

FERC-725G (OMB Control No.:1902-0252)
Final Rule (issued 09/20/2017) in Docket No. RM16-20
RIN: 1902-AF36
(updated 11/29/2017)

Supporting Statement for
FERC-725G (Reliability Standards for the Bulk Power System: PRC Reliability Standards), as modified by the Final Rule in RM16-20^{1,2}

The Federal Energy Regulatory Commission (Commission or FERC) requests the Office of Management and Budget (OMB) review and approve the information collection as modified in this Final Rule in Docket RM16-20 which implements Reliability Standard PRC-012-2 (titled “Remedial Action Schemes”³). The intent of Reliability Standard PRC-012-2 is:

- to supersede “pending” Reliability Standards

¹ The Commission issued the NOPR on 1/19/2017, and it is posted at <https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14469212>

² The RIN (1902-AF32) was incorrect in the NOPR stage as submitted in ROCIS and REGINFO.gov. The correct RIN is 1902-AF36. To submit this final rule in a timely manner, the RIN used during the NOPR stage is used in ROCIS and REGINFO.gov as the RIN for the Final Rule. The correct RIN (1902-AF36) is used in this supporting statement.

³ The definition of “Remedial Action Scheme” (RAS) posted in the Glossary on the NERC website (at http://www.nerc.com/pa/Stand/Glossary%20of%20Terms/Glossary_of_Terms.pdf) follows.

“A scheme designed to detect predetermined System conditions and automatically take corrective actions that may include, but are not limited to, adjusting or tripping generation (MW and Mvar), tripping load, or reconfiguring a System(s). RAS accomplish objectives such as:

- Meet requirements identified in the NERC Reliability Standards;
- Maintain Bulk Electric System (BES) stability;
- Maintain acceptable BES voltages;
- Maintain acceptable BES power flows;
- Limit the impact of Cascading or extreme events.

The following do not individually constitute a RAS:

- a. Protection Systems installed for the purpose of detecting Faults on BES Elements and isolating the faulted Elements
- b. Schemes for automatic underfrequency load shedding (UFLS) and automatic undervoltage load shedding (UVLS) comprised of only distributed relays
- c. Out-of-step tripping and power swing blocking
- d. Automatic reclosing schemes
- e. Schemes applied on an Element for non-Fault conditions, such as, but not limited to, generator loss-of-field, transformer top-oil temperature, overvoltage, or overload to protect the Element against damage by removing it from service
- f. Controllers that switch or regulate one or more of the following: series or shunt reactive devices, flexible alternating current transmission system (FACTS) devices, phase-shifting transformers, variable-frequency transformers, or tap-changing transformers; and, that are located at and monitor quantities solely at the same station as the Element being switched or regulated
- g. FACTS controllers that remotely switch static shunt reactive devices located at other stations to regulate the output of a single FACTS device
- h. Schemes or controllers that remotely switch shunt reactors and shunt capacitors for voltage regulation that would otherwise be manually switched
- i. Schemes that automatically de-energize a line for a non-Fault operation when one end of the line is open
- j. Schemes that provide anti-islanding protection (e.g., protect load from effects of being isolated with generation that may not be capable of maintaining acceptable frequency and voltage)
- k. Automatic sequences that proceed when manually initiated solely by a System Operator

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- o PRC-012-1 Remedial Action Scheme Review Procedure
- o PRC-013-1, Remedial Action Scheme Database
- o PRC-014-1, Remedial Action Scheme Assessment
- to retire and replace currently-effective Reliability Standards
 - o PRC-015-1, Remedial Action Scheme Data and Documentation
 - o PRC-016-1.⁴ Remedial Action Scheme Misoperations

NERC stated that Reliability Standard PRC-012-2 represents substantial improvements over these Reliability Standards because it streamlines and consolidates existing requirements; corrects the applicability of previously unapproved Reliability Standards; and implements a continent-wide remedial action schemes review program.⁵ In this Final Rule, the Commission approves those revisions.

This supporting statement addresses FERC-725G (Reliability Standards for the Bulk Power System: PRC Reliability Standards), OMB Control No. 1902-0252.

Note: Reliability Standards PRC-015-1 and PRC-016-1 are being retired with the implementation of PRC-012-2 and will reduce the burden in FERC-725A (OMB Control No. 1902-0244). However, an unrelated package in another docket affecting FERC-725A (ICR 201709-1902-003) is pending OMB review for the FERC-725A, and only one package per OMB Control No. can be pending OMB review at a time.

In addition, FERC is being conservative and not subtracting hours at this time from FERC-725A, due to the retirements of the Reliability Standards from Docket RM16-20. For those reasons, estimates of the reduction to FERC-725A are not submitted here; burden will be removed from FERC-725A at a later date. Unless specifically noted, this supporting statement addresses changes to FERC-725G resulting from Docket RM16-20.

A. Justification

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- l. Modulation of HVdc or FACTS via supplementary controls, such as angle damping or frequency damping applied to damp local or inter-area oscillations
 - m. Sub-synchronous resonance (SSR) protection schemes that directly detect sub-synchronous quantities (e.g., currents or torsional oscillations)
 - n. Generator controls such as, but not limited to, automatic generation control (AGC), generation excitation [e.g. automatic voltage regulation (AVR) and power system stabilizers (PSS)], fast valving, and speed governing”

⁴ NERC notes that it submitted “for completeness” revised versions of Reliability Standards PRC-012-1, PRC-013-1, and PRC-014-1 in its petition to revise the definition of remedial action schemes, but NERC did not request Commission approval of the revised Reliability Standards in that proceeding.

