Supporting Statement for
FERC-725A, Mandatory Reliability Standards for the Bulk-Power System
As Proposed in Docket No. RM09-25-000
(A Final Rule Issued November 18, 2010)[1]

The Federal Energy Regulatory Commission (Commission) (FERC) requests that the Office of Management and Budget (OMB) review and approve **FERC-725A, Mandatory Reliability Standards for the Bulk Power System**, for a three year period. FERC-725A (Control No. 1902-0244) is an existing Commission data collection as contained in 18 Code of Federal Regulations, Part 40. RM09-25-000 Final Rule is concerned only with Reliability Standards that deal with training requirements and therefore not all the Reliability Standards approved under 1902-0244 will be impacted.

Background

In the aftermath of the 1965 Blackout in the northeast United States, the electric industry established the North American Electric Reliability Council (NERC), a voluntary reliability organization. Since its inception, NERC has developed Operating Policies and Planning Standards that provided voluntary guidelines for operating and planning the North American bulk-power system. In April 2005, NERC adopted "Version O" reliability standards that translated the NERC Operating Policies, Planning Standards and compliance requirements into a comprehensible set of measurable standards. While NERC had developed a compliance enforcement program to ensure compliance with the reliability standards it developed, industry compliance was voluntary and not subject to mandatory enforcement penalties. Although NERC's efforts had been important in maintaining the reliability of the nation's bulk-power system, NERC itself recognized the need for mandatory, enforceable reliability standards and was a proponent of legislation to establish a FERC-jurisdictional Electric Reliability Organization (ERO) that would propose and enforce mandatory reliability standards. With passage of the Energy Policy Act of 2005 as more fully described below, voluntary reliability standards became mandatory.

On March 16, 2007, the Commission issued Order No. 693, a Final Rule that added part 40, to the Commission's regulations. In Order No. 693 the Commission stated that this part applies to all users, owners and operators of the Bulk-Power System within the United States (other than Alaska or Hawaii). The Order also required that each Reliability Standard identify the subset of users, owners and operators to which that particular Reliability Standard applies. The regulations also require that each Reliability Standard that is approved by the Commission be maintained on the ERO's Internet website for public inspection.

The Commission approved 83 of 107 the proposed Reliability Standards, six of the eight

1 Normally the justification and other supporting documents are submitted to OMB the day the rule is published in the Federal Register. The Commission was not able to submit this rule at that time because another rule under the same control number was pending at OMB (RM09-18-000 Final Rule).

regional differences, and the Glossary of Terms used in Reliability Standards as developed by NERC. NERC was certified by the Commission as the ERO responsible for developing and enforcing mandatory Reliability Standards. These Reliability Standards meet the requirements of section 215 of the Federal Power Act (FPA) and part 39 of the Commission's regulations.[2] However, although the Commission believed that it is in the public interest to make these Reliability Standards mandatory and enforceable, the Commission also found that much work remained to be done. Specifically, the Commission believes that many of these Reliability Standards required significant improvement to address, among other things, the recommendations of the Blackout Report. Therefore, in accordance with section 215(d)(5), the Commission required the ERO to submit significant improvements to many of the Reliability Standards that were approved as mandatory and enforceable. Some Reliability Standards have been pending due to further development.

A subsequent blackout on August 14, 2003, that began in Ohio affected significant portions of the Midwest and Northeast United States, and Ontario, Canada (August 14 Blackout). This blackout affected an area with an estimated 50 million people and 61,800 megawatts of electric load.[3] The subsequent investigation and report completed by the U.S.-Canada Power System Outage Task Force (Task Force) reviewed several previous major North American outages and concluded that "inadequate training of operating personnel" was among the factors that the August 14 Blackout had in common with previous outages.[4]

Specifically, the Task Force summarized that previous outage analyses recommended "enhanced procedures and training for operating personnel."[5] This included:

- Thorough programs and schedules for operator training and retraining should be vigorously administered.

- A full-scale simulator should be made available to provide operating personnel with "hands-on" experience in dealing with possible emergency or other system conditions.

- Procedures and training programs for system operators should include anticipation, recognition, and definition of emergency situations.

- Written procedures and training materials should include criteria that system operators can use to recognize signs of system stress and mitigating

2 18 CFR Part 39 addresses (among other things) the submittal and approval process for a Reliability Standard. 18 CFR Part 40 makes the Reliability Standards mandatory. 18 CFR Part 40 is the cited CFR section for Reliability Standards because it makes them mandatory.

3 *U.S.-Canada Power System Outage Task Force, Final Report on the August 14, 2003 Blackout in the United States and Canada: Causes and Recommendations*, (April 2004) (Blackout Report), available at http://www.ferc.gov/industries/electric/indus-act/reliability/blackout.asp.

4 *See* Blackout Report at 107.

5 *Id.* at 110.

measures to be taken before conditions degrade into emergencies….[6]

The Blackout Report stated that some reliability coordinators and control area operators, i.e., balancing authorities[7], did not receive adequate training in recognizing and responding to system emergencies and this "training deficiency contributed to the lack of situational awareness and failure to declare an emergency on August 14 while operator intervention was still possible (before events began to occur at a speed beyond human control)."[8] The Blackout Report recommended "[i]mprov[ing] near-term and long-term training and certification requirements for operators, reliability coordinators, and operator support staff."[9] The Task Force suggested that NERC require training for planning staff at control areas and reliability coordinators concerning power system characteristics and load, VAR, and voltage limits to enable them to develop rules for operating staff to follow.[10] In addition, the Task Force urged NERC to "require control areas and reliability coordinators to train grid operators, IT support personnel, and their supervisors to recognize and respond to abnormal automation system activity."[11]

RM09-25-000 NOPR

On June 17, 2010, the Commission issued a Notice of Proposed Rulemaking (NOPR) in Docket RM09-25-000. This NOPR proposed to approve two new Reliability Standards, PER-004-2 and PER-005-1 governing training. These standards replace currently effective Reliability Standards PER-002-0 and PER-004-1 approved by the Commission in Order No. 693. Rather than creating entirely new training requirements, the Reliability Standard PER-005-1 instead modifies and improves the existing Reliability Standards governing personnel training.[12] The proposed rulemaking did not impose entirely new burdens on the effected entities. For example, the previously effective training Reliability Standard, PER-002-0, required transmission operators and balancing authorities to create training program objectives, develop a plan for the initial and continued training, and maintain training records. Similarly, proposed training Reliability Standard, PER-005-1, which supersedes PER-002-0, requires transmission operators, balancing authorities and reliability coordinators to establish a training program (using a systematic approach to training), verify the trainee's capabilities to perform task for which they receive training, and maintain training records. Accordingly, the recordkeeping requirements imposed by Reliability Standard PER-005-1, are more specific but not necessarily more expansive than previously effective Reliability Standard PER-002-0's recordkeeping requirements. However, Reliability Standard PER-005-1 does enlarge the scope of the affected entities to include reliability coordinators.

6 *Id.*

7 Balancing Authority-The responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real time.

8 *Id.* at 157.

9 *Id.* at 156, Task Force Recommendation 19.

10 *Id.* at 156-157, Task Force Recommendation 19.A.

11 *Id.* at 157, Task Force Recommendation 19.B.

12 Proposed Reliability Standard PER-004-2 does not add any new requirements, rather it restates and carries forward the two remaining requirements from PER-004-1 that are not superseded by proposed Reliability Standard PER-005-1.

RM09-25-000 Final Rule

On November 18, 2010 the Commission issued a Final Rule approving the two Reliability Standards submitted by NERC for the Commission's approval. The Commission also approves NERC's proposal to retire two existing PER Reliability Standards that are replaced by the standards approved in the Final Rule.

Like the previously effective training Reliability Standards, PER-002-0 and PER-004-1, Reliability Standards PER-004-2 and PER-005-1 do not require responsible entities to file information with the Commission. However, these Reliability Standards do require applicable entities to develop and maintain certain information, subject to audit by a Regional Entity such as documentation to show a development and delivery of a training program for system operators, verification of system operator capabilities to perform tasks, and training records to show compliance with requirements.

A. Justification

1. **CIRCUMSTANCES THAT MAKE THE COLLECTION OF INFORMATION NECESSARY**

On August 8, 2005, the Electricity Modernization Act of 2005, which is Title XII, Subtitle A, of the Energy Policy Act of 2005 (EPAct 2005), was enacted into law.[13] EPAct 2005 added a new section, 215, to the FPA, which requires a Commission-certified ERO (FERC-725, 1902-0225) to develop mandatory and enforceable Reliability Standards, which are subject to Commission review and approval. Once approved, the Reliability Standards may be enforced by the ERO, subject to Commission oversight, or the Commission can independently enforce Reliability Standards (FERC-725A).[14]

Section 215(d)(1) of the FPA provides that the ERO must file each Reliability Standard or modification to a Reliability Standard that it proposes to be made effective, i.e., mandatory and enforceable, with the Commission. On April 4, 2006, and as later modified and supplemented, the ERO submitted 107 Reliability Standards for Commission approval pursuant to section 215(d) of the FPA.

