

## Implementation Plan

### Project 2022-02 Uniform Modeling Framework for IBR

#### Applicable Standard(s)

- Reliability Standard MOD-032-2 Data for Power System Modeling and Analysis
- Reliability Standard IRO-010-6 Reliability Coordinator Data and information Specification and Collection
- Reliability Standard TOP-003-8 Transmission Operator and Balancing Authority Data and Information Specification and Collection

#### Requested Retirement(s)

- Reliability Standard MOD-032-1 Data for Power System Modeling and Analysis
- Reliability Standard IRO-010-5 Reliability Coordinator Data and information Specification and Collection
- Reliability Standard TOP-003-7 Transmission Operator and Balancing Authority Data and Information Specification and Collection

#### Prerequisite Standard(s)

These standard(s) or definitions must be approved before the Applicable Standard becomes effective:

- None

#### Applicable Entities

- Reliability Coordinator
- Balancing Authority
- Distribution Provider
- Generator Owner
- Generator Operator
- Planning Coordinator
- Resource Planner
- Transmission Owner
- Transmission Operator
- Transmission Planner
- Transmission Service Provider

## NERC Glossary of Terms

This section includes a newly defined term used in the NERC Reliability Standards. The new definition listed below becomes approved when the proposed standard is approved. When the standard becomes effective, the defined term will be removed from the individual standard and added to the NERC Glossary of Terms.

### **Proposed New Definition:**

#### **Distributed Energy Resource (DER):**

Generators and energy storage technologies connected to a distribution system that are capable of providing Real Power in non-isolated parallel operation with the Bulk-Power System, including those connected behind the meter of an end-use customer that is supplied from a distribution system.

## Background

As the penetration of DERs continues to increase across the many distribution systems connected both directly and indirectly to the North American Bulk-Power System (BPS), it is necessary to account for the potential impacts of DERs on reliability in the planning, operation, and design of the Bulk Electric System. The NERC System Planning Impacts of Distributed Energy Resources Working Group (SPIDERWG) has identified the need for improved modeling of aggregate DER for planning studies (including both utility-scale and retail-scale DER) conducted by Transmission Planners (TPs) and Planning Coordinators (PCs), including updated modeling data requirements specific to DER.

Further, in Order No. 901,<sup>1</sup> the U.S. Federal Energy Regulatory Commission (“FERC”) found that it is imperative for NERC to develop new or modified Reliability Standards MOD-032, IRO-010, and TOP-003 to address reliability concerns “related to IBRs at all stages of interconnection, planning, and operations.”<sup>2</sup> Among other things, FERC directed NERC to develop requirements addressing the provision of IBR and DER data to the entities responsible for the planning and operation of the BPS. Detailed information on the specific FERC Order No. 901 directives addressed through this project is available in Project 2022-02 Consideration of Order No. 901 Directives.

Proposed Reliability Standard MOD-032-2 replaces the Load-Serving Entity as an applicable entity with the Distribution Provider and updates Attachment 1: Data Reporting Requirements with data specific to DERs and IBRs, consistent with addressing the FERC Order No. 901 directives. Proposed Reliability Standard MOD-032-2 also adds a new Part 1.2 in Requirement R1, which would require the Planning Coordinator and Transmission Planner to include in their data requirements and procedures requirements for model submissions in accordance with the Criteria for Acceptable Models maintained by the Electric Reliability Organization (ERO). New Requirement R2 Part 2.1 addresses estimation of unregistered IBR or DER data where actual data is not available, consistent with the directives in Order No. 901.

Revisions in the Reliability Standards TOP-003-8 and IRO-010-6 data specification standards specify that entities responsible for developing and distributing data specifications shall include requirements

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<sup>1</sup> Reliability Standards to Address Inverter-Based Resources, Order No. 901, 185 FERC ¶ 61,042 (2023).

<sup>2</sup> Id. at P 25

for model submissions in accordance with the Criteria for Acceptable Models List maintained by the ERO.