⁵ *Id.* at 12-13.

1. CIRCUMSTANCES THAT MAKE THE COLLECTION OF INFORMATION NECESSARY

Pursuant to section 215 of the Federal Power Act (FPA),⁶ the Commission approves Reliability Standard PRC-012-2 (Remedial Action Schemes), developed by the North American Electric Reliability Corporation (NERC), the Commission-certified Electric Reliability Organization (ERO). The Commission believes that Reliability Standard PRC-012-2 is necessary to ensure that remedial action schemes do not introduce unintentional or unacceptable reliability risks to the bulk electric system.

In 2006, the Commission established a process to select and certify an ERO and, subsequently, certified North American Electric Reliability Corp (NERC) as the ERO.⁷ In Order No. 693, the Commission approved 83 of 107 proposed Reliability Standards submitted by NERC, including Reliability Standards PRC-015-1 (Remedial Action Scheme Data and Documentation) and PRC-016-1 (Remedial Action Scheme Misoperation).⁸ In Order No. 693, the Commission determined that proposed Reliability Standards PRC-012-0, PRC-013-0, and PRC-014-0 were “fill-in-the-blank” Reliability Standards because, while it was proposed to require regional reliability organizations to ensure that all special protection systems are properly designed, meet performance requirements, and are coordinated with other protection systems, NERC had not submitted any regional review procedures with this Reliability Standard.⁹ The Commission stated that it would not approve or remand proposed Reliability Standards PRC-012-0, PRC-013-0 or PRC-014-0 until NERC submitted the additional necessary information to the Commission.¹⁰

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

On August 5, 2016, NERC submitted a petition seeking Commission approval of Reliability Standard PRC-012-2.¹¹ NERC contended that Reliability Standard PRC-012-

6 16 U.S.C. 824o (2012).

7 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).

8 Mandatory Reliability Standards for the Bulk-Power System, Order No. 693, FERC Stats. and Regs. ¶ 31,242, order on reh’g, Order No. 693-A, 120 FERC ¶ 61,053 (2007).

9 Order 693 PP 1517-18, 1520; PP 1521-22, 1524; PP 1525-25, 1528. The Commission used the term “fill-in-the-blank” standards to refer to proposed Reliability Standards that required the regional reliability organizations to develop at a later date criteria for use by users, owners or operators within each region. Id. P 297.

10 Order 693, PP 1520, 1524, 1528.

11 Reliability Standard PRC-012-2 is not attached to the Final Rule. The Reliability Standard is available on the Commission’s eLibrary document retrieval system in Docket No. RM16-20-000 and is posted on NERC’s website, <http://www.nerc.com>.

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2 is just, reasonable, not unduly discriminatory or preferential, and in the public interest.¹² NERC explained that the intent of Reliability Standard PRC-012-2 is to supersede “pending” Reliability Standards PRC-012-1, PRC-013-1, and PRC-014-1 and to retire and replace currently-effective Reliability Standards PRC-015-1 and PRC-016-1.¹³ NERC stated that Reliability Standard PRC-012-2 represents substantial improvements over these Reliability Standards because it streamlines and consolidates existing requirements; corrects the applicability of previously unapproved Reliability Standards; and implements a continent-wide remedial action schemes review program.¹⁴

The applicable entities of the Reliability Standard PRC-012-2 are reliability coordinators (RC), planning coordinators (PC), and transmission owners (TO), generator owners (GO), or distribution providers (DP) that own all or part of remedial action schemes. The reliability coordinator must complete the review before an entity places a new or functionally modified remedial action scheme into service. Requirement R4 of Reliability Standard PRC-012-2, requires the planning coordinator to perform a periodic evaluation of each remedial action scheme within its planning area, at least once every five years. The evaluation must determine whether each remedial action scheme: (1) mitigates the system conditions or contingencies for which it was designed; and (2) avoids adverse interactions with other remedial action schemes and protection systems. Requirement R4, Part 4.1.3 footnote 1 defines a certain subset of remedial action schemes as “limited impact” remedial action schemes to mean “A RAS [remedial action scheme] designated as limited impact cannot, by inadvertent operation or failure to operate, cause or contribute to BES [bulk electric system] Cascading, uncontrolled separation, angular instability, voltage instability, voltage collapse, or unacceptably damped oscillations.”¹⁵

Without collecting this information at the proposed frequency, reliability of the Bulk-Power System could become compromised potentially resulting in wide spread outages.

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

The use of current or improved technology and the medium are not covered in PRC Reliability Standards.

¹² NERC Petition.

¹³ NERC notes that it submitted “for completeness” revised versions of Reliability Standards PRC-012-1, PRC-013-1, and PRC-014-1 in its petition to revise the definition of remedial action schemes, but NERC did not request Commission approval of the revised Reliability Standards in that proceeding. Id. at 1 n.5.

¹⁴ Id. at 12-13.

¹⁵ Id. at 19 & n.44.

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We think that nearly all of the respondents are likely to make and keep related records in an electronic format. Each of the eight 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.

In general, the Commission supports the use of information technology to reduce burden.

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

Filing requirements are periodically reviewed as OMB review dates arise or as the Commission may deem necessary in carrying out its regulatory responsibilities under the FPA in order to eliminate duplication and ensure that filing burden is minimized. There are no similar sources for information available that can be used or modified for these reporting purposes.