Section 215(d)(2) of the FPA provides that the Commission may approve, by rule or order, a proposed Reliability Standard or modification to a proposed Reliability Standard if it meets the statutory standard for approval, giving due weight to the technical expertise of the ERO. Alternatively, the Commission may remand a Reliability Standard pursuant to section 215(d)(4) of the FPA. Further, the Commission may order the ERO to submit to the

13 Energy Policy Act of 2005, Pub. L. No 109-58, Title XII, Subtitle A, 119 Stat. 594, 941 (2005), to be codified at 16 U.S.C. 824o.
14 16 U.S.C. 824o(e)(3).

Commission a proposed Reliability Standard or a modification to a Reliability Standard that addresses a specific matter if the Commission considers such a new or modified Reliability Standard appropriate to "carry out" section 215 of the FPA.[15] The Commission's action in this rulemaking proceeding is based on its authority pursuant to section 215 of the FPA.

On February 3, 2006, the Commission issued Order No. 672, implementing section 215 of the FPA.[16] Pursuant to Order No. 672, the Commission certified one organization, NERC, as the ERO.[17] The ERO is required to develop Reliability Standards, which are subject to Commission review and approval. The Reliability Standards apply to users, owners and operators of the Bulk-Power System, as set forth in each Reliability Standard.

On March 16, 2007, the Commission issued Order No. 693, a Final Rule adding part 40, a new part to the Commission's regulations. Order No. 693 Rule states that this part applies to all users, owners and operators of the Bulk-Power System within the United States (other than Alaska or Hawaii). It also requires that each Reliability Standard identify the subset of users, owners and operators to which that particular Reliability Standard applies. The new regulations also require that each Reliability Standard that is approved by the Commission will be maintained on the ERO's Internet website for public inspection.

In accordance with section 39.5 of the Commission's regulations, the ERO must file each Reliability Standard or a modification to a Reliability Standard with the Commission. The filing is to include a concise statement of the basis and purpose of the proposed Reliability Standard, either a summary of the Reliability development proceedings conducted by the ERO or a summary of the Reliability Standard development proceedings conducted by a Regional Entity together with a summary of the Reliability Standard review proceedings of the ERO and a demonstration that the proposed Reliability Standard is "just, reasonable, not unduly discriminatory or preferential, and in the public interest.

Electric reliability legislation was first proposed after issuance of the September 1998 task force report and was a common feature of comprehensive electricity bills since that time. A stand-alone electric reliability bill was passed by the Senate unanimously in 2000. In 2001, President Bush proposed making electric Reliability Standards mandatory and enforceable as part of the National Energy Policy.[18]

Under the new electric power reliability system enacted by Congress in 2005, the United States will no longer rely on voluntary compliance by participants in the electric industry with

15 See 16 U.S.C. 824o(d)(5) (2006).
16 Rules Concerning Certification of the Electric Reliability Organization; Procedures for the Establishment, Approval and Enforcement of Electric Reliability Standards, Order No. 672, 71 FR 8662 (February 17, 2006), FERC Stats. & Regs. ¶ 31,204 (2006), order on reh'g, Order No. 672-A, 71 FR 19814 (April 18, 2006), FERC Stats. & Regs. ¶ 31,212 (2006).
17 North American Electric Reliability Corp., 116 FERC ¶ 61,062 (ERO Certification Order), order on reh'g & compliance, 117 FERC ¶ 61,126 (ERO Rehearing Order) (2006), order on compliance, 118 FERC ¶ 61,030 (2007) (January 2007 Compliance Order).
18 Report of the National Energy Policy Development Group, May 2001, at p. 7-6.

industry reliability requirements for operating and planning the Bulk-Power System. Congress directed the development of mandatory, Commission-approved, enforceable electricity Reliability Standards. The Commission believes that, to achieve this goal, it is necessary to have a strong ERO that promotes excellence in the development and enforcement of Reliability Standards.

A mandatory Reliability Standard should not reflect the "lowest common denominator" in order to achieve a consensus among participants in the ERO's Reliability Standard development process. Therefore, the Commission carefully reviews each Reliability Standard submitted and, where appropriate, later remand if necessary, an inadequate Reliability Standard to ensure that it protects reliability, has no undue adverse effect on competition, and can be enforced in a clear and even-handed manner.

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

Prior to enactment of section 215, FERC had acted primarily as an economic regulator of wholesale power markets and the interstate transmission grid. In this regard, the Commission acted to promote a more reliable electric system by promoting regional coordination and planning of the interstate grid through regional independent system operators (ISOs) and regional transmission organizations (RTOs), adopting transmission pricing policies that provide price signals for the most reliable and efficient operation and expansion of the grid, and providing pricing incentives at the wholesale level for investment in grid improvements and assuring recovery of costs in wholesale transmission rates.

As part of FERC's efforts to promote grid reliability, the Commission created a new Office of Electric Reliability. One task of this office has been to participate in NERC's) reliability readiness reviews of balancing authorities, transmission operators and reliability coordinators in North America to determine their readiness to maintain safe and reliable operations. FERC's Office of Electric Reliability has also engaged in studies and other activities to assess the longer-term and strategic needs and issues related to power grid reliability.

Sufficient supplies of energy and a reliable way to transport those supplies to customers are necessary to assure reliable energy availability and to enable competitive markets. Reasonable supply relative to demand is essential for competitive markets to work. Without sufficient delivery infrastructure, some suppliers will not be able to enter the market, customer choices will be limited, and prices will be needlessly volatile. The Commission assists in creating a more reliable electric system by:

- Fostering regional coordination and planning of the interstate grid through independent system operators and regional transmission organizations;
- Adopting transmission policies that provide price signals for the most reliable and efficient operation and expansion of the grid; and
- Providing pricing incentives at the wholesale level for investment in grid improvements and ensuring opportunities for cost recovery in wholesale transmission rates.

The passage of the Electricity Modernization Act of 2005 added to the Commission's efforts identified above, by giving it the authority to strengthen the reliability of the interstate grid through the grant of new authority pursuant to section 215 of the FPA which provides for a system of mandatory Reliability Standards developed by the ERO, established by FERC, and enforced by the ERO and Regional Entities.

As noted above, the Commission issued Order No. 693, approving 83 of the 107 Reliability Standards filed by NERC, including the four PER Reliability Standards: PER-001-0, PER-002-0, PER-003-0, and PER-004-1.[19] In addition, under section 215(d)(5) of the FPA, the Commission directed NERC to develop modifications to the PER Reliability Standards to address certain issues identified by the Commission. Approved in the Final Rule are two new PER standards that would replace the currently effective Reliability Standards PER-002-0 (Operating Personnel Training) and PER-004-1 (Reliability Coordination – Staffing).

Currently effective Reliability Standard PER-002-0 requires each transmission operator and balancing authority to be staffed with adequately trained operating personnel.[20] Specifically, PER-002-0: (1) directs each transmission operator and balancing authority to have a training program for all operating personnel who occupy positions that either have primary responsibility, directly or through communication with others, for the real-time operation of the Bulk-Power System or who are directly responsible for complying with the NERC Reliability Standards; (2) lists criteria that must be met by the training program; and (3) requires that operating personnel receive at least five days of training in emergency operations each year using realistic simulations.[21]

In Order No. 693, the Commission also approved Reliability Standard PER-004-1.[22] This Reliability Standard requires each reliability coordinator to be staffed with adequately trained, NERC-certified operators, 24 hours a day, seven days a week. Further, PER-004-1 requires reliability coordinator operating personnel to have a comprehensive understanding of the area of the Bulk-Power System for which they are responsible.

In Order No. 693, the Commission directed NERC, in accordance with section 215(d)(5) of the FPA, to develop the following modifications to PER-002-0: (1) identify the expectations

19 Order No. 693 at P 1330-1417.
20 *Id.* P 1331.
21 Reliability Standard PER-002-0.
22 *Id.* P 1417.

of the training for each job function; (2) develop training programs tailored to each job function with consideration of the individual training needs of the personnel; (3) expand the applicability of the training requirements to include: reliability coordinators, local transmission control center operator personnel, generator operators centrally-located at a generation control center with a direct impact on the reliable operation of the Bulk-Power System, and operations planning and operations support staff who carry out outage planning and assessments and those who develop system operating limits (SOLs), interconnection reliability operating limits (IROLs), or operating nomograms for real-time operations; (4) use a Systematic Approach to Training methodology for developing new training programs; and (5) include the use of simulators by reliability coordinators, transmission operators, and balancing authorities that have operational control over a significant portion of load and generation.[23]

The Commission also directed NERC to develop modifications to currently effective Reliability Standard PER-004-1 through the Reliability Standards development process to: (1) include formal training requirements for reliability coordinators similar to those addressed under the personnel training Reliability Standard PER-002-0 and (2) include requirements pertaining to personnel credentials for reliability coordinators similar to those in PER-003-0.[24]

In a September 30, 2009 filing NERC requested Commission approval of proposed Reliability Standards PER-005-1 (System Personnel Training) and PER-004-2 (Reliability Coordination – Staffing), which were developed in response to the Commission's directives in Order No. 693 regarding currently effective Reliability Standard PER-002-0.[25] NERC also seeks to concurrently retire currently effective Reliability Standards PER-002-0 and PER-004-1 upon the effective date PER-004-2 and PER-005-1.

