



**MIDWEST  
RELIABILITY  
ORGANIZATION**

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**Company Name**

**NERC ID: NCRXXXXX**

**PRC-019-2 Coordination of Generating Unit or Plant  
Capabilities, Voltage Regulating Controls, and  
Protection**

**4th Quarter 2016 Self-Certification**



## Instructions

1. Complete the tasks listed under **Appendix A**.
2. Log into **webCDMS** and complete your self-certification response.
3. Submit via the MRO [FTP2](#) site of MRO's EFT:
  - a. This completed Worksheet; and
  - b. Specific evidence requested within the **Appendix A**. Please make sure to use unique file names for each evidence file submitted, and identify within your narratives which specific evidence files support each conclusion made. These references and the use of unique file names helps facilitate and expedite MRO's review of the Guided Self-Certification work that has been performed.



## Scope

### **PRC-019-2 Coordination of Generating Unit or Plant Capabilities, Voltage Regulating Controls, and Protection**

<b>Standard</b>	<b>Requirement</b>	<b>Effective Date</b>	<b>Applicable % of Facilities</b>
PRC-019-2	R1 and R2	7/1/2016	40%
PRC-019-2	R1 and R2	7/1/2017	60%
PRC-019-2	R1 and R2	7/1/2018	80%
PRC-019-2	R1 and R2	7/1/2019	100%

#### **A. Applicability:**

##### **4.1. Functional Entities**

**4.1.1** Generator Owner

**4.1.2** Transmission Owner that owns synchronous condenser(s)

##### **4.2. Facilities**

For the purpose of this standard, the term, “applicable Facility” shall mean any one of the following:

**4.2.1** Individual generating unit greater than 20 MVA (gross nameplate rating) directly connected to the Bulk Electric System.

**4.2.2** Individual synchronous condenser greater than 20 MVA (gross nameplate rating) directly connected to the Bulk Electric System.

**4.2.3** Generating plant/ Facility consisting of one or more units that are connected to the Bulk Electric System at a common bus with total generation greater than 75 MVA (gross aggregate nameplate rating).

**4.2.3.1** This includes individual generating units of the dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System definition where voltage regulating control for the facility is performed solely at the individual generating unit of the dispersed power producing resources.

**4.2.4** Any generator, regardless of size, that is a blackstart unit material to and designated as part of a Transmission Operator’s restoration plan.



## ***B. Requirement***

**R1.** At a maximum of every five calendar years, each Generator Owner and Transmission Owner with applicable Facilities shall coordinate the voltage regulating system controls, (including in-service<sup>1</sup> limiters and protection functions) with the applicable equipment capabilities and settings of the applicable Protection System devices and functions. [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning*]

(<sup>1</sup>Limiters or protection functions that are installed and activated on the generator or synchronous condenser.)

**1.1.** Assuming the normal automatic voltage regulator control loop and steady-state system operating conditions, verify the following coordination items for each applicable Facility:

**1.1.1.** The in-service limiters are set to operate before the Protection System of the applicable Facility in order to avoid disconnecting the generator unnecessarily.

**1.1.2.** The applicable in-service Protection System devices are set to operate to isolate or de-energize equipment in order to limit the extent of damage when operating conditions exceed equipment capabilities or stability limits.

## ***C. Measure***

**M1.** Each Generator Owner and Transmission Owner with applicable Facilities will have evidence (such as examples provided in PRC-019 Section G) that it coordinated the voltage regulating system controls, including in-service<sup>2</sup> limiters and protection functions, with the applicable equipment capabilities and settings of the applicable Protection System devices and functions as specified in Requirement R1. This evidence should include dated documentation that demonstrates the coordination was performed.

(<sup>2</sup>Limiters or protection functions that are installed and activated on the generator or synchronous condenser.)



## Appendix A

1. Do you own Applicable Facilities?

- Yes. Go to step 2.
- No. Skip to the end. Respond “Do Not Own” for this Self-Certification in webCDMS. This worksheet *does not* need to be submitted to MRO.

2. Identify all of your applicable facilities, in **Table 1** below. Add additional rows, if needed.

<b>Table 1</b> <b>Name of Applicable Facility</b>

3. Identify all of the applicable facilities in **Table 1** above that are compliant with PRC-019-2 R1, in **Table 2** below. Add additional rows if needed.

<b>Table 2</b> <b>Name of Applicable Facility</b>

4. Do 40% of your applicable facilities meet PRC-019-2 R1?

- Yes. Go to step 5.
- No. Respond “Not Compliant” to R1 to the Self-Certification, in webCDMS.

5. Select a random sample from the population identified in step 3. (A random sample may be selected using statistical functions available in Microsoft Excel or through use of RAT-STATS, a free sampling tool available from the U.S. Department of Health & Human Services Office of Inspector General).

From the population:

- a. Select at least 10% of the population (maximum number sampled 30) making sure at least five are sampled (e.g., if fewer than 50 exist in your population, select at



- least five).
- b. If five or fewer total exist in the population, select the whole population.

Provide supporting evidence of the sampling process used including: (1) full population, (2) samples selected, and (3) output from the statistical function used to perform the sampling (e.g. RAT-STATS output).

<i>File(s) Contents</i>	<i>File Name / Page(s)</i>
<b>Full Population</b>	
<b>Samples Selected</b>	
<b>Statistical Function Output</b>	
<b>Comments</b>	





7. Have all the items listed in **Table 3** been coordinated?
  - Yes. Respond “Compliant” for this Self-Certification in webCDMS.
  - No. Respond “Not Compliant” to R1 for this Self-Certification in webCDMS.
  
8. Submit this worksheet and associated supporting evidence referenced in the worksheet on the [FTP2](#) site of MRO’s EFT server.

### **Document Submittals**

MRO requires copies of the following be submitted with the self-certification response:

- a) This worksheet;
- b) File(s) associated with the sampling process in Step 5 above;
- c) Documentation associated with verification of in-service limiter settings referenced in Table 3; and
- d) Documentation associated with verification of protection system settings referenced in Table 3.

Please make sure to use unique file names for each evidence file submitted, and identify within your responses to the steps above which specific evidence files support each conclusion made. These references and the use of unique file names helps Facilitate and expedite MRO’s review of the Self-Certification work that has been performed.

All other data related to the registered entity’s analysis and self-certification response are to be retained for at least 180 days after the submission date. MRO staff may request submission of additional information at a later date, on a random basis, to verify accuracy of self-certification submittals.