

October 25, 2018

**VIA OVERNIGHT MAIL**

Sheri Young, Secretary of the Board  
National Energy Board  
517 – 10<sup>th</sup> Avenue SW  
Calgary, Alberta  
T2R 0A8

**RE: Revision to Implementation Plans for Reliability Standards MOD-026-1 and MOD-027-1**

Dear Ms. Young:

The North American Electric Reliability Corporation (“NERC”) submits the attached revision to the Implementation Plans for Reliability Standards MOD-026-1 (Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions) and MOD-027-1 (Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions), which were submitted on June 10, 2013. It has come to NERC’s attention that the Implementations Plans for both MOD-026 and MOD-027 erroneously reference “verification date” instead of “transmittal date” to set the periodicity for reverification under each standard.

Attachment 1 of Reliability Standards MOD-026-1 and MOD-027-1 use “transmittal date” to set the periodicity for verifications under each standard. The proposed revision to the Implementation Plans is to ensure that the language in the Implementation Plans is consistent with the language in the Reliability Standards. NERC’s standard drafting team for Reliability Standards MOD-026-1 and MOD-027-1 intended to use the term “transmittal date” in the Implementation Plans to allow entities to use a single date for measuring periodicity rather than multiple dates for cases when verifications under the two standards are performed days, weeks, or months from the other for an applicable unit. As such, the proposed revision to the Implementation Plans replaces “verification date” with “transmittal date”, consistent with the language in the standards. Clean and redline versions of the revised MOD-026-1 and MOD-027-1 Implementation Plans are provided as **Exhibits A-B** hereto.

Respectfully submitted,

/s/ Shamai Elstein

Shamai Elstein

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**Exhibit A**

**MOD-026-1 Implementation Plan**

**Exhibit A**

**MOD-026-1 Implementation Plan - Clean Version**

## Implementation Plan

### Project 2007-09 Generator Verification

#### **Implementation Plan for MOD-026-1, Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions**

##### ***Approvals Required***

MOD-026-1, Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions

##### ***Prerequisite Approvals***

None

##### ***Revisions to Glossary Terms***

None

##### ***Applicable Entities***

Generator Owner  
Transmission Planner

For the purpose of this standard, the following Facilities are considered, “applicable units.”

Units or plants that meet the following:

Generating units connected to the Eastern or Quebec Interconnections with the following characteristics:

- Individual generating unit greater than 100 MVA (gross nameplate rating) directly connected to the Bulk Electric System.
- Each generating plant consisting of multiple units that are directly connected to the Bulk Electric System at a common bus with total generation greater than 100 MVA (gross aggregate rating).

Generating units connected to the Western Interconnection with the following characteristics:

- Individual generating unit greater than 75 MVA (gross nameplate rating) directly connected to the Bulk Electric System.

- Each generating plant consisting of multiple units that are directly connected to the Bulk Electric System at a common bus with total generation greater than 75 MVA (gross aggregate rating).

Generating units connected to the ERCOT Interconnection with the following characteristics:

- Individual generating unit greater than 50 MVA (gross nameplate rating) directly connected to the Bulk Electric System.
- Each generating plant / Facility consisting of multiple units that are connected to the Bulk Electric System at a common bus with total generation greater than 75 MVA (gross aggregate rating).

For all Interconnections:

- Any technically justified<sup>1</sup> unit that meets NERC registry criteria and is requested by the Transmission Planner.

