NERC Standard

MOD-032-1

Requirement R1

Idaho Power Planning Coordinator Area

Modeling Data Requirements and Data Reporting Procedures

Prepared by:
Idaho Power Company
Planning Coordinator Function

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Idaho Power Planning Coordinator Area

NERC MOD-032-1 R1

Modeling Data Requirements and Reporting Procedures

Purpose

The purpose of this document is to describe the modeling data requirements and reporting procedures for the Idaho Power Company (IPCO) PC planning area as required by NERC MOD-032-1, Requirements R1.

IPCO has jointly developed these steady-state, dynamics, and short circuit modeling data requirements and reporting procedures with its TPs located within the Idaho PC Area.

Functional entities submitting data to IPCO PC and TP functions under NERC MOD-032-1, Requirement R2 shall provide steady-state, dynamics, and short circuit data according to the data requirements and reporting procedures described in this and the referenced documents.

Functional Entities

Balancing Authority	(BA)
Generator Owner	(GO)
Load Serving Entity	(LSE)
Planning Coordinator	(PC)
Resource Planner	(RP)
Transmission Owner	(TO)
Transmission Planner	(TP)
Transmission Service Provider	(TSP)

Data Submittals or Questions

Functional entities submitting data under MOD-032-1 Requirement R2 or questions regarding this document shall be submitted to the following email address:

To: BaseCase@idahopower.com

Functional entities within IPCO can submit data via email at the address above or by direct upload to the IPCO MOD-032 R2 compliance archive.

Background

Guidelines and Technical Basis

MOD-032-1 pp. 15-16 states the following:

"The intent of the standard is not to change established processes and procedures in each of the Interconnections, but to create a framework to support both what is already in place or what it may transition into in the future, and to provide further guidance in a common platform for the collection of data that is necessary for the building of the Interconnection-wide case(s)."

WECC Interconnection-wide Data Reporting Procedures

WECC has well established modeling data reporting requirements and data reporting procedures already in-place to support the purpose of MOD-032-1. The WECC System Review Subcommittee (SRS) provides a forum for PC and TP functions within WECC to jointly develop Interconnection-wide modeling data reporting requirements and data reporting procedures.

The WECC modeling data reporting requirements and data reporting procedures have been formalized in the following WECC Documents: (1) WECC Data Preparation Manual, (2) System Review Subcommittee Charter, (3) Annual Base Case Compilation and Data Check Scope of Work. SRS activities and maintenance of the referenced WECC documents are an ongoing joint effort. The activities of the WECC SRS are formally documented in the WECC SRS Meeting Minutes. These WECC documents are available on the WECC webpage (www.wecc.biz).

Joint Development of Modeling Data Requirements and Reporting Procedures

The IPCO PC/TP Function actively participates in the WECC SRS; which provides a forum for PC and TP functions to jointly develop modeling data requirements and data reporting procedures that directly support development of Interconnection-wide modeling cases commonly referred to as WECC Base Cases for the Western Interconnection.

Since the intent of MOD-032-1 is not to change established processes and procedures, the IPCO PC function has adopted the WECC Interconnection-wide data reporting procedures as its MOD-032-1 Requirement R1 modeling data requirements and reporting procedures. This approach supports consistency between modeling and data reporting requirements of the Idaho PC Area and the existing WECC modeling and data reporting processes and procedures.

Modeling Data Requirements and Reporting Procedures for MOD-032-1 Requirement R1

Responsible Data Owner / Data Reporting Entity

The following sections describe the MOD-032-1 R1 modeling data requirements and data reporting procedures for the IPCO PC Area. Data submitters providing data under MOD-032-1 R2 are required to follow the requirements specified.

R1.1 Data Listed in Attachment 1

MOD-032-1 R2 requires that functional entities within the IPCO PC Area submit the steady-state, dynamics, and short circuit data listed in NERC MOD-032-1 Attachment 1 to IPCO as their PC and TP.