NERC stated that the proposed Reliability Standards "are a significant improvement over the existing Reliability Standards" and recommended Commission approval of the standards as a "significant step in strengthening the quality of operator training programs as necessary for the reliability of the [B]ulk-[P]ower [S]ystem."[26] The proposed Reliability Standards will require reliability coordinators, balancing authorities, and transmission operators to establish a training program for their system operators, verify each of their system operator's capability to perform tasks, and provide emergency operations training to every system operator.

The Commission approves Reliability Standards PER-005-1 and PER-004-2, as just, reasonable, not unduly discriminatory or preferential, and in the public interest. Personnel

23 Order No. 693 at P 1393.
24 *Id.* P 1415, 1417. Currently effective Reliability Standard PER-003-0 requires transmission operators, balancing authorities and reliability coordinators to have NERC-certified staff for all operating positions that have a primary responsibility for real-time operations or are directly responsible for complying with the Reliability Standards. *Id.* at 1395.
25 NERC's Petition addresses only the directives in Order No. 693 related to existing Reliability Standard PER-002-0, not the directives related to PER-004-1. *See* NERC Petition at 27.
26 NERC Petition at 5.

training are important to ensuring the reliability of the Bulk-Power System, as recognized in Order No. 693 and the Blackout Report.

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

With respect to the Reliability Standards that are the subject of this rulemaking proceeding, there is no information filed with the Commission. However, these Reliability Standards do require applicable entities to develop and maintain certain information, subject to audit by a Regional Entity, such as documentation to show a development and delivery of a training program for system operators, verification of system operator capabilities to perform tasks, and training records to show compliance with requirements.

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 responsibilities under the FPA in order to eliminate duplication and ensure that filing burden is minimized. There are no similar sources of information available that can be used or modified for these reporting purposes. All reliability requirements are subject to FERC approval along with the requirements developed by Regional Entities and Regional Advisory Bodies and the ERO.

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

FERC-725A is a filing requirement concerning the implementation of reliability standards by the Electric Reliability Organization and its responsibilities as well as those of Regional Entities and Regional Advisory Bodies in the development of Reliability Standards. The Electricity Modernization Act specifies that the ERO and Regional Entities are not departments, agencies or instrumentalities of the United States government and will not be like most other businesses, profit or not-for–profit. Congress created the concept of the ERO and Regional Entities as select, special purpose entities that will transition the oversight of the Bulk-Power System reliability from voluntary, industry organizations to independent organizations subject to Commission jurisdiction.

Section 215(b) of the FPA requires all users, owners and operators of the Bulk-Power System to comply with Commission-approved Reliability Standards. Each proposed Reliability

Standard submitted for approval by NERC applies to some subset of users, owners and operators.

Most of the entities, i.e., reliability coordinators, transmission operators, and balancing authorities, to which the requirements of this rule apply do not fall within the definition of small entities.[27] Moreover, the approved Reliability Standards reflect a continuation of existing training requirements for transmission operators and balancing authorities and are "new" only with respect to reliability coordinators.

Based on available information regarding NERC's compliance registry, approximately seven entities will be responsible for compliance with proposed Reliability Standards PER-004-2 and PER-005-1 that were not already subject to the existing Reliability Standards comprising the same base training requirements as contained in the new Reliability Standards. The Commission does not consider this a substantial number. Further, few if any of the seven reliability coordinators are small entities.

In Order 693 (RM06-16-000 Final Rule) the Commission estimated that Reliability Standards approved in the Final Rule would apply to 682 small entities. In this proceeding the Commission has re-estimated the number of small entities to be 920 (904 municipals and small coops + 16 Investor Owned Utilities).[28]

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

The Electric Reliability Organization will conduct periodic assessments of the reliability and adequacy of the Bulk-Power System in North America and report its findings to the Commission, the Secretary of Energy, Regional Entities, and Regional Advisory Bodies annually or more frequently if so ordered by the Commission. The ERO and Regional Entities will report to FERC on their enforcement actions and associated penalties and to the Secretary of Energy, relevant Regional entities and relevant Regional Advisory Bodies annually or quarterly in a manner to be prescribed by the Commission. If the training records are not kept then the bulk electric system would be placed at risk due to the ERO not being able to completely verify and ensure that personnel training programs are designed and occurring properly. Further, these Reliability Standards were thought necessary and vetted by industry through the ERO's standards process.[29]

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27 The RFA definition of "small entity" refers to the definition provided in the Small Business Act (SBA), which defines a "small business concern" as a business that is independently owned and operated and that is not dominant in its field of operation. *See* 15 USC § 632. According to the SBA, a small electric utility is defined as one that has a total electric output of less than four million MWh in the preceding year.

28 See item 15 in this document for more information on the new estimate for the total number of respondent for FERC 725A.

29 See http://www.nerc.com/page.php?cid=2|247 for more information on the standards process.

7. EXPLAIN ANY SPECIAL CIRCUMSTANCES RELATING TO THE INFORMATION COLLECTION

FERC-725A is a filing requirement necessary to comply with the applicable provisions of the Electricity Modernization Act of 2005 and section 215 of the Federal Power Act.

In accordance with section 39.5 of the Commission's regulations, the ERO must file each Reliability Standard or a modification to a Reliability Standard with the Commission. The filing is to include a concise statement of the basis and purpose of the proposed Reliability Standard, either a summary of the Reliability development proceedings conducted by the ERO or a summary of the Reliability Standard development proceedings conducted by a Regional Entity together with a summary of the Reliability Standard review proceedings of the ERO and a demonstration that the proposed Reliability Standard is "just, reasonable, not unduly discriminatory or preferential, and in the public interest.

The ERO must make each effective Reliability Standard available on its Internet website. Copies of the effective Reliability Standards will be available from the Commission's Public Reference Room.

The electronic filing initiative at FERC includes Reliability Standards and/or modifications to Reliability Standards filed with the Commission. The original version of the Reliability Standard is docketed, posted on e-Library and filed as a permanent record for the Commission.

However, individual reliability standards may have records retention schedules that exceed OMB guidelines in 5 CFR 1320.5(d)(2)(iv) of not retaining records for longer than three years. The Commission is not prescribing a set data retention period to apply to all Reliability Standards. The Commission has not been persuaded that a one-size fits all approach to data retention is appropriate because different Reliability Standards may require data to be retained for shorter or longer periods. The Commission is also not persuaded that it should set a data retention requirement for any Reliability Standard for which one is currently lacking. The Commission will also not prescribe a set data retention period to apply to all Reliability Standards. Instead, the Commission directed the ERO to review and update the data retention requirements in each Reliability Standard as it is reevaluated through its Reliability Standards development process and submit the result for Commission approval.

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

Each Commission rulemaking (both NOPRs and Final Rules) are published in the Federal Register, thereby affording all public utilities and licensees, state commissions, Federal

agencies, and other interested parties an opportunity to submit data, views, comments or suggestions concerning the proposed collection of data. The notice procedures also allow for public conferences to be held as required. [The public comments related to PRA issues are attached in ROCIS. Other public comments are available in FERC's eLibrary under Docket No. RM09-25.]

Reporting Requirements

The Commission solicited comments on the need for and the purpose of the information contained in these two Reliability Standards and the corresponding burden to implement them. The Commission received comments on specific requirements in the Reliability Standards, which we address in this Final Rule. The Commission has not directed any modifications to the Requirements in the two Reliability Standards being approved. Thus, the Final Rule does not materially or adversely affect the burden estimates provided in the NOPR.

However, the Commission received comments on our reporting burden estimates. Of the twenty-eight entities that filed comments on the NOPR, two entities, the ISO/RTO Council and Westar, comment on the record keeping burden. Both the ISO/RTO Council and Westar note that proposed Reliability Standard PER-005-1 includes a new requirement that applicable entities use a systematic approach to training which includes record-keeping requirements (including a job-task-analysis) that are significantly greater than the Commission's estimates provided in the NOPR. In addition, the ISO/RTO Council asserts that Reliability Standard PER-005-1, as submitted, more than adequately covers appropriate record keeping requirements.

Commission Determination

With respect to the estimate of the record-keeping requirements, in the NOPR, the Commission considered the inclusion of a systematic approach to training requirement when developing the record-keeping estimates. Moreover, neither commenter provides an estimate of the record-keeping burden. The Commission finds that the two commenters did not provide sufficient information to support increasing the record keeping burden estimates. With respect to the ISO/RTO Council's assertion that PER-005-1, as submitted, more than adequately covers appropriate record keeping requirements, this issue is moot as this final rule does not require NERC to make any modifications to PER-005-1.