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

The Reliability Standard PRC-012-2 improves upon the existing standards because it removes ambiguity in NERC's original "fill-in-the-blank" Reliability Standards by assigning responsibility to appropriate functional entities. It also streamlines and consolidates the remedial action schemes Reliability Standards into one unambiguous and effective Reliability Standard.

This Reliability Standard does not contain provisions for minimizing the burden of the collection for small entities. All the requirements in the Reliability Standard apply to every applicable entity. However, small entities generally can reduce their burden by taking part in a joint registration organization or a coordinated function registration. These options allow an entity the ability to share its compliance burden with other similar entities. Detailed information regarding these options is available in NERC's Rules of Procedure at Section 1502, Paragraph 2, available at NERC's website.

At the time of Commission review of Reliability Standard PRC-012-2, 15 reliability coordinators, 71 planning coordinators, 328 transmission owners, 930 generation owners, and 367 distribution providers in the United States were registered in the NERC

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compliance registry. However, under NERC's compliance registration program, entities may be registered for multiple functions, so these numbers incorporate some duplicative counting. The Commission notes that many generation sites share a common generation owner.

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

The purpose of Reliability Standard PRC-012-2 is to ensure that remedial action schemes do not introduce unintentional or unacceptable reliability risks to the bulk electric system. Reliability Standard PRC-012-2 enhances reliability by addressing all aspects of remedial action schemes in a single, continent-wide Reliability Standard and by assigning specific remedial action schemes responsibilities to reliability coordinators, planning coordinators and transmission owners, generator owners, or distribution providers that own all or part of remedial action schemes. Failure to follow requirements and comply with PRC-012-2 could directly affect the ability to effectively monitor, control and ensure reliability of the bulk electric system.

7. EXPLAIN ANY SPECIAL CIRCUMSTANCES RELATING TO THE INFORMATION COLLECTION

In Reliability Standard PRC-012-2, Requirements R1, R2, and R3, together, establish a process for RAS entities to provide information and for the reliability coordinator to review new or modified remedial action schemes.¹⁶ The reliability coordinator must complete the review before an entity places a new or functionally modified remedial action scheme into service.

Requirement R4 requires the planning coordinator to perform a periodic evaluation of each remedial action scheme within its planning area, at least once every five years.¹⁷ The evaluation must determine, whether each remedial action scheme: (1) mitigates the system conditions or contingencies for which it was designed; and (2) avoids adverse interactions with other remedial action schemes and protection systems. Requirement R4, Part 4.1.3 footnote 1 defines a certain subset of remedial action schemes as "limited impact" remedial action schemes to mean "A [remedial action scheme] designated as limited impact cannot, by inadvertent operation or failure to operate, cause or contribute to [bulk electric system cascading], uncontrolled separation, angular instability, voltage instability, voltage collapse, or unacceptably damped oscillations."¹⁸

The applicable entity shall keep data or evidence to show compliance as identified

¹⁶ *Id.* at 15-18.

¹⁷ *Id.* at 18-22.

¹⁸ *Id.* at 19 & n.44.

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below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

The Transmission Owner, Generator Owner, and Distribution Provider shall each keep data or evidence to show compliance with Requirements R1 through R9, and Measures M1 through M9 since the last audit, unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation. [Audits are generally performed every 3 years.] If a Transmission Owner, Generator Owner or Distribution Provider is found noncompliant, it shall keep information related to the non-compliance until mitigation is completed and approved, or for the time specified above, whichever is longer.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

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

The ERO process to develop and establish Reliability Standards is a collaborative process between the ERO, Regional Entities and other industry stakeholders.¹⁹ The process involves developing, discussing, and reviewing drafts, commenting and voting on the drafts, posting responses to the comments, conducting a final ballot, and submitting the standard and implementation plan to the board of trustees for adoption and approval. (This process provides several opportunities for review and comment by stakeholders and interested parties.) Then, the final proposed Reliability Standard (if approved by the board of trustees) is submitted by the ERO to the FERC for review and approval. Upon approval by FERC, the Reliability Standards are mandatory and enforceable.

FERC notices are published in the Federal Register to allow all public utilities, natural gas and oil pipeline companies, state commissions, federal agencies, and other interested parties an opportunity to submit comments, or suggestions concerning the proposal. The NOPR for RM16-20 was published in the Federal Register (82 FR 9702, 2/8/2017). There were eight comments received by FERC but none of the comments were related to PRA issues.

¹⁹ Details of the ERO's standard process is available on the NERC website in the Standard Process Manual (Version 3, effective 6/26/2013) at http://www.nerc.com/comm/SC/Documents/Appendix_3A_StandardsProcessesManual.pdf . Figure 1 (Process for Developing or Modifying a Reliability Standard) on page 15 of the NERC manual includes a diagram showing the "typical process for a project identified in the Reliability Standards Development Plan that involves a revision to an existing Reliability Standard...."

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9. EXPLAIN ANY PAYMENT OR GIFTS TO RESPONDENTS

The Commission does not make payments or provide gifts for respondents related to FERC-725G.

10. DESCRIBE ANY ASSURANCE OF CONFIDENTIALITY PROVIDED TO RESPONDENTS

According to the NERC Rules of Procedure, “a Receiving Entity shall keep in confidence and not copy, disclose, or distribute any Confidential Information or any part thereof without the permission of the Submitting Entity, except as otherwise legally required.”²⁰ This serves to protect confidential information submitted to NERC or Regional Entities.