### ***Conforming Changes to Other Standards***

None

### ***Effective Dates***

In those jurisdictions where regulatory approval is required:

- Each responsible entity shall ensure compliance with Requirements R1, and R3 through R6 By the first day of the first calendar quarter following applicable regulatory approval, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.
- Each Generator Owner shall ensure at least 30 percent of its applicable unit gross MVA per Interconnection are compliant with Requirement R2 by the first day of the first calendar quarter, four years following applicable regulatory approval, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.
- Each Generator Owner shall ensure at least 50 percent of its applicable unit gross MVA per Interconnection are compliant with Requirement R2 by the first day of the first calendar quarter, six years following applicable regulatory approval, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.
- Each Generator Owner shall ensure 100 percent of its applicable unit gross MVA are compliant with Requirement R2 By the first day of the first calendar quarter, 10 years

<sup>1</sup> Technical justification is achieved by demonstrating that the simulated unit or plant response does not match the measured unit or plant response.

following applicable regulatory approval, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.

In those jurisdictions where no regulatory approval is required:

- Each responsible entity shall ensure compliance with Requirements R1, and R3 through R6 by the first day of the first calendar quarter following Board of Trustees adoption.
- Each Generator Owner shall ensure at least 30 percent of its applicable unit gross MVA per Interconnection is compliant with Requirement R2 by the first day of the first calendar quarter, four years following Board of Trustees adoption.
- Each Generator Owner shall ensure at least 50 percent of its applicable unit gross MVA per Interconnection is compliant with Requirement R2 By the first day of the first calendar quarter, six years following Board of Trustees adoption.
- Each Generator Owner shall ensure 100 percent of its applicable unit gross MVA is compliant with Requirement R2 By the first day of the first calendar quarter, 10 years following Board of Trustees adoption.

### ***Consideration for Early Compliance***

Existing excitation control system and plant volt/var control model verification is sufficient for demonstrating compliance for a 10 year period from the actual transmittal date if either of the following applies:

- The Generator Owner has a verified model that is compliant with the applicable regional entity policies, guidelines or criteria existing at the time of model verification, or
- The Generator Owner has an existing verified model that is compliant with the requirements of this standard.

### **Justification**

This phased implementation supports the 10 year cycle for the collection of generator response data necessary for required verifications and typical generating unit outage schedules.

When a Generator Owner has verified its Excitation Control System and Plant Volt/Var Control model(s) in compliance with its regional entity requirements 10 years or less prior to the approval date of this Standard, these verifications are deemed sufficient for demonstrating compliance with this Standard for a ten year period from the date of the aforementioned transmittal.

***Retirements***

None

**Exhibit A**

**MOD-026-1 Implementation Plan - Redlined Version**

## Implementation Plan

### Project 2007-09 Generator Verification

#### **Implementation Plan for MOD-026-1, Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions**

##### ***Approvals Required***

MOD-026-1, Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions

##### ***Prerequisite Approvals***

None

##### ***Revisions to Glossary Terms***

None

##### ***Applicable Entities***

Generator Owner  
Transmission Planner

For the purpose of this standard, the following Facilities are considered, “applicable units.”

Units or plants that meet the following:

Generating units connected to the Eastern or Quebec Interconnections with the following characteristics:

- Individual generating unit greater than 100 MVA (gross nameplate rating) directly connected to the Bulk Electric System.
- Each generating plant consisting of multiple units that are directly connected to the Bulk Electric System at a common bus with total generation greater than 100 MVA (gross aggregate rating).

Generating units connected to the Western Interconnection with the following characteristics:

- Individual generating unit greater than 75 MVA (gross nameplate rating) directly connected to the Bulk Electric System.

- Each generating plant consisting of multiple units that are directly connected to the Bulk Electric System at a common bus with total generation greater than -75 MVA (gross aggregate rating).

Generating units connected to the ERCOT Interconnection with the following characteristics:

- Individual generating unit greater than 50 MVA (gross nameplate rating) directly connected to the Bulk Electric System.
- Each generating plant / Facility consisting of multiple units that are connected to the Bulk Electric System at a common bus with total generation greater than -75 MVA (gross aggregate rating).

For all Interconnections:

- Any technically justified<sup>1</sup> unit that meets NERC registry criteria and is requested by the Transmission Planner.