Approval of Standards

Many commenters support approving the two proposed Reliability Standards PER-004-2 and PER-005-1.[30] NERC reiterates in its comments that implementation of Reliability Standards PER-005-1 and PER-004-2 will achieve a significant improvement in the reliability of the Bulk-

30 *See* comments of APPA, Dominion, EEI, IESO, NERC, NRECA, PG&E, Platte River, Wisconsin Electric, and WECC on FERC's eLibrary system under Docket RM09-25-000.

Power System and, therefore, it is supportive of the Commission's proposal to approve the two standards.

Commission Determination

The Commission adopts the NOPR proposal and approves Reliability Standard PER-004-2 and PER-005-1 as just, reasonable, not unduly discriminatory or preferential, and in the public interest.[31] By assigning a significant amount of structure to the training programs for the principal operators of the Bulk-Power System, namely reliability coordinators, balancing authorities and transmission operators, the two proposed Reliability Standards will enhance the reliability of the Bulk-Power System. Moreover, the two proposed Reliability Standards represent a step forward in implementing a key recommendation from the 2003 Blackout Report[32] by addressing an identified gap where operations personnel were not adequately trained to maintain reliable operation under emergency conditions.

Implementation Timeline

In the NOPR, the Commission expressed concern about NERC's proposed use of staggered effective dates for the two proposed Reliability Standards, which Reliability Standards modify currently effective standards. The Commission questioned whether staggered effective dates could create a gap in compliance and enforceability. Specifically, NERC proposed to make the various requirements in PER-005-1 mandatory and enforceable in three stages over a three-year period. The Commission also questioned the need for the proposed two- and three-year lead times before certain Requirements in PER-005-1 become mandatory and enforceable.

Comments

NERC's comments clarify the proposed effective dates for each of the new Requirements in PER-005-1 and PER-004-2 as well as the corresponding retirement dates of the currently effective Requirements in PER-002-0 and PER-004-1. NERC included in its comments a table that specifies the retirement and effective date for each Requirement in each of the affected Reliability Standards, specifically, currently effective PER-002-0 and PER-004-1 and proposed Reliability Standards PER-004-2 and PER-005-1. This table is reproduced in Appendix B of this Final Rule. Further, NERC provides justification for the proposed two- and three-year lead times for the effective date for some of the proposed Requirements in PER-005-1. Specifically, NERC states that the 24-month implementation timeframe of proposed PER-005-1, Requirements R1 and R2 allows flexibility in developing and implementing the training programs that use a systematic approach to training, and is structured and tailored to the functions that each entity performs in operating the Bulk-Power System. Additionally, NERC

31 16 U.S.C. 824o(d)(2).

32 *U.S.-Canada Power System Outage Task Force, Final Report on the August 14, 2003 Blackout in the United States and Canada: Causes and Recommendations*, (April 2004) (Blackout Report), *available at* http://www.ferc.gov/industries/electric/indus-act/reliability/blackout.asp.

explains that the 36-month implementation timeframe for Requirement R3.1 in the proposed standard PER-005-1 allows entities with simulation technology sufficient time to integrate the use of this technology as a core component of those programs going forward and allows entities without simulation technology the needed time to secure and integrate simulation technology. Finally, NERC states that it reviewed the staggered effective/retirement dates and did not find any overlaps or gaps.

The majority of the commenters generally support NERC's proposed effective and retirement dates.[33] Many of these commenters state that if the Commission rejects the use of staggered effective and retirement dates, then in the alternative, the Commission should impose a uniform effective date that is the first day of the first calendar quarter, 36 months after FERC approval.[34] BGE, GSOC and GTC, KCP&L, SPP, and Westar generally support eliminating the staggered effective dates and instead setting this uniform effective/retirement date.

EEI raises a concern regarding the effective date for Reliability Standard PER-005-1, Requirement 3.1. Specifically, EEI states that although Reliability Standard PER-005-1 addresses lead times for compliance based on regulator approval of the standards, it does not address the situation where Requirement 3.1 is not applicable to certain entities at the time of the regulatory effective date of the standard, but later becomes applicable to those entities. Specifically, with respect to PER-005-1, Requirement R3.1, which requires simulator training for entities with established

interconnection reliability operating limits (IROLs),[35] EEI states that if an entity does not have established IROLs when the Reliability Standard PER-005-1 becomes effective, but later due to system changes an IROL is invoked, the standard does not specify when the requirements for simulation training (Requirement R3.1) would be mandatory and enforceable for such an entity. EEI states that because entities with established IROLs would initially have 36 months to comply with the provisions of Requirement R3.1; i.e., to develop simulation training, that the same 36 month compliance lead time should also be afforded to all entities with future established IROLs. EEI requests that the Commission direct NERC to modify the effective date specified in Reliability Standard PER-005-1, section 5.1 to grant a 36-month lead time for entities with newly established IROLs or operating guides to be compliant with Requirement 3.1.

Commission Determination

The Commission finds that the proposed staggered implementation schedule for PER-005-1 and PER-004-2 and the corresponding retirement schedule for PER-002-0 and PER-004-1

33 *See* comments submitted by BPA, ITC, Minnesota Power, Montana-Dakota, NV Energy, NorthWestern, PG&E, Platte River, Portland, and WECC.

34 *See* comments submitted by Minnesota Power, Montana-Dakota, PG&E, and WECC.

35 *See* NERC Glossary of Terms at http://www.nerc.com/docs/standards/rs/Glossary_of_Terms_2010April20.pdf.

strikes a reasonable balance between the need for timely reform and the needs of the entities that will be subject to PER-005-1 to develop and implement training programs utilizing a systematic approach to training and use of simulators as a training tool. The effective and retirement date table provided by NERC in its comments and incorporated herein as Appendix B demonstrates that there are no apparent overlaps or gaps between the retirement of PER-002-0 and PER-004-1 and the effectiveness of the requirements in the new Reliability Standards, PER-005-1 and PER-004-2.

The Commission finds that the commenters that advocate for a uniform effective date of 36 months have not adequately justified such a lengthy lead time for a Reliability Standard that will not impose entirely new requirements. Rather, PER-005-1 requires applicable entities to build upon and improve the existing training programs that are in place under currently effective PER-002-0. Accordingly, as approved, PER-004-2 in its entirety and PER-005-1, Requirement R3 shall become effective on the first day of the first calendar quarter after regulatory approval.[36] PER-005-1, Requirements R1, R1.1, R1.1.1, R1.2, R1.3, R1.4, R2, and R2.1 shall become effective on the first day of the first calendar quarter, twenty-four months after regulatory approval. And, finally, PER-005-1, Requirements R3.1 shall become effective on the first day of the first calendar quarter, thirty-six months after regulatory approval.

With respect to EEI's comment regarding the effective date for entities that may become, in the future, subject to the simulator training requirement in PER-005-1, R3.1, the Commission believes that this issue should be considered by the ERO. We note that, with respect to the Critical Infrastructure Protection (CIP) Reliability Standards, NERC has developed a separate implementation plan that essentially gives responsible entities some lead time before newly acquired assets must be in compliance with the effective CIP Reliability Standards.[37] We direct NERC to consider the necessity of developing a similar implementation plan with respect to PER-005-1, Requirement R3.1.

Understanding of Reliability Coordinator Area

Currently effective Reliability Standard PER-004-1, Requirements R3 and R4 provide that reliability coordinator operating personnel "shall have a comprehensive understanding of the Reliability Coordinator Area and interactions with neighboring Reliability Coordinator areas" and "shall have an extensive understanding of the Balancing Authorities, Transmission Operators, and Generation Operators within the Reliability Coordinator Area, including the operating staff, operating practices and procedures . . . ."[38] NERC states that these two requirements are supplanted by and addressed more fully in proposed Reliability Standard PER-

36 "Regulatory approval" for these two Reliability Standards refers to approval by the Commission in a final rule. The date of the Commission's regulatory approval is not the date that the final rule is issued by the Commission, rather, in this case, it is 60 days after the date the final rule is published in the *Federal Register*.

37 *See North American Electric Reliability Corp.*, 130 FERC ¶ 61,271, at P 15 (2010) (approving the Implementation Plan for Newly Identified Cyber Assets).

38 *See* Reliability Standard PER-004-1, Requirements R3 and R4.

005-1, Requirements R1 and R2. However, proposed Reliability Standard PER-005-1 does not explicitly require reliability coordinator operating personnel to have a comprehensive understanding of the reliability coordinator area or an extensive understanding of the balancing authorities, transmission operators, and generation operators within the reliability coordinator area. In order to clarify that these requirements are clear and enforceable under proposed Reliability Standard PER-005-1, the Commission sought an explanation from NERC and comments from the general public whether these existing requirements are enforceable under the proposed Reliability Standard PER-005-1 and whether these requirements are clear or should be more explicit.

