

## Protection System Misoperation Data Collection

Industry Comments on the Draft Section 1600 Data Request  
July 30, 2014

### Question 1

**Is the data requested similar in substance and form to the data presently collected pursuant to Reliability Standard PRC-004-2a?**

#### Summary

Fifteen responses were received: 14 commenters agree the data requested is the same in substance and form and one commenter disagrees. Some entities that agree have requested clarification on the following subjects:

- Is the intent that reporting Misoperation Mitigation data will not be required until after the investigation is complete?
- Can the Data Request include a section that either confirms there are no technical differences in how “operation” and “misoperation” are defined, or if there are differences, provide a comparison of how the terms going forward compare to those currently used by the NERC Regions?

One commenter indicates the data is not consistent because it is based on the draft standard PRC-004-3, and recommends that the Data Request not be approved until PRC-004-3 has passed industry ballot. The commenter also recommends that the data be collected under PRC-004-3 rather than under Section 1600.

#### Comments

**NRG** -- Yes it is similar in substance.

**Response:** Thank you for your input.

**Oncor** – Yes.

**Response:** Thank you for your input.

**PPL NERC Registered Affiliates (PPL)**<sup>1</sup> – The PPL NERC Registered Affiliates do not believe the data requested is similar in substance and form to the data presently collected pursuant to Reliability Standard PRC-004-2a. The updated data report form is based on the standard currently in development PRC-004-3, which did not pass in its most recent vote. NERC states in the Request for Public Comment document for the revised form that it expects PRC-004-3 to be presented to the NERC BOT in November 2013, which is a premature assumption given it has only received 37% and 50% approval from the industry in the last 2 previous ballots. The new form should not be presented for approval until the associated standard has been approved through PRC-004-3 Final Ballot.

It is difficult to determine if the data requested is comparable to the current standard PRC-004 for the following reasons. 1.) The data request frequency has not been established, 2.) there are no VRF/VSLs associated with a Section 1600 Data Request. Therefore we propose the information request remain associated with the standard, not Section 1600.

**Response:** NERC will not present the Data Request to the NERC Board of Trustees until PRC-004-3 achieves a successful stakeholder ballot to provide for consistency between the Data Request and the revised standard.

The Data Request reporting frequency will be quarterly, consistent with the existing reporting under PRC-004-2.1a. NERC has revised the Scheduling and Reporting section of the Data Request to make this clear.

In the event a reporting entity within the United States fails to comply with an authorized request for data or information under Section 1600, NERC may request FERC to exercise its enforcement authority to require the reporting entity to comply with the request pursuant to Section 1603 of the NERC *Rules of Procedure*. NERC will make any request for FERC to enforce a request for data or information through a non-public submission to FERC enforcement staff. NERC does not assign VSLs to Section 1600 Data Requests.

**ACES**<sup>2</sup> -- We believe that the data is similar in substance and form to the data that is currently collected

**Response:** Thank you for your input.

**MidAmerican** – Yes.

**Response:** Thank you for your input.

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<sup>1</sup> PPL NERC Registered Affiliates (PPL) are Louisville Gas and Electric Company and Kentucky Utilities Company; PPL Electric Utilities Corporation, PPL EnergyPlus, LLC; and PPL Generation, LLC; PPL Montana, LLC; and PPL Susquehanna, LLC. The PPL NERC Registered Affiliates are registered in six regions (MRO, NPCC, RFC, SERC, SPP, and WECC) for one or more of the following NERC functions: BA, DP, GO, GOP, IA, LSE, PA, PSE, RP, TO, TOP, TP, and TSP.

<sup>2</sup> ACES comments are submitted by ACES, Brazos Electric Power Cooperative, North Carolina Electric Membership Corporation, Sunflower Electric Power Cooperative, and Wabash Valley Power Association

**Exelon** -- Yes, the data intended to be requested is similar to the data currently being requested. However, on Tab 2, is the Misop Mitigations data being requested expected to be reported once the mitigation is completed? The analysis of the mis-operation might not have mitigation data available prior to the quarterly report due date.

**Response:** In response to other comments, NERC has revised the Data Request to collect the Corrective Action Plan (CAP) information presently collected under PRC-004-2.1a in place of the proposed Misoperation Mitigation information. Similar to existing reporting, entities will report the planned corrective actions and target completion date for corrective actions in progress, and the actual completion date when corrective actions are complete.

**Dominion** – Yes

**Response:** Thank you for your input.

**IMEA** – Yes, the data requested appears to be similar to that currently submitted by IMEA to RFC for compliance with PRC-004-2a; however, it is difficult to do a comparison. There may be some technical differences in what qualifies as a reportable “Operation”, and a reportable “Misoperation”. A section in the DR explaining whether there are any technical differences in what qualifies as an “Operation” and/or as a “Misoperation”, in comparison to those terms currently use by the NERC Regions, would be helpful.

**Response:** NERC has modified the Data Request to clarify that reporting will be consistent with the NERC glossary definition of “Misoperation” and PRC-004. Tab 1 – Operation Summary defines Protection System operation and provides examples for clarity.

**NYPA** – Yes.

**Response:** Thank you for your input.

**SPP Standards Review Group<sup>3</sup>** – Yes, it is similar to what is currently being provided.

**Response:** Thank you for your input.

**City of Tallahassee** – Yes.

**Response:** Thank you for your input.

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<sup>3</sup> SPP Standards Review Group commenters: John Allen – City Utilities of Springfield, Greg Froehling – Rayburn Country Electric Cooperative; Louis Guidry – Cleco Power, John Hare – Oklahoma Gas & Electric, Don Hargrove – Oklahoma Gas & Electric, Shawn Jacobs – Oklahoma Gas & Electric, Stephanie Johnson – Westar Energy, Bo Jones – Westar Energy, Mike Kidwell – Empire District Electric, Tiffany Lake – Westar Energy, Greg McAuley – Oklahoma Gas & Electric, Todd Moore – Kansas City Power & Light, James Nail – City of Independence, MO, Robert Rhodes – Southwest Power Pool, David Rucker – Kansas City Power & Light, Lynn Schroeder – Westar Energy, Ashley Stringer – Oklahoma Municipal Power Authority, Sing Tay – Oklahoma Gas & Electric, Paul Von Hertsenburg – Westar Energy

**PacifiCorp** – Yes.

**Response:** Thank you for your input.

**OEVC** – Yes. Occidental Energy Ventures Corp. (“OEVC”) appreciates the drafting team’s attempts to retain consistency with the existing process – and with PRC-004-3. In addition, we have found the close coordination between RAPA and the Regional Entities has led to continent-wide consistency. In our view that will ensure that the data can be correlated over all of North America, making it easier to find and mitigate troublesome trends.

**Response:** Thank you for your input.

**Dynegy** – Yes, the data being requested is similar to previous reporting provided in Reliability Standard PRC-004-2a.

**Response:** Thank you for your input.

**Pepco Holdings** – Yes.

**Response:** Thank you for your input.

## Question 2

**What incremental increase in effort beyond that needed to comply with Reliability Standard PRC-004-2a will be required to fulfill the proposed Data Request?**

### Summary

Fourteen responses were received: 10 indicate there will be no or minimal incremental effort; two indicate there will be increased effort, but do not define the amount; and two are concerned about the potential for significant increase, but require further clarification to make an assessment. Some entities that expect minimal incremental effort state the effort will be a one-time effort to become familiar with the revisions to the process.

Some entities expressed concern on the following subjects:

- The slow trip category could result in some entities (particularly Generator Owners) needing to install additional Disturbance Monitoring Equipment (DME) to support analysis of Protection System operating time.
- One commenter indicated the Regional Entity should continue to have a role in reviewing quarterly data to provide feedback to entities regarding weaknesses or errors.
- One commenter expressed the need to become familiar with the webTADS system to make a comparison of the level of effort compared to the existing system in use in RFC.
- One commenter questioned whether the ability to bulk upload data through webTADS means “being able to upload the spreadsheet,” and suggested this would greatly simplify the reporting effort.
- One entity requested clarification that this approach will establish a single NERC-driven process to replace reporting to multiple Regional Entities, and fully supports such an approach.

### Comments

**NRG** - Coordination and confirmation GADS data will require additional interface activities.

**Response:** Thank you for your input.

**Oncor** - Oncor will have to update its existing misoperations reporting template currently designed to copy and paste into the required regional quarterly misoperations report. Currently, the regional misoperations reporting template and the proposed NERC data request are different so the level of effort will be determined by if NERC and the Regional Entities work together to streamline the template variances and ultimately, the process. If streamlined, the level of effort would be low.

**Response:** Thank you for your input. NERC has worked to minimize differences between the existing common reporting template and the NERC Data Request. In response to comments, NERC also has revised

the Data Request to collect the Corrective Action Plan (CAP) information presently collected under PRC-004-2.1a in place of the proposed Misoperation Mitigation information, which further minimizes differences. However, NERC recognizes that some Regional Entities collect data that is not included in the Data Request which will result in differences for entities in some Regions.

**PPL** -- Depending on interpretation of the GO analysis requirements for the new Misoperation category of slow trips, many generators may be required to purchase more DME equipment associated with relay protection systems.

