

Supporting Statement
FERC-725G, Mandatory Reliability Standards

The existing information collection requirements in the currently effective Mandatory Reliability Standards, are approved by OMB under FERC-725G, Mandatory Reliability Standards for the Bulk-Power System: PRC Standards; PRC-023-6.

1. CIRCUMSTANCES THAT MAKE THE COLLECTION OF INFORMATION NECESSARY

On August 8, 2005, the Electricity Modernization Act of 2005, which is Title XII of the Energy Policy Act of 2005 (EPAAct 2005), was enacted into law¹. EPAAct 2005 added a new section 215 to the Federal Power Act (FPA), which requires a Commission-certified Electric Reliability Organization (ERO) to develop mandatory and enforceable Reliability Standards, subject to Commission review and approval.

In 2006, the Commission certified NERC (North American Electric Reliability Corporation) as the ERO² pursuant to section 215 of the FPA.³

On March 16, 2007 (pursuant to section 215(d) of the FPA), the Commission issued Order No. 693, approving 83 of the 107 initial Reliability Standards filed by NERC. Order 693 addressed several Reliability Standards. In the intervening years, numerous changes have been made to update, eliminate, or establish various Reliability Standards.

2. HOW, BY WHOM, AND FOR WHAT PURPOSE THE INFORMATION IS TO BE USED AND THE CONSEQUENCES OF NOT COLLECTING THE INFORMATION

In general, information collection and record retention requirements related to Reliability Standards are not submitted to, or retained for audit by, FERC. Rather they are submitted to, or retained for audit by, NERC or the Compliance Enforcement Authority, as specified in each individual Reliability Standard. Absent the collections of information associated with Reliability Standards, reliability of the bulk-power system could become compromised, potentially resulting in outages.

¹ The Energy Policy Act of 2005, Pub. L. No 109-58, Title XII, Subtitle A, 119 Stat. 594, 941 (2005), codified at 16 U.S.C. 824o (2006).

² “Electric Reliability Organization” or “ERO” means the organization certified by the Commission the purpose of which is to establish and enforce Reliability Standards for the Bulk-Power System, subject to Commission review.

³ *North American Electric Reliability Corp.*, 116 FERC ¶ 61,062, *order on reh’g and compliance*, 117 FERC ¶ 61,126 (2006), *order on compliance*, 118 FERC ¶ 61,190, *order on reh’g*, 119 FERC ¶ 61,046 (2007), *aff’d sub nom. Alcoa Inc. v. FERC*, 564 F.3d 1342 (D.C. Cir. 2009).

1902-0252 (FERC-725G)
Order in Docket No. RD23-5-000
DLO approved 1/24/2024 for (update to PRC-23-6)

Section 215 of the Federal Power Act (FPA)⁴ requires a Commission-certified Electric Reliability Organization (ERO) to develop mandatory and enforceable Reliability Standards, which are subject to Commission review and approval. The Commission has certified the North American Reliability Corporation (NERC) as the ERO. In addition, a Regional Entity may propose Reliability Standards to be effective in that region.⁵ Once approved, Reliability Standards may be enforced by the ERO subject to Commission oversight or by the Commission independently.

FERC-725G information collection requirements are associated with Reliability Standard PRC-023-6 (Transmission Relay Loadability), and with the accompanying implementation plan, violation risk factors and violation severity levels. On March 2, 2023, the NERC filed a petition seeking approval of proposed Reliability Standard PRC-023-6 (Transmission Relay Loadability), the associated proposed implementation plan, and violation risk factors and violation severity levels.⁶ NERC also requested the Commission's approval of the retirement of the version of Reliability Standard PRC-023 that would be in effect (i.e., currently effective Reliability Standard PRC-023-4 or the approved but not yet effective Reliability Standard PRC-023-5).⁷ Revisions of FERC-725G information collection requirements are due to new Reliability Standard PRC-023-6.