R1.2 Specifications of the following items consistent with procedures for building Interconnection-wide case(s)

The IPCO PC Area has adopted the WECC Regional Data reporting requirements and procedures in order to remain consistent with existing processes used by WECC to develop the interconnection-wide Base Cases. These procedures include equipment modeling data listed in the WECC Data Preparation Manual.

IPCO's MOD-032-1 R1 modeling data requirements and reporting procedures are not intended to change the established WECC Base Case data compilation procedures and processes.

R1.2.1 Data Format

Steady-State Data

The IPCO PC Area requires steady-state data to be submitted in one of the following formats:

1. GE PSLF (*.epc) Format
2. PowerWorld (*.pwb) Format
3. PowerWorld (*.aux) Format
4. PSS/E (*.raw) Format

Dynamics Data

The IPCO PC Area requires dynamics data to be submitted in GE PSLF format (*.dyd) using WECC Approved models. The WECC Approved Dynamic Model Library is available from the WECC Webpage (www.wecc.biz).

Short Circuit Data

The WECC Data Preparation Manual version 8 was modified in August 2017 to remove any short circuit data requirements. The IPCO PC Function prefers short circuit data from the CAPE program (used internally by IPCO) to be provided in PTI PSS/E (*.raw) and (*.seq) format.

R1.2.2 Level of Detail for Equipment Modeling

The IPCO PC Area requires that the level of detail for equipment modeling and for data submitted under R2 be consistent with the data reporting requirements specified in Attachment 1 and the applicable sections of the WECC Data Preparation Manual.

R1.2.3 Case Types or Scenarios to be Modeled

The IPCO PC Area has adopted the WECC Annual Base Case Compilation and Data Check Scope of Work (formerly known as the WECC Annual Study Program) as defined by the WECC SRS for the case types or scenarios to be modeled for Western Interconnection Base Cases. The Base Case description sheets for WECC Base Case types or scenarios to be modeled (for current year and past year Programs) are available on the WECC Webpage (www.wecc.biz).

IPCO does not require data submittal from data owners for each specific scenario or case type defined within the WECC Annual Study Program (i.e. case-by-case data submittal is not necessary). IPCO requires that each data owner provide sufficient data under R2 per these specifications in order for the PC function to be able to develop the case types or scenarios from the collection of data submitted per the schedule assigned under R1.2.4.

R1.2.4 Schedule of Data Submission

The IPCO PC Area requires data submission at least once every 13 calendar months. If data has not changed since the last submission; IPCO requires written confirmation that the data has not changed at least once every 13 calendar months.

R1.3 Specifications for Distribution of the Data Requirements and Reporting Procedures

IPCO distributes its NERC MOD-032-1 R1 modeling data requirements and reporting procedures to applicable NERC functional entities within its PC Area that have a need to know within 30 calendar days after receiving a written request from a functional entity for the R1 procedures.

Written requests or questions related to MOD-032-1 data requirements and reporting procedures for the IPCO PC Area should be submitted to BaseCase@idahopower.com.

Idaho Power also makes its NERC MOD-032-1 R1 procedure publically available on its Open Access Same-Time Information System (OASIS) site under the NERC MOD-032 folder. (http://www.oasis.oati.com/ipco/index.html).

Effective Dates

The enforcement date for NERC Standard MOD-032-1 Requirement R1 is 07/01/2015.

The enforcement date for NERC Standard MOD-032-1 Requirements R2-R4 is 07/01/2016.

Associated Documents

NERC (www.nerc.com)

1. NERC MOD-032-1

WECC (www.wecc.biz)

2. WECC Data Preparation Manual
3. WECC SRS Charter
4. WECC Annual Base Case Compilation and Data Check Scope of Work
5. WECC SRS Meeting Minutes

Glossary of Terms

Base Case as used in this document refers to WECC interconnection-wide powerflow cases which include planning case types and operating case types.