Many generators do not currently employ the use of equipment capable of capturing all sequences of events involved to detect “slow trip” information necessary to fulfill the proposed Data Request. PPL believes the cost associated with the installation of such equipment is not justified given there is only a minimal increase to BES reliability when applied to generation assets.

PPL and many other GOs do not capture every relay event on DME, nor are we required to. What is collected on DME is manually downloaded, not automatically collected. For example, the relay program would need to be greatly expanded, without any evident justification, to obtain speed-of-response information for every relay operation and determine whether or not it met the design intent.

Slow trip analysis and reporting for GOs should be stated in PRC-004-3, not specified in a data request. The associated data reporting form to consist of the statement “primary relay tripped = OK, backup relay tripped = slow”. PRC-004-3 could also be limited to state slow-tripping analysis and reporting should apply only to TOs.

**Response:** NERC has modified the Data Request to clarify that reporting will be consistent with the NERC glossary definition of “Misoperation” and PRC-004. The Project 2010-05.1 – Protection Systems: Phase 1 (Misoperations) drafting team has revised the definition of Misoperation to provide additional clarity on the “slow trip” category. The revised definition makes it clear that Disturbance Monitoring Equipment is not required to determine whether a slow trip has occurred. Determinations of slow trips will be based on whether a Protection System on another Element (i.e., remote back-up) operated, similar to the suggestion in this comment. NERC has revised the Data Request accordingly.

**ACES** – The incremental effort necessary to respond to the data request will mostly be one-time efforts to adjust tools and processes to submit the data in the field formats required in the Misoperations data request. Because of the reduction in compliance risk, these one-time adjustments are worth the effort.

**Response:** Thank you for your input.

**MidAmerican** -- No significant incremental increase in effort.

**Response:** Thank you for your input.

**Exelon** – The proposed Data Request will require an increase in the analysis and documentation of data which will result in increased effort on behalf of the Exelon companies. Additionally, there appears to be additional information requirements which in turn will cause an increase in effort. Currently, the RRO reviews the data submitted and determines that the data submitted is appropriate which results in closure of the data submission, how will this closure occur in the future, what role will the RRO play in reviewing the submitted data and will there be a review period?

**Response:** NERC has minimized the differences between the Data Request and the information presently collected by revising the Data Request to collect the Corrective Action Plan (CAP) information presently collected under PRC-004-2.1a in place of the proposed Misoperation Mitigation information.

A review period will be provided for Regional Entities to review data submitted in webTADS by the entities in their Region. The Regional Entities will review and sign-off on the data prior to review by NERC. The Regional Entities will have the ability to utilize their existing processes or similar processes for review of data and closure of the data submission.

**Dominion** – None

**Response:** Thank you for your input.

**IMEA** -- It is not possible for IMEA to quantify additional resources that will be required to comply with the proposed DR since we are not familiar with the webTADS system in comparison to the RFC webCDMS system currently used to fulfill PRC-004-2a Data Submittals. At a minimum, IMEA will need to invest time resources to learn yet another new reporting system. [We currently use two different systems for fulfillment of Compliance Monitoring and Enforcement obligations – the RFC webCDMS and the SERC Portal.]

**Response:** Thank you for your input. NERC will schedule training sessions to assist entities with the transition to entering data in webTADS.

**NYPA** – Minimal.

**Response:** Thank you for your input.

**SPP Standards Review Group** – On the outside there doesn't appear to be much of an increase in effort required, in fact with the use of the spreadsheet, reporting effort may be decreased. However, we won't really know until we start the proposed reporting process. On Page 14 of the announcement, it is stated that entities will be able to manually enter or bulk upload the data through the webTADS system. If this

means being able to upload the spreadsheet, that will greatly simplify the reporting effort. We would recommend that this be provided for in the new process.

**Response:** The Registered Entities will be able to manually enter or bulk upload the Misoperation data through the NERC webTADS portal, in the same manner as Transmission Owners presently report the TADS data.

**City of Tallahassee** – There will be no increase in effort.

**Response:** Thank you for your input.

**PacifiCorp** – PacifiCorp anticipates little change in effort to fulfill the proposed Data Request other than the initial effort for submitting personnel to learn the new data submittal method on the Misoperation module of the webTADS system.

**Response:** Thank you for your input.

**OEVC** – OEVC's reading of the proposed data request leads us to believe that Misoperations reporting to multiple Regional Entities will be discontinued in favor of a single NERC-driven process. We fully support such an approach – which drives a single point of data entry, and better assures data quality. If this is not case, OEVC would like an assurance from NERC that a plan is in place to consolidate the systems.

**Response:** Thank you for your input. The NERC Section 1600 Data Request deploys a consistent process across all eight Regions. The NERC webTADS portal will be used for entry of Misoperation data.

**Dynegy** – No incremental increase would be necessary to comply with the proposed Data Request.

**Response:** Thank you for your input.

**Pepco Holdings** – None.

**Response:** Thank you for your input.



### Question 3

**Is the data requested reasonable and obtainable? If “no,” please explain.**

#### Summary

Sixteen responses were received: 10 indicate the data is reasonable and attainable, five believe it is not, and one requires clarification to make an assessment.

Some entities expressed concern on the following subjects:

- One commenter repeated its concerns regarding the slow trip category, suggesting the data is not readily attainable if the intent results in some entities needing to install additional DME. A second commenter expressed similar concerns, in particular noting concern with how a Compliance Enforcement Authority (CEA) may interpret the adequacy of analysis as it relates to availability of DME data.
- Three commenters expressed concern that, as written, the Data Request could require reporting data for individual wind and solar generation components and other small generating units. One commenter recommends aligning the Data Request with the GADS reporting criteria with respect to generating unit size.
- One commenter noted the Data Request does not clearly define what protective devices owned by Distribution Providers are subject to the Data Request.

#### Comments

**NRG** – Yes, relative to the intent and purpose to provide a means of tracking performance of protection system operations.

**Response:** Thank you for your input.

**Oncor** – Yes

**Response:** Thank you for your input.

**PPL** – No, Please refer to the comments above regarding DME, slow trips and automated data collection in response to question #2.

**Response:** Please see the response to your comment on Question 2.

**ACES** – Yes. The data is already being collected and submitted to the regional entities.

**Response:** Thank you for your input.

**MidAmerican** – No. As currently drafted this data request could require misoperation reporting for individual wind and solar generation components and other small generating units. The data request is not specific to how this might be implemented in a wind or solar facility particularly as to which components protection system misoperations should be reported. It is recommended that this data request be aligned with the GADS mandatory reporting criteria<sup>4</sup> which specify the unit size subject to the mandatory GADS reporting and exclude wind and solar facilities from GADS reporting<sup>5</sup>. The analysis that provided the basis for the GADS reporting criteria should be equally applicable to this reporting.

**Response:** NERC will collect data for Misoperations identified pursuant to Reliability Standard PRC-004. The Project 2014-01 – Standards Applicability for Dispersed Generation Resources drafting team has proposed revisions to clarify the applicability of PRC-004 to dispersed power producing resources.

**Exelon** – Yes.

**Response:** Thank you for your input.

**Dominion** – Yes

**Response:** Thank you for your input.

**IMEA** – Yes and No/Don't Know. The data requested appears to be reasonable, with the caveat provided in the comment to Question 1. However, Applicability language in several proposed PRC Reliability Standards is causing confusion as to which DP protective devices are in scope for those Reliability Standards. This confusion may cause subsequent uncertainty about which protective devices would be in scope for this DR. Hopefully, the "Operation" and "Misoperation" event categories will minimize uncertainty about scope of data requested.

**Response:** NERC will collect data for Misoperations identified pursuant to Reliability Standard PRC-004. The Project 2010-05.1 – Protection Systems: Phase 1 (Misoperations) drafting team has revised the applicability section in PRC-004-3 to provide clarity on the Protection Systems to which the standard is applicable. The Data Request will become effective coincident with the retirement of PRC-004-2.1a.

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<sup>4</sup>"Generation Availability Data System: Mandatory Reporting of Conventional Generation Performance Data" dated July 2011: The MW size of the conventional units will be phased-in with units 50 MW and larger being reported first and later units 20 MW and larger joining GADS. The first mandatory data for units 50 MW and larger for unit outages occurring in 2012 will be from January 1 to March 31, 2012 and will be due to NERC no later than April 30, 2012. GADS data will be collected from all generator owners on the NERC Compliance Registry under NERC's *Rules of Procedure* Section 1600, *Requests for Data or Information*. Units 20 MW and larger for unit outages occurring in 2013 will be required to report to GADS starting January 1, 2013 with the first data from January 1 to March 31, 2013.

<sup>5</sup> "Generation Availability Data System: Mandatory Reporting of Conventional Generation Performance Data" dated July 2011: The task force recommends that GADS data be provided for conventional generating units (not variable energy resources such as wind and solar) from all Generator Owners on the NERC Compliance Registry, following Section 1600, *Requests for Data or Information* under NERC's *Rules of Procedure*.

NERC also has modified the Data Request to clarify that reporting will be consistent with the NERC glossary definition of “Misoperation.” Tab 1 – Operation Summary defines Protection System operation and provides examples for clarity.