NERC explained that the proposed Reliability Standard would advance Bulk-Power System reliability by removing certain redundant and unnecessary language from the Standard related to the setting of out-of-step blocking relays. To achieve this, NERC proposes to retire the Reliability Standard's Requirement R2 related to setting out-of-step blocking schemes to allow tripping of phase protective relays and remove the Attachment A, Item 2.3 exclusion for protection systems intended for protection during stable power swings.⁸ NERC states that Requirement R2 is redundant because the fault condition addressed by Requirement R2 is addressed by Requirement R1 and requires the same compliance activity by the entity.⁹ NERC explains, thus, that Requirement R2 is not needed for reliability. Further, NERC explains that the exclusion in Attachment A, Item 2.3 is no longer necessary due to system changes.¹⁰

On October 10, 2023, the Office of Electric Reliability issued a letter requesting that NERC provide additional information to explain how Requirement R2 of Reliability Standard PRC-023 is redundant to Requirement R1 and confirm whether the existing obligations in Requirement R2

4 16 U.S.C. 824o

5 16 U.S.C. § 824o(e)(4). A Regional Entity is an entity that has been approved by the Commission to enforce Reliability Standards under delegated authority from the ERO. *See* 16 U.S.C. § 824o(a)(7) and (e)(4).

6 NERC Petition at 1.

7 NERC Petition at 1-2. The Commission approved Reliability Standard PRC-023-5 in March 2022. Under the approved implementation plan, Reliability Standard PRC-023-5 was scheduled to become effective in the United States on April 1, 2024.

8 NERC Petition at 4.

9 NERC Petition at 21.

10 NERC Petition at 25-26.

1902-0252 (FERC-725G)
Order in Docket No. RD23-5-000
DLO approved 1/24/2024 for (update to PRC-23-6)

would be enforced and audited under Requirement R1.¹¹ NERC filed its amended petition on November 3, 2023. In its amended petition, NERC confirms that because Requirement R2 is redundant to Requirement R1, any entity noncompliance with existing obligations of Requirement R2 would be assessed under Requirement R1.¹²

The petition was noticed on March 22, 2023, with interventions, comments, and protests due on or before April 21, 2023. No interventions, comments, or protests were filed.

Due to NERC's confirmation that any entity noncompliance with existing obligations under Requirement R2 (i.e., the proper setting out out-of-step blocking relays) can be assessed under Requirement R1 if R2 is retired, NERC's uncontested filing is hereby approved pursuant to the relevant authority delegated to the Director, Office of Electric Reliability under 18 C.F.R. § 375.303, effective as of the date of this order.

This action shall not be construed as approving any other application, including proposed revisions of Electric Reliability Organization or Regional Entity rules or procedures pursuant to 18 C.F.R. § 375.303(a)(2)(i). Such action shall not be deemed as recognition of any claimed right or obligation associated therewith and such action is without prejudice to any findings or orders that have been or may hereafter be made by the Commission in any proceeding now pending or hereafter instituted by or against the Electric Reliability Organization or any Regional Entity.

The revisions to PRC-023-6 will result in a change in how relay settings will be assessed under Requirement R1 of out-of-step blocking elements but will not result in reporting or recordkeeping requirements or burden. As of February 2024, there are 324 transmission owners, 1,173 generator owners, 371 distribution providers and 62 planning coordinators registered with NERC. These registered entities will have to comply requirements in the proposed Reliability Standard PRC-023-6.

Requirements and Measures

R1. Each Transmission Owner, Generator Owner, and Distribution Provider shall use any one of the following criteria (Requirement R1, criteria 1 through 13) for any specific circuit terminal to prevent its phase protective relay settings from limiting transmission system load ability while maintaining reliable protection of the BES for all fault conditions. Each Transmission Owner, Generator Owner, and Distribution Provider shall evaluate relay Loadability at 0.85 per unit voltage and a power factor angle of 30 degrees.

Criteria:

1. Set transmission line relays so they do not operate at or below 150% of the highest seasonal Facility Rating of a circuit, for the available defined loading duration nearest 4 hours (expressed in amperes).
2. Set transmission line relays so they do not operate at or below 115% of the highest seasonal 15-minute Facility Rating¹ of a circuit (expressed in amperes).
3. Set transmission line relays so they do not operate at or below 115% of the

¹¹ RFI at 2.

¹² NERC Amended Petition at 25.

maximum theoretical power transfer capability (using a 90-degree angle between the sending-end and receiving-end voltages and either reactance or complex impedance) of the circuit (expressed in amperes) using one of the following to perform the power transfer calculation:

- An infinite source (zero source impedance) with a 1.00 per unit bus voltage at each end of the line.
- An impedance at each end of the line, which reflects the actual system source impedance with a 1.05 per unit voltage behind each source impedance.

