

## Reliability Objective

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To verify that the generator excitation control system or plant volt/var control function<sup>1</sup> model (including the power system stabilizer model and the impedance compensator model) and the model parameters used in dynamic simulations accurately represent the generator excitation control system or plant volt/var control function behavior when assessing Bulk Electric System (BES) reliability.

To verify that the turbine/governor and load control or active power/frequency control<sup>1</sup> model and the model parameters, used in dynamic simulations that assess Bulk Electric System (BES) reliability, accurately represent generator unit real power response to system frequency variations.

## WECC Intent

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The potential failure points and guidance questions give direction to registered entities for assessment of risk, while designing internal controls specific to NERC Reliability Standards and Requirements. The Registered Entity may use this document as a starting point in determining entity risk. It is not WECC's intent to establish a standard or baseline for entity risk assessment or controls design.

***Note:** Guidance questions help an entity understand and document its controls. Any responses, including lack of affirmative feedback, will have no consequences on an entity's demonstration of compliance at audit.*

*\*Please send feedback to [ICE@WECC.org](mailto:ICE@WECC.org) with suggestions on potential failure points and guidance questions.*

## Potential Failure Points & Guidance Questions

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**Potential Failure Point:** Failure to develop an implementation strategy to meet regulatory targets.

1. Who identifies these targets?
  - a. How are they selected?
  - b. Who makes the strategy to implement them?

**Potential Failure Point:** Failure to develop a policy that establishes entity or stakeholder obligation to provide information required by the standard.

1. How do you establish and communicate entity or stakeholder obligation to provide information required by the standard?

## Internal Controls Failure Points and Guidance Questions

**Potential Failure Point:** Failure to ensure adequate SME representation in the development of MOD-XXX-x processes.

**Potential Failure Point (R1):** Failure to clearly define or communicate start and end dates used to establish timeframes for requests.

1. Who sets the end dates; the entity, or a regulatory body?

**Potential Failure Point (R1):** Failure to develop a process explaining how to respond to a request.

1. How do you provide guidance on how to respond to a request?

**Potential Failure Point (R1):** Failure to create a process to develop instructions.

1. Who is qualified to create the instructions, how is this role identified?

**Potential Failure Point (R1):** Failure to develop a process to document excitation control system or plant volt/var control function models.

1. How do you develop a process to document excitation control system or plant volt/var control function models?
  - a. Who is qualified to create the process? How is this role identified?

**Potential Failure Point (R1):** Failure to define criteria to determine acceptability.

1. How do you define criteria to determine acceptability?
  - a. Can these criteria be copied from the entity to whom they submit models?
  - b. How do you identify someone who can set these criteria and what qualifications must they meet?

**Potential Failure Point (R1):** Failure to develop a process to document dynamic control system or plant volt/var control function models.

1. How do you document dynamic control system or plant volt/var control function models?
  - a. How do you ensure the person is qualified to perform the task?

**Potential Failure Point (R1):** Failure to develop a process to track Generator Operator (GO) units.

1. How do you track changes to GO units?

**Potential Failure Point (R1):** Failure to develop a process to track models.

1. How do you track models?
2. Do you operate a PSS/e shop, but still have to provide PSLF models to WECC?
  - a. Does your process include tracking both sets?
3. Do you use PSLF, or some other software?
4. Are your criteria and process applicable to PSLF, or do you have to convert acceptable models to PSLF?



## Internal Controls Failure Points and Guidance Questions

- a. At which point?
- b. How do you validate these?

**Potential Failure Point (R1):** Failure to develop a process to document generator MVA base.

1. How do you ensure MVA base is logged in both Power Flow and Dynamics?

**Potential Failure Point (R2):** Failure to develop a process to identify applicable units subject to R2 reporting.

1. How do you ensure all applicable units are identified?

**Potential Failure Point (R2):** Failure to develop a procedure on how to perform verification(s).

1. How do you provide guidance on how to perform verification?
  - a. How do you ensure qualified personnel create the procedure?

**Potential Failure Point (R2):** Failure to develop a procedure on how to document Part 2.1.

1. How do you document Part 2.1?
  - a. How do you ensure qualified personnel the procedure?

**Potential Failure Point (R2):** Failure to develop an overall process to provide verification in accordance with Attachment 1.

1. How do you ensure guidance for the overall process to provide verification according to Attachment 1?

**Potential Failure Point (R2):** Failure to define criteria to determine acceptability.

1. How do you define criteria to determine acceptability?
  - a. How do you ensure qualified personnel define the criteria?