**NYPA** – Yes.

**Response:** Thank you for your input.

**We Energies** – No. As currently drafted this data request could require misoperation reporting for individual wind and solar generation components and other small generating units. The data request is not specific to how this might be implemented in a wind or solar facility particularly as to which components protection system misoperations should be reported. It is recommended that this data request be aligned with the GADS mandatory reporting criteria<sup>[1]</sup> which specify the unit size subject to the mandatory GADS reporting and exclude wind and solar facilities from GADS reporting<sup>[2]</sup>. The analysis that provided the basis for the GADS reporting criteria should be equally applicable to this reporting.

**Response:** NERC will collect data for Misoperations identified pursuant to Reliability Standard PRC-004. The Project 2014-01 – Standards Applicability for Dispersed Generation Resources drafting team has proposed revisions to clarify the applicability of PRC-004 to dispersed power producing resources.

**SPP Standards Review Group** – As previously indicated the data that is being requested is basically currently being provided, so it is obtainable.

**Response:** Thank you for your input.

**City of Tallahassee** – Yes.

**Response:** Thank you for your input.

**PacifiCorp** – No. As currently drafted, this Data Request could require Misoperation reporting for individual wind and solar generation components and other small generating units. The Data Request is not specific as to how this might be implemented in a wind or solar facility, particularly as to which components’

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<sup>[1]</sup>“Generation Availability Data System: Mandatory Reporting of Conventional Generation Performance Data” dated July 2011: The MW size of the conventional units will be phased-in with units 50 MW and larger being reported first and later units 20 MW and larger joining GADS. The first mandatory data for units 50 MW and larger for unit outages occurring in 2012 will be from January 1 to March 31, 2012 and will be due to NERC no later than April 30, 2012. GADS data will be collected from all generator owners on the NERC Compliance Registry under NERC’s *Rules of Procedure* Section 1600, *Requests for Data or Information*. Units 20 MW and larger for unit outages occurring in 2013 will be required to report to GADS starting January 1, 2013 with the first data from January 1 to March 31, 2013.

<sup>[2]</sup> “Generation Availability Data System: Mandatory Reporting of Conventional Generation Performance Data” dated July 2011: The task force recommends that GADS data be provided for conventional generating units (not variable energy resources such as wind and solar) from all Generator Owners on the NERC Compliance Registry, following Section 1600, *Requests for Data or Information* under NERC’s *Rules of Procedure*.

protection system Misoperations should be reported. It is recommended that this Data Request be aligned with the GADS mandatory reporting criteria<sup>6</sup> which specify the unit size subject to the mandatory GADS reporting and exclude wind and solar facilities from GADS reporting<sup>7</sup>. The analysis that provided the basis for the GADS reporting criteria should be equally applicable to this reporting.

**Response:** NERC will collect data for Misoperations identified pursuant to Reliability Standard PRC-004. The Project 2014-01 – Standards Applicability for Dispersed Generation Resources drafting team has proposed revisions to clarify the applicability of PRC-004 to dispersed power producing resources.

**OEVC – No.** Consistent with our feedback on PRC-004-3, OEVC still believes that Protection System owners must have the final call on the determination of a “slow trip” Misoperation. Even though the drafting team has expressed that intent, it is not captured in the definition or the requirements. This means that CEAs may decide that the owner’s assessment was not adequate – or was not consistent with their own set of design expectations.

This may present a particular problem if DME is not available to capture the actual relay performance for every operation. Without it, the DP, TO, or GO cannot prove that the reaction time was in specification. The cost to deploy DME so widely is not justified in order to satisfy what is an administrative verification in almost every instance of a normal relay action.

**Response:** NERC has modified the Data Request to clarify that reporting will be consistent with the NERC glossary definition of “Misoperation” and PRC-004. The Project 2010-05.1 – Protection Systems: Phase 1 (Misoperations) drafting team has revised the definition of Misoperation to provide additional clarity on the “slow trip” category. The revised definition makes it clear that Disturbance Monitoring Equipment is not required to determine whether a slow trip has occurred. Determinations of slow trips will be based on whether a Protection System on another Element (i.e., remote back-up) operated.

**Dynegy – Yes,** this proposed method of data requested is preferable over submitting a different Misoperations Reporting Template to each Region.

**Response:** Thank you for your input.

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<sup>6</sup> “Generation Availability Data System: Mandatory Reporting of Conventional Generation Performance Data” dated July 2011: The MW size of the conventional units will be phased-in with units 50 MW and larger being reported first and later units 20 MW and larger joining GADS. The first mandatory data for units 50 MW and larger for unit outages occurring in 2012 will be from January 1 to March 31, 2012 and will be due to NERC no later than April 30, 2012. GADS data will be collected from all generator owners on the NERC Compliance Registry under NERC’s *Rules of Procedure* Section 1600, *Requests for Data or Information*. Units 20 MW and larger for unit outages occurring in 2013 will be required to report to GADS starting January 1, 2013 with the first data from January 1 to March 31, 2013

<sup>7</sup> “Generation Availability Data System: Mandatory Reporting of Conventional Generation Performance Data” dated July 2011: The task force recommends that GADS data be provided for conventional generating units (not variable energy resources such as wind and solar) from all Generator Owners on the NERC Compliance Registry, following Section 1600, *Requests for Data or Information* under NERC’s *Rules of Procedure*.

**Pepco Holdings** – Yes.

**Response:** Thank you for your input.

## Question 4

**Is the implementation schedule for the request reasonable? If “no,” please explain.**

### Summary

Fifteen responses were received: 12 indicate the implementation schedule is reasonable and three believe it is not.

Some entities expressed concern on the following subjects:

- One commenter noted that if a company does not have an automated tracking system and decides to implement one in response to the new standard, the implementation interval is very brief.
- One commenter repeated concerns related to the potential need to install DME.
- One commenter noted the implementation plan for the Data Request is reasonable; however, if the implementation plan for PRC-004-3 changes significantly, then industry should be provided another opportunity to comment on the Data Request.
- One commenter noted that 60 days after the end of the first quarter following retirement of PRC-004-2a does not provide adequate time for entities to implement training and change management activities, and recommends synchronizing implementation to the TADS reporting for 100 to 199 kV.
- One commenter believes the implementation schedule is reasonable if training is provided to entities not familiar with WebTADS. This commenter also proposes that the reporting frequency is not reasonable for small entities, and recommends annual reporting is sufficient for Transmission Owners with less than “xxx” miles of transmission lines and Distribution Providers with less than “xxx” MW of peak load.

### Comments

**NRG** – No. If a company does not have an automated tracking system and decided to do so in response to the new standard version, the implementation interval is very brief.

**Response:** Thank you for your input. Please note that the Data Request will not become effective until the effective date of PRC-004-3, which, in the United States, is proposed to be the first day of the first calendar quarter that is twelve (12) months after the date that the standard is approved by FERC. This will provide adequate time for training and for Registered Entities to manage the change to the new reporting system.

**Oncor** – Yes

**Response:** Thank you for your input.

**PPL** – No, due to the feasibility issues discussed above in response to question #1 and question #2.

**Response:** Please see the response to your comments on Question 1 and Question 2.

**ACES** – Given that the data request is linked to the retirement of PRC-004-2a, the retirement will not occur until approximately 12-15 months after the new PRC-004-3 standard is approved, and the data is already collected, the implementation schedule is reasonable. However, should the implementation plan of the proposed standard change significantly, stakeholders should be given an opportunity to comment on the implementation schedule of the data request again.

**Response:** Thank you for your input.

**MidAmerican** – Yes

**Response:** Thank you for your input.

**Exelon** – No. 60 days after the end of the first quarter following retirement of the standard is not reasonable considering the training and change management activities that will need to take place. Recommend synchronizing the additional reporting requirements up with NERC TADs reporting requirements for voltage levels of 100 to 199KV. A recommendation has been sent to the NERC Planning Committee by the NERC TADSWG for an implementation extension to January 1st, 2015.

**Response:** Please note that the Data Request will not become effective until the effective date of PRC-004-3, which, in the United States, is proposed to be the first day of the first calendar quarter that is twelve (12) months after the date that the standard is approved by FERC. The Data Request will not become effective prior to the collection of TADS data for voltage levels of 100 kV to 199 kV. This will provide adequate time for training and for Registered Entities to manage the change to the new reporting system.

**Dominion** – Yes

**Response:** Thank you for your input.

**IMEA** -- Yes and No. The implementation schedule identified in Table 3 of the proposed DR appears reasonable. It is assumed that timely training opportunities will be provided for those entities not familiar with webTADS. However, IMEA would appreciate consideration of a less frequent reporting schedule for small TOs and small DPs, instead of continuing with the current one-size-fits-all approach of Quarterly Reporting. This comment is based on our experience to date of limited reportable Operation and Misoperation events. IMEA recommends that an Annual Submittal would be adequate for a TO with less than xxx miles of transmission lines, and a DP with less than xxx MW of peak load.

**Response:** NERC will schedule training sessions to assist entities with the transition to entering data in webTADS. NERC appreciates the suggestion regarding reporting frequency, but believes that a common schedule for reporting is appropriate. It is also consistent with the current regional processes for reporting Misoperations under PRC-004-2.1a.

**NYPA** – Yes.

**Response:** Thank you for your input.

**SPP Standards Review Group** – Except for the entities mentioned in our general comment below, the proposed timeline does not appear to be a problem.

