NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Section 1600 Data Request

Discontinuation of TADS Non-Automatic Planned Outage Data Collection

RELIABILITY | ACCOUNTABILITY




3353 Peachtree Road NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

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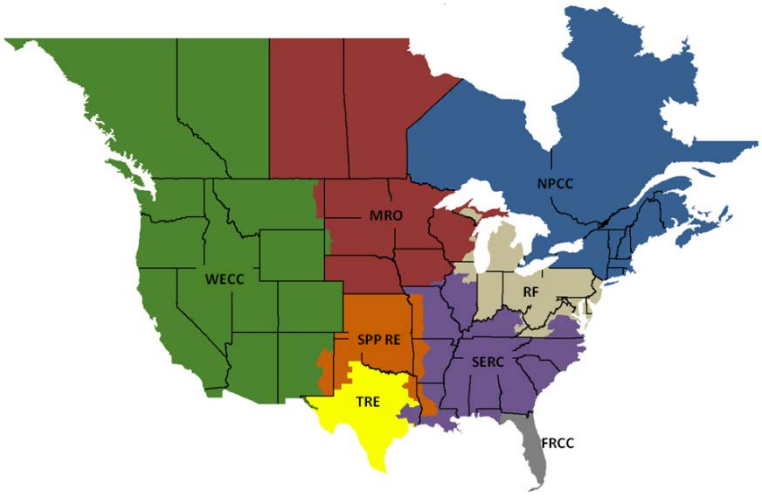
Preface

The North American Electric Reliability Corporation (NERC) is a not-for-profit international regulatory authority whose mission is to assure the reliability of the bulk power system (BPS) in North America. NERC develops and enforces Reliability Standards; annually assesses seasonal and long-term reliability; monitors the BPS through system awareness; and educates, trains, and certifies industry personnel. NERC's area of responsibility spans the continental United States, Canada, and the northern portion of Baja California, Mexico. NERC is the electric reliability organization (ERO) for North America, subject to oversight by the Federal Energy Regulatory Commission (FERC) and governmental authorities in Canada. NERC's jurisdiction includes users, owners, and operators of the BPS, which serves more than 334 million people.

The North American BPS is divided into several assessment areas within the eight Regional Entity (RE) boundaries, as shown in the map and corresponding table below.



FRCC	Florida Reliability Coordinating Council
MRO	Midwest Reliability Organization
NPCC	Northeast Power Coordinating Council
RF	Reliability*First*
SERC	SERC Reliability Corporation
SPP-RE	Southwest Power Pool Regional Entity
TRE	Texas Reliability Entity
WECC	Western Electricity Coordinating Council

Executive Summary

The purpose of this data request is to initiate a change to the existing TADS reporting, specifically concerning the collection of Non-Automatic Outage data[1] consistent with the recommendations in the *TADSWG Non-Automatic Outage Sunset Provision Recommendation*[2] presented to the NERC Planning Committee in its December 2014 meeting.

The collection of Non-Automatic Outage data commenced in 2010 to complement the collection of Automatic Outage data that had been collected since 2008[3]. According to the *Transmission Availability Data System Phase II Final Report*[4], issued in September 2008, the collection of Non-Automatic Outage data would be put in place for a period of five years at which time, further collection of the Non-Automatic Outage data would be reassessed based on the intended uses described within this report. There are two components of Non-Automatic Outage data: Planned Outages (pre-planned, scheduled outages) and Operational Outages (non-pre-planned, operator-initiated outages under emergency conditions).

Following a review of the Non-Automatic Outage data collected and an assessment of the intended uses of this data, the TADSWG has concluded that there is merit to continue collecting the Operational Outage data, but the intended uses of collected Planned Outage data have not materialized.

It is recommended that the collection of Planned Outages be discontinued, concluding with the last Planned Outage data collected for the fourth quarter of 2014. NERC should continue to collect Operational Outages for all Voltage Classes above and including the 200-299 kV Voltage Classes.

To follow up these recommendations, this proposal was written to seek the NERC Board of Trustees' approval for the necessary modifications to the TADS Section 1600 data request.

