

March 31, 2009

TO: Industry Stakeholders

RE: NERC Benchmarks and Metrics

Ladies and Gentlemen:

I write today to share the initial results of one of our efforts to ensure the reliability of the bulk power system in North America – the benchmarks and metrics that help indicate how we are doing.

When NERC filed its application to become the international Electric Reliability Organization, benchmarking was a critical component of our approach to continually ensuring and improving reliability. We committed to: (1) measuring reliability performance across North America – past, present, and future; (2) analyzing and benchmarking the results of those measurements; (3) identifying problems and assessing needs for improvement; (4) developing solutions to address those problems and needs; and (5) implementing solutions

Acting on that commitment in 2008 led to the launch of online reliability performance indicators (visit: <http://www.nerc.com/page.php?cid=4|37>) and the first ever inclusion of these statistics in the Long-Term Reliability Assessment¹. The Reliability Metrics Working Group has been working diligently to improve upon these initial efforts, and we anticipate a proposed suite of new and updated metrics in the coming months.

Because this program continues to grow and mature, the numbers I share with you today are not an exact comparison to prior years. Scrutiny has increased, definitions have sharpened, reporting has improved, and implementation of new market rules along with the growing use of demand-side resources have affected our ability to make meaningful comparisons between the metrics recorded in the past and those we will capture in the future. It will take time to accumulate data to establish a baseline for performance assessment. We encourage all stakeholders to provide comments on these benchmarks as we attempt to perfect them over time.

Nevertheless, the figures provide important insights. As shown in the chart to the right, 14 Category 3 disturbances and one

Number of Disturbance Events by Severity & Year (2002 - 2008)



¹ See <http://www.nerc.com/files/LTRA2008%20v1.1.pdf>

Category 4 disturbance occurred in 2008 (refer to page 4 for more detail on NERC’s “Bulk Power System Disturbance Classification Scale”). A significant rise in misoperations of protection systems and controls was the leading contributing factor to the disturbances. Other contributing factors were equipment failure, vegetation contact with transmission lines, and human error.²

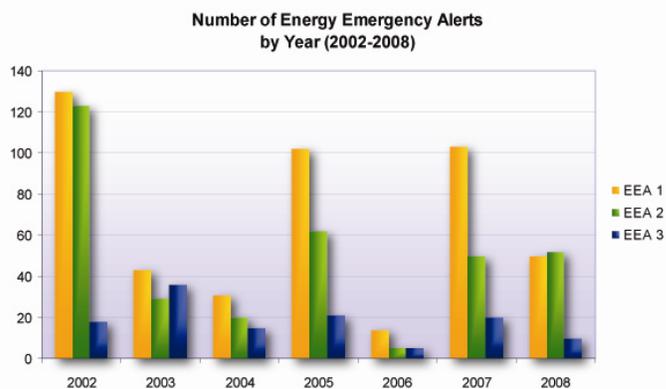
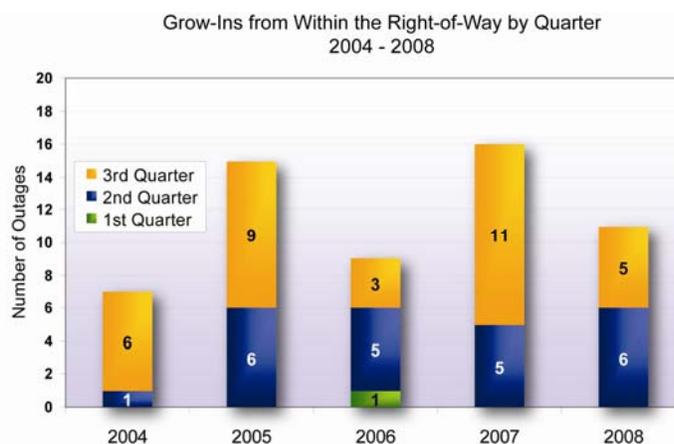
As a result of these findings, NERC is launching a significant initiative to improve protection and control system performance in 2009 – evidence of the value these metrics can bring to ensuring reliability. Expect to hear more on this important effort in the coming weeks.

At NERC, we believe ensuring reliability means preventing avoidable system disturbances, especially those that could lead to widespread customer outages. On our classification scale, these events are classified as Categories 4 and 5. While only the February Florida outage rose to a Category 4 in 2008, marking improvement over past years, I firmly believe it is our shared goal for no such events to occur in 2009.

Vegetation management remains a concern. 2008 figures suggest we still have work to do as an industry to fully address one of the primary causes of the August 14th, 2003 blackout. In 2008, transmission lines were taken out of service eleven times due to contact with trees from within the right of way, and the vegetation management standard (FAC-003-01) ranked in the top ten on NERC’s 2008 list of most frequently violated standards.

Energy Emergency Alerts (EEA’s) are another reliability performance indicator, though no clear trend is visible.³ We saw a slight increase in EEA 2’s in 2008, but this was coupled with a substantial reduction in EEA 1 and EEA 3 events. EEA 2 and EEA 3’s are clear indicators of the system’s inability to meet demand under normal operating conditions. We should strive to continue reducing these numbers in the future.