**Response:** Thank you for your input.

**City of Tallahassee** – Yes.

**Response:** Thank you for your input.

**PacifiCorp** – Yes.

**Response:** Thank you for your input.

**OEVC** – Yes.

**Response:** Thank you for your input.

**Dynegy** – Yes, this proposed implementation schedule is preferable over the current method of having different Misoperations Reporting Deadlines for each Region.

**Response:** Thank you for your input.

**Pepco Holdings** – Yes.

**Response:** Thank you for your input.



## Question 5

**If you will have to develop a system to export the Misoperation data, what is the incremental cost of this reporting?**

### Summary

Fifteen responses were received: 10 indicate development of a system is not needed, two indicate minimal cost, one indicates costs have not been quantified, and two provide cost estimates.

- One commenter is investigating a software system to automate data gathering and reporting and estimates \$600,000 for training and implementation of the system in each of its three business units, including a 2-year purchase/development/test/rollout period.
- One commenter repeated its concerns regarding the need to install DME and notes the cost would be equivalent to purchasing Sequence of Events equipment for all of its facilities.

Some entities expressed concern on the following subjects:

- One commenter stated it would have no incremental cost if the data submittal process is designed similar to the existing Regional reporting process.
- Two commenters noted that if they can key-in information directly into WebTADS or perform a bulk upload of data from a spreadsheet, they will have no additional cost.

### Comments

NRG – Those costs have not been quantified.

Response: Thank you for your input.

Oncor -- As addressed in question 2, Oncor houses its misoperations data in an internally managed spreadsheet designed to mirror the regional misoperations report for easy copy/paste into the regional misoperations report when due. Oncor would need additional information about NERC's data submittal process to answer regarding incremental cost; however, if designed similar to the regional reporting, Oncor would experience no incremental cost.

Response: Thank you for your input. This Data Request is similar to the present regional reporting.

PPL – The PPL NERC Registered Affiliates believe the costs for this type of reporting will be would be equivalent to purchasing Sequencing of Events DME equipment for all of the facilities. There is currently no known justification for forcing GOs to install DME and implement automated data collection at every plant meeting the NERC Registry Criteria. Given that Project 2007-11 Disturbance Monitoring is still in the SAR phase of standard development, it would again be premature to require entities to begin installing

equipment that serves the same overall purpose but may not conform to a subsequent NERC standard, PRC-018, which is still in development.

Response: NERC has modified the Data Request to clarify that reporting will be consistent with the NERC glossary definition of “Misoperation” and PRC-004. The Project 2010-05.1 – Protection Systems: Phase 1 (Misoperations) drafting team has revised the definition of Misoperation to provide additional clarity on the “slow trip” category. The revised definition makes it clear that Disturbance Monitoring Equipment is not required to determine whether a slow trip has occurred. Determinations of slow trips will be based on whether a Protection System on another Element (i.e., remote back-up) operated.

ACES – Given that the compliance risk associated with Misoperations reporting will be reduced, the incremental costs will likely be less than the costs associated with responding to a potential violation of the existing standard for errors in reporting Misoperations data. Thus, the incremental costs will be justified for reduced compliance risk.

Response: Thank you for your input.

MidAmerican – Do not expect to have to develop a system.

Response: Thank you for your input.

Exelon – Three of the Exelon Business Units are investigating a software system to automate the data gathering and reporting process, the estimated cost for training and implementation of this system is \$600,000.00 per installation including a 2 year purchase/development/test/rollout period.

Response: Thank you for your input.

Dominion – N/A

Response: Thank you for your input.

IMEA – Given the comment provided in response to Question 4, IMEA does not anticipate the need to develop a system to export Misoperation data.

Response: Thank you for your input.

NYPA – Minimal.

Response: Thank you for your input.

SPP Standards Review Group – We’re not sure if we totally understand this question. We mentioned earlier the ability to manually enter or bulk upload data, hopefully via the provided template so we’re at a loss as to what other systems may be required for exporting the data. Other than the spreadsheet, which is a single row, multiple column worksheet which can be a bit unruly to handle, we’re not aware of what other systems may be required.

Response: Thank you for your input. NERC confirms that entities will have the ability to manually enter or bulk upload data into webTADS.

City of Tallahassee – N/A.

Response: Thank you for your input.

PacifiCorp – PacifiCorp will not have to develop a system to export the Misoperation data and therefore will not incur an incremental cost.

Response: Thank you for your input.

OEVC – OEVC is expecting to either key-in the information directly into the webTADS system or to bulk upload it using the spreadsheet provided by NERC. This assumes that the proper access is granted to our organization – requiring no development effort on our part

Response: Thank you for your input. NERC confirms that entities will have the ability to manually enter or bulk upload data into webTADS.

Dynegy – A new system would not have to be developed for the proposed Data Request.

Response: Thank you for your input.

Pepco Holdings – Not Applicable.

Response: Thank you for your input.

## Other Comments

### Summary

Fourteen commenters submitted general comments in place of, or in addition to, responding to the five questions in the Data Request. These additional comments expressed concern on the following subjects:

- The possibility of duplicative processes for reporting data to NERC and the Regions.
- A desire to continue review of Misoperation data at the Region level, citing recommendations in the Protection System Misoperation Task Force (PSMTF) report.
- The potential for NERC to request additional data, and concern that Section 1600 would allow revisions to be posted for only five days for commenting.
- The potential for NERC to develop metrics comparing performance among individual entities and the concern whether additional metrics would be developed through existing stakeholder processes.
- Assurance that data collected through the Data Request will not be used to assess compliance with PRC-004.
- Need for WebTADS training for certain entities that presently are not required to use the system, whether the TADS instruction manual will be revised, and whether Generator Owners should be required to submit their Misoperation data through WebTADS.
- Concern that the definitions in the Data Request must remain aligned with any changes that may occur to the Misoperation definition under development in Project 2010-05.1.
- Whether the Data Request meets Section 1602.2.1(i) of the NERC Rules of Procedure if additional information is not provided on how NERC will use the Protection System operation data.
- Whether reporting is mandatory for non-U.S. entities, and whether confidentiality of data provided by Canadian entities will be protected by Canadian law.
- Reporting requirements for Misoperation investigations in process and processes for updating previously submitted data upon completion of a Misoperation investigation.

In addition, some commenters identified discrepancies between the Data Request and the posted template, and some commenters proposed revisions and clarifications to the Data Request and definitions used therein.

### Portland General Electric (PGE)

On initial review, moving the requirement for data reporting to a Section 1600 data request from Reliability Standards PRC-004-2a and PRC-003-1 seems straightforward and PGE is supportive of this change. However, PGE is concerned that this will create a duplication of effort between NERC and the regions. There

should be one submittal of information to be shared as required; there should not be a NERC data request and a Regional Entity request for the same or similar data. PGE believes NERC and the Regional Entities should coordinate their efforts and request one data submittal.

**Response:** Commencing with the retirement of PRC-004-2.1a, this Section 1600 Data Request will replace the reporting presently required under PRC-004-2.1a. Registered Entities will only submit Misoperation data once to NERC via the NERC webTADS portal. The Regional Entities will have the ability to review the data for their Region and will not need to collect the same data.

The spreadsheet NERC presents for this purpose is the same spreadsheet that has been used for some time. At present, the information is copied into a web form and submitted to WECC via WebCDMs. If the submittal is made once and shared between the Regional Entities and NERC, the process will not only be more efficient, but will eliminate the potential for data inconsistencies which could potentially result in additional questions and further data (re)submittals requirement. This efficiency is also captured if it becomes necessary to report new or additional misoperation information.

**Response:** Commencing with the effective date of PRC-004-3, this Section 1600 Data Request will replace the reporting presently required under PRC-004-2.1a. Registered Entities will only submit Misoperation data once to NERC via the NERC webTADS portal. The Regional Entities will have the ability to review the data for their Region and will not need to collect the same data.

PGE additionally requests that NERC state whether there will be additional data requested that are not on the existing spreadsheet. Entities must fully understand the scope of the request to accurately assess the resources required to support this change.

**Response:** NERC does not intend to request data in addition to that specified in the Data Request. If in the future NERC determines additional data is required, the Data Request will be modified according to Section 1600 of the NERC *Rules of Procedure*.

### **Southern Company**

NERC should clarify that it's intended use of Protection System operations data being reported will be limited to the stated purpose (outlined on page 2 of the Request) and will not be used to deconstruct or otherwise parse out individual Registered Entities when metrics are compiled or when lessons-learned are published. Southern does not agree with the development of a metric which could, for example, single-out entities for any reason during a particular quarter. Such data should only be used in aggregate to provide global data on a Regional Entity (Region) or NERC-wide level.

**Response:** The reliability metric reporting process is designed to respect the confidentiality of data received from individual Registered Entities. Data submitted by a Registered Entity, classified as confidential, are managed in accordance with NERC's treatment of confidential information, as described in Section 1500 of

the NERC *Rules of Procedure*.<sup>8</sup> Neither the entity, nor data directly attributable to a specific entity will be published. As the intent of all these metrics is to provide an overall assessment of reliability, the metrics data will be published at the North American, Interconnection, or Region levels only.