[1] http://www.nerc.com/pa/RAPA/tads/TransmissionAvailabilityDataSyatemRF/TADS_Phase_II_Final_Report_091108.pdf

[2] http://www.nerc.com/comm/PC/Transmission%20Availability%20Data%20System%20Working%20G1/TADSWG_Non_Automatic_Sunset_Short_Report.pdf

[3] http://www.nerc.com/pa/RAPA/tads/TransmissionAvailabilityDataSyatemRF/TADS_PC_Revised_Final_Report_09_26_07.pdf

[4] http://www.nerc.com/pa/RAPA/tads/TransmissionAvailabilityDataSyatemRF/TADS_Phase_II_Final_Report_091108.pdf

Introduction

Background

Planned Outage Collection[5]

The original launch of the NERC Transmission Availability Data System (TADS) was described in the *Transmission Availability Data System Revised Final Report*[6], issued in 2007. This report focused on the collection of Automatic Outage data that began in 2008. In September of 2008, NERC issued the *Transmission Availability Data System Phase II Final Report*[7]. This report expanded on the original TADS approach to include the collection of Non-Automatic Outage data. The Non-Automatic Outage data are comprised of: Planned Outages (pre-planned, scheduled outages) and Operational Outages (non-pre-planned, operator-initiated outages under emergency conditions). The collection of Non-Automatic Outage data commenced in 2010. The TADS Phase II report stipulated collection of the Non-Automatic Outage data for a period of five years (referred to as the sunset provision) at which time, further collection of the Non-Automatic Outage data would be reassessed. The *TADS Phase II Final Report* indicated the expected uses and limitations for the data.

Assessment of the Intended Uses for the Data[8]

As part of the TADS Phase II approval, a sunset provision of five years was created in order to ascertain the value of the Non-Automatic Outage data collection and to determine whether it was justifiable to continue its collection. This section describes the outcome of each of the intended uses for the data as described in the *TADS Phase II Final Report*, as follows:

1. *Non-Automatic Outage data will complement Phase I Automatic Outage data, resulting in our ability to capture almost all transmission Element outages. Since almost all Element outages will be recorded, the calculation of certain Phase I metrics (discussed in Section 4) will now be more accurate.*

Outcome: The primary TADS Phase I metrics that improved from the collection were Transmission Availability (APC) and Mean Time Between Failures (MTBF). The Non-Automatic outage data complements the Automatic outage data to provide comprehensive availability metrics.

2. *Complete transmission outage information may influence NERC Reliability Standards development.*

Outcome: No reliability standards have been changed as a result of collecting the Non-Automatic TADS Outage data. This does not preclude the idea that, for future changes to or new reliability standards, TADS Non-Automatic Outages could become useful.

3. *Complete transmission outage information could allow for improved system analysis by bridging gaps between the operating environment and planning assumptions. For example, Transmission Planners could compare historical Planned Outages for a period with previously forecasted outages for the same period allowing them to assess whether their outage representation for planning is valid. 15 TOs, Transmission Planners, and Planning Coordinators could compare historic Planned Outages to historic load levels to determine the frequency of such outages during peak load periods.*

[5] http://www.nerc.com/comm/PC/Transmission%20Availability%20Data%20System%20Working%20G1/TADSWG_Non_Automatic_Sunset_Short_Report.pdf .

[6] http://www.nerc.com/pa/RAPA/tads/TransmissionAvailabilityDataSyatemRF/TADS_PC_Revised_Final_Report_09_26_07.pdf

[7] http://www.nerc.com/pa/RAPA/tads/TransmissionAvailabilityDataSyatemRF/TADS_Phase_II_Final_Report_091108.pdf

[8] Each italicized entry corresponds to an entry from section 2.4 in the TADS Phase 2 Final Report, pp.10-12.

