Unofficial Comment Form
Project 2007-11 Disturbance Monitoring

Please **DO NOT** use this form for submitting comments. Please use the electronic form to submit comments on the Standard. The electronic comment form must be completed by 8 p.m. Eastern on **October 21, 2014**.

If you have questions please contact **Stephen Crutchfield** via email or by telephone at 609-651-9455.

Click here for the [Project Page](#).

**Background Information**

Project 2007-11 Disturbance Monitoring was initiated to replace the existing fill-in-the-blank Standard [PRC-002-1 Define Regional Disturbance Monitoring and Reporting Requirements](#) with a more comprehensive standard. (Fill-in-the-blank standards are those standards that depend on regional criteria or procedures not currently contained within certain Reliability Standards, but which are needed to provide additional requirements for implementing the standards within the regions.) The DMSDT posted a draft standard for a 45-day comment/ballot period May 9- June 25, 2014. Based on the comments received from stakeholders, the DMSDT has revised the standard.

The DMSDT has performed significant outreach to better understand issues raised by stakeholders during the most recent posting and ballot period. This has resulted in revisions to the requirements, measures and rationales of the standard. One major point of emphasis is that the Transmission Owner or Generator Owner only has to be able to determine the quantities specified in the appropriate requirements.

The major issues related to PRC-002-2 that were raised by stakeholders include:

Commenters suggested that Requirement R1 should be separated into distinct Parts rather than having the requirement contained in a single sentence. The DMSDT revised R1 to contain distinct Parts:

R1. Each Transmission Owner shall: [Violation Risk Factor: Lower ] [Time Horizon: Long-term Planning]

1.1. Identify BES buses for which sequence of events recording (SER) and fault recording (FR) data is required by using the methodology in PRC-002-2, Attachment 1;

1.2. Notify other owners of BES Elements connected to those BES buses, if any, within 90 calendar days of completion of Part 1.1 that those BES Elements require SER data and/or FR data;
1.3. Re-evaluate all BES buses at least once every five calendar years in accordance with Part 1.1 and notify other owners, if any, in accordance with Part 1.2, and implement the re-evaluated list of BES buses as per the Implementation Plan.

Some stakeholders voiced their concerns for more precise wording of Step 7 in previously posted Attachment 1 which stated “If the list has 11 or fewer BES buses: FR and SER data is required at the BES buses with the highest maximum available calculated three phase short circuit MVA.” The ambiguity arose out of the term “buses” because it could be read as requiring FR and SER data from more than one bus. Thus, Step 7 is now revised to read “If the list has 1 or more but less than or equal to 11 BES buses: FR and SER data is required at the BES bus with the highest maximum available calculated three phase short circuit MVA.”

Commenters suggested clarifications to the rationales and a few of the requirements. The DMSDT has made extensive revisions to the rationales for Requirements R5, R10 and R11. These revisions provide clarity with regard to BES buses for DDR data, time synchronization for DDR and the length of time DDR data must be made available. Because of the extensive revisions made, the contents of the Rationale Boxes are “clean”.

Many stakeholders were unhappy with the bulleted list in Requirement R5, Part 5.1.2, either with a single bullet or with the list altogether. The standard DMSDT revised Requirement R5, Part, 5.1.2 and removed the bulleted list of “or” statements, replacing it with “Any one BES Element that is part of a stability (angular or voltage) related System Operating Limit (SOL).”

In Requirement R5, the use of “BES buses” was found to be confusing by many stakeholders. The use of this language was simply to provide clarity but, in response to industry’s comments, the DMSDT revised R5 by removing “BES buses”. The Requirement now references only BES Elements.