Additionally, to the extent that NERC must create new or additional metrics, Southern believes the metrics must be presented and approved by the industry prior to implementation. This collaborative approach with industry will ensure that any identified performance trends that impact reliability or published lessons-learned include the appropriate context and provide meaningful benefit to industry stakeholders.

**Response:** All NERC reliability metrics are developed using an open stakeholder process, and the NERC Operating and Planning Committees review and endorse all metric proposals. NERC will follow this process in the event that any additional metrics are proposed. Stakeholder input is always welcome and valued.

NERC's Request (page 2) describes how the revised Reliability Standard PRC-004-3 will maintain the data/evidence retention requirement for compliance purposes. Southern believes NERC should clarify that information provided by entities via the reporting Data Reporting template will not be used by NERC or the Regions for routine compliance monitoring or enforcement purposes.

**Response:** NERC will use the data collected through this Data Request in the same manner it has used the data collected under PRC-004-2.1a. The data will be used to support Bulk-Power System reliability through development of metrics, identification of trends, and identification of remediation techniques, to reduce the rate of occurrence and severity of Misoperations. However, Section 1600 does not restrict how NERC or the Regions use the data collected.

We believe that the Region is the appropriate party to review data on a per entity basis. This concept is consistent with the NERC PSMTF (Protection System Misoperation Task Force) recommendation that the Region review continue. The main benefits the Region has are (a) its relationship with its entities, (b) subject matter experts (SMEs) from the Region who are actively engaged with protection work are involved in reviewing Misoperation submittals, and (c) the Region SMEs provide a peer review. We recommend the proposed process facilitate continued Region review.

**Response:** A review period will be provided for Regional Entities to review data submitted in webTADS by the entities in their Region. The Regional Entities will review and sign-off on the data prior to review by NERC. The Regional Entities will have the ability to utilize their existing processes or similar processes for review of data and closure of the data submission.

It is noted that the proposed Protection System Misoperation Template does not agree with the template presented by the NERC System Protection and Control Subcommittee (SPCS) for future use. We recommend

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<sup>8</sup> <http://www.nerc.com/AboutNERC/Pages/Rules-of-Procedure.aspx>

that the SPCS review and revise the proposed template prior to implementation. Note: The previous template utilizes the Event Description and Corrective Action Plan (CAP) information along with Corrective Action Status, Corrective Action Completion Date and Target Completion Date. The proposed template does not request corrective action information, but rather requests Misoperation Mitigation information. We believe the Corrective Action data is the better approach.

**Response:** NERC has worked to minimize differences between the existing common reporting template and the NERC Data Request. NERC has incorporated the SPCS proposed changes to the existing template. In response to comments, NERC also has revised the Data Request to collect the Corrective Action Plan (CAP) information presently collected under PRC-004-2.1a in place of the proposed Misoperation Mitigation information. Similar to existing reporting, entities will report the planned corrective actions and target completion date for corrective actions in progress, and the actual completion date when corrective actions are complete.

#### **Entergy**

1. Entergy estimates a \$500,000 incremental cost associated with development and implementation of a system to export the subject data into a Misoperation module of webTADS system.

**Response:** Thank you for your input.

2. The proposed PRC-004-3 Event Description data being requested is more detailed than the current Event Description data being requested. The proposed data will require more effort to compile, may include redundant information since each Misoperation is to be reported separately anyway, and provide little value for strictly Section 1600 statistical or data trending purposes since this level of detail is unique for each event.

Event Description data as per proposed PRC-004-3 Event Description data field will include:

- a. Provide a brief description of the event including:
  - i. Initiating event: include a description of any internal or external fault causes, any abnormal system conditions which may have contributed to the Misoperation, or state that the Misoperation occurred under normal operating conditions.
  - ii. Facilities involved that operated correctly and/or incorrectly concurrent with the Misoperation.
  - iii. Component(s) of the Protection System(s) that failed and/or did not function correctly.
  - iv. Detailed description of root causes determined by completed Corrective Action Plans.

Event Description data as per present PRC-004-2a Event Description data field request is:

- a. To provide a brief description of the event and detailed description of Misoperation root causes.

**Response:** The expanded Event Description in the Data Request is consistent with recommendations of the NERC Protection System Misoperations Task Force to modify the existing Misoperation reporting template. This information will assist NERC in confirming that data is being reported consistently among entities, and assist NERC in fulfilling the stated objectives of the Data Request which extend beyond statistical or data trending purposes.

3. NERC and/or SERC should provide a webcast to review changes and orient users on webTADS.

**Response:** Training webcasts will be provided, including how to use the NERC webTADS portal.

4. Page 15 – Section 3: It states that submission of data is mandatory for Transmission Owners, Generation Owners and Distribution Owners on the NERC Registry. Are there any exclusion based on generating unit size or role (such as a peaking unit)?

**Response:** NERC will collect data for Misoperations identified pursuant to Reliability Standard PRC-004. The proposed applicability includes all BES generation resources with no exclusions based on size or role. However, the Project 2014-01 – Standards Applicability for Dispersed Generation Resources drafting team has proposed revisions to clarify the applicability of PRC-004 to dispersed power producing resources.

#### **FMPA**

1. “The Standard Drafting Team has proposed to remove from the revised standard the data reporting obligation included in Reliability Standard PRC-004-2a and proposes instead that NERC request under Section 1600 of the NERC *Rules of Procedure* the data required for performance analysis purposes. The revised Reliability Standard PRC-004-3 will continue to require retention of data or evidence of compliance in the “Compliance” section of the standard.”

It is not clear from the statement above whether the reporting requirement will still exist in the standard (last sentence) or not exist in the standard (first sentence). It’s difficult to discern especially since the revised standard PRC004-3 has not been reposted. We do not understand whether the SDT intends to include within the standard: 1) data retention requirements for responses to data requests; or 2) data retention requirements for a misoperation investigation and Correction Action Plan. If the former, we do not understand why the standard would retain any data retention or evidence of compliance to responding to a data request.

**Response:** NERC confirms that the standard will require data retention requirements for a Misoperation investigation and Correction Action Plan, not for the Data Request. NERC has revised this paragraph to



clarify that “The revised Reliability Standard PRC-004-3 will continue to require retention of data or evidence of compliance with the standard, but will no longer require periodic reporting of that information. Periodic, quarterly submittals of Misoperation data will be associated with reporting under this Section 1600 Data Request.”

2. “NERC shall post the proposed request for data or information or proposed modification to a previously-authorized request for data or information for a public comment period that is reasonable in duration given the circumstances, but in no event shorter than five (5) days.”

Recognizing that the *Rules of Procedure* apply to this proposed new data request, it appears that future modification to the Misoperations Data Collection will only have to be posted for 5 days. This would be problematic and we suggest that for modifications to this data request there are more reasonable timelines for commenting.

**Response:** The section quoted above is taken from Section 1606 of the NERC *Rules of Procedure* and requires both an authorization from the NERC Board of Trustees to use and a showing that NERC cannot adhere to the time periods set in Section 1602. Any revision to this Data Request must follow the same procedure in Section 1600 as the creation of the Data Request unless NERC meets the requirements in Section 1606 for use of the expedited revision process. A reference to Section 1606 has been corrected to “1602” in the Data Request on page 3. The Data Request has been prepared in accordance with Section 1602 of the NERC *Rules of Procedure*.

**PPL** –In Table 1, page 12 of “RE: Request for Public Comment on Protection System Misoperation Data Collection pdf”, the proposed data request questions, “Is this a Generation Availability Data System (GADS) reportable event?” and “Whether the Misoperation involved the automatic outage of a GADS-reportable transmission element.” do not appear in the Tab 2 – Misoperation Entry Form table of the “excel sheet “Section\_1600\_Misop\_Draft\_Template.xlsx”. Either these questions should be removed from Table 1 of the pdf or they should be added to the Tab 2 table of the excel sheet so there is consistency between the two data request documents.

**Response:** NERC has added this column to correct this unintended omission.

#### ACES

1. The description of the NERC ID field indicates a submitter may not have a NERC ID. This should never be the case. NERC can only compel data submission from users, owners and operators of the bulk power system (BPS). NERC has identified the users, owners and operators of the BPS through the registration process. All registered entities have a NERC ID. Thus, if an entity does not have a NERC ID, they are not a user, owner or operator of the BPS and cannot be compelled to submit the data.

**Response:** The note for submitters that do not have a NERC ID addresses a limited number of unique situations.

2. The field description of the “Event Description” field incorrectly refers to Facilities in bullet 2. It states that Facilities that operated correctly or incorrectly concurrent with the Misoperations should be included in the description. We are assuming Facilities are intended to refer to switching devices such as breakers, circuit switchers, and motor-operated disconnect (MOD) switches. Per the NERC definition, Facilities would include a line, generator or transformer but would not include breakers, circuit switches or MODs. Element may be the more appropriate glossary term to use as it would include breakers. However, we suggest just stating clearly that breakers, circuit switchers and MODs are intended to be included in the event description.

**Response:** NERC has modified the second bullet to address this concern. The second bullet now reads “Facilities involved on which Protection Systems operated correctly and/or incorrectly concurrent with the Misoperation.”

3. To allow the data request to stand alone, we suggest that the definitions of Misoperations categories (i.e. Failure to Trip – During Fault) and causes of Misoperations (i.e. logic errors) should be included in the Section 1600 data request or make clear that the definitions are included in the template.