## **General Considerations**

In developing this implementation plan, the drafting team (DT) considered the time in MOD-032-2 that would be necessary to develop data requirements and reporting procedures, including identifying the proper reporting entity, for data related to IBRs, including unregistered IBRs and DERs. The DT also considered that the standard would become applicable to the Distribution Provider (DP) for the first time. Transmission Owners (TOs) and DPs would be expected to participate in PC/TP processes to change data reporting requirements related to DER and IBR developed during the 24 months prior to the effective date of Requirement R1 and should be able to start working on data collection processes and methods prior to the compliance dates of Requirements R2, R3, and R4. This timeline also allows for the development of new data estimation processes developed under MOD-032-2 Requirement R2 Part 2.1. Requirements adjusted in Reliability Standards IRO-010-5 and TOP-003-8 may not be practical to implement prior to full implementation of MOD-032-2, and therefore was set to the same timeline. One additional limitation the DT noted is the requirement for all FERC Order No. 901 directives to be fully implemented by January 1, 2030, including those covered by these standard revisions.

In summary, this implementation plan would provide a full 36 months for MOD-032 Requirements R2, R3, R4, IRO-010, and TOP-003 from FERC approval until data is required to be reported.

## **Effective Date and Phased-In Compliance Dates**

The effective date for the proposed Reliability Standard and NERC Glossary term Distributed Energy Resource is provided below. Where the DT identified the need for a longer implementation period for compliance with a particular section of a proposed Reliability Standard (i.e., an entire Requirement or a portion thereof), the additional time for compliance with that section is specified below. The phased-in compliance date for those particular sections represents the date that entities must begin to comply with that particular section of the Reliability Standard, even where the Reliability Standard goes into effect at an earlier date.

## **Initial Performance Dates**

Entities shall not be required to comply with Reliability Standard MOD-032-2 Requirements R2, R3, and R4 relating to revised Planning Coordinator/Transmission Planner data requirements and reporting procedures as developed under Requirement R1 and Attachment 1, until 12 months after the effective date of Reliability Standard MOD-032-2.

Entities shall continue to comply with Requirements R2, R3, and R4 related to Planning Coordinator/Transmission Planner data requirements and reporting procedures developed under MOD-032-1 Requirement R1 and Attachment 1 during the phased-in compliance period for MOD-032-2 unless they are compliant with revised Planning Coordinator/Transmission Planner data requirements and reporting procedures under Reliability Standard MOD-032-2 Requirement R1.

### **Reliability Standard MOD-032-2**

Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is twenty-four (24) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.

Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is twenty-four (24) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

### **Compliance Date for Reliability Standard MOD-032-2 Requirements R2, R3, and R4**

Entities shall not be required to comply with Requirements R2, R3, and R4 relating to revised Planning Coordinator and Transmission Planner data requirements and reporting procedures developed under MOD-032-2 Requirement R1 and Attachment 1 until 12 months after the effective date of Reliability Standard MOD-032-2.

### **Definition – Distributed Energy Resource (DER)**

Where approval by an applicable governmental authority is required, the definition of DER shall become effective on the first day of the first calendar quarter that is after the effective date of the applicable governmental authority's order approving Reliability Standard MOD-032-2, or as otherwise provided for by the applicable governmental authority.

Where approval by an applicable governmental authority is not required, the definition shall become effective on the first day of the first calendar quarter that is after the date that Reliability Standard MOD-032-2 is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

### **Reliability Standard IRO-010-5**

Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is thirty-six (36) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.

Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is thirty-six (36) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

### **Reliability Standard TOP-003-8**

Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter that is thirty-six (36) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.

Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is thirty-six (36) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

## **Retirement Date**

### **Reliability Standard MOD-032-1**

Reliability Standard MOD-032-1 shall be retired immediately prior to the effective date of Reliability Standard MOD-032-2 in the particular jurisdiction in which the revised standard is becoming effective.

### **Reliability Standard IRO-010-4**

Reliability Standard IRO-010-4 shall be retired immediately prior to the effective date of Reliability Standard IRO-010-5 in the particular jurisdiction in which the revised standard is becoming effective.

### **Reliability Standard TOP-003-7**

Reliability Standard TOP-003-7 shall be retired immediately prior to the effective date of Reliability Standard TOP-003-8 in the particular jurisdiction in which the revised standard is becoming effective.