Responding entities do not submit the information collected to FERC. Rather, they submit the information to NERC, the Regional Entities, or maintain it internally. Since there are no submissions made to FERC, FERC provides no specific provisions in order to protect confidentiality.

11. PROVIDE ADDITIONAL JUSTIFICATION FOR ANY QUESTIONS OF A SENSITIVE NATURE, SUCH AS SEXUAL BEHAVIOR AND ATTITUDES, RELIGIOUS BELIEFS, AND OTHER MATTERS THAT ARE COMMONLY CONSIDERED PRIVATE

There are no questions of a sensitive nature that are considered private in information collection FERC-725G.

12. ESTIMATED BURDEN OF COLLECTION OF INFORMATION²¹

FERC-725A. Reliability Standards PRC-015-1 and PRC-016-1 are approved in FERC-725A (OMB Control No. 1902-0244). Reliability Standards PRC-015-1 and PRC-016-1 will be retired when Reliability Standard PRC-012-2 becomes effective, which will reduce the burden in FERC-725A. However, as noted on page 2, the reduction to FERC-725A cannot be taken at this time and will be taken later.

FERC-725G. The number of respondents below is based on an examination of the NERC compliance registry for reliability coordinators, planning coordinators, transmission owners, generation owners, and distribution providers and an estimation of how many entities from that registry will be affected by the Reliability Standard. At the

²⁰ Section 1502, Paragraph 2, available at NERCs website

²¹For each Reliability Standard, the Measure shows the acceptable evidence for the associated Reporting Requirement (R numbers), and the Compliance section details the related Recordkeeping Requirement.

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time of Commission review of Reliability Standard PRC-012-2, 15 reliability coordinators, 71 planning coordinators, 328 transmission owners, 930 generation owners, and 367 distribution providers in the United States were registered in the NERC compliance registry. However, under NERC's compliance registration program, entities may be registered for multiple functions, so these numbers incorporate some double counting. The Commission notes that many generation sites share a common generation owner.

The purpose of Reliability Standard PRC-012-2 is to ensure that remedial action schemes (RAS) do not introduce unintentional or unacceptable reliability risks to the bulk electric system. (As part of the final rule, the Commission also approves the retirement of currently-effective Reliability Standards PRC-015-1 and PRC 016-1 [included in FERC-725A] as well as NERC's request to withdraw proposed Reliability Standards PRC 012-1, PRC-013-1, and PRC-014-1, which are now pending before the Commission.)

The Final Rule in Docket RM16-20 imposes an estimated additional 116,770 burden hours for FERC-725G (including the 78,086 burden hours [for engineers] for reporting, and 38,684 hours [for file clerks] for recordkeeping); and corresponding burden cost of \$6,480,470 (including \$5,020,149 for reporting, and \$1,460,321 for recordkeeping), which are detailed by requirement and entity affected in the table (below). The Requirements and Measures (R1-R9 and corresponding M1-M9) ('reporting requirements') and recordkeeping requirements specify the entities required to comply with each requirement. The reporting and recordkeeping requirements (including the additional details of the requirements are shown in Attachments 1-3) are included here in the Appendix to this supporting statement.

For RAS-entities (the Transmission Owner, Generator Owner, or Distribution Provider that owns all or part of an RAS), the requirements include documenting, providing, and retaining:

- o maps, one-line drawings, substation and schematic drawings that identify the physical and electrical location of the RAS and related facilities
- o the functionality of the RAS
- o Corrective Action Plan
- o in-service or retirement date
- o system performance issue or reason for installing the RAS and contingencies and system conditions to be remedied by RAS
- o action(s) to be taken by the RAS in response to disturbance conditions.
- o summary of technical studies showing proposed RAS satisfy system performance objectives future system plans which will impact the RAS

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- o evaluation indicating that the RAS settings and operation avoid adverse interactions with other RAS, and protection and control systems
- o documentation describing the applicable equipment used for detection, dc supply, communications, transfer trip, logic processing, control actions, and monitoring.
- o information on detection logic and settings/parameters that control the operation of the RAS
- o analyze the operation or failiure of RAS performance
- o perform functional test of RAS and document findings
- o responses to each issue identified by the Reliability Coordinator.

For Reliability Coordinators, the requirements (including Attachments 2 and 3 of the Reliability Standard) include :

- o reviewing and analyzing the information provided by the RAS-entity and providing written feedback
- o updating the RAS database periodically.

Planning Coordinators must perform an evaluation at least every 5 years to determine whther the RAS is effectively mitigating the issue(s) for which it was designed and that it avoids adverse interaction with other RAS and protection and control systems.

The following table illustrates the estimated annual changes to burden and cost (rounded) for FERC-725G, due to the Final Rule in RM16-20.²²

²² In the burden table, reporting requirements are labeled “Eng.” and record keeping requirements are i labeled “R.K.”