**Response:** NERC has modified the Data Request make clear that this information is included in the template.

4. Because the data request relies on proposed changes to the Misoperation definition in the “Misoperation Category” field, the data request cannot be finalized until the definition has been finalized. Otherwise, a revision to the definition will modify the data request and will trigger the need to seek approval of the data request. Close coordination between the data request and the standards project is necessary.

**Response:** NERC will not present the Data Request to the NERC Board of Trustees until PRC-004-3 achieves a successful stakeholder ballot to provide for consistency between the Data Request and the revised standard.

5. Since the “Protection Systems/Components that Misoperated” field requires relay model types to be reported when the cause of the failure is associated with the relay, the “Relay Technology” field is unnecessary. The relay model type should indicate the technology such as electromechanical, solid state, or microprocessor.

**Response:** NERC has retained the Relay Technology field to facilitate sorting and trending of data. Without this field, it would be necessary for users of the data to create this information from the relay model type.

6. In the fifth row on page 12, the “For improved consistency with transmission outage reporting and more complete information” should be struck. The field is about GADS data. How does transmission outage reporting relate? Even if it did, it is not a description of the field but rather a reason to submit the data and how the data will be used which belongs in section 1.b.

**Response:** NERC has updated this field in Table 1 of the Data Request to limit the instruction as recommended.

7. On page 12, please change the last three rows to be clear that the contact information should be of a person familiar with the data. As it literally reads, the person submitting the data must enter their information. Some companies with little data to report may rely on administrative personnel to enter the information in the NERC database and these personnel may not be able to answer questions about the data.

**Response:** Space has been added to the template to list a point of contact familiar with the data if different from the individual reporting the information.

8. In Table 2 on page 13, the changes referenced in the “Misoperation Mitigation” field are incorrect. It references a “Mitigation Analysis Status.” No such field is identified elsewhere in the data request. We believe the reference should have been to “Misoperation Mitigation Status.”

**Response:** In response to other comments, NERC has revised the Data Request to collect the Corrective Action Plan (CAP) information presently collected under PRC-004-2.1a in place of the proposed Misoperation Mitigation information. NERC has modified the descriptions in Table 2 of the Data Request and the columns in the template.

9. In Table 2 on page 13, the description of changes to the field that requests if the event was reportable to GADS refers to a “GADS-reportable transmission element”. Since GADS deals with generation outage reporting, we believe the reference to a transmission element is incorrect.

**Response:** NERC has corrected this field in the template to refer to “a GADS reportable Element.”

10. We do not believe the data request as written fully satisfies *Rules of Procedure* section 1602.2.1(i). This section requires an explanation of how data will be used. We can find no statement in the data request for how “Total Protection System Operations by Voltage Class” will be used. Since this field does not have an obvious link to reporting Misoperations and would include primarily correct operations, we think the data request should explicitly explain the purpose for collecting total Protection System operations in the Misoperations reporting data request.

**Response:** Collection of the total Protection System operations facilitates normalization to account for differences among Registered Entities (e.g., location, climate, size, density, protection schemes used). The Misoperation rate metric can be used to gauge the performance of BES Protection Systems for both generation and transmission Elements. The relative percentage indicates of the relative performance of Protection System operations, specifically Protection System Misoperations as a ratio of total Protection System operations. This information has been added to the Data Request.

11. The 1-Operations Summary tab in Misoperations reporting template is not described in detail in the data request. Rather there is reference to a single file called “Total Protection System Operations by Voltage Class.” The template is very clear that this is not a single field as represented in the data request. Please provide a more detailed description of the required information in the data request.

**Response:** NERC has updated the description in the Data Request to describe all fields on the Operation Summary tab.

#### **Exelon**

1. Currently the NERC TADS Working Group has an instruction manual and a separate definitions manual. Are there plans for developing a separate instruction manual and definitions manual for this additional reporting or will the existing NERC TADS instruction manual and definitions manual be modified?

**Response:** A separate instruction manual and definition document will be developed since there are significant differences between TADS and Misoperation reporting.

2. What, if any, will be the separation of viewing rights between the TOs and GO / GOPs who enter data?

**Response:** The NERC portal registers Entities based on their roles. For example, a Generator Owner will be able to access its Misoperation records and GADS data using the portal; a Transmission Owner will be able to access its Misoperation records and TADS data. Registered Entities will not be able to access data entered by other Registered Entities.

3. WebTADS data reporting is currently voluntary, that is, there is no NERC Standard requiring the Automatic Outage or Planned Outage data submittal requirements. It is recommended the data required by NERC for Relay Mis Operations be identified to assure that it is entered.

**Response:** TADS data reporting is mandatory under Section 1600 of the NERC *Rules of Procedure*. The webTADS portal will provide validation checks to ensure the automatic outages caused by Misoperations are consistent with the TADS Element outages identified from Misoperation reporting.

4. Will there be a disconnect in reporting as a result of the implementation of the lower voltage levels in NERC WebTADS?

**Response:** No. The present schedule results in implementing the Data Request subsequent to the initiation of collection TADS data for voltages from 100 kV to 199 kV.

5. The Exelon companies registered as GO / GOPs are registered separately and currently do not use WebTADS, thus training will be required by these new users. Is there a plan in place to address the training needs of entities that currently don't use Web TADS?

**Response:** Training webcasts will be provided, including how to use the NERC webTADS portal.

6. Why will the generator related data not be input via GADs?

**Response:** It is necessary to have one portal for all Misoperation data. The webTADS system was selected because a majority of the Protection System Misoperations are associated with transmission system outages. The NERC portal will provide validation checks to ensure unit outages in GADS are consistent with the units identified from the Misoperations reporting.

7. How will compliance be maintained once webTADS is used for data collection? How will an entity that needs to produce the data for compliance be able to pull the necessary data from the system to show compliance?

**Response:** The NERC webTADS portal provides time stamps and validation checks for each entity's submittal. The entity will be able to access this information using the portal.

### **Manitoba Hydro**

1. Page 15 of the Draft Protection System Misoperations Section 1600 Data Request for Public Comment document states that: "...because the data request is being requested in accordance with Section 1600, the submission of Protection System Misoperation data is mandatory for non-U.S. Transmission Owners, Generator Owners, and Distribution Providers as NERC members." This statement is incorrect and should be revised or deleted. In Manitoba, provincial legislation overrides the NERC membership contract. Section 3)3) of the Reliability Standards Regulation only adopts specific NERC *Rules of Procedure*. As such, Section 1600 is not enforceable in Manitoba.

**Response:** The statement has been revised. The request now reads, "The submission of Protection System Misoperation data is mandatory for all U.S. Transmission Owners, Generator Owners and Distribution Providers who are on the NERC Compliance Registry. Non-U.S. Transmission Owners, Generator Owners, and Distribution Providers should provide data in accordance with the legislation, laws, regulations, rules or orders of an Applicable Governmental Authority. Non-U.S. Transmission Owners, Generator Owners, and

Distribution Providers are strongly encouraged to provide the requested data to ensure the completeness of the data collected for analysis.”

- Page 16 Protection System Misoperations Section 1600 Data Request for Public Comment document states that “NERC’s treatment of confidential information is subject to section 1500 of the NERC *Rules of Procedure*”. However, NERC’s treatment of confidential data is also subject to applicable Canadian law, such as in Manitoba where Section 1500 is not in force. If Manitoba entities voluntarily participate in the data request, information provided by Manitoba registered entities will be governed by the Manitoba Reliability Standards Regulation.

**Response:** The language has been revised to reflect the existence of other agreements governing confidentiality. The language now reads, “NERC’s treatment of confidential information is subject to Section 1500 of the NERC *Rules of Procedure* and other agreements with Applicable Governmental Authorities.”

#### **SERC PCS<sup>9</sup> –**

The SERC PCS has the following comments and questions regarding NERC proposed Misoperation 1600 Data Request.

- Please clarify NERC’s intended use of Protection System operations being collected on per entity basis. There is considerable variation among entities (size, density, technology, protection schemes used, etc.) and the weather (seasonally and regionally). Is the goal to develop a metric to identify which entity has the highest Misoperations/operations each quarter or will the data only be used to provide global metrics on a Region or NERC-wide level? Incorrect conclusions per entity may be developed using a per entity metric without normalizing data collected from an entity because of the variations previously mentioned. The SERC PCS believes any per entity data should be performed by the Region where the Region works with individual entities to normalize or work with entities on data submittals in order to develop clear trending statistics. The letter indicates the goal is to “Establish a consistent metric for measuring Protection System performance with uniform applicability.” Uniform applicability will not be achieved without normalization.

**Response:** The reliability metric reporting process is designed to respect the confidentiality of data received from individual Registered Entities. Data submitted by a Registered Entity, classified as confidential, are managed in accordance with NERC’s treatment of confidential information, as described in Section 1500 of the NERC *Rules of Procedure*. Neither the entity, nor data directly attributable to a specific entity will be

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<sup>9</sup> SERC PCS comments are endorsed by the following entities: SERC entities endorsing the above comments: Ameren - Paul Nauert, TVA - George Pitts, MEAG Power - Ernesto Paon, SCE&G - Russ Evans, GTC - Greg Davis, John Miller, Entergy - Charlie Fink, Santee Cooper – Bridget , Coffman, Southern Company – Phil Winston, Steve Edwards – Dominion Virginia Power, SERC – David Greene. The comments expressed herein represent a consensus of the views of the above-named members of the SERC EC Protection and Control Subcommittee only and should not be construed as the position of SERC Reliability Corporation, its board, or its officers.

published. As the intent of all these metrics is to provide an overall assessment of reliability, the metrics data will be published at the North American, Interconnection, or Region levels only.