Comments

Most commenters agree that comprehensive understanding of the reliability coordinator area is fully addressed by PER-005-1, Requirements R1 and R2 through the use of a systematic approach to training.[39] For example, Dominion supports proposed PER-005-1, Requirements R1 and R2 because the requirements are clear, measurable, and eliminate the subjectivity of the phrase "comprehensive understanding" that currently exists under the current PER-004-1, Requirement R3. Dominion believes that proper implementation of a systematic approach to training will address the Commission's concern that operating personnel may not have a proper understanding of their system and interactions with neighboring systems without resurrecting the vague language in PER-004-1. However, other commenters, including ITC, MidAmerican, and SPP, state that because the requirement to have a "comprehensive understanding of the reliability coordinator's area" is not explicitly stated in PER-005-1, it will be difficult to enforce.

NERC states that PER-005-1 implements a defense-in-depth approach to ensure that the reliability coordinator's system operators have a comprehensive understanding of their reliability coordinator area. NERC believes this approach ensures that system operators have the tools to effectively monitor and direct actions within the reliability coordinator area in support of the Bulk-Power System. NERC provides examples of how proposed PER-005-1 ensures that the reliability coordinator's system operators will have detailed knowledge of their reliability coordinator area.

Commission Determination

Based on NERC's explanation, the Commission agrees that the existing requirements contained in PER-004-1, which require reliability coordinators to have a comprehensive understanding of the reliability coordinator area and interactions with neighboring reliability coordinator areas and an extensive understanding of the balancing authorities, transmission operators, and generation operators within the reliability coordinator area, are adequately captured and enforceable under proposed Reliability Standard PER-005-1.

39 *See* comments of BPA, Dominion, GSOC & GTC, IESO, ISO/RTO Council, KCP&L, Minnesota Power, Montana Dakota, NV Energy, NERC, PG&E, Portland, Westar, and WECC.

Continual Training

Currently effective Reliability Standard PER-002-0, Requirement R3.2 explicitly mandates that "the training program must include a plan for the initial and *continuing* training of Transmission Operators and Balancing Authorities operating personnel." In the NOPR, the Commission sought an explanation from NERC, and comment from the general public, whether continuing training is an enforceable requirement under proposed Reliability Standard PER-005-1 and whether this requirement is clear or should be more explicit.

Comments

NERC comments that continual training is an enforceable requirement under PER-005-1, Requirement R1 as a fundamental aspect of a systematic approach to training. Most commenters agree with NERC that continual training is an inherent aspect of the systematic approach to training.[40] For example, the ISO/RTO Council states that PER-005-1 is superior to the previous continual training requirement and will be easily measured and enforced and thus does not need to be more explicit.

KCP&L believes continuing training is not necessary for routine tasks, only non-routine. MidAmerican and NV Energy both argue that explicit language addressing continual training is necessary to be an enforceable requirement.

Commission Determination

Based on NERC's and the majority of the commenters' affirmation that continual training is a fundamental part of a systematic approach to training and an enforceable requirement under PER-005-1, we find that any systematic approach to training, including the systematic approach to training mandated by Reliability Standard PER-005-1, would entail continual training to refresh system operators' knowledge and to cover any new tasks relevant to the operation of the Bulk-Power System.

Training Staff Identity and Competency

In the NOPR, the Commission noted that currently effective Reliability Standard PER-002-0, Requirement R3.4 requires a training program in which "[t]raining staff must be identified, and the staff must be competent in both knowledge of system operations and instructional capabilities." The Commission further noted that this requirement is not explicitly provided in PER-005-1. As such, the NOPR sought clarification as to (i) how and whether a systematic approach to training requires training staff to be identified, and (ii) if not, the mechanism by which training staff will be identified and its competency ensured. The

40 *See* comments of BPA, GSOC & GTC, IESO, ISO/RTO Council, ITC, Minnesota Power, Montana-Dakota, NV Energy, NorthWestern, PG&E, Platte River, Portland, Westar, and WECC.

Commission also invited comment on whether this clarification should be made explicit so that entities clearly understand their compliance obligations.

Comments

NERC agrees with the Commission that PER-002-0, Requirement R3.4, which requires a training program in which training staff must be identified and competent in system operations and instructional capabilities, is an important requirement and proposes to reassess whether this requirement should be made more explicit in a later version of PER-005-1 so that entities can understand their compliance obligations.

The majority of commenters agree that training staff identification and competency are inherent in a systematic approach to training, and that, as such, no modification of proposed PER-005-1 is necessary.[41] However, some commenters disagree and argue that PER-005-1 should have an explicit requirement similar to Requirement R3.4 in PER-002-0 mandating training staff to be identified and be competent in system operations and instructional capabilities.[42] Other commenters state that the systematic approach to training does not require training staff to be identified or their competency ensured, but argue that such a requirement is not necessary and potentially detrimental.[43] For example, ITC believes competency of training staff should be determined by entities internally during the hiring process and companies should not be limited by a prescriptive requirement that does not allow for company discretion during the hiring process.

Commission Determination

Based on the comments received, the Commission concludes that the current requirement for each training program (that training staff must be identified and that such staff must be competent in both knowledge of system operations and instructional capabilities) is inherent in any systematic approach to training that a registered entity would use to meet this requirement, and thus is an enforceable component of Requirement R1 under the proposed standard. However, given the number of commenters that argue that it is necessary for the current training program requirement to be explicitly stated in the proposed training standard, we agree that NERC should follow through on its proposal in its comments to reassess whether this requirement should be made more explicit in a later version of PER-005-1.

Training Expectations for Each Job Function/Tailored Training NOPR Proposal

Proposed Reliability Standard PER-005-1, Requirement R1.2 mandates applicable entities to "design and develop learning objectives and training materials based on the task list

41 *See* comments of GSOC & GTC, Minnesota Power, Montana Dakota, NRECA, NV Energy, PG&E, Platte River, Portland, SPP, and Westar.
42 *See* comments of BGE, BPA, and MidAmerican.
43 *See* comments of IESO, ISO/RTO Council, ITC, KCP&L, NorthWestern, and Wisconsin Electric.

created in R1.1."[44] In the NOPR, the Commission noted that it believes that NERC has complied with the directive to require entities to identify the expectations of the training for each job function and develop training programs tailored to each job function with consideration of the individual training needs of their personnel. The Commission took the view in the NOPR that the systematic approach to training used to satisfy PER-005-1, Requirement R1 would assess factors such as educational, technical experience, and medical requirements that candidates must possess before entering a given training program. With the above understanding, the Commission concluded that the systematic approach to training methodology required in Reliability Standard PER-005-1, Requirement R1 satisfies the Commission's directive for Order No. 693 to develop a modification that identifies the expectations of the training for each job function and develops training programs tailored to each job function with consideration of the individual training needs of the personnel. In the NOPR, the Commission sought comment on its understanding that PER-005-1, Requirement R1.2 requires that the learning objectives and training materials be developed with consideration of the individual needs of each operator.

Comments

NERC agrees with the Commission that learning objectives and training materials are to be developed for each job function. NERC believes that using a systematic approach to training allows each entity to tailor its training program to best meet the training needs of the function performed by System Operators.

A number of commenters[45] agree with NERC and affirm the Commission's understanding that a systematic approach to training requires development of tailored training. NorthWestern concurs that PER-005-1 requires the training materials to be tailored to the individual needs of each operator. For example, IESO believes that the systematic approach to training process will ensure that the necessary knowledge, skills and abilities are provided in the development of learning objectives and associated training materials. The ISO/RTO Council contends that PER-005 addresses function/task-specific training and not person-specific training or personal development. With respect to Requirement R1.2, the ISO/RTO Council interprets the Commission's statement that ". . . requires that the learning objectives and training materials be developed with consideration of the individual needs of each operator. . . ." as requiring an entity to address the knowledge and skill gaps of individual system operators with respect to the reliability tasks they are expected to perform.[46] The ISO/RTO Council supports the term "systematic approach to training (in lower case)" as used in the Reliability Standard because the lower case term provides registered entities flexibility in complying with the standard.[47]

44 NERC Petition at 27 (quoting proposed Reliability Standard PER-005-1, Requirement R1.2).
45 *See* comments of BPA, GSOC & GTC, NV Energy, NorthWestern, PG&E, and Platte River.
46 *See* IRC Comments at 7.
47 *Id.*

SPP and Westar did not take a position on the issue; rather, they request that the Commission clarify what is meant by "consideration of the individual needs of each operator." BG&E recommends that the Commission make more explicit the requirement to implement the Department of Energy Handbook on the systematic approach to training[48] as the mandatory standardized methodology industry-wide, and expresses the view that the DOE Handbook is the most stringent set of standards available, has the longest track record of proven successful results, and is familiar to the industry. BG&E identifies the following expectations that training should include: (1) customized, task-based training; (2) annual assessment of operator needs; and (3) individualized training on any task for which the trainee failed to achieve satisfactory standards during the annual training.