One technical change many stakeholders proposed was to revise Requirement R10 to relate to time synchronization of the device clock rather than data. The Requirement’s original language called for time synchronization of SER data within +/- 2 milliseconds. Accuracy of time synchronization applies only to the clock used for synchronizing the monitoring equipment. The equipment used to measure the electrical quantities must be time synchronized to ± 2 ms accuracy; however, accuracy of the application of this time stamp and therefore the accuracy of the data itself is not mandated. This is because of inherent delays associated with measuring the electrical quantities and events such as breaker closing, measurement transport delays, algorithm and measurement calculation techniques, etc. Ensuring that the monitoring devices are within ± 2 ms accuracy will suffice with respect to providing time synchronized data. The DMSDT revised Requirement R10 accordingly.
Several stakeholders also commented that Requirement R11 had no substantial impact on improving the reliability of the system. The DMSDT notes that the Requirement R11 ensures data availability from the data sources, timely retrievability of the data and common format so that the data can be read and used in the expeditious and effective analysis of events. Requirement R11 provides a reliability impact by integrating all of the previous requirements in the standard with respect to data reporting to facilitate event analysis. The first two Parts of Requirement R11 specify how long an entity has to provide requested data (Part 11.1) and also limits how long data must be retained by the TO or GO (Part 11.2). Parts 11.3-11.5 ensure the uniformity and consistency of the data that is reported.

Based on stakeholder feedback, the DMSDT capitalized the defined terms System, Transmission and Disturbance. The DMSDT believes that this adds clarity regarding the requirements and rationales in PRC-002-2. In some instances, these terms appear adjacent to each other within sentences of Requirements, Rationales or Guidelines. The following instances occur:

- Transmission System
- System Disturbance
- System Demand

The DMSDT has also incorporated the defined term “Transmission Line”. The DMSDT does not intend to create any new defined terms by the above uses. Each defined term stands on its own.
*Please use the electronic form to submit your final comments to NERC.*

You do not have to answer all questions. Enter All Comments in Simple Text Format.
Bullets, numbers, and special formatting will not be retained. Insert a “check” mark in the appropriate boxes by double-clicking the gray areas.

1. The DMSDT revised the requirements for dynamic Disturbance recording (DDR) data based on stakeholder comments (see background section above). Do you agree with the BES Elements requiring DDR data listed in Requirement R5? If not, please provide technical justification.

- Yes
- No

Comments:

2. The DMSDT revised Requirements R10 regarding time synchronization of data and added explanation regarding time synchronization as follows to the rationale:
   “Accuracy of time synchronization applies only to the clock used for synchronizing the monitoring equipment. The equipment used to measure the electrical quantities must be time synchronized to ± 2 ms; however, accuracy of the application of this time stamp and therefore the accuracy of the data itself is not mandated. This is because of inherent delays associated with measuring the electrical quantities and events such as breaker closing, measurement transport delays, algorithm and measurement calculation techniques, etc. Ensuring that the standard devices used for monitoring are within ± 2 ms accuracy will suffice with respect to providing time synchronized data.”

Do you support these revisions? If not, please explain why and provide suggested changes.

- Yes
- No

Comments:

3. If you have any other comments that you haven’t already mentioned above, please provide them here:

Comments: Include the Quebec Interconnection in the Introduction Section 4 Applicability. Add to “4.1 The Responsible entity is:”

4.1.4 Quebec Interconnection - Planning Coordinator or Reliability Coordinator

As an alternative, define a Responsible Entity for non-specified Interconnection areas.
M12 – Remove “of”.

Requirement R1, Part 1.2 requires from each Transmission Owner (TO) to notify other owners of BES Elements connected to identified BES buses. It is recommended to revise Part 1.2 to read that each TO provides the list of identified BES buses to their PC / RC who will notify those owners whose BES Elements require SER data and/or FR data. The PC / RC has more authority to maintain a master list of BES buses that require SER and FR data that can provide maximum wide-area coverage. This may avoid TOs being challenged regarding BES bus selection.

Requirement R11, Part 11.3 requires SER data in CommaSeparated Value (.CSV) format following Attachment 2 whereas the majority of Disturbance Monitoring Equipment (DME) does not save data in this format. If large data volumes are requested then TO / GO should have their say to the requestor about when they can provide the data in (.CSV) format. Some DME produces records from which SER data would need to be manually extracted, which is very time-consuming. However, the same SER data can be visually seen using COMTRADE viewing software. The standard should not make a file format (such as .CSV) a mandatory requirement. Additionally, Part 11.3 asks to combine SER data from multiple DME devices and from multiple stations. This could be very time consuming and subject to errors.