2. The SERC PCS currently reviews all entities' quarterly Misoperation reporting and provides feedback to entities on any weaknesses or errors. The entities then update their report and SERC staff sends a subset (corrective action and contact info not included) of the data requested to NERC. SERC strongly believes this is the role of the Region. The NERC PSMTF also recommends this type of Region review continue. This review takes place during the 45day period between when Misoperations are reported and when the Region submits the data to NERC. The main benefits the Region has are its relationship with its entities, SME's from the Region who are actively engaged with protection work are involved in reviewing Misoperation submittals, and the Region SME's provide a peer review. In our experience in any given quarter, approximately 1/3 of Misoperations submittals require feedback prior to NERC upload. The Region should provide the focused assistance to entities in need of guidance. We recommend the proposed process facilitate continued Region review.

**Response:** A review period will be provided for Regional Entities to review data submitted in webTADS by the entities in their Region. The Regional Entities will review and sign-off on the data prior to review by NERC. The Regional Entities will have the ability to utilize their existing processes or similar processes for review of data and closure of the data submission.

3. The Region review identified above utilizes the Event Description and Corrective Action Plan (CAP) information along with Corrective Action Status, Corrective Action Completion Date and Target Completion Date. The proposed Section 1600 data request reporting template does not request corrective action information, but rather requests Misoperation Mitigation information. The SERC PCS believes the Misoperation Mitigation information may lack enough detail (relay replaced, cable terminated, carrier repaired, etc) to provide sufficient information for a Region review to be of value. The SERC PCS does not agree with requiring entities to provide separate Misoperation data reporting's to NERC and the Regions to provide the data necessary to perform a meaningful review. This is why we recommend using the existing Misoperation Reporting template instead of the proposed Section 1600 template.

From the entity perspective:

- As an entity, with this change, we do not want to be submitting data to both SERC and NERC. The process should still flow from the entity to SERC and from SERC to NERC.
- Entities have worked hard to provide complete and detailed information through the Regions PRC 004 compliance assessment using the Misoperation Template. To make a change to a new template is unnecessary and additionally the new proposed template removes valuable information for the Region and the entity from the template, that being the Corrective Action

Plan. This is the main focus during an investigation into a Misoperation and the tool used to identify detailed steps for correcting and mitigating reoccurrence of an event.

**Response:** NERC has worked to minimize differences between the existing common reporting template and the NERC Data Request. In response to comments, NERC also has revised the Data Request to collect the Corrective Action Plan (CAP) information presently collected under PRC-004-2.1a in place of the proposed Misoperation Mitigation information. Similar to existing reporting, entities will report the planned corrective actions and target completion date for corrective actions in progress, and the actual completion date when corrective actions are complete.

4. We concur with your bullet at the top of page 2 “Establish a consistent metric for measuring Protection System performance with uniform applicability.” In that vein, we suggest that Misoperations of an element due to a sequence of reclosing and tripping within a 24 hour period be counted as a single Misoperation. This approach worked well for years and appropriately kept the focus on the Protection System problem. The metrics have been distorted by more recently limiting duration to that of the automatic reclosing cycle.

**Response:** NERC has revised the template to include a note that all Misoperations due to the same equipment and cause within a 24-hour period are recorded as one Misoperation. This change is consistent with the PSMTF recommendation.

5. Your third purpose bullet (middle of page 2) states NERC will analyze data to: “Identify remediation techniques to reduce the rate of occurrence and severity of Misoperations.” We advise caution because the Protection System is intentionally biased toward dependability. As we and the PSMTF have pointed out the consequences of Failures to Trip are usually far more severe than those of Unnecessary Trips. Metrics can drive behaviors so we agree it’s important to develop meaningful metrics (your first bullet point.) Consistent with our comment 2 above, we believe active industry SMEs participating as peers at the Region are better positioned than NERC to identify remediation techniques.

**Response:** NERC understands this concern and notes the Protection System Misoperations Task Force (PSMTF) observation that “[t]he balance between dependability and security necessary to mitigate the potential consequences of a Protection System misoperation is dependent, in part, on the characteristics and performance needs of the power system on which the Protection System is applied.” NERC will consult with the NERC System Protection and Control Subcommittee (SPCS), the eight regional SME groups, and other industry SME groups to support analysis of the data and identification of remediation techniques.

**SPP Standards Review Group** – Currently we’re reporting this data through the Regional Entity using their processes whereas with the proposed process we will be reporting through TADS. TADS reporting is now 200kV and above therefore we will now need to report lower voltage BES events in the new process. This may be an issue for the smaller Generator Owners and Distribution Providers who have not been reporting



via TADS in the past. These entities will have to obtain access to TADS and become familiar with the processes using that tool. This may require additional time on their part.

**Response:** Please note that the Data Request will not become effective until the effective date of PRC-004-3, which, in the United States, is proposed to be the first day of the first calendar quarter that is twelve (12) months after the date that the standard is approved by FERC. The Data Request will not become effective prior to the collection of TADS data for voltage levels of 100 kV to 199 kV. This will provide adequate time for training and for Registered Entities to manage the change to the new reporting system.

#### **Ameren**

1. We support and include by reference the SERC PCS comments.

**Response:** Thank you for your input. Please refer to responses to comments from the SERC PCS.

2. This process appears to remove the Regions from the process of reviewing and validating data that is reported. This approach seems to be in conflict with the recommendation of the PSMTF (Protection System Misoperation Task Force) report which stated: In the future, the NERC PSMTF and NERC SPCS (System Protection Control Subcommittee) recommend that misoperation analysis be continued, on an annual basis, by the respective protection system subcommittees within each Regional Entity.

**Response:** A review period will be provided for Regional Entities to review data submitted in webTADS by the entities in their Region. The Regional Entities will review and sign-off on the data prior to review by NERC. The Regional Entities will have the ability to utilize their existing processes or similar processes for review of data and closure of the data submission.

3. The following statement in the background information raises some concerns: “The purpose of this proposed Data Request is to continue consistent reporting of Misoperation data to NERC through a standardized template for performance analysis. NERC will analyze the data to: Develop meaningful metrics to assess Protection System performance;” There is no indication of what additional metrics are intended? What metrics? This should only be used to create those metrics that have been approved by the Industry process. At a minimum the NERC SPCS needs to be included in the determination of metrics.

**Response:** All NERC reliability metrics are developed using an open stakeholder process, and the NERC Operating and Planning Committees review and endorse all metric proposals. NERC will follow this process in the event that any additional metrics are proposed. Stakeholder input is always welcome and valued.

4. As far as the Template:

- a. The template that was posted does not agree with the Template that was presented and approved by the NERC System Protection and Control Subcommittee which has ownership of the Template.

- b. We recommend the use of Prevailing Time (e.g. Central Prevailing Time, CPT) instead of Standard and Daylight time. Relay engineers have plenty to do and don't need the distraction of looking this up after the fact during reporting. Let a computer do it.
- c. Please correct the Relay Technology Field Description to separate Incorrect settings / logic / design.

**Response:**

- a. NERC has worked to minimize differences between the existing common reporting template and the NERC Data Request. NERC has incorporated the SPCS proposed changes to the existing template. In response to comments, NERC also has revised the Data Request to collect the Corrective Action Plan (CAP) information presently collected under PRC-004-2.1a in place of the proposed Misoperation Mitigation information. Similar to existing reporting, entities will report the planned corrective actions and target completion date for corrective actions in progress, and the actual completion date when corrective actions are complete.
  - b. The electronic submission of the data must be able to translate the information to common time. "Prevailing time" reporting creates issues at seams and for states that do not observe Daylight Savings Time.
  - c. NERC has updated the Data Request and template to separate these categories in the "Protection Systems/Components that Misoperated" and "Relay Technology" field descriptions to align them with the changes made in the "Cause(s) of Misoperations" field.
5. Additionally, the event Description Field specifically says: "4. Detailed description of root causes determined by completed Corrective Action Plans." There appears to be an overlap with a newly identified field: "Misoperation Mitigation" (Describe how the Misoperation was ultimately mitigated. This is a summary of the mitigating actions in a Corrective Action Plan and, as such, will not be used for assessing compliance with Reliability Standard PRC-004-3).

**Response:** In response to comments, NERC has revised the Data Request to collect the Corrective Action Plan (CAP) information presently collected under PRC-004-2.1a in place of the proposed Misoperation Mitigation information. The root cause is only required in the Event Description field. While there may be a potential overlap with the CAP information, the corrective actions will not necessarily reveal the root cause of the Misoperation.

6. On the top of page 3, you state the PSMTF "developed targeted Misoperation reduction plans." The PSMTF final report does include "Suggestions to Reduce Misoperations" not reduction plans.