4. Set transmission line relays on series compensated transmission lines so they do not operate at or below the maximum power transfer capability of the line, determined as the greater of:

- 115% of the highest emergency rating of the series capacitor.
- 115% of the maximum power transfer capability of the circuit (expressed in amperes), calculated in accordance with Requirement R1, criterion 3, using the full line inductive reactance.

5. Set transmission line relays on weak source systems so they do not operate at or below 170% of the maximum end-of-line three-phase fault magnitude (expressed in amperes).

6. Reserved.

7. Set transmission line relays applied at the load center terminal, remote from generation stations, so they do not operate at or below 115% of the maximum current flow from the load to the generation source under any system configuration

8. Set transmission line relays applied on the bulk system-end of transmission lines that serve load remote to the system so they do not operate at or below 115% of the maximum current flow from the system to the load under any system configuration.

9. Set transmission line relays applied on the load-end of transmission lines that serve load remote to the bulk system so they do not operate at or below 115% of the maximum current flow from the load to the system under any system configuration.

10. Set transformer fault protection relays and transmission line relays on transmission lines terminated only with a transformer so that the relays do not operate at or below the greater of:

- 150% of the applicable maximum transformer nameplate rating (expressed in amperes), including the forced cooled ratings corresponding to all installed supplemental cooling equipment.
- 115% of the highest operator established emergency transformer rating.

10.1 Set load-responsive transformer fault protection relays, if used, such that the protection settings do not expose the transformer to a fault level and duration that exceeds the transformer's mechanical withstand capability².

11. For transformer overload protection relays that do not comply with the loadability component of Requirement R1, criterion 10 set the relays according to one of the following:

- Set the relays to allow the transformer to be operated at an overload level of at least 150% of the maximum applicable nameplate rating, or 115% of the highest operator established emergency transformer rating, whichever is greater, for at least 15 minutes to provide time for the operator to take controlled action to

relieve the overload.

- Install supervision for the relays using either a top oil or simulated winding hot spot temperature element set no less than 100° C for the top oil temperature or no less than 140° C for the winding hot spot temperature³.

12. When the desired transmission line capability is limited by the requirement to adequately protect the transmission line, set the transmission line distance relays to a maximum of 125% of the apparent impedance (at the impedance angle of the transmission line) subject to the following constraints:

- a. Set the maximum torque angle (MTA) to 90 degrees or the highest supported by the manufacturer.
- b. Evaluate the relay loadability in amperes at the relay trip point at 0.85 per unit voltage and a power factor angle of 30 degrees.
- c. Include a relay setting component of 87% of the current calculated in Requirement R1, criterion 12 in the Facility Rating determination for the circuit.

13. Where other situations present practical limitations on circuit capability, set the phase protection relays so they do not operate at or below 115% of such limitations.

M1. Each Transmission Owner, Generator Owner, and Distribution Provider shall have evidence such as spreadsheets or summaries of calculations to show that each of its transmission relays are set according to one of the criteria in Requirement R1, criterion 1 through 13 and shall have evidence such as coordination curves or summaries of calculations that show that relays set per criterion 10 do not expose the transformer to fault levels and durations beyond those indicated in the standard. (R1)

R2. Reserved.

M2. Reserved.

R3. Each Transmission Owner, Generator Owner, and Distribution Provider that uses a circuit capability with the practical limitations described in Requirement R1, criterion 7, 8, 9, 12, or 13 shall use the calculated circuit capability as the Facility Rating of the circuit and shall obtain the agreement of the Planning Coordinator, Transmission Operator, and Reliability Coordinator with the calculated circuit capability. [Violation Risk Factor: Medium] [Time Horizon: Long Term Planning]

M3. Each Transmission Owner, Generator Owner, and Distribution Provider with transmission relays set according to Requirement R1, criterion 7, 8, 9, 12, or 13 shall have evidence such as Facility Rating spreadsheets or Facility Rating database to show that it used the calculated circuit capability as the Facility Rating of the circuit and evidence such as dated correspondence that the resulting Facility Rating was agreed to by its associated Planning Coordinator, Transmission Operator, and Reliability Coordinator. (R3)