From a planning perspective, if planned outages are not properly accounted for in the planning of the system, insufficient facilities may be built, making day-to-day reliability worse. Several TPL standards (TPL-002-0, TPL-003-0, and TPL-004-0) have a requirement that planned outages be explicitly considered. In TPL-002-0, this is found in R1.3.12:

> *"Include the planned (including maintenance) outage of any bulk electric equipment (including protection systems or their components) at those demand levels for which planned (including maintenance) outages are performed."*

Historical Planned Outage data could help Transmission Planners with this requirement.

Outcome: One of the considered uses for the Non-Automatic Outage data was to provide a NERC-wide snapshot of the actual operator-initiated Outages allowing transmission planners to reuse the data to create more realistic planning scenarios with the added benefit of having NERC-wide transmission owner data available. Unfortunately, there are three reasons why this has not occurred. First, the transmission planner may not easily obtain the relevant TADS data because it is CEII (Critical Energy Infrastructure Information). Secondly, the Outages are not currently linked directly to the planning or operational study identifiers. Thirdly, because of the first two limitations, transmission planners have not mapped TADS outages into their transmission studies.

4. *For U.S. Transmission Owners who are subject to EIA reporting requirements, the reporting of Non-Automatic Outages to NERC could avoid a duplicative reporting requirement to EIA.*

Outcome: In 2010, EIA changed their Form 411 Schedule 7 to include both Planned and Operational Outages, and TADS included these outages, providing EIA a consolidated source for Form 411 Schedule 7 data. In 2014, EIA performed a review of their Form 411 and determined that only Automatic and Operational, but not Planned, Outage data would be collected for Form 411 Schedule 7.

5. *No Reliability Standard or NERC rule (in NERC's Rules of Procedure) requires the systematic recording of historic system topology for the purpose of analyzing events. TADS will begin to fill this need by collecting both Automatic and Non-Automatic Outage data. Since we only require the submission of TADS data annually, we recognize that the submission of TADS data into webTADS may not occur until months after an event. The requirement to collect TADS outage data means that TOs could, by special request from NERC, provide outage data if required to help NERC analyze an event, and the fact that such data will be entered into a structured TADS database will be helpful.*

Outcome: Today, no Reliability Standard or NERC rule requires the systematic recording of historic system topology for the purpose of analyzing events. Currently, there have not been any events where this data was needed, but, in a larger event, having such a standardized format of data available will prove beneficial in developing a detailed sequence of events.

Conclusions

TADSWG has reviewed the intended benefits, and through its assessment, has concluded that there is benefit to continue the collection of Operational Outage data. However, the collection of Planned Outage data should be discontinued. This conclusion was formulated into a recommendation to the NERC PC as part of a short report[9] which stated that:

> *NERC should not continue to collect Planned Outages with the last Planned Outage data collected for the fourth quarter of 2014. NERC should continue to collect Operational Outages for all Voltage Classes above and including the 200-299 kV Voltage Classes.*

Authority

According to Section 1600 of NERC's Rules of Procedure[10]:

> *Within the United States, NERC and Regional Entities may request data or information that is necessary to meet their obligations under Section 215 of the Federal Power Act, as authorized by Section 39.2(d) of the Commission's regulations, 18 C.F.R. § 39.2(d). In other jurisdictions NERC and Regional Entities may request comparable data or information, using such authority as may exist pursuant to these Rules of Procedure and as may be granted by Applicable Governmental Authorities in those other jurisdictions.*

Section 1600 data requests are not applicable to data requests from a standards' requirement or from a compliance or enforcement action. As TADS data is not related to either of these two items, it is within the scope of Section 1600.

[9] http://www.nerc.com/comm/PC/Transmission%20Availability%20Data%20System%20Working%20G1/TADSWG_Non_Automatic_Sunset_Short_Report.pdf

[10] http://www.nerc.com/FilingsOrders/us/RuleOfProcedureDL/NERC_ROP_Effective_20140701_updated_20140602%20(updated).pdf, pp. 96-99.

Data Request Details

This section gives a brief overview of the two proposed changes: Discontinuation of Planned Outage Data Collection and Continuation of Operational Outage Data Collection. Following these details, the required questions for all Section 1600 data requests are organized into their own section for easy reference.