One commenter, Wisconsin Electric, disagrees with the Commission's "understanding" on this issue. Wisconsin Electric expresses several concerns with the following statement in the NOPR:

Based on our review of the Systematic Approach to Training methodology used by the Department of Energy, we understand that a Systematic Approach to Training would assess factors such as educational, technical, experience, and medical requirements that candidates must possess before entering a given training program. With the above understanding, we believe that the Systematic Approach to Training methodology, as proposed in Reliability Standard PER-005-1, satisfies the Commission directive to develop a modification that identifies the expectations of the training for each job function and develops training programs tailored to each job function with consideration of the individual training needs of the personnel.[49]

Specifically, Wisconsin Electric is concerned that this would add a number of elements to PER-005 and would create confusion over the scope of the compliance obligation. Wisconsin Electric states that this language appears to impose the Department of Energy's Systematic Approach to Training as the only acceptable methodology, which, in effect, precludes entities from adopting another approach. Wisconsin Electric is also concerned that the factors that a candidate must possess before entering a training program create a de facto compliance checklist that would exist apart from the language of the Reliability Standard. Wisconsin Electric objects to the expansion of NERC requirements to include assessment of medical condition of its personnel. Wisconsin Electric believes that the Commission should approve PER-005-1 as written without conditioning its approval on additional, unstated requirements.

Commission Determination

Based on NERC's and other commenters' affirmation of the Commission's understanding as stated in the NOPR, the Commission confirms that Requirement R1.2 of

48 *See* U.S. Department of Energy's Handbook, DOE-HDBK-1078-94, Training Program Handbook: A Systematic Approach to Training (August 1994), *available at* http://www.hss.energy.gov/nuclearsafety/ns/techstds/standard/hdbk1078/hdbk1078.pdf (DOE Handbook).
49 NOPR, FERC Stats & Regs. ¶ 32,661 at P 32.

proposed Reliability Standard PER-005-1 requires that the learning objectives and training materials be developed with consideration of the individual needs of each operator. In response to Wisconsin Electric, BG&E and the ISO/RTO Council, the Commission clarifies that it is not mandating the use of the specific Systematic Approach to Training methodology used by the Department of Energy. However, we believe that the Department of Energy's Systematic Approach to Training methodology as set forth in the DOE Handbook is a particularly good and relevant model to use.

DOE's Handbook is relevant for two reasons. First, it was designed to assist facilities, specifically nuclear facilities, that are within the same general industry as electric power facilities.[50] Second, the DOE Handbook was written on the assumption that the user, a facility, is currently not using the DOE Systematic Approach to Training model for their training programs, which is very likely the case with respect to entities subject to PER-005-1.[51] Thus, the DOE Handbook is particularly relevant to entities that transition to a systematic approach to training. We note that the DOE Handbook was compiled from a number of sources including the Institute of Nuclear Power Operations' Principles of Training System Development as well as in collaboration with personnel representing DOE contractors and private industry.[52] Moreover, the DOE Handbook provides reasonable flexibility when implementing a systematic approach to training in various settings.[53]

Finally, SPP and Westar request that the Commission clarify what is meant by "consideration of the individual needs of each operator." The Commission provides the following clarification. A training plan is designed to prepare *individuals* to perform their jobs. More specifically, a training plan should address gaps between the skills necessary to accomplish a particular job task and an operator's competency to carry out that task. Because of the emphasis on the individual, to be effective, a training plan must take into consideration the individual needs of the trainee, which includes the trainee's education level, technical experience, and relevant medical requirements.

Simulation Training

50 DOE has noted that although its training handbooks related to the Systematic Approach to Training were prepared primarily for DOE nuclear facilities, the information can be effectively used by any other type of facility. *See* DOE Handbook, DOE-HDBK-1074-95 at Foreword (January 1995) (Alternative Systematic Approach to Training Handbook), *available at* http://www.hss.energy.gov/nuclearsafety/ns/techstds/standard/hdbk1074/hdb1074a.html.

51 *See* DOE Handbook at 1.2. The DOE Handbook acknowledges that many nuclear facilities already had effective training programs in place that contain many performance-based characteristics. Accordingly, DOE Handbook states that facilities with existing training programs should not discard such programs; rather, they should validate and supplement the existing training content where necessary using systematic methods. *Id.*

52 *See* DOE Handbook at 1.1.

53 *See id.* at 1.2. In developing the DOE Handbook, DOE noted that the handbook describes the more classical concept and approach to systematically establishing training programs. However, in some cases this classical approach has proven to be time- and labor-intensive, and therefore encourages users of the handbook to consider the variety of training options that are available for establishing and maintaining personnel training and qualification programs. DOE further found that blending classical and alternative systematic approaches to training methods often yields the most effective product. *See* DOE Handbook at iii (the Foreword).

In Order No. 693, the Commission directed NERC to develop a requirement mandating simulator training for reliability coordinators, transmission operators and balancing authorities that have operational control over a significant portion of load and generation. Recognizing that cost of simulator training is an issue, the Commission allowed for the use of simulators to be dependent on an entity's role and size.[54]

NOPR Proposal

In the NOPR, the Commission found that proposed Reliability Standard PER-005-1, Requirement R3.1 meets this Order No. 693 directive regarding training using simulators. However, the Commission sought comment on the terminology in Requirement R3.1 which provides that the emergency operations training should use "simulation technology such as a simulator, virtual technology, or other technology that *replicates the operational behavior of the BES during normal and emergency conditions*." Specifically, the NOPR asked NERC to clarify: (i) whether the language in R3.1, "replicates the operational behavior of the BES," requires the use of simulators specific to an operator's own system; (ii) if not, whether operators trained on simulators that replicate systems other than their own will be adequately trained to respond to emergency conditions on their own system; and (iii) whether it is feasible or practicable (including cost considerations) to require use of simulators that realistically replicate the entity's own topology and operating conditions; i.e., to require "custom" simulators.

Comments

NERC and all others who commented on the simulator training issue agree that PER-005-1, Requirement R3.1, does not require the use of custom simulators.[55] NERC, and other commenters,[56] state that Requirement R3.1 requires a simulator to replicate the operational behavioral characteristics of the bulk electric system through the use of simulation technology. Commenters argue that the purpose of simulators is to train the operator in principles that can be applied to any system. Specifically, NRECA explains that the intent of PER-005-1, Requirement R3.1 is not to require simulators that replicate every aspect of an entity's own topology and operating conditions. Rather, the intent is to replicate the operational behavioral characteristics of the bulk electric system through the use of more generalized simulation technology.

All commenters, except for BPA, agree that the simulator training requirement *should not* require custom simulators. Some commenters argue that custom simulators are not necessary.[57] These commenters argue that it is the understanding of situational conditions and the response to

54 *See* Order No. 693, FERC Stats. & Regs. ¶ 31,242 at P 1390.
55 *See* comments of APPA, BPA, EEI, GSOC & GTC, IESO, ISO/RTO Council, ITC, KCP&L, MidAmerican, Minnesota Power, Montana-Dakota, NRECA, NV Energy, NERC, NorthWestern, PG&E, Platte River, Portland, SPP, and Westar.
56 *See* comments of APPA, EEI, IESO, ISO/RTO Council, NRECA, Northwestern, PG&E, Platte River, Portland, SPP, and Westar.
57 *See* comments of EEI, IESO, KCP&L, Minnesota Power, Montana-Dakota, NRECA, NV Energy, and PG&E.

them that is the hallmark of successful operator training, and such training does not require the use of simulators specific to an operator's own system.

For example, NRECA states that it is an understanding of the situational conditions and the response to them that is the key to successful operator training, and those do not require the use of simulators specific to an operator's own system. NRECA further described that simulation of operational scenarios such as: frequency response of generators, VAR flow from high voltage to low voltage, and restoration load pick-up and the potential for under-frequency tripping, are concepts common to all systems, noting that a simulator can address and train on these issues irrespective of individual system characteristics. Minnesota Power and Montana Dakota explain that, in general, elements of the bulk electric system exhibit behaviors based upon the characteristics of each element, not upon their specific location in a particular system. They posit that it is the understanding of the situational conditions and the response to them that is the key to successful operator training and that understanding does not require the use of simulators specific to an operator's own system. EEI notes that the issue of custom versus generic simulators was discussed extensively by the PER-005-1 drafting team and argues that custom simulators are not necessary to properly train personnel. EEI urges the Commission to approve PER-005-1, R3.1 without change and to allow NERC to monitor the effectiveness of the simulator training requirement for possible gaps.

Other commenters argue against mandating custom simulators because the cost of custom simulators would far exceed the benefit.[58] APPA states that the additional cost of developing and maintaining a realistic full-scale, system-specific simulator for a small balancing authority or transmission operator would likely exceed the benefits. No commenter provided specific estimates of the incremental increase in cost of custom simulators. EEI, acknowledging that it does not have specific cost information, noted that accurate Bulk-Power System modeling and maintenance would be a significant cost driver. ITC states that although it believes that the use of system simulators specific to an operator's own system would better prepare a system operator for emergency conditions, the cost of custom simulators could likely outweigh the reliability benefits to small operators. Portland General Electric estimates that purchase, implementation and maintenance of a system-specific simulator could cost several hundred thousand dollars in up-front costs and would necessitate the addition of engineering personnel for programming and ongoing maintenance.