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FERC-725G, modifications in Docket No. RM16-20-000					
Requirement ²³ and Respondent Category for PRC-012-2	Number of Respondents (1)	Number of Responses per Respondent (2)	Total Number of Responses (1)*(2)=(3)	Average Burden Hours & Cost per Response ²⁴ (4)	Annual Burden Hours & Total Annual Cost (3)*(4)=(5)
R1. Each RAS-entity (TO, GO, DP)	1,595	1	1,595	(Eng.) 24 hrs. (\$1,543); (R.K.) 12 hrs. (\$453)	57,420 hrs. (38,280 Eng., 19,140 R.K.); \$3,183,556 (\$2,461,021 Eng., \$722,535 R.K.)
R2. Each Reliability Coordinator	15	1	15	(Eng.) 16 hrs. (\$1,029); (R.K.) 4 hrs. (\$151)	300 hrs. (240 Eng., 60 R.K.); \$17,695 (\$15,430 Eng., \$2,265 R.K.)
R4. Each Planning Coordinator	71	1	71	(Eng.) 16 hrs. (\$1,029); (R.K.) 4 hrs. (\$151)	1,420 hrs. (1,136 Eng., 284 R.K.); \$83,754 (\$73,033 Eng., \$10,721 R.K.)
R5, R6, R7, and R8. Each RAS-entity (TO, GO, DP)	1,595	1	1,595	(Eng.) 24 hrs. (\$1,543); (R.K.) 12 hrs. (\$453)	57,420 hrs. (38,280 Eng., 19,140 R.K.); \$3,183,556 (\$2,461,021 Eng., \$722,535 R.K.)
R9. Each Reliability Coordinator	15	1	15	(Eng.) 10 hrs. 643; (R.K.) 4 hrs. (\$151)	210 hrs. (150 Eng., 60 R.K.); \$11,909 (\$9,644 Eng., \$2,265 R.K.)
TOTAL			3,291		116,770 hrs. (78,086 Eng., 38,684 R.K.); \$6,480,470 (\$5,020,149 Eng.; \$1,460,321 R.K.)

13. ESTIMATE OF THE TOTAL ANNUAL COST BURDEN TO RESPONDENTS

23 The Requirement is labeled Rn. For example, Requirement 1 is shown as “R1” in the table. The list of requirements (R1-R9) and measurements for each of those requirements is listed in detail in the Appendix.

24 The estimates for cost per response are derived using the following formula: Burden Hours per Response * \$/hour = Cost per Response. The \$64.29/hour figure for an engineer and the \$37.75/hour figure for a record clerk are based on the average salary plus benefits data from the Bureau of Labor Statistics.

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FERC-725G in RM16-20: All of the costs in the final rule are associated with burden hours (labor) and described in Questions #12 and #15 in this supporting statement. There are no start-up or other non-labor costs.

Total Capital and Start-up cost: \$0
 Total Operation, Maintenance, and Purchase of Services: \$0

14. ESTIMATED ANNUALIZED COST TO FEDERAL GOVERNMENT

The Regional Entities and NERC do most of the data processing, monitoring, auditing, and compliance work for Reliability Standards. Any involvement by the Commission is covered under the FERC-725 (OMB Control No. 1902-0255) and is not part of this request or package. The data for FERC-725G are not submitted to FERC.

The Commission does incur the costs associated with obtaining OMB clearance for FERC-725G collection under the Paperwork Reduction Act (PRA). The PRA Administrative Cost is a Federal 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. This average annual cost includes requests for extensions, all associated rulemakings and orders, other changes to the collection, and associated publications in the Federal Register. FERC estimates the annual cost for this effort to be \$5,723.00

FERC-725G	Number of Employees (FTEs)	Estimated Annual Federal Cost
FERC-725G Analysis and Processing of filings	0	\$0
PRA Administrative Cost for FERC-725G		\$5,723.00
TOTAL		\$5,723.00

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

FERC-725A and corresponding reductions. Reliability Standards PRC-015-1 and PRC-016-1 (which are included in FERC-725A) are being retired with the implementation of PRC-012-2 and will reduce the burden in FERC-725A. As noted above, estimates of the corresponding reduction to FERC-725A cannot be submitted at this time and are not detailed here. Burden will be removed from FERC-725A at a later date.

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FERC-725G. Reliability Standard PRC-012-2 sets forth Requirements for remedial action schemes to ensure that remedial action schemes do not introduce unintentional or unacceptable reliability risks to the bulk electric system and are coordinated to provide the service to the system as intended. Reliability Standard PRC-012-2 improves upon the existing standards because it removes ambiguity in NERC’s original “fill-in-the-blank” Reliability Standards by assigning responsibility to appropriate functional entities. It also streamlines and consolidates the remedial action schemes Reliability Standards into one clear, effective Reliability Standard.

FERC-725G (OMB Control No. 1902-0252)	Total Request	Previously Approved	Change due to Adjustment in Estimate	Change Due to Agency Discretion
Annual Number of Responses	10,770	7,479	0	3,291
Annual Time Burden (Hr.)	643,647	526,877	0	116,770
Annual Cost Burden (\$)	\$0	\$0	\$0	\$0

16. TIME SCHEDULE FOR THE PUBLICATION OF DATA

There is no publication of data associated with FERC-725G collection of information.

17. DISPLAY OF THE EXPIRATION DATE

The expiration dates are posted on ferc.gov at <http://www.ferc.gov/docs-filing/info-collections.asp>.

18. EXCEPTIONS TO THE CERTIFICATION STATEMENT

There are no exceptions.

APPENDIX

Excerpt of Reporting and Recordkeeping Requirements for Reliability Standard: PRC-012-2

Requirements and Measures

R1. Prior to placing a new or functionally modified RAS in service or retiring an existing RAS, each RAS-entity shall provide the information identified in Attachment 1 for review to the Reliability Coordinator(s) where the RAS is located. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

M1. Acceptable evidence may include, but is not limited to, a copy of the Attachment 1 documentation and the dated communications with the reviewing Reliability Coordinator(s) in accordance with Requirement R1.