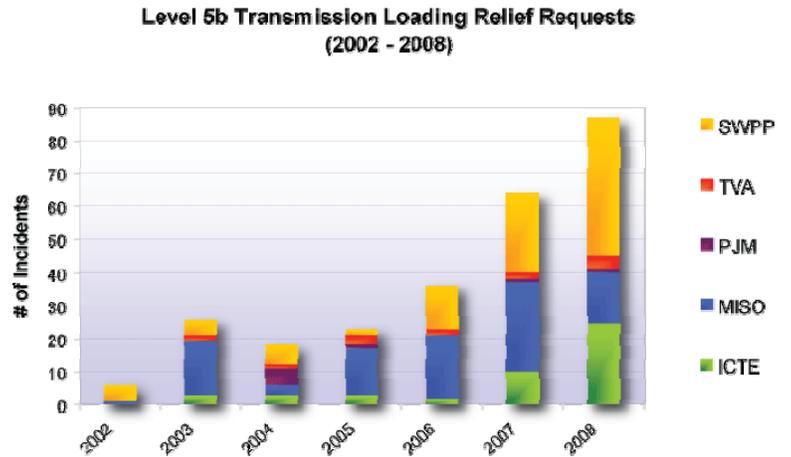
As noted in the 2008 Long-Term Assessment, the definitions for EEA’s are in need of revision, specifically in reference to use of demand response programs. NERC will work with the industry and our committees to revise this definition in 2009.



² Category 1 and 2 events are also reported to NERC, though changes in data classification have made a year-on-year comparison misleading. These data will be presented in future years as additional leading indicators for future performance.

³ View <http://www.nerc.com/page.php?cid=5165> for an explanation of Energy Emergency Alerts.

The fourth and final metric we evaluated in 2008 is level 5b transmission loading relief requests (TLRs). A Level 5b TLR is called in the Eastern Interconnection to indicate that firm transactions are being curtailed as more power is scheduled to travel over a given transmission pathway than can be accommodated. There is not a general agreement that TLR's are a useful reliability metric because the source of TLR's has market drivers, rather than strictly reliability implications. Level 5b TLR's have risen significantly over the past five years, with over 85 occurring in 2008 as compared with only five in 2002. More than 50 percent of EEA 3 events called in 2007 and 2008 were preceded by TLR 5a or 5b declarations, when firm load interruption was imminent or in progress. We will work with the industry to determine the cause of this upward trend and to develop and analyze metrics, such as transmission constraint mitigation and IROL violations (as proposed earlier this month by the Reliability Metrics Working Group), which better assess and benchmark transmission use and adequacy in 2009.



I ask all of you to join NERC this year in improving these metrics – both by supporting the efforts of NERC staff and the Reliability Metrics Working Group in their data collection and analysis of new metrics and by continuously working to improve performance in these critical areas. The Reliability Metrics Working Group has put in place a methodology to assess metrics concepts and would welcome your input and suggestions. I look forward to reporting next year's results to you.

Sincerely,

Rick

NERC's Bulk Power System Disturbance Classification Scale

Category 1: An event results in any or combination of the following actions:

- a. the loss of a bulk power transmission component beyond recognized criteria, i.e. single-phase line-to-ground fault with delayed clearing, line tripping due to growing trees, etc.
- b. frequency below the Low Frequency Trigger Limit (FTL) more than 5 minutes.
- c. frequency above the High FTL more than 5 minutes.
- d. partial loss of dc converter station (mono-polar operation)
- e. inter-area oscillations

Category 2: An event results in any or combination of the following actions:

- a. the loss of multiple bulk power transmission components.
- b. the loss of load (less than 500 MW)
- c. system separation with loss of less than 5,000 MW load or generation.
- d. SPS or RAS misoperation
- e. the loss of generation (between 1,000 and 2,000 MW in the Eastern Interconnection or Western Interconnection and between 500 MW and 1,000 MW in the ERCOT or Québec Interconnections).
- f. the loss of an entire generation station or 5 or more generators.
- g. the loss of an entire switching station (all lines, 100 kV or above).
- h. complete loss of dc converter station.

Category 3: An event results in any or combination of the following actions:

- a. the loss of generation (2,000 MW or more in the Eastern Interconnection or Western Interconnection and 1,000 MW or more in the ERCOT or Québec Interconnections).
- b. the loss of load (from 500 to 1,000 MW)
- c. system separation or islanding with loss of 5,000 MW to 10,000 MW of load or generation.
- d. UFLS or UVLS operation.

Category 4: An event results in any or combination of the following actions:

- a. system separation or islanding of more than 10,000 MW of load
- b. the loss of load (1,000 to 9,999 MW)

Category 5: An event results in any or combination of the following actions:

- a. the occurrence of an uncontrolled or cascading blackout
- b. the loss of load (10,000 MW or more)