BPA, the sole commenter that endorses modifying PER-005-1 to mandate the use of custom simulators, notes that it uses custom simulators. BPA acknowledges that the cost of implementing and maintaining a high fidelity simulator is significant, but suggests an alternative approach of developing a centralized, high fidelity simulator that realistically replicates the entire interconnection that could be remotely accessed by entities for training exercises.

58 *See* comments of APPA, EEI, ISO/RTO Council, ITC, KCP&L, MidAmerican, Minnesota Power, Montana-Dakota, NRECA, NV Energy, NorthWestern, Platte River, Portland, and SPP.

NERC notes in its comments that custom simulators could be important in ensuring the reliability of the BES. NERC further states that while a high fidelity simulator may not be necessary to ensure bulk electric system reliability, NERC agrees that simulators used for training that provide a useful representation of the system that the operators work with may warrant further consideration in a subsequent version of the proposed standard.[59] EEI appears to agree with NERC, as EEI urges the Commission to allow NERC to implement the new PER-005-1 requirements, gather experience on their effectiveness, and monitor results for possible gaps or challenges that arise with experience.

Commission Determination

We affirm NERC's and the industry's understanding that PER-005-1, Requirement R3.1 does not require the use of simulators specific to an operator's own system. While the Commission continues to feel there is value in using custom simulators, we acknowledge that NERC and industry have determined that it is not necessary at this time. However, NERC and other commenters state that there may be potential reliability benefits of some form of custom simulators. NERC has also proposed to consider custom simulators in a subsequent modification of PER-005-1. We appreciate NERC's commitment to continually look at how reliability can be improved and encourage NERC and industry to evaluate the gained reliability in requiring the use of custom simulators.

Local Transmission Control Center Operator Personnel Training

In Order No. 693, the Commission directed NERC to expand the applicability of currently effective Reliability Standard PER-002-0 to include local transmission control center operator personnel. Order No. 693 provided that the training should be tailored to the functions that local transmission control center operators perform that impact the reliable operation of the Bulk-Power System for both normal and emergency operations.[60] Proposed Reliability Standard PER-005-1, which is intended to supersede existing Reliability Standard PER-002-0, does not include local transmission control center operator personnel in the applicability section. Rather, proposed Reliability Standard PER-005-1, as drafted, is applicable only to the following three functional entities: reliability coordinators, balancing authorities, and transmission operators. NERC explained that its functional model lists the functions that a transmission operator performs, which includes the functions performed by local transmission control center personnel. NERC therefore concluded that, the Order No. 693 directive to include formal training for local transmission control center personnel is addressed in proposed Reliability Standards PER-005-1 because the transmission operator has the ultimate responsibility to ensure that its functional responsibilities are met, even if through other entities.[61]

NOPR Proposal

59 NERC Comments at 14.
60 Order No. 693, FERC Stats. & Regs. ¶ 31,242 at P 1348.
61 NERC Petition at 30.

In the NOPR, the Commission rejected NERC's explanation regarding the failure to include local transmission control center operating personnel in the proposed training standard. The Commission stated in the NOPR that, contrary to NERC's suggestion, under proposed Reliability Standard PER-005-1, a transmission operator could not require a local transmission control center operator to receive training if that operator is employed by an entity other than a reliability coordinator, balancing authority, or transmission operator. The Commission noted that with respect to proposed Reliability Standard PER-005-1, the standard requires transmission operators, reliability coordinators, and balancing authorities to establish a training program for the *company-specific* tasks performed by *its* System Operators.[62] Thus the proposed standard only requires implementation of a training program for operators employed by the applicable entity's own company. Accordingly, the NOPR proposed to direct NERC to modify proposed Reliability Standard PER-005-1 to include a provision that explicitly addresses training for local transmission control centers, consistent with the Commission's directive in Order No. 693.

Comments

NERC, and all other commenters that address this issue, object to the Commission's proposal to direct NERC to expand the applicability of PER-005-1 to explicitly include local transmission control center personnel. Some commenters agree with NERC's position, stated in its Petition, that the local transmission control center operators will receive the necessary training without explicitly including them as a class subject to PER-005-1.[63] These commenters are concerned that the Commission's directive will require the creation of a new class of registered entities.

The majority of commenters[64] state that the term "local transmission control center" is unclear and undefined and, without definition, is subject to broad interpretation. These commenters raise the concern that "if local transmission control center" is not clearly defined, it could result in training requirements applying to non-NERC jurisdictional persons or entities. Commenters appear generally to support a definition that would define local transmission control centers as those which have authority to make decisions concerning the real-time operation of the bulk electric system. Associated Electric proposes a definition of "local transmission control center."

NERC and two other commenters[65] suggest that training requirements for local transmission control center personnel should be developed in a separate project, not as a modification to PER-005-1. NERC advocates developing training standards for local transmission control center personnel in a separate standard because proposed PER-005-1 is

62 Reliability Standard PER-005-1, Requirement R1.1 (emphasis added).

63 *See* comments of IESO, NRECA, and NV Energy.

64 *See* comments of Associated Electric, Dominion, GSOC & GTC, IESO, ISO/RTO Council, Minnesota Power, Montana Dakota, PG&E, Portland, and SPP.

65 *See* comments of APPA and EEI.

focused on improving training requirements for system operators who work for the reliability coordinator, transmission operator, and balancing authority. Further, NERC explains that developing training requirements for these operator personnel in a separate standard will allow that future standard to be modeled after PER-005-1. Accordingly, NERC proposes in its comments to address training requirements for local transmission control center operator personnel through its standards development process as a separate standards development project, after the Commission issues a final order on PER-005-1.

Commission Determination

Some commenters question the original directive in Order No. 693 requiring the development of training requirements for local transmission control center personnel by contending, as IESO does, that if individuals at a local control center are simply implementing directives from a transmission operator or a reliability coordinator, then such personnel should not be required to undergo the same rigorous training meant only for those entities who make independent decisions. Specifically, in Order No. 693, the Commission stated:

The Commission disagrees with those commenters who contend that, because operators at local control centers take direction from NERC-certified operators at the ISO or RTO, they do not need to be addressed by the training requirements of PER-002-0. Rather, as discussed above, these operators maintain authority to act independently to carry out tasks that require real-time operation of the Bulk-Power System including protecting assets, protecting personnel safety, adhering to regulatory requirements and establishing stable islands during system restoration.[66]

Thus, such comments are a collateral attack on Order No. 693 and will not be re-addressed. Issues regarding the rigor or type of training required for operators at local control centers should be vetted through NERC's standards development process as part of the standards drafting and balloting, and ultimately may be raised in comments in any future Commission proceeding in which the proposed standard(s) or modified standard(s) are before the Commission.

The Commission understands that local transmission control center personnel exercise control over a significant portion of the Bulk-Power System under the supervision of the personnel of the registered transmission operator. This supervision may take the form of directing specific step-by-step instructions and at other times may take the form of the implementation of predefined operating procedures. For example, ISO New England, Inc., PJM Interconnection, L.L.C., and New York Independent System Operator, Inc., are registered transmission operators who issue operating instructions that are carried out by local transmission control centers such as PSE&G, PPL Electric Utilities Corp., PECO Energy Company, Baltimore Gas and Electric Co., Consolidated Edison of New York, Inc., National Grid USA,

66 Order No. 693, FERC Stats. & Regs. ¶ 31,242 at P 1347.

and Long Island Power Authority, which are not registered transmission operators. The combined peak load of these three RTOs is in excess of 200 gigawatts. In all cases, the local transmission control center personnel must understand what they are required to do in the performance of their duties to perform them effectively on a timely basis. Thus, omitting such local transmission control center personnel from the PER-005-1 training requirements creates a reliability gap. The Commission believes that identifying these entities would be a valuable step in delineating the magnitude of that gap.

NERC proposes in its comments to address the training of local transmission control center operating personnel in a different standard than PER-005-1.[67] The Commission's concern in the NOPR was that local control center operating personnel be trained. We leave it to NERC's discretion whether to revise Reliability Standard PER-005-1 to accomplish this goal or to require local control center operating personnel to be trained in a separate Reliability Standard. The Commission notes that proposed Reliability Standard PER-005-1 generally requires the applicable entity to establish and implement a training program, verify operators' capabilities, and provide emergency training. The specific training, based on the Systematic Approach to Training methodology, is determined by the entity based on company-specific reliability-related tasks performed by its operators. As discussed above, the Systematic Approach to Training methodology is not job specific and, rather, provides flexibility to meet the needs of varying organizations and job skills. In its comments, NERC has said that it intends to generally model local control center operating personnel training on PER-005-1. Thus, we expect that the Reliability Standard that is developed will require training for local transmission control center that does not significantly diverge from the training requirements set forth in PER-005-1. If the ERO proposes a Reliability Standard that differs significantly from the approved PER-005-1 requirements, NERC must provide in its petition seeking approval of such future standard, adequate technical analysis supporting the different approach.

