be colored per region.
4) ALR6-15 Element Availability Percentage (APC) is a new chart grouped by Interconnection and by regions. This chart uses the Transmission Availability Data System (TADS).
5) ALR6-16 Transmission System Unavailability due to Automatic and Non-Automatic Outages charts are also broken down by Interconnection and region.

**Team 3**
Laura Couillard as new team lead reviewed the recent analysis on ALR6-2 (EEA3). Further research will need to be completed on the follow-up explanation on the extreme values founded on last year’s report for SPP Acadiana Load Pockets (ALP).
For ALR6-3(EEA2) a new write up is needed on the explanation of SERC’s peaking numbers on last year’s annual report.

**Team 4**
Heide Caswell updated the group on the current charts that will be presented to the Board of Trustees this coming May. The System Risk Index (SRI) curve will include the historical benchmark days and will collaborate with Event Analysis Working Group (EAWG) to conduct an event analysis review of events and how these events are categorized.

The updated Integrated Reliability Index charts (IRI) will combine three major categories: event, standards, and condition indicators. The goal is to illustrate the relationship between the three categories and use an acceptable method to normalizing all events.

**Transmission Availability Data System**
Jim Robinson presented a summary of all reportable outages and the elements that explains the six ALR metrics under Automatic AC Circuits with causes. There are talks to incorporate confidence intervals on future data sets. His presentation, *Transmission Availability Data System Draft Summary 2008-2010* is available at [http://www.nerc.com/filez/rmwg.html](http://www.nerc.com/filez/rmwg.html).

**Annual Report**
Rhaiza Villafranca NERC staff will send out the most updated version of the report on May 4th for a thorough review prior to the scheduled meeting in May 11th in Washington DC.

Without any other further business the meeting adjourned at 4:00 PM.

**Future meeting**
The next meeting is a face-to-face meeting to be held in Washington DC on May 11-12, 2011.

Submitted by,
*Rhaiza Villafranca,*
NERC Staff
Appendix A: April 13 Agenda

1. Roll Call
2. Antitrust Guidelines
3. Chair’s Remarks – Bill Adams
4. Review/Approval of March Meeting Minutes * – Rhaiza Villafranca
5. Liaison Reports
   a. Forum – need a volunteer for a new liaison
   b. RS - Jerry Rust
   c. CEA - Jeff Schaller
   d. RCWG - Robert Legault
   e. EAWG - John Johnson
   f. TADSWG - Michael Pakeltis
   g. ERO-RAPA - Curtis Crews
6. Team Updates on the Annual Report Contributions (See Proposed Title)
   Team 1
     h. ALR1-3 Planning Reserve Margin * (See Interconnection Trends)
     i. ALR1-4 BPS Transmission * Review Analysis
        a. ALR2-3 UFLS (see new iDashboard chart): http://idashboard.nerc.com/idashboards/viewer/?guestuser=guest&dashboardID=74
        b. ALR2-4 DCS & 2-5 MSSC * Review Analysis
   Team 2
     a. ALR3-5 - IROL/SOL Exceedance * (See new bar chart and footnote included)
     b. ALR4-1 – Protection System Misoperations * Review Analysis
     c. Automatic AC Circuit Outages Initiated by Failed Protection System Equipment (ALR6-11), Human Error (ALR6-12), Failed AC Substation Equipment (ALR6-13), and Failed AC Circuit Equipment (ALR6-14) * (see updated chart with 2010 data)
     d. ALR6-15 Element Availability Percentage (APC) and ALR6-16 Transmission System Unavailability due to Automatic Outages * new charts
   Team 3
     a. ALR 6-1 Transmission Constraint Mitigation
     b. ALR6-3 EEA2 * Review analysis
     c. ALR6-2 EEA3 * Review analysis
   Team 4
     a. SRI - * Review of IRI calculations
7. TADS Transmission Availability Trends – Jim Robinson
8. May face-to-face meeting arrangements

* Includes an attachment
<table>
<thead>
<tr>
<th></th>
<th><strong>RMWG Action Items for April 13</strong></th>
<th><strong>Assigned To</strong></th>
<th><strong>Due by Target Date</strong></th>
<th><strong>Action Status</strong></th>
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<tbody>
<tr>
<td>1.</td>
<td>Re-arrange ALR1-4 Planning Reserve Margin by two years, eliminate 2008</td>
<td>Team 1 lead &amp; NERC staff</td>
<td>By April 18th</td>
<td>Completed</td>
</tr>
<tr>
<td>2.</td>
<td>Provide Ed Pfeiffer trends on the demand capacity for 2008 and 2009</td>
<td>NERC staff</td>
<td>By April 18th</td>
<td>Completed</td>
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<tr>
<td>3.</td>
<td>Arrange ALR 6-11 to 6-14 AC Circuits by cause to show by region. Apply consistency to scale and charts. Communicate with the team</td>
<td>Team 2 lead &amp; NERC staff</td>
<td>By April 18th</td>
<td>Completed</td>
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<td>4.</td>
<td>Re-charted ALR3-5 IROL/SOL Exceedances to one chart and make appropriate changes on the axis</td>
<td>NERC staff</td>
<td>By April 18th</td>
<td>Completed</td>
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<td>5.</td>
<td>ALR6-2 (EEA3): follow-up analysis on SPP’s spike numbers caused by Acadiana Load Pockets (ALP)</td>
<td>Team 3 &amp; NERC staff</td>
<td>Written sections by May 9th</td>
<td>Completed</td>
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<td>6.</td>
<td>ALR6-3 (EEA2): provide an explanation on SERC’s value from last year.</td>
<td>Team 3 &amp; NERC staff</td>
<td>Written sections by May 9th</td>
<td>Completed</td>
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<td>7.</td>
<td>OLD Team 4 meeting on System Risk Index and prepare for MRCC and BOT charts</td>
<td>Team 4 &amp; NERC staff</td>
<td>Meeting held on March 30th &amp; April 8th</td>
<td>Completed</td>
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<td>8.</td>
<td>Transfer ALR2-4 DCS Average and ALR2-5 DCS greater than MSSC to bar charts</td>
<td>NERC staff</td>
<td>By April 18th</td>
<td>Completed</td>
</tr>
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<td>9.</td>
<td>Consolidate ALR1-4 BPS Transmission Related Events 2010 data</td>
<td>NERC staff</td>
<td>By April 18th</td>
<td>Not Completed Data is not final. Completed</td>
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<td>10.</td>
<td>Incorporate Transmission Availability Data System (TADS) and Generation Availability Data System (GADS)</td>
<td>NERC staff</td>
<td>By April 18th</td>
<td>Completed</td>
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