R4. Each Transmission Owner, Generator Owner, and Distribution Provider that chooses to use Requirement R1 criterion 2 as the basis for verifying transmission line relay loadability shall provide its Planning Coordinator, Transmission Operator, and Reliability Coordinator with an updated list of circuits associated with those transmission line relays at least once each calendar year, with no more than 15 months between reports. [Violation Risk Factor: Lower] [Time Horizon: Long Term Planning]

M4. Each Transmission Owner, Generator Owner, or Distribution Provider that sets transmission line relays according to Requirement R1, criterion 2 shall have evidence

1902-0252 (FERC-725G)
Order in Docket No. RD23-5-000
DLO approved 1/24/2024 for (update to PRC-23-6)

such as dated correspondence to show that it provided its Planning Coordinator, Transmission Operator, and Reliability Coordinator with an updated list of circuits associated with those transmission line relays within the required timeframe. The updated list may either be a full list, a list of incremental changes to the previous list, or a statement that there are no changes to the previous list. (R4)

R5. Each Transmission Owner, Generator Owner, and Distribution Provider that sets transmission line relays according to Requirement R1 criterion 12 shall provide an updated list of the circuits associated with those relays to its Regional Entity at least once each calendar year, with no more than 15 months between reports, to allow the ERO to compile a list of all circuits that have protective relay settings that limit circuit capability. [Violation Risk Factor: Lower] [Time Horizon: Long Term Planning]

M5. Each Transmission Owner, Generator Owner, or Distribution Provider that sets transmission line relays according to Requirement R1, criterion 12 shall have evidence such as dated correspondence that it provided an updated list of the circuits associated with those relays to its Regional Entity within the required timeframe. The updated list may either be a full list, a list of incremental changes to the previous list, or a statement that there are no changes to the previous list. (R5)

R6. Each Planning Coordinator shall conduct an assessment at least once each calendar year, with no more than 15 months between assessments, by applying the criteria in PRC-023-6, Attachment B to determine the circuits in its Planning Coordinator area for which Transmission Owners, Generator Owners, and Distribution Providers must comply with Requirements R1 through R5. The Planning Coordinator shall: [Violation Risk Factor: High] [Time Horizon: Long Term Planning]

6.1 Maintain a list of circuits subject to PRC-023-6 per application of Attachment B, including identification of the first calendar year in which any criterion in PRC-023-6, Attachment B applies.

6.2 Provide the list of circuits to all Regional Entities, Reliability Coordinators, Transmission Owners, Generator Owners, and Distribution Providers within its Planning Coordinator area within 30 calendar days of the establishment of the initial list and within 30 calendar days of any changes to that list.

M6. Each Planning Coordinator shall have evidence such as power flow results, calculation summaries, or study reports that it used the criteria established within PRC-023-6, Attachment B to determine the circuits in its Planning Coordinator area for which applicable entities must comply with the standard as described in Requirement R6. The Planning Coordinator shall have a dated list of such circuits and shall have evidence such as dated correspondence that it provided the list to the Regional Entities, Reliability Coordinators, Transmission Owners, Generator Owners, and Distribution Providers within its Planning Coordinator area within the required timeframe.

3. DESCRIBE ANY CONSIDERATION OF THE USE OF IMPROVED INFORMATION TECHNOLOGY TO REDUCE THE BURDEN AND TECHNICAL OR LEGAL OBSTACLES TO REDUCING BURDEN

The use of current or improved information technology is not covered in Reliability Standards and is therefore left to the discretion of each reporting entity. Commission staff estimates that

nearly all the respondents are likely to make and keep related records in an electronic format. Each of the six Regional Entities has a well-established compliance portal for registered entities to electronically submit compliance information and reports. The compliance portals allow documents developed by the registered entities to be attached and uploaded to the Regional Entity's portal. Compliance data can also be submitted by filling out data forms on the portals. These portals are accessible through an internet browser password protected user interface.

4. DESCRIBE EFFORTS TO IDENTIFY DUPLICATION AND SHOW SPECIFICALLY WHY ANY SIMILAR INFORMATION ALREADY AVAILABLE CANNOT BE USED OR MODIFIED FOR USE FOR THE PURPOSE(S) DESCRIBED IN INSTRUCTION NO. 2

The Commission periodically reviews filing requirements concurrent with OMB review or as the Commission deems necessary to eliminate duplicative filing and to minimize the filing burden. Reliability Standards are developed by a collaborative process which requires industry participation. The Commission is unaware of any other source of information similar to the additional requirements.