Discontinuation of Planned Outage Data Collection

Based on the approval by the NERC Planning Committee of the TADSWG's Non-Automatic Outage Sunset Provision Short Report recommendations, these recommendations should be applied as a modification to the Section 1600 data regarding TADS.

These recommendations (applying to all TADS data collected from January 1, 2015 forward)[11] are:

> *NERC should not continue to collect Planned Outages with the last Planned Outage data collected for the fourth quarter of 2014. NERC should continue to collect Operational Outages for all Voltage Classes above and including the 200-299 kV Voltage Classes.*

Many reasons were determined why the Planned Outage data collection was no longer necessary:

- Third party organizations have not found sufficient value.
- It is no longer required by EIA Form 411 Schedule 7 reporting.
- Additional costs and efforts are required to report the data.
- Coordination between Transmission Owners during Planned Outage TADS reporting is problematic.
- In the operational horizon, there is questionable reliability value.
- NERC is not yet able to draw actionable conclusions from the collected data.
- There are no proven benefits from the current metrics.
- In Phase II report, NERC anticipated that this data would be useful in Event Analysis which has not been demonstrated.
- Analysis of the present data collection has been inconclusive considering its current level of detail.

Continuation of Operational Outage Data Collection

Operational Outage collection would continue under the original TADS Phase II Section 1600 data request. Based on the TADSWG's Non-Automatic Outage Sunset Report, Operational Outage collection is needed for the following reasons[12]:

- EIA is still collecting this data. If this data is not collected, each TO would have to submit the same data to EIA separately instead of NERC collecting all of the required outage data and submitting it on behalf of the industry, as is presently the case.
- Operational Outages are functionally similar to Automatic Outages because they are typically in response to unplanned situations on the BES. For example, Operational Outages due to an emergency and human error switching, are similar in effect to an Automatic Outage response.

[11] http://www.nerc.com/comm/PC/Transmission%20Availability%20Data%20System%20Working%20G1/TADSWG_Non_Automatic_Sunset_Short_Report.pdf, p. 4.

[12] http://www.nerc.com/comm/PC/Transmission%20Availability%20Data%20System%20Working%20G1/TADSWG_Non_Automatic_Sunset_Short_Report.pdf, p. 5, ¶1.

Section 1600 Data Request Questions and Answers

Q. What data or information is being requested?
Response: Modification of Non-Automatic Outage collection to remove Planned Outages - Changes as per Section 1600 2.2

> *A proposed modification to a previously authorized request for data or information shall explain the nature of the modifications; Modify the existing Section 1600 data request (reference 2008 Section 1600 data request) to discontinue Planned Outage collection*

Based on the approval by the NERC Planning Committee of the TADSWG's Non-Automatic Outage Sunset Provision Short Report recommendations, these recommendations should be applied as a modification to the Section 1600 data regarding TADS.

These recommendations (applying to all TADS data collected from January 1, 2015 forward)[13] are:

> *NERC should not continue to collect Planned Outages with the last Planned Outage data collected for the fourth quarter of 2014. NERC should continue to collect operational outages for all Voltage Classes above and including the 200-299 kV Voltage Classes.*

Many reasons were determined why the Planned Outage data collection was no longer necessary:

- Third party organizations have not found sufficient value.
- It is no longer required by EIA Form 411 Schedule 7 reporting.
- Additional costs and efforts are required to report the data.
- Coordination between Transmission Owners during Planned Outage TADS reporting is problematic.
- In the operational horizon, there is questionable reliability value.
- NERC is not yet able to draw actionable conclusions from the collected data.
- There are no proven benefits from the current metrics.
- In Phase II report, NERC anticipated that this data would be useful in Event Analysis which has not been demonstrated.
- Analysis of the present data collection has been inconclusive considering its current level of detail.

Q. How will the data or information be used?
Response: Operational Outage collection would continue under the original TADS Phase II Section 1600 data request. Based on the TADSWG's Non-Automatic Outage Sunset Report, Operational Outage collection is needed for the following reasons[14]:

- EIA is still collecting this data. If this data is not collected, each TO would have to submit the same data to EIA instead of NERC submitting it on behalf of the industry.
- They are functionally similar to Automatic Outages because they are often not routine. For emergency and human error switching Operational Outages, they are similar in effect to the Automatic Outage response.