R2. Each Reliability Coordinator that receives Attachment 1 information pursuant to Requirement R1 shall, within four full calendar months of receipt or on a mutually agreed upon schedule, perform a review of the RAS in accordance with Attachment 2, and provide written feedback to each RAS-entity. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

M2. Acceptable evidence may include, but is not limited to, dated reports, checklists, or other documentation detailing the RAS review, and the dated communications with the RAS-entity in accordance with Requirement R2.

R3. Prior to placing a new or functionally modified RAS in service or retiring an existing RAS, each RAS-entity that receives feedback from the reviewing Reliability Coordinator(s) identifying reliability issue(s) shall resolve each issue to obtain approval of the RAS from each reviewing Reliability Coordinator. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

M3. Acceptable evidence may include, but is not limited to, dated documentation and communications with the reviewing Reliability Coordinator that no reliability issues were identified during the review or that all identified reliability issues were resolved in accordance with Requirement R3.

R4. Each Planning Coordinator, at least once every five full calendar years, shall: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

4.1. Perform an evaluation of each RAS within its planning area to determine whether:

4.1.1. The RAS mitigates the System condition(s) or Contingency(ies) for which it was designed.

4.1.2. The RAS avoids adverse interactions with other RAS, and protection and control systems.

4.1.3. For limited impact²⁵ RAS, the inadvertent operation of the RAS or the failure of the RAS to operate does not cause or contribute to BES Cascading, uncontrolled separation, angular instability, voltage instability, voltage collapse, or unacceptably damped oscillations.

4.1.4. Except for limited impact RAS, the possible inadvertent operation of the RAS, resulting from any single RAS component malfunction satisfies all of the following:

4.1.4.1. The BES shall remain stable.

4.1.4.2. Cascading shall not occur.

4.1.4.3. Applicable Facility Ratings shall not be exceeded.

4.1.4.4. BES voltages shall be within post-Contingency voltage limits and post-Contingency voltage deviation limits as established by the Transmission Planner and the Planning Coordinator.

4.1.4.5. Transient voltage responses shall be within acceptable limits as established by the Transmission Planner and the Planning Coordinator.

4.1.5. Except for limited impact RAS, a single component failure in the RAS, when the RAS is intended to operate does not prevent the BES from meeting the same performance requirements (defined in Reliability Standard TPL-001-4 or its successor) as those required for the events and conditions for which the RAS is designed.

4.2. Provide the results of the RAS evaluation including any identified deficiencies to each reviewing Reliability Coordinator and RAS-entity, and each impacted Transmission Planner and Planning Coordinator.

M4. Acceptable evidence may include, but is not limited to, dated reports or other documentation of the analyses comprising the evaluation(s) of each RAS and dated communications with the RAS-entity(ies), Transmission Planner(s), Planning Coordinator(s), and the reviewing Reliability Coordinator(s) in accordance with Requirement R4.

R5. Each RAS-entity, within 120 full calendar days of a RAS operation or a failure of its RAS to operate when expected, or on a mutually agreed upon schedule with its reviewing Reliability Coordinator(s), shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Operations Planning*]

5.1. Participate in analyzing the RAS operational performance to determine whether:

5.1.1. The System events and/or conditions appropriately triggered the RAS.

5.1.2. The RAS responded as designed.

5.1.3. The RAS was effective in mitigating BES performance issues it was designed to address.

²⁵ A RAS designated as limited impact cannot, by inadvertent operation or failure to operate, cause or contribute to BES Cascading, uncontrolled separation, angular instability, voltage instability, voltage collapse, or unacceptably damped oscillations.

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5.1.4. The RAS operation resulted in any unintended or adverse BES response.

5.2. Provide the results of RAS operational performance analysis that identified any deficiencies to its reviewing Reliability Coordinator(s).

M5. Acceptable evidence may include, but is not limited to, dated d documentation detailing the results of the RAS operational performance analysis and dated communications with participating RAS-entities and the reviewing Reliability Coordinator(s) in accordance with Requirement R5.

R6. Each RAS-entity shall participate in developing a Corrective Action Plan (CAP) and submit the CAP to its reviewing Reliability Coordinator(s) within six full calendar months of: [*Violation Risk Factor: Medium*] [*Time Horizon: Operations Planning, Long-term Planning*] • Being notified of a deficiency in its RAS pursuant to Requirement R4, or

- Notifying the Reliability Coordinator of a deficiency pursuant to Requirement R5, Part 5.2, or

- Identifying a deficiency in its RAS pursuant to Requirement R8.

M6. Acceptable evidence may include, but is not limited to, a dated CAP and dated communications among each reviewing Reliability Coordinator and each RAS-entity in accordance with Requirement R6.

R7. Each RAS-entity shall, for each of its CAPs developed pursuant to Requirement R6: [*Violation Risk Factor: Medium*] [*Time Horizon: Operations Planning, Long-term Planning*] **7.1.** Implement the CAP.

7.2. Update the CAP if actions or timetables change.

7.3. Notify each reviewing Reliability Coordinator if CAP actions or timetables change and when the CAP is completed.

M7. Acceptable evidence may include, but is not limited to, dated documentation such as CAPs, project or work management program records, settings sheets, work orders, maintenance records, and communication with the reviewing Reliability Coordinator(s) that documents the implementation, updating, or completion of a CAP in accordance with Requirement R7.