5. METHODS USED TO MINIMIZE THE BURDEN IN COLLECTION OF INFORMATION INVOLVING SMALL ENTITIES

In general, small entities may reduce their burden by taking part in a joint registration organization or a coordinated functional registration. These options allow an entity to share its compliance burden with other entities.

Detailed information regarding these options is available in NERC's Rules of Procedure at sections 507 and 508.¹³

6. CONSEQUENCE TO FEDERAL PROGRAM IF COLLECTION WERE CONDUCTED LESS FREQUENTLY

FERC-725G

Relay loadability refers to the ability of protective relays to restrain operation for load conditions. As protective relays can respond only to measured voltage and current, they must be set such that they will detect the faults for which they must operate while not operating unnecessarily for non-fault load conditions. Relay loadability issues were found to have played a significant role in multiple system disturbances over the years, including the August 14, 2003 blackout. The PRC-023-6 Reliability Standard requires applicable entities to set load-responsive phase protection relays according to specific criteria so that the relays detect and protect the grid from fault conditions but do not limit transmission loadability or interfere with system operators'

¹³ Details of the current ERO Reliability Standard processes are available on the NERC website at https://www.nerc.com/AboutNERC/RulesOfProcedure/Appendix_3A_SPM_Clean_Mar2019.pdf#search=Appendix%203A .

ability to protect reliability. PRC Reliability Standards were established such that the declining frequency is arrested and recovered in accordance with NPCC performance requirements. The collection cannot be collected less frequently, as the proper targets need to be set in terms load tripping at the required frequency set points. Over time the amount of load on will change and if not reviewed it may result in missing targeted values and cause frequency decline that would trip generation leading to widespread uncontrolled outages.

Each transmission owner, generator owner, and distribution provider shall provide its planning coordinator, transmission operator, and reliability coordinator with an updated list of circuits associated with those transmission line relays at least once each calendar year.

7. EXPLAIN ANY SPECIAL CIRCUMSTANCES RELATING TO THE INFORMATION COLLECTION

FERC-725G, has no special circumstances associated with the information collection.

8. DESCRIBE EFFORTS TO CONSULT OUTSIDE THE AGENCY: SUMMARIZE PUBLIC COMMENTS AND THE AGENCY'S RESPONSE

The Commission published a 60-day notice¹⁴ in Docket No. RD23-5 in the Federal Register requesting comments. No comments were received in response to the 60-day Notice.

In addition, the Commission is publishing a 30-day Notice in the Federal Register¹⁵.

9. EXPLAIN ANY PAYMENT OR GIFTS TO RESPONDENTS

The Commission does not make payments or provide gifts for respondents related to this collection.

10. DESCRIBE ANY ASSURANCE OF CONFIDENTIALITY PROVIDED TO RESPONDENTS

There are no specific assurances of confidentiality mentioned to respondents.

11. PROVIDE ADDITIONAL JUSTIFICATION FOR ANY QUESTIONS OF A SENSITIVE NATURE

This collection does not include any questions of a sensitive nature.

12. ESTIMATED BURDEN OF COLLECTION OF INFORMATION

¹⁴ 89 FR 34236, April 30, 2024

¹⁵ 89 FR 59733, July 23, 2024

Proposed Changes Due to Order in Docket No. RD23-5-000					
Reliability Standard & Requirement	Type¹⁶ and Number of Entity (1)	Number of Annual Responses Per Entity (2)	Total Number of Responses (1) *(2) = (3)	Average Number of Burden Hours per Response¹⁷ (4)	Total Burden Hours (3) *(4) = (5)
FERC-725G					
PRC-023-6					
TO	324	1	324	16 hrs. \$1,067.52	5,184 hrs. \$345,876.48
GO	1,173	1	1,173	16 hrs. \$1,067.52	18,768 hrs. \$1,252,200.96
DP	371	1	371	8 hrs. \$533.76	2,968 hrs. \$198,024.96
PC	62	1	62	8 hrs. \$533.76	496 \$33,093.12
Total for PRC-023-6			1,930	48 hrs. \$3,202.56	27,416 hrs. \$1,829,195.52
One Time Estimate - Years 1 and 2					

¹⁶ TO=Transmission Owner, GO=Generator Owner, DP=Distribution Provider and PC=Planning Coordinator.