### ***Conforming Changes to Other Standards***

None

### ***Effective Dates***

In those jurisdictions where regulatory approval is required:

- Each responsible entity shall ensure compliance with Requirements R1, and R3 through R6 By the first day of the first calendar quarter following applicable regulatory approval, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.
- Each Generator Owner shall ensure at least 30 percent of its applicable unit gross MVA per Interconnection are compliant with Requirement R2 by the first day of the first calendar quarter, four years following applicable regulatory approval, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.
- Each Generator Owner shall ensure at least 50 percent of its applicable unit gross MVA per Interconnection are compliant with Requirement R2 by the first day of the first calendar quarter, six years following applicable regulatory approval, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.
- Each Generator Owner shall ensure 100 percent of its applicable unit gross MVA are compliant with Requirement R2 By the first day of the first calendar quarter, 10 years

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<sup>1</sup> Technical justification is achieved by demonstrating that the simulated unit or plant response does not match the measured unit or plant response.

following applicable regulatory approval, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.

In those jurisdictions where no regulatory approval is required:

- Each responsible entity shall ensure compliance with Requirements R1, and R3 through R6 by the first day of the first calendar quarter following Board of Trustees adoption.
- Each Generator Owner shall ensure at least 30 percent of its applicable unit gross MVA per Interconnection is compliant with Requirement R2 by the first day of the first calendar quarter, four years following Board of Trustees adoption.
- Each Generator Owner shall ensure at least 50 percent of its applicable unit gross MVA per Interconnection is compliant with Requirement R2 By the first day of the first calendar quarter, six years following Board of Trustees adoption.
- Each Generator Owner shall ensure 100 percent of its applicable unit gross MVA is compliant with Requirement R2 By the first day of the first calendar quarter, 10 years following Board of Trustees adoption.

### ***Consideration for Early Compliance***

Existing excitation control system and plant volt/var control model verification is sufficient for demonstrating compliance for a 10 year period from the actual verification transmittal date if either of the following applies:

- The Generator Owner has a verified model that is compliant with the applicable regional entity policies, guidelines or criteria existing at the time of model verification, or
- The Generator Owner has an existing verified model that is compliant with the requirements of this standard.

### **Justification**

This phased implementation supports the 10 year cycle for the collection of generator response data necessary for required verifications and typical generating unit outage schedules.

When a Generator Owner has verified its Excitation Control System and Plant Volt/Var Control model(s) in compliance with its regional entity requirements 10 years or less prior to the approval date of this Standard, these verifications are deemed sufficient for demonstrating compliance with this Standard for a ten year period from the date of the aforementioned verification transmittal.

***Retirements***

None

**Exhibit B**

**MOD-027-1 Implementation Plan**

**Exhibit B**

**MOD-027-1 Implementation Plan - Clean Version**

## Implementation Plan

### Project 2007-09 Generator Verification

#### **Implementation Plan for MOD-027-1, Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions**

##### ***Approvals Required***

MOD-027-1, Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions

##### ***Prerequisite Approvals***

None

##### ***Revisions to Glossary Terms***

None

##### ***Applicable Entities***

Generator Owner  
Transmission Planner

For the purpose of this standard, the following Facilities are considered, “applicable units.” Units or plants that meet the following:

Generating units connected to the Eastern or Quebec Interconnections with the following characteristics:

- Individual generating unit greater than 100 MVA (gross nameplate rating) directly connected to the Bulk Electric System.
- Each generating plant or generating Facility consisting of multiple units that are connected to the Bulk Electric System at a common bus with total generation greater than 100 MVA (gross aggregate rating).

Generating units connected to the Western Interconnection with the following characteristics:

- Individual generating unit greater than 75 MVA (gross nameplate rating) directly connected to the Bulk Electric System.

- Each generating plant or generating Facility consisting of multiple units that are connected to the Bulk Electric System at a common bus with total generation greater than 75 MVA (gross aggregate rating).