R8. Each RAS-entity shall participate in performing a functional test of each of its RAS to verify the overall RAS performance and the proper operation of non-Protection System components: [*Violation Risk Factor: High*] [*Time Horizon: Long-term Planning*]

- At least once every six full calendar years for all RAS not designated as limited impact, or

- At least once every twelve full calendar years for all RAS designated as limited impact

M8. Acceptable evidence may include, but is not limited to, dated documentation detailing the RAS operational performance analysis for a correct RAS segment or an end-to-end operation (Measure M5 documentation), or dated documentation demonstrating

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that a functional test of each RAS segment or an end-to-end test was performed in accordance with Requirement R8.

R9. Each Reliability Coordinator shall update a RAS database containing, at a minimum, the information in Attachment 3 at least once every twelve full calendar months.

[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]

M9. Acceptable evidence may include, but is not limited to, dated spreadsheets, database reports, or other documentation demonstrating a RAS database was updated in accordance with Requirement R9.

Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority:

As defined in the NERC Rules of Procedure, “Compliance Enforcement Authority” means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.

1.2. Evidence Retention:

The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

The RAS-entity (Transmission Owner, Generator Owner, and Distribution Provider) shall each keep data or evidence to show compliance with Requirements R1, R3, R5, R6, R7, and R8, and Measures M1, M3, M5, M6, M7, and M8 since the last audit, unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

The Reliability Coordinator shall each keep data or evidence to show compliance with Requirements R2 and R9, and Measures M2 and M9 since the last audit, unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

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The Planning Coordinator shall each keep data or evidence to show compliance with Requirement R4 and Measure M4 since the last audit, unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

If a RAS-entity (Transmission Owner, Generator Owner or Distribution Provider), Reliability Coordinator, or Planning Coordinator is found non-compliant, it shall keep information related to the non-compliance until mitigation is completed and approved, or for the time specified above, whichever is longer.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.3. Compliance Monitoring and Enforcement Program

As defined in the NERC Rules of Procedure, “Compliance Monitoring and Enforcement Program” refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Attachment 1

Supporting Documentation for RAS Review

The following checklist identifies important Remedial Action Scheme (RAS) information for each new or functionally modified²⁶ RAS that the RAS-entity must document and provide to the reviewing Reliability Coordinator(s) (RC). If an item on this list does not apply to a specific RAS, a response of “Not Applicable” for that item is appropriate. When RAS are submitted for functional modification review and approval, only the proposed modifications to that RAS require review; however, the RAS-entity must provide a summary of the existing functionality. The RC may request additional information on any aspect of the RAS as well as any reliability issue related to the RAS. Additional entities (without decision authority) may be part of the RAS review process at the request of the RC.

I. General

1. Information such as maps, one-line drawings, substation and schematic drawings that identify the physical and electrical location of the RAS and related facilities.
2. Functionality of new RAS or proposed functional modifications to existing RAS and documentation of the pre- and post-modified functionality of the RAS.
3. The Corrective Action Plan (CAP) if RAS modifications are proposed in a CAP.
4. Data to populate the RAS database:
 - a. RAS name.
 - b. Each RAS-entity and contact information.
 - c. Expected or actual in-service date; most recent RC-approval date (Requirement R3); most recent evaluation date (Requirement R4); and date of retirement, if applicable.

²⁶Functionally modified: Any modification to a RAS consisting of any of the following:

- Changes to System conditions or contingencies monitored by the RAS
- Changes to the actions the RAS is designed to initiate
- Changes to RAS hardware beyond in-kind replacement; i.e., match the original functionality of existing components
- Changes to RAS logic beyond correcting existing errors
- Changes to redundancy levels; i.e., addition or removal

³A RAS designated as limited impact cannot, by inadvertent operation or failure to operate, cause or contribute to BES Cascading, uncontrolled separation, angular instability, voltage instability, voltage collapse, or unacceptably damped oscillations.

- d. System performance issue or reason for installing the RAS (e.g., thermal overload, angular instability, poor oscillation damping, voltage instability, under- or over-voltage, or slow voltage recovery).
- e. Description of the Contingencies or System conditions for which the RAS was designed (i.e., initiating conditions).
- f. Action(s) to be taken by the RAS.
- g. Identification of limited impact²⁷ RAS.
- h. Any additional explanation relevant to high-level understanding of the RAS.

II. Functional Description and Transmission Planning Information

- 1. Contingencies and System conditions that the RAS is intended to remedy.
- 2. The action(s) to be taken by the RAS in response to disturbance conditions.
- 3. A summary of technical studies, if applicable, demonstrating that the proposed RAS actions satisfy System performance objectives for the scope of System events and conditions that the RAS is intended to remedy. The technical studies summary shall also include information such as the study year(s), System conditions, and Contingencies analyzed on which the RAS design is based, and the date those technical studies were performed.
- 4. Information regarding any future System plans that will impact the RAS.
- 5. RAS-entity proposal and justification for limited impact designation, if applicable.
- 6. Documentation describing the System performance resulting from the possible inadvertent operation of the RAS, except for limited impact RAS, caused by any single RAS component malfunction. Single component malfunctions in a RAS not determined to be limited impact must satisfy all of the following:
 - a. The BES shall remain stable.
 - b. Cascading shall not occur.
 - c. Applicable Facility Ratings shall not be exceeded.
 - d. BES voltages shall be within post-Contingency voltage limits and post-Contingency voltage deviation limits as established by the Transmission Planner and the Planning Coordinator.
 - e. Transient voltage responses shall be within acceptable limits as established by the Transmission Planner and the Planning Coordinator.
- 7. An evaluation indicating that the RAS settings and operation avoid adverse interactions with other RAS, and protection and control systems.