¹⁷ The estimated hourly cost (salary plus benefits) derived using the following formula: Burden Hours per Response * \$/hour = Cost per Response. based on the Bureau of Labor Statistics (BLS), as of August 1, 2023, of an Electrical Engineer (17-2071) - \$77.29, - and for Information and Record Clerks (43-4199) \$56.14, The average hourly burden cost for this collection is [(\$77.29 + \$56.14)/2 = \$66.715] rounded to \$66.72 an hour.

1902-0252 (FERC-725G)
 Order in Docket No. RD23-5-000
 DLO approved 1/24/2024 for (update to PRC-23-6)

The one-time burden of 27,416 hours that only applies for Year 1 and 2 will be averaged over three years ($27,416 \text{ hours} \div 3 = 9,138.67$ (9,138.67 – rounded) hours/year over three years). The number of responses is also averaged over three years ($1,930 \text{ responses} \div 3 = 643.33$ (643.33 - rounded) responses/year).

The responses and burden hours for Years 1-3 will total respectively as follows for one-time burden:

Year 1: 643.33 responses; 9,138.67 hours
 Year 2: 643.33 responses; 9,138.67 hours
 Year 3: 643.33 responses; 9,138.67 hours

13. ESTIMATE OF THE TOTAL ANNUAL COST BURDEN TO RESPONDENTS

There is no start-up or other non-labor hour cost associated with this collection.

14. ESTIMATED ANNUALIZED COST TO FEDERAL GOVERNMENT

The estimate of the cost for ‘analysis and processing of filings’ is based on salaries and benefits for professional and clerical support. This estimated cost represents staff analysis, decision-making, and review of any actual filings submitted in response to the information collection are the applicable “Compliance Enforcement Authority.” As defined by Reliability Standard PRC-023-6, the Compliance Enforcement Authority means

The Paperwork Reduction Act (PRA) Administrative Cost is the average annual FERC cost associated with preparing, issuing, and submitting materials necessary to comply with the PRA for rulemakings, orders, or any other vehicle used to create, modify, extend, or discontinue an information collection. It also includes the cost of publishing the necessary notices in the Federal Register.

FERC-725G	Number of Employees (FTEs)	Estimated Annual Federal Cost
Analysis and Processing of filings	0	\$0
PRA Administrative Cost		\$8,396
FERC Total		\$8,396

15. REASONS FOR CHANGES IN BURDEN INCLUDING THE NEED FOR ANY INCREASE

The following table shows the total burden for the collection of information. The format, labels, and definitions of the table follow the ROCIS submission system’s “Information Collection Request Summary of Burden” for the metadata.

FERC-725G	Total Request	Previously Approved	Change due to Agency Estimate	Change Due to Agency Discretion
Annual Number of Responses	11,367	10,862	0	505
Annual Time Burden (Hr.)	726,718	721,995	0	4,723
Annual Cost Burden (\$)	0	0	0	0

For 725G (PRC Reliability Standards), the change (Increase in responses and burden hours) is due to agency discretion and due to statute as we have updated the method to determine affected entities and their responses.

Program Change to Agency Discretion

- PRC-023-6 Increased by 643 responses and 9,139 (rounded) burden hours for the One-time burden associated by the updated Reliability standard PRC-023-6 (previously PRC-023-5).
- The one-time burden that increased due to revisions from PRC-023-5, PRC-026-2, and PRC-002-3 in RD22-2 have ended and were removed creating a removal of -138 responses and -4,416 annual burden hours.

16. TIME SCHEDULE FOR PUBLICATION OF DATA

There are no data publications as part of this collection.

17. DISPLAY OF EXPIRATION DATE

It is not appropriate to display the expiration date because the information is not collected on a preformatted form or is part of a Reliability Standard, which do not display OMB expiration dates. The collection associated with PRC-023-6 will be updated on Ferc.gov at <https://www.ferc.gov/information-collections>.

18. EXCEPTIONS TO THE CERTIFICATION STATEMENT

The Commission does not use statistical methods for this collection. Therefore, the Commission does not certify that the collection uses statistical methods.