**Potential Failure Point (R2):** Failure to develop and communicate a strategy to perform verifications.

1. How do you develop and communicate a strategy to perform verifications?
  - a. Who performs the verifications?
  - b. How is this person selected, and what are the qualifications?

**Potential Failure Point (R2):** Failure to develop and communicate a process to document unit response.

1. How do you develop and communicate a process to document unit response?
  - a. How do you ensure qualified personnel create the process?

**Potential Failure Point (R2):** Failure to develop and communicate a process to document unit attributes as required by Part 2.1.2 (baseline).

1. How do you ensure the unit attributes required by Part 2.1.2 (baseline) are documented and communicated?



## Internal Controls Failure Points and Guidance Questions

- a. How do you ensure qualified personnel create the process?

**Potential Failure Point (R2):** Failure to develop and communicate a process to document the model attributes required by Part 2.1.3.

1. How do you ensure the model attributes required by Part 2.1.3 are documented and communicated?
  - a. How do you ensure qualified personnel create the process?

**Potential Failure Point (R2):** Failure to designate acceptable equivalent data.

1. How do you designate acceptable equivalent data?

**Potential Failure Point (R2):** Failure to develop a process to document the excitation control system.

1. How do you document the excitation control system?
  - a. How do you ensure qualified personnel create the process?

**Potential Failure Point (R2):** Failure to develop a process to document the compensation settings.

1. How do you document the compensations settings?
  - a. How do you ensure qualified personnel create the process?

**Potential Failure Point (R2):** Failure to develop a process to document the power system stabilizer.

1. How do you document the power system stabilizer?
  - a. How do you ensure qualified personnel create the process?

**Potential Failure Point (R3):** Failure to develop guidance on how written responses are to be performed.

1. How do you provide guidance on how written responses are to be performed?

**Potential Failure Point (R3):** Failure to clearly define or communicate start and end dates used to establish timeframes for requests.

1. How do you ensure request deadlines are met?

**Potential Failure Point (R3):** Failure to develop guidance on how written notifications are to be processed.

1. How do you provide guidance on how written notifications are to be processed?

**Potential Failure Point (R3):** Failure to develop guidance on how written comments are to be processed.

1. How do you provide guidance on how written comments are to be processed?

**Potential Failure Point (R3):** Failure to develop guidance on how supporting evidence is to be processed.



## Internal Controls Failure Points and Guidance Questions

1. How do you provide guidance on how supporting evidence is to be processed?

**Potential Failure Point (R3):** Failure to develop verification tracking.

1. How do you track verifications?

**Potential Failure Point (R3):** Failure to develop criteria for what written responses must contain.

1. How do you develop criteria for what written responses must contain?

**Potential Failure Point (R4):** Failure to develop guidance on how model data and plans are to be provided.

1. How do you provide guidance on how model data and plans are to be provided?
  - a. Who is qualified to create the process?

**Potential Failure Point (R4):** Failure to clearly define or communicate start and end dates used to establish timeframes to provide information

1. How do you ensure you do not miss deadlines to provide information?

**Potential Failure Point (R4):** Failure to develop a process to baseline response characteristics.

1. Does this include tracking and preserving previous test data for use as a baseline?

**Potential Failure Point (R4):** Failure to develop a process to track and report configuration changes of applicable equipment.

1. How do you identify changes to which this process applies?

**Potential Failure Point (R5):** Failure to develop criteria to be used in a technical validation of request.

1. How do you determine and get an SME to answer this?

**Potential Failure Point (R5):** Failure to develop a procedure on how to perform a technical evaluation of request.

1. How do you identify requirements of who can do these evaluations?

**Potential Failure Point (R5):** Failure to develop guidance on plan development.

1. How do you provide guidance on plan development?

**Potential Failure Point (R5):** Failure to develop a process to update models.

1. How do you provide guidance on how to update models?
  - a. How do you ensure qualified personnel create the process?

**Potential Failure Point (R6):** Failure to develop a process on how to process verified model information for acceptance (usable or not usable).

1. Who processes these?



## Internal Controls Failure Points and Guidance Questions

- a. How are they qualified to perform the task?

**Potential Failure Point (R6):** Failure to develop guidance on how to document technical descriptions of how model is "not usable."

1. How do you provide guidance on how to document technical descriptions of "not usable"?