²⁷A RAS designated as limited impact cannot, by inadvertent operation or failure to operate, cause or contribute to BES Cascading, uncontrolled separation, angular instability, voltage instability, voltage collapse, or unacceptably damped oscillations.

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8. Identification of other affected RCs.

III. Implementation

1. Documentation describing the applicable equipment used for detection, dc supply, communications, transfer trip, logic processing, control actions, and monitoring.
2. Information on detection logic and settings/parameters that control the operation of the RAS.
3. Documentation showing that any multifunction device used to perform RAS function(s), in addition to other functions such as protective relaying or SCADA, does not compromise the reliability of the RAS when the device is not in service or is being maintained.
4. Documentation describing the System performance resulting from a single component failure in the RAS, except for limited impact RAS, when the RAS is intended to operate. A single component failure in a RAS not determined to be limited impact must not prevent the BES from meeting the same performance requirements (defined in Reliability Standard TPL-001-4 or its successor) as those required for the events and conditions for which the RAS is designed. The documentation should describe or illustrate how the design achieves this objective.
5. Documentation describing the functional testing process.

IV. RAS Retirement

The following checklist identifies RAS information that the RAS-entity shall document and provide to each reviewing RC.

1. Information necessary to ensure that the RC is able to understand the physical and electrical location of the RAS and related facilities.
2. A summary of applicable technical studies and technical justifications upon which the decision to retire the RAS is based.
3. Anticipated date of RAS retirement.

Attachment 2

Reliability Coordinator RAS Review Checklist

The following checklist identifies reliability-related considerations for the Reliability Coordinator (RC) to review and verify for each new or functionally modified²⁸ Remedial Action Scheme (RAS). The RC review is not limited to the checklist items and the RC may request additional information on any aspect of the RAS as well as any reliability issue related to the RAS. If a checklist item is not relevant to a particular RAS, it should be noted as “Not Applicable.” If reliability considerations are identified during the review, the considerations and the proposed resolutions should be documented with the remaining applicable Attachment 2 items.

I. Design

1. The RAS actions satisfy performance objectives for the scope of events and conditions that the RAS is intended to mitigate.
2. The designed timing of RAS operation(s) is appropriate to its BES performance objectives.
3. The RAS arming conditions, if applicable, are appropriate to its System performance objectives.
4. The RAS avoids adverse interactions with other RAS, and protection and control systems.
5. The effects of RAS incorrect operation, including inadvertent operation and failure to operate, have been identified.
6. Determination whether or not the RAS is limited impact.²⁹ A RAS designated as limited impact cannot, by inadvertent operation or failure to operate, cause or contribute to BES Cascading, uncontrolled separation, angular instability, voltage instability, voltage collapse, or unacceptably damped oscillations.
7. Except for limited impact RAS as determined by the RC, the possible inadvertent operation of the RAS resulting from any single RAS component malfunction satisfies all of the following:

28Functionally modified: Any modification to a RAS consisting of any of the following:

- Changes to System conditions or contingencies monitored by the RAS
- Changes to the actions the RAS is designed to initiate
- Changes to RAS hardware beyond in-kind replacement; i.e., match the original functionality of existing components
- Changes to RAS logic beyond correcting existing errors
- Changes to redundancy levels; i.e., addition or removal

29 A RAS designated as limited impact cannot, by inadvertent operation or failure to operate, cause or contribute to BES Cascading, uncontrolled separation, angular instability, voltage instability, voltage collapse, or unacceptably damped oscillations.

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- a. The BES shall remain stable.
 - b. Cascading shall not occur.
 - c. Applicable Facility Ratings shall not be exceeded.
 - d. BES voltages shall be within post-Contingency voltage limits and post-Contingency voltage deviation limits as established by the Transmission Planner and the Planning Coordinator.
 - e. Transient voltage responses shall be within acceptable limits as established by the Transmission Planner and the Planning Coordinator.
8. The effects of future BES modifications on the design and operation of the RAS have been identified, where applicable.

II. Implementation

1. The implementation of RAS logic appropriately correlates desired actions (outputs) with events and conditions (inputs).
2. Except for limited impact RAS as determined by the RC, a single component failure in a RAS does not prevent the BES from meeting the same performance requirements as those required for the events and conditions for which the RAS is designed.
3. The RAS design facilitates periodic testing and maintenance.
4. The mechanism or procedure by which the RAS is armed is clearly described, and is appropriate for reliable arming and operation of the RAS for the conditions and events for which it is designed to operate.

III. RAS Retirement

RAS retirement reviews should assure that there is adequate justification for why a RAS is no longer needed.

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Attachment 3

Database Information

1. RAS name.
2. Each RAS-entity and contact information.
3. Expected or actual in-service date; most recent RC-approval date (Requirement R3); most recent evaluation date (Requirement R4); and date of retirement, if applicable.
4. System performance issue or reason for installing the RAS (e.g., thermal overload, angular instability, poor oscillation damping, voltage instability, under- or over-voltage, or slow voltage recovery).
5. Description of the Contingencies or System conditions for which the RAS was designed (i.e., initiating conditions).
6. Action(s) to be taken by the RAS.
7. Identification of limited impact ³⁰RAS.
8. Any additional explanation relevant to high-level understanding of the RAS.

³⁰ A RAS designated as limited impact cannot, by inadvertent operation or failure to operate, cause or contribute to BES Cascading, uncontrolled separation, angular instability, voltage instability, voltage collapse, or unacceptably damped oscillations.