



**[Registered Entity Name]**

**NERC ID: [NCRXXXXX]**

**PRC-004-5(i) Protection System Misoperation  
Identification and Correction**

**4<sup>th</sup> Quarter 2021 Self-Certification**



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## Instructions

1. Populate the cover page by adding your entity's name and NERC identification number.
2. Complete the tasks listed under **Assessment Guidance**.
3. Log into **webCDMS** and complete your self-certification response.
4. Submit via the MRO EFT Encrypted [FTP2](#) Site:
  - a. This completed Worksheet; and
  - b. Specific evidence requested within this document. 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 Self-Certification work that has been performed.
  - c. Optional: Any internal control information related to the Reliability Standard and Requirement in scope with supporting documentation of design and implementation of the internal control(s).



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## Scope

### **PRC-004-5(i) — Protection System Misoperation Identification and Correction**

**Purpose:** Identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.

**R1.** Each Transmission Owner, Generator Owner, and Distribution Provider that owns a BES interrupting device that operated under the circumstances in Parts 1.1 through 1.3 shall, within 120 calendar days of the BES interrupting device operation, identify whether its Protection System component(s) caused a Misoperation:

**1.1** The BES interrupting device operation was caused by a Protection System or by manual intervention in response to a Protection System failure to operate; and

**1.2** The BES interrupting device owner owns all or part of the Composite Protection System; and

**1.3** The BES interrupting device owner identified that its Protection System component(s) caused the BES interrupting device(s) operation or was caused by manual intervention in response to its Protection System failure to operate.

**M1.** Each Transmission Owner, Generator Owner, and Distribution Provider shall have dated evidence that demonstrates it identified the Misoperation of its Protection System component(s), if any, that meet the circumstances in Requirement R1, Parts 1.1, 1.2, and 1.3 within the allotted time period. Acceptable evidence for Requirement R1, including Parts 1.1, 1.2, and 1.3 may include, but is not limited to the following dated documentation (electronic or hardcopy format): reports, databases, spreadsheets, emails, facsimiles, lists, logs, records, declarations, analyses of sequence of events, relay targets, Disturbance Monitoring Equipment (DME) records, test results, or transmittals.

**R5.** Each Transmission Owner, Generator Owner, and Distribution Provider that owns the Protection System component(s) that caused the Misoperation shall, within 60 calendar days of first identifying a cause of the Misoperation:

- Develop a Corrective Action Plan (CAP) for the identified Protection System component(s), and an evaluation of the CAP's applicability to the entity's other Protection Systems including other locations; or
- Explain in a declaration why corrective actions are beyond the entity's control or would not improve BES reliability, and that no further corrective actions will be taken.

**M5.** Each Transmission Owner, Generator Owner, and Distribution Provider shall have dated evidence that demonstrates it developed a CAP and an evaluation of the CAP's applicability to other Protection Systems and locations, or a declaration in accordance with Requirement R5. Acceptable evidence for Requirement R5 may include, but is not limited to the following dated documentation (electronic or hardcopy format): CAP and evaluation, or declaration.



## Assessment Guidance

1. For the period of **1/1/2020-12/31/2020**, determine if you, as a Transmission Owner, Generator Owner, or Distribution Provider that owns a BES interrupting device had a device that operated under the circumstances in PRC-004-5(i) R1.1 through R1.3.
  - 1.1. If **YES**, mark here:  and continue on with step 2
  - 1.2. If **NO**, mark here:  and describe the steps taken to verify you had no interrupting device operations below.
    - 1.2.1. After completing the description below populate:
      - 1.2.1.1. **Internal Control** section Table 3
      - 1.2.1.2. **Self Certification Results** section below and respond "Compliant" for the R1 Conclusion

Describe how you determined that you had no BES interrupting devices that operated under the circumstances in R1.1 through R1.3?

2. Generate a list of all of your BES interrupting device operations in 2020 (**1/1/2020-12/31/2020**). Enter the list in column "A" of ***MRO\_Self-Certification\_Spreadsheet\_PRC-004-5(i)\_R1,R5.xlsx*** (Self-Cert tab)
3. Sample the your BES interrupting device operations you listed in column "A"
  - 3.1. Select a random sample from the population of the operations identified in Step 1, using the following sampling logic (a random sample may be selected using statistical functions available in Microsoft Excel, through use of RAT-STATS <https://oig.hhs.gov/compliance/rat-stats/index.asp>), or other statistical tool:

Table 1: NERC ERO Sampling Handbook Sample Population Guidelines	
Total Operations	Using Statistical Sampling
1-9	All Operations
10-19	9 Operations
20-40	16 Operations
41-100	23 Operations
101-1000	29 Operations
1001 +	33 Operations

- 3.1.1. Half of your samples should be identified Misoperations (if possible). You may need to complete two random samples, one for correct operations and another for Misoperations. The total for all operations sampled should match the table above. For example, if you had 30



operations total, with 3 identified Misoperations, your sample should include the three Misoperations and 13 correct operations, for a total of 16 sampled.