**Response:** NERC has revised this statement to be consistent with the PSMTF report.

**AEP**

While AEP has no objections to these data requests being moved outside the standard, nor concerns regarding the structure, format, or reasonableness of the spreadsheet itself, AEP offers the following general concerns and questions:

- 1) How would this request handle instances where updates must be made to data that was previously reported?

**Response:** NERC requests reporting of new Misoperations and the total number of operations within 60 days after the end of each quarter. The data fields can be updated through the NERC portal for the Misoperations that were reported previously.

- 2) Similar to the above, how would the request work for reporting an occurrence that was \*not\* previously reported, for example on something that occurred at the very end of the previous quarter?

**Response:** An entity can update the data for previous quarters to report an occurrence that was not reported previously.

**Idaho Power**

There do not appear to be significant differences between the data being requested today under the NERC PRC-004-2a Standard and the resulting WECC PRC-003-CRT criterion when compared to the proposed NERC template. Due to its similarity with the data currently being collected, we do not see any additional burden to fulfill the proposed data request. We are already documenting the requested data in our normal processes related to operations and misoperations. The implementation schedule does not affect our data reporting as we already report 60 days after the end of each quarter to WECC.

**Response:** Thank you for your input.

**PSEG**

1. Data request scope. The “description of the data requested” on p. 9 of the data request document should state that the data request shall apply only to the facilities listed in PRC-004-3. Otherwise, the data request is not constrained to the those facilities listed in PRC-004-3 – see the excerpt below from draft #3 of PRC-004-3:

## 4.2. Facilities

4.2.1 Protection Systems for BES Elements

4.2.2 Underfrequency Load Shedding (UFLS) that trips a BES Element

4.2.3 Special Protection Systems (SPS), Remedial Action Schemes (RAS), and Undervoltage Load Shedding (UVLS) are excluded

4.2.4 Non-protective functions that may be imbedded within a Protection System are excluded

**Response:** NERC has modified the Data Request to clarify that reporting will be consistent with the NERC glossary definition of “Misoperation” and PRC-004. NERC has not included the revision number to allow the Data Request to be consistent with future revisions of PRC-004.

2. Protection System operation status under review. Table 1 does not address reporting of BES Protection System operations that are still under review when quarterly reports are due, which due date is 60 days after the end of a quarter. Draft #3 of PRC-004-3 R1 gives the owner of the interrupting device 120 days to investigate the Protection System operation to determine whether it was a correct operation, a Misoperation of its Protection System, or due to the operation of another entity’s Protection System (R1). The data request should address how to report on Protection System operations that are still under review at the end of a quarter. An entity may have several pieces of unfinished business such as:
  - a. It may not have identified the Protection System as a correct operation or a Misoperation; or
  - b. It may have identified a Misoperation, but it may still be determining the cause.

**Response:** NERC requests reporting of new Misoperations and the total number of operations within 60 days after the end of each quarter. The data fields can be updated through the NERC portal for the Misoperations that were reported previously.

3. Protection System owned by two entities. In the case of a line that has two terminals which are each owned by different entities, both terminal owners would have had BES interrupting devices operate to clear a fault. Only one owner should report correct Protection System Operations for the metrics to be correct. We believe NERC should review how this is addressed in TADS and do something comparable.<sup>10</sup>

**Response:** NERC has modified the Data Request to address this situation.

4. Mitigation is not required in all cases. Table 1, p. 11, requires reporting “Misoperation Mitigation.” It states “Describe how the Misoperation was ultimately mitigated.” However, PRC-004-3 does not require mitigation unless a corrective action plan (CAP) is developed per R2, first bullet. Both the second bullet in R2 and actions under R3, which do not require the development of a CAP, are not addressed

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<sup>10</sup> Under R1 in draft #3 of PRC-004-3, it appears Misoperation will only be reported by the entity whose equipment did not operate properly.

in Table 1. If the Misoperation Mitigation description is intended only to be applicable in an entity that develops a CAP, an answer of “no CAP developed” should be recognized as acceptable.

**Response:** In response to other comments, NERC has revised the Data Request to collect the Corrective Action Plan (CAP) information presently collected under PRC-004-2.1a in place of the proposed Misoperation Mitigation information. NERC has modified the Data Request to address the situation in which an entity does not develop a CAP pursuant to the requirements in PRC-004.

5. TADS and GADS. Table 1, p. 12 contains several questions related to TADS and GADS reporting requirements. These should have an “unknown” response option available. GOPs are not involved in TADS reporting and TOs are not involved in GADS reporting

**Response:** Only Generator Owners are required to report the data related to GADS fields using the template. Only Transmission Owners are required to report the data related to TADS fields. NERC has added this clarification in the Data Request and template.

6. Suggested spreadsheet modifications:

a. In the “Operations Summary” tab:

- i. “Definition of Protection Operation” does not include the six categories of Misoperations defined on p. 3 in the draft #3 of PRC-004-3. (These, however, are contained in the “Definitions” tab.) Therefore, we suggest the revised “Definition of Protection System Operation” shown on the next page be used. (This Section 1600 request, including the spreadsheet, needs to be consistent with whatever is finally approved in PRC-004-3.)
- ii. Item#5 in the “Protection System Operation Examples” section is not an example of a reportable Protection System operation. It was added as Note c. in the “Definition of Protection System” section in our item #6 above.
- iii. The “Total Protection Operations” should be changed to “Total Correct Protection Operations Occurring in Quarter.” The total number of Protection System operations can be easily calculated by the sum of the correct operations plus the Misoperations.
- iv. The “Total Protection System Misoperations Occurring in Quarter” should be calculated from the individual Misoperation data that’s reported in the “Misoperation Entry Form” tab. It should not be input by the user. This would require the addressing the issue
- v. The “Notes” in the “Definition of Protection System Operations” section should be consistent with the “Notes” in the “Definitions” tab.

b. The “Misoperation Entry Form” tab should include the voltage class for every Misoperation – use the voltage classes in the “Operations Summary” tab.

- c. The phrase “Protection System” and “Misoperation” are defined terms and are inconsistently capitalized in the spreadsheet.

**Response:**

- a. In the Operation Summary tab:
  - i. NERC has not encountered any issues or concerns with the definition of Protection System operation presently in use and has retained this definition in the Data Request for consistency with existing reporting.
  - ii. NERC has moved this example to be Note 3 in the definition of Protection System operation as suggested.
  - iii. NERC has retained reporting of Protection System operations for consistency with existing reporting.
  - iv. NERC agrees this information can be obtained from the individual Misoperation data and has removed this field from the Operation Summary tab.
  - v. The notes in the Operation Summary tab are associated with the definition of Protection System operation and the notes in the Definitions tab are associated with reportable Misoperations. NERC has modified the notes to make them consistent where appropriate.
- b. The voltage class for each Misoperation is reported in the Facility Voltage column on the Misoperation Entry Form tab. The voltage classes in the drop-down menu are the same as the voltage classes on the Operation Summary tab.
- c. NERC has reviewed the capitalization of glossary terms and updated the spreadsheet.

### Definition of Protection System Operation

#### Correct Operation:

The correct operation of Protection Systems associated with isolating a faulted system element. The failure of a Protection System component is a correct operation as long as the overall performance of the Protection System for the Element it is designed to protect is correct.

**Misoperation:** Any of the following is considered a Misoperation.

1. Failure to Trip - During Fault - A failure of a Protection System to operate for a Fault within the zone it is designed to protect. The failure of a Protection System component is not a Misoperation as long as the overall performance of the Protection System for the Element it is designed to protect is correct.
2. Failure to Trip - Other Than Fault - A failure of a Protection System to operate for a non-Fault condition for which the Protection System was intended to operate, such as a power swing, under-voltage, over excitation, or loss of excitation. The failure of a Protection System component is not a Misoperation as long as the overall performance of the Protection System for the Element it is designed to protect is correct.
3. Slow Trip - During Fault - A Protection System operation that is slower than intended for a Fault within the zone it is designed to protect. Delayed Fault clearing associated with an installed high-speed protection scheme is not a Misoperation if the high-speed performance has not been identified to meet the dynamic stability performance requirements of the TPL standards nor is it required to ensure coordination with other Protection Systems.
4. Slow Trip - Other Than Fault - A Protection System operation that is slower than intended for a non-Fault condition such as a power swing, under-voltage, over excitation, or loss of excitation for which the Protection System was intended to operate.
5. Unnecessary Trip - During Fault - A Protection System operation for a Fault for which the Protection System is not intended to operate.
6. Unnecessary Trip - Other Than Fault - A Protection System operation for a non-Fault condition for which the Protection System is not intended to operate, and is unrelated to on-site maintenance, testing, inspection, construction or commissioning activities.

#### Notes:

- a. When reclosing is applied (automatic or manual), a sequence of reclosing and tripping associated with isolating a faulted system element is counted as a single operation. Multiple unintended operations of an element due to this sequence of reclosing and tripping would also be counted as a single operation.
- b. Transformer operations are reported by the high-side voltage. Generator operations are reported by the generator step-up transformer high-side voltage.
- c. Operations which are initiated by control systems (not by Protection Systems), such as those associated with generator controls, turbine/boiler controls, Static VAR Compensators (SVCs), Flexible AC Transmission Systems (FACTS), High-Voltage DC (HVDC) transmission systems, circuit breaker mechanisms, or other facility control systems, are not reported as operations of a protection system.