Q. How is the availability of the data or information necessary for NERC to meet its obligations under applicable laws and agreements?
Response: NERC does not need the data to meet its obligations under applicable laws and agreements.

[13] http://www.nerc.com/comm/PC/Transmission%20Availability%20Data%20System%20Working%20G1/TADSWG_Non_Automatic_Sunset_Short_Report.pdf, p. 4.
[14] http://www.nerc.com/comm/PC/Transmission%20Availability%20Data%20System%20Working%20G1/TADSWG_Non_Automatic_Sunset_Short_Report.pdf, p. 5, ¶1.

Q. What Reporting Entities will be required to report the data?
Response: Transmission Owners with TADS Elements for all Voltage Classes equal to and above 200 kV. Specifically, these include:

1. Overhead and underground ac circuits ≥ 200 kV;
2. Transformers with ≥ 200 kV low-side;
3. Back-to-back ac/dc converters with ≥ 200 kV ac on both sides; and
4. Dc circuits with ≥ ±200 kV dc voltage.

Q. What is the estimated the relative burden imposed on the Reporting Entities to accommodate the data or information request?
Response: It is anticipated that the discontinuation of reporting Planned Outage to TADS would reduce reporting burden on Reporting Entities. Operational Outages are less frequent and their continued collection and reporting is not expected to impose a large incremental burden on Reporting Entities.

Q. What is the schedule or due date for the data or information?
Response: Planned Outage Discontinuation: TADSWG recommends discontinuation of Planned Outage data collection commencing the quarter following NERC Board of Trustee approval.

Operational Outage Continuation: No change to existing TADS reporting.

Survey Questions and Request for Comments

A proposed request for data or information shall contain, at a minimum, the following information: (i) a description of the data or information to be requested, how the data or information will be used, and how the availability of the data or information is necessary for NERC to meet its obligations under applicable laws and agreements; (ii) a description of how the data or information will be collected and validated; (iii) a description of the entities (by functional class and jurisdiction) that will be required to provide the data or information ("Reporting Entities"); (iv) the schedule or due date for the data or information; (v) a description of any restrictions on disseminating the data or information (e.g., "Confidential Information," "Critical Energy Infrastructure Information," "aggregating" or "identity masking"); and (vi) an estimate of the relative burden imposed on the Reporting Entities to accommodate the data or information request.

A proposed modification to a previously authorized request for data or information shall explain (i) the nature of the modifications; (ii) an estimate of the burden imposed on the Reporting Entities to accommodate the modified data or information request, and (iii) any other items from Section 1602.2.1 that require updating as a result of the modifications.

Survey Questions - Discontinuation of TADS Planned Outage Data Collection

1. Would discontinuation of Planned Outage data reporting to TADS create a burden on your utility?
2. Would the continuation of Operational Outage data reporting to TADS pose a large increase in incremental effort for your utility?
3. Is the data being requested reasonable and obtainable? If "no," please explain.
4. Is the implementation schedule for the request reasonable? If "no," please explain.
5. Additional comments?

Comments are due by Midnight, PDT on <INSERT DATE>, and must be submitted in a Word document to tads@nerc.net. If you have any questions, please contact Trinh Ly at (404) 446-9737 or by e-mail at Trinh.Ly@nerc.net.

TADS Definitions[15]:

Planned Outage
A Non-Automatic Outage with advance notice for the purpose of maintenance, construction, inspection, testing, or planned activities by third parties that may be deferred. Outages of TADS Elements of 30 minutes or less duration resulting from switching steps or sequences that are performed in preparation or restoration of an outage of another TADS Element are not reportable.

Operational Outage
A Non-Automatic Outage for the purpose of avoiding an emergency (i.e., risk to human life, damage to equipment, damage to property) or to maintain the system within operational limits and that cannot be deferred.

[15] Transmission Availability Data System (TADS) Definitions – Appendix 7 of the Data Reporting Manual