- 3.1.2. If nine or fewer total operations exist in the population, select the entire population.
- 3.2. Fill in Table 2 with the evidence of the sampling process used, including:
  - 3.2.1. Samples selected (per Step 2.1)
  - 3.2.2. Evidence of the sampling process or tool utilized to create the sample (e.g. what are your samples and how are they created)

<b>Table 2: Statistical Sampling Output</b>	
<b>Samples Selected</b>	
<b>Sampling Process Output Filename</b>	
<b>Comments</b>	

- 3.3. Place an X in column “C” of ***MRO\_Self-Certification\_Spreadsheet\_PRC-004-5(i)\_R1,R5.xlsx*** (Self-Cert tab) for all sampled operations
- 4. Following the directions on the spreadsheet, complete filling out of ***MRO\_Self-Certification\_Spreadsheet\_PRC-004-5(i)\_R1,R5.xlsx*** (Self-Cert tab) for all sampled operations (Those with an X in column “C”)
  - 4.1. R5 is Not Applicable (NA) for correct operations
  - 4.2. Note for Column “G”:
    - 4.2.1. Documentation of the investigation and date of the interruption must include an evaluation by a Subject Matter Expert (SME). A listing of relay targets and the note “Storm in area” is not a complete investigation. A line patrol that finds a line conductor on the ground is a strong indication of why the interruption occurred, but the relay response as indicated by targets and other information collected must still be reviewed to verify proper protection system operation for the event. An SME must review the available evidence and come to a reasonable conclusion concerning the event and the Protection System response. A different SME should be able to understand the initial SME’s reasoning.
  - 4.3. Note for Column “L”:
    - 4.3.1. A Corrective Action Plan (CAP) or a declaration of why corrective actions are beyond the entity’s control or would not improve BES reliability, and that no further corrective actions will be taken, must include an evaluation of the CAP’s (or declaration’s) applicability to the entity’s other Protection Systems including other locations.



## Internal Controls

**Provide** documentation for your Internal Controls concerning PRC-004. If undocumented, provide a narrative of your PRC-004 program. Provide the files and list the filenames below of your policy documents or your narration of your program.

Policies, practices, and/or procedures used to ensure that interrupting device operations are analyzed and determined to be correct or Misoperations and that CAP's are developed for any Misoperation on an on-going basis. Please include any documented detective controls that you use to verify that the work done was completed correctly and also any documented corrective controls you use if a deficiency is found.

Table 3: Internal Controls					
Document File Names					
Filename:		Date:		Version:	
Filename:		Date:		Version:	

## Self-Certification Results

### R1 Conclusion

On *MRO\_Self-Certification\_Spreadsheet\_PRC-004-5(i)\_R1,R5.xlsx* (Self-Cert tab):

Review the entries in Columns "E" and "G"

- If all are "Yes", or if you had no BES interrupting device that operated under the circumstances in Parts R1.1 through R1.3 respond "Compliant" for R1 to the Self-Certification in **webCDMS**. Upload supporting documentation to the [FTP2](#) server.
- If any are "No", respond "Not Compliant" for R1 to the Self-Certification in **webCDMS**. Include a comment summary based on potential issues and upload supporting documentation to the [FTP2](#) server.
- Do not own, respond "Do Not Own" for R1 to the Self-Certification in **webCDMS**. Include comments supporting the "Do Not Own" response and upload supporting documentation to the [FTP2](#) server.
- Do not meet the applicability requirements of the full standard, respond "Not Applicable" for R1 to the Self-Certification in **webCDMS**. Include comments supporting the "Not Applicable" response and upload supporting documentation to the [FTP2](#) server. This response should not be used if the circumstance within the standard or requirement language did not happen. This response should only be used if the requirement or standard is not applicable at all to the entity (such as not registered for the function).

### R5 Conclusion

On *MRO\_Self-Certification\_Spreadsheet\_PRC-004-5(i)\_R1,R5.xlsx* (Self-Cert tab):

Review the entries in Columns "J" and "L"



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- If all are “Yes”, or you had no identified Misoperations, respond “Compliant” for R5 to the Self-Certification in webCDMS. Include a comment summary and upload supporting documentation to the [FTP2](#) server.
  
  - If any are “No”, respond “Not Compliant” for R5 to the Self-Certification in webCDMS. Include a comment summary based on potential issues and upload supporting documentation to the [FTP2](#) server.
  
  - Do not own, respond “Do Not Own” for R5 to the Self-Certification in webCDMS. Include comments supporting the “Do Not Own” response and upload supporting documentation to the [FTP2](#) server.
  
  - Do not meet the applicability requirements of the full standard, respond “Not Applicable” for R5 to the Self-Certification in webCDMS. Include comments supporting the “Not Applicable” response and upload supporting documentation to the [FTP2](#) server. This response should not be used if the circumstance within the standard or requirement language did not happen. This response should only be used if the requirement or standard is not applicable at all to the entity (such as not registered for the function).

## Document Submittals

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

- a. This worksheet and
- b. Supporting documentation referenced in the Assessment Guidance.

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 to verify accuracy of self-certification submittals.