NERC MOD-032-1 Attachment 1 Data Reporting Requirements

Steady-State Data

1. Each bus [TO]
    a. nominal voltage
    b. area, zone and owner
2. Aggregate Demand[2] [LSE]
    a. real and reactive power*
    b. in-service status*
3. Generating Units[3] [GO, RP (for future planned resources only)]
    a. real power capabilities - gross maximum and minimum values
    b. reactive power capabilities - maximum and minimum values at real power capabilities in 3a above
    c. station service auxiliary load for normal plant configuration (provide data in the same manner as that required for aggregate Demand under item 2, above).
    d. regulated bus* and voltage set point* (as typically provided by the TOP)
    e. machine MVA base
    f. generator step up transformer data (provide same data as that required for transformer under item 6, below)
    g. generator type (hydro, wind, fossil, solar, nuclear, etc)
    h. in-service status*
4. AC Transmission Line or Circuit [TO]
    a. impedance parameters (positive sequence)
    b. susceptance (line charging)
    c. ratings (normal and emergency)*
    d. in-service status*
5. DC Transmission systems [TO]
6. Transformer (voltage and phase-shifting) [TO]
    a. nominal voltages of windings
    b. impedance(s)
    c. tap ratios (voltage or phase angle)*
    d. minimum and maximum tap position limits
    e. number of tap positions (for both the ULTC and NLTC)
    f. regulated bus (for voltage regulating transformers)*
    g. ratings (normal and emergency)*
    h. in-service status*
7. Reactive compensation (shunt capacitors and reactors) [TO]
    a. admittances (MVars) of each capacitor and reactor
    b. regulated voltage band limits* (if mode of operation not fixed)
    c. mode of operation (fixed, discrete, continuous, etc.)
    d. regulated bus* (if mode of operation not fixed)
    e. in-service status*

8. Static Var Systems [TO]
   a. reactive limits
   b. voltage set point*
   c. fixed/switched shunt, if applicable
   d. in-service status*
9. Other information requested by the PC or TP necessary for modeling purposes. [BA, GO, LSE, TO, TSP]

* Items marked with an asterisk indicate data that vary with system operating state or conditions. Those items may have different data provided for different modeling scenario

[2] For purposes of this item, aggregate Demand is the Demand aggregated at each bus under item 1 that is identified by a Transmission Owner as a load serving bus. A Load Serving Entity is responsible for providing this information, generally through coordination with the Transmission Owner.

[3] Including synchronous condensers and pumped storage.

*Dynamics**

1. Generator [GO, RP (for future planned resources only)]
2. Excitation System [GO, RP(for future planned resources only)]
3. Governor [GO, RP(for future planned resources only)]
4. Power System Stabilizer [GO, RP(for future planned resources only)]
5. Demand [LSE]
6. Wind Turbine Data [GO]
7. Photovoltaic systems [GO]
8. Static Var Systems and FACTS [GO, TO, LSE]
9. DC system models [TO]
10. Other information requested by the PC or TP necessary for modeling purposes. [BA, GO, LSE, TO, TSP]

* User-written dynamics models are not accepted.

Short Circuit

1. Provide for all applicable elements in column “steady-state” [GO, RP, TO]
   a. Positive Sequence Data
   b. Negative Sequence Data
   c. Zero Sequence Data
2. Mutual Line Impedance Data [TO]
3. Other information requested by the PC or TP necessary for modeling purposes. [BA, GO, LSE, TO, TSP]

Review/Revision History

Review Date	Version #	Revisions	Author
07/01/2015	1.0	Original – OASIS Posting Version of MOD-032-1 Procedures	Eric Bakie
07/25/2018	2.0	Updated language for clarity and to reflect name changes	Greg Travis/Eric Bakie
06/08/2020	3.0	2020 Review	Greg Travis
07/28/2021	3.1	2021 Annual Review	Greg Travis
06/29/2022	3.2	2022 Review	Patrick Perry
06/21/2023	4.0	Modified section “R1.2.1 Data Format”	Patrick Perry

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