Generating units connected to the ERCOT Interconnection with the following characteristics:

- Individual generating unit greater than 50 MVA (gross nameplate rating) directly connected to the Bulk Electric System.
- Each generating plant or generating Facility consisting of multiple units that are connected to the Bulk Electric System at a common bus with total generation greater than 75 MVA (gross aggregate rating).

### ***Conforming Changes to Other Standards***

None

### ***Effective Dates***

In those jurisdictions where regulatory approval is required:

- Each responsible entity shall ensure compliance with Requirements R1, and R3 through R5 by the first day of the first calendar quarter following applicable regulatory approval, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.
- Each Generator Owner shall ensure at least 30 percent of its applicable unit gross MVA per Interconnection are compliant with Requirement R2 by the first day of the first calendar quarter, four years following applicable regulatory approval, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.
- Each Generator Owner shall ensure at least 50 percent of its applicable unit gross MVA per Interconnection are compliant with Requirement R2 by the first day of the first calendar quarter, six years following applicable regulatory approval, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.
- Each Generator Owner shall ensure at least 100 percent of its applicable unit gross MVA per Interconnection are compliant with Requirement R2 by the first day of the first calendar quarter, 10 years following applicable regulatory approval, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.

In those jurisdictions where no regulatory approval is required:

- Each responsible entity shall ensure compliance with Requirements R1, and R3 through R5 by the first day of the first calendar quarter following Board of Trustees adoption.

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- Each Generator Owner shall ensure at least 100 percent of its applicable unit gross MVA per Interconnection are compliant with Requirement R2 by the first day of the first calendar quarter, 10 years following Board of Trustees adoption.

### **Justification**

This phased implementation supports the ten year cycle for the collection of generator response data necessary for required verifications and typical generating unit outage schedules, and it also provides ample time for Generator Owners to either purchase new recording equipment as required or to make necessary modifications to existing recording equipment (frequency triggers, length of recordings for frequency excursions, additional event storage capacity, etc).

### **Consideration for Early Compliance**

Existing turbine/governor and load control or active power/frequency control model verification is sufficient for demonstrating compliance for a ten year period from the actual transmittal date if either of the following applies:

- The Generator Owner has a verified model that is compliant with the applicable regional entity policies, guidelines or criteria existing at the time of model verification.
- The Generator Owner has an existing verified model that is compliant with the requirements of this standard.

### **Retirements**

None

**Exhibit B**

**MOD-027-1 Implementation Plan - Redlined Version**

## Implementation Plan

### Project 2007-09 Generator Verification

#### **Implementation Plan for MOD-027-1, Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions**

##### ***Approvals Required***

MOD-027-1, Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions

##### ***Prerequisite Approvals***

None

##### ***Revisions to Glossary Terms***

None

##### ***Applicable Entities***

Generator Owner  
Transmission Planner

For the purpose of this standard, the following Facilities are considered, “applicable units.” Units or plants that meet the following:

Generating units connected to the Eastern or Quebec Interconnections with the following characteristics:

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Generating units connected to the Western Interconnection with the following characteristics:

- Individual generating unit greater than 75 MVA (gross nameplate rating) directly connected to the Bulk Electric System.

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Generating units connected to the ERCOT Interconnection with the following characteristics:

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### ***Conforming Changes to Other Standards***

None

### ***Effective Dates***

In those jurisdictions where regulatory approval is required:

- Each responsible entity shall ensure compliance with Requirements R1, and R3 through R5 by the first day of the first calendar quarter following applicable regulatory approval, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.
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### **Justification**

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### **Consideration for Early Compliance**

Existing turbine/governor and load control or active power/frequency control model verification is sufficient for demonstrating compliance for a ten year period from the actual ~~verification~~ transmittal date if either of the following applies:

- The Generator Owner has a verified model that is compliant with the applicable regional entity policies, guidelines or criteria existing at the time of model verification.
- The Generator Owner has an existing verified model that is compliant with the requirements of this standard.

### **Retirements**

None