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## NERC Facility Rating Standards Development

NERC's rating team has spent the good part of two years drafting a new FAC-008-2 in response to FERC Order 693. This task has been arduous because the team is trying to reconcile so many different industry concerns into a document acceptable to all parties.

The team's final product was sent for balloting in October 2008. The document had many important features and met with wide acceptance in the industry. Key changes – as far as transmission lines are concerned – included the following:

1. The requirement that all ratings be calculated by standards developed "in open process," essentially meaning that ratings must be calculated by IEEE or CIGRE standards.
2. As the rating process is "open", transmission line owners must make their assumptions explicit to other involved parties.
3. Ratings can be either based on fixed ambient conditions or "as they vary in real time." This means that use of real time ratings is explicitly allowed.

The controversial issue, and the one which resulted in the down vote in the ballots, was the requirement that line owners provide ratings based on not only the most limiting element, but also the next most limiting element. A slight majority of voters felt that this requirement did not properly belong in reliability standards, but should be moved to planning requirements.

NERC has now reconstituted the FAC-008-2 standards drafting team, which will proceed with a new standard from which the "second most limiting element" requirement will be removed. The new FAC-008-2 can be expected to progress rapidly towards ballot.



## FASTCAT Rapid Deployment Program

The FASTCAT Rapid Deployment Program was started in 2008 in response to industry needs for a quick response to transmission reliability issues. We are proud to announce the continuation of the FASTCAT Rapid Deployment Program for 2009.

FERC Order 693 calls for fines of up to \$1,000,000 per day for failing to meet reliability regulations. CAT-1 Transmission Line Monitoring Systems are the fastest deployed and most economical solution to ease congestion and to help ensure reliability of overhead lines. Accurate real time ratings provide advance warnings of reliability threats while delivering significantly higher ratings in most cases.

"CAT-1 Transmission Line Monitoring Systems are the fastest deployed and most economical solution...to help ensure reliability..."

The FASTCAT Rapid Deployment Program guarantees that you can have the reliability assurance of standard CAT-1 systems delivered and operational within 30-60 days of your order – at a fraction of the cost and installation time involved with physical upgrades or construction.

The objective of the FASTCAT Rapid Delivery Program is to ship standard CAT-1 Transmission Line Monitoring Systems to you within 30 days ARO and to have real time ratings fully operational within 60 days ARO. In addition to the inherently fast solution provided by real time ratings, the FASTCAT program guarantees even quicker delivery by providing pre-stocked modules.

For program details, please see [www.cat-1.com](http://www.cat-1.com)

## White paper: Reliability and real time transmission line ratings

Transmission reliability has been elevated in the nation's consciousness since 50 million people were blacked out in the Northeast US and Canada on August 14, 2003. Real time thermal ratings can play an important role in enhancing transmission reliability of specific lines as well as of the entire transmission grid.

The topic is discussed in detail in Tapani Seppa's white paper "Reliability and real time transmission line rating." The following is an excerpt from the paper:

"Real time transmission line ratings, also called dynamic ratings, are a well proven tool for enhancing the reliability and improving the capability of transmission systems. Real time rating systems, such as the CAT-1 Transmission Line Monitoring System, can be installed at a fraction of the cost of conventional transmission line enhancements. With The Valley Group's FASTCAT Rapid Deployment Program, such enhancements can be fully operational within a few weeks. Thus, they provide the fastest and least expensive mitigation method in cases where capacity deficiencies are discovered by reviews or reliability audits; or happen because of unexpected economic conditions, system damage, or delays in construction projects."

Among other important findings, the white paper discusses how the major consequences of transmission reliability issues can often be mitigated by real time monitoring:

"Even in well designed systems, exceptional conditions may cause line overloads. The August 2003 blackout was such an event. Analysis of weather data during the time preceding the blackout indicated extraordinarily calm weather, implying high conductor temperatures and large line sags. If real time rating data had been available for the area's operators, they would have observed unusually high conductor temperatures, which would have warned them of a potentially dangerous situation."

The entire white paper is available at [www.cat-1.com](http://www.cat-1.com)

## Transmission line real time ratings recognized as a fundamental need for SmartGrid

Sandy Aivaliotis, Senior Vice President of Operations, Technology, and Business Development, has led The Valley Group's involvement in the development of the SmartGrid, enhancing awareness of the important role that transmission line real time ratings can have. The Valley Group has been involved in many ongoing efforts with groups such as the Department of Energy, NEMA, and NIST.

The Department of Energy recently sponsored an informative series of e-forums on SmartGrid benefits. These forums presented successful strategies and case studies of new technology implementation relevant to the development of the SmartGrid. These technologies include everything from distribution automation systems to new power quality control devices to AMI deployments.

The Valley Group participated in the first such e-forum. You can find our presentation on [www.cat-1.com](http://www.cat-1.com)

### Employee spotlight

#### Gerhard Biedenbach Technical Sales Manager, Europe



Gerhard Biedenbach was named Technical Sales Manager for Europe in May 2007.

Gerhard worked for over 10 years for RIBE Electrical Fittings, a conductor and cable accessory manufacturer in Germany.

From 2004-2007, Gerhard was the President of Monitec, operating as sales representative for The Valley Group in 11 countries and providing consulting services to utilities for thermal ratings of overhead lines.

Gerhard is Secretary of CIGRE WG B2.36 "Guide for Application of Direct Real Time Monitoring Systems on Overhead Transmission Lines". He received his Diploma Engineering degree from Technical University Darmstadt.

Contact Gerhard at [gerhard.biedenbach@nexans.com](mailto:gerhard.biedenbach@nexans.com) regarding sales or technical inquiries in Europe.

## Questions and Answers

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**Q: Thanks to the efforts of former Vice President Al Gore, we have received a grant for studying the effects of global warming on transmission lines. What is your sense of the likely impact?**

**A. Ward Whimsy, Ph.D., Eusless Technical University**

A: Per most worst-case scenarios of global warming, the ambient temperature is predicted to increase by 0.6 degrees Celsius during the 40 year design life of a

transmission line. This would reduce line ratings of a typical transmission line by 0.5%.

But because of increased air pollution, conductor emissivity and absorptivity would increase by 0.05. This would in turn increase the conductor rating by approximately 0.6%.

Finally, be sure to note where transmission lines will now be under water, especially in Greenland.