Accordingly, we adopt our NOPR proposal and direct the ERO to develop through a separate Reliability Standards development project formal training requirements for local transmission control center operator personnel. Finally, given the numerous comments stating that term "local transmission control center" should be defined, we direct NERC to develop a definition of "local transmission control center" in the standards development project for developing the training requirements for local transmission control center operator personnel. We will not evaluate Associated Electric's proposed definition but, rather, leave it to the ERO to develop an appropriate definition that reflects the scope of local transmission control centers. The Commission will not opine on the appropriate definition of local transmission control center, as this definition can be addressed first using NERC's Reliability Standards Development Procedures.

Performance Metrics

67 NERC Comments at 15-16.

In Order No. 693, the Commission directed NERC to (1) determine "whether it is feasible to develop meaningful performance metrics associated with the effectiveness of a training program…, and if so, develop such performance metrics,"[68] and (2) determine if quantifiable performance metrics can be developed to gauge the effectiveness of the Reliability Standard itself.[69] In its Petition, NERC stated that the systematic approach to training methodology, as set forth in proposed Reliability Standard PER-005-1, sub-requirement R1.4, requires each reliability coordinator, balancing authority and transmission operator to conduct an annual evaluation of the training program and assess whether system operators are receiving effective training. NERC concluded that this annual evaluation "provides a meaningful assessment of the training program" while "[a]n evaluation of how System Operators perform during infrequent, actual events on the system would not provide useful metrics on an ongoing basis."[70] NERC also stated that proposed Reliability Standard PER-005-1 is a training standard, and is not intended to address individual system operator performance apart from the requirements associated with the company-specific reliability-related tasks identified in Requirement R1.

NOPR

In the NOPR the Commission sought comment from NERC on whether it considered metrics to evaluate the effectiveness of the Reliability Standard itself, not just metrics to evaluate the effectiveness of the applicable entity's training program under PER-005-1. In addition, the Commission sought comment on possible performance metrics that could be used to assess whether proposed Reliability Standard PER-005-1 achieves its stated purpose. As a result, the Commission proposed to direct NERC to evaluate the feasibility of developing meaningful performance metrics to evaluate the effectiveness of the Reliability Standard related to operator training.

Comments

NERC notes that it is working to develop performance measures that will address Reliability Standards in general. NERC emphasizes that performance measures should not be embodied in the Reliability Standard requirements so there is room for flexibility in the development, implementation and modification of such measures. Commenters APPA, Minnesota Power, and Montana-Dakota agree with NERC that the development of metrics to evaluate the effectiveness of a NERC Reliability Standard should uniformly apply to all standards, not to individual standards.

Two commenters, BG&E and NorthWestern, generally support the Commission's proposal and request that any action taken to explore the feasibility of developing metrics provide for a transparent stakeholder process. NorthWestern identifies three methods for

68 Order No. 693, FERC Stats. & Regs. ¶ 31,242 at P 1394.
69 *Id.* P 1379.
70 NERC Petition at 33-34.

measuring performance: (1) use currently monitored operating parameters and incident reports; (2) capitalize on the capabilities of certain entities to monitor and evaluate the response of subordinate entities; and (3) use simulation to evaluate operator performance against a standard set of operating challenges. NorthWestern suggests that metrics to evaluate system operators performing real-time tasks should focus on reliability-related tasks that have the greatest commonality across entities and on characteristics of operation that provide insight into the organizational and operational approach to reliability.

Most commenters, however, state that performance metrics for this Reliability Standard are either not feasible[71] or not necessary because of the systematic approach to training methodology.[72] For example, Platte River believes that the feasibility of developing meaningful global performance metrics is low. Platte River also believes it is too difficult to establish specific parameters and to monitor trends across entities because systems are topologically unique and operational situations differ. Commenters note that the systematic approach to training addresses the performance metric because its checks and balances verify that a person can perform the task after training.

Commission Determination

The Commission believes that performance metrics should be developed to gauge the effectiveness of a Reliability Standard if it is feasible to do so. We are pleased that NERC is working to develop performance measures that will address reliability standards in general. Based on the comments, it appears that it may be infeasible or, at a minimum, impracticable to develop performance metrics for some individual Reliability Standards; e.g., PER-005-1. However, we find that, based on this project, NERC is already in the process of evaluating the feasibility of developing meaningful performance metrics to evaluate the effectiveness of PER-005-1. The Commission encourages NERC to complete its generic performance measures project.

Violation Risk Factors/Violation Severity Levels NOPR Proposal

In the NOPR, the Commission proposed deferring action on the proposed violation risk factors (VRF) and violation severity levels (VSL) for both of the proposed Reliability Standards until the Commission acts on NERC's pending petition in Docket No. RR08-4-005, in which NERC proposes a "roll-up" approach for VRFs and VSL assignments by which NERC would only assign VRFs and VSLs to the main Requirements and not to the sub-Requirements.[73]

Comments

71 *See* comments of APPA, IESO, ITC, KCP&L, NV Energy, and Platte River.

72 *See* comments of ISO/RTO Council, MidAmerican, Minnesota Power, Montana-Dakota, PG&E, Portland, and Westar.

73 Docket No. RR08-4-005 comprises NERC's March 5, 2010 Violation Severity Level Compliance Filing submitted in response to Order No. 722 and an August 10, 2009 informational filing in which NERC proposes assigning VRFs and VSLs only to the main Requirements in each Reliability Standard and not to the sub-requirements.

The ISO/RTO Council, the sole commenter on this issue, supports the Commission's proposal to defer action on the proposed violation risk factors and violation severity levels assignments. No commenter objected to the proposal to defer action.

Commission Determination

The Commission will defer discussion on the proposed violation risk factors and violation severity levels assigned to PER-005-1 and PER-004-2 until after the Commission issues a final order acting on NERC's petition in Docket No. RR08-4-005.

Unaddressed Directives NOPR Proposal

The Commission noted in the NOPR that NERC, in developing proposed Reliability Standard PER-005-1, did not comply with the directive in Order No. 693 to expand the applicability of the personnel training Reliability Standard, PER-002-0, to include (i) generator operators centrally-located at a generation control center with a direct impact on the reliable operation of the Bulk-Power System, and (ii) operations planning and operations support staff who carry out outage planning and assessments and those who develop System Operating Limits (SOL), Interconnection Reliability Operating Limits (IROL) or operating nomograms for real-time operations.[74] The Commission also directed, in Order No. 693, NERC to consider whether personnel that support Energy Management System (EMS) applications should be included in mandatory operator personnel training requirements.[75] Noting NERC's proposal to address the expansion of the applicability of the training standard (PER-005-1) and to consider including EMS support personnel in the training standard in a subsequent standards development project, Project 2010-01 – Support Personnel Training, the Commission sought comment on whether NERC should target completing Project 2010-01 by the fourth quarter of 2011.

Comments

Twenty-five entities commented on this issue.[76] BPA is the only commenter that believes Project 2010-01 can be completed by fourth quarter 2011. The other commenters, including NERC, state that a fourth quarter 2011 deadline is not reasonable. A number of commenters believe that a 24 month deadline would be an appropriate timeframe for NERC to comply with the Order No. 693 directives.

NERC states that, with respect to incorporating generator operators into the applicability section of PER-005-1, it must interact with the Commission to obtain more direction before proceeding with the standards development process. NERC commits in its comments to

74 Order No. 693, FERC Stats. & Regs. ¶ 31,242 at P 1393.
75 *Id.* P 1394.

76 The twenty-five commenters include: APPA, Associated Electric, BGE, BPA, Constellation, Dominion, EEI, E.ON, EPSA, GSOC & GTC, ISO/RTO Council, ITC, KCP&L, Minnesota Power, Montana-Dakota, NV Energy, NERC, NorthWestern, PG&E, Platte River, Portland, SPP, Westar, WECC, and Wisconsin Electric.

meeting the directive to consider whether personnel who support EMS applications should be included the mandatory training Reliability Standard within 24 months after August 23, 2010.[77]

Other commenters such as APPA and Dominion encourage the Commission to allow Project 2010-01 to follow the natural course of the Reliability Standards development procedures without imposing a specific deadline. APPA notes that, in NERC's draft 2011-2013 Reliability Standards Development Plan, Project 2010-01 is fourteenth of seventeen projects which will be initiated in numerical order. Further, APPA states that NERC's Reliability Standards development "pipeline" is already full to capacity. APPA is concerned that a "hard" deadline for Project 2010-01 might delay ongoing projects. APPA encourages the Commission to collaborate with NERC on the priority for Reliability Standards projects in conjunction with the Reliability Standards Development Plan rather than setting deadlines in individual proceedings.

With respect to the Order No. 693 directive to expand training to include operations planning and operations support staff who carry out outage planning and assessments and persons who develop SOLs, IROLs or operating nomograms for real-time operations, several commenters raise issues regarding the substance of the original directive. These issues are beyond the scope of the timing issue the Commission raises in the NOPR. For example, Associated Electric urges the Commission to direct NERC to adopt a definition of operations planning and operations support staff that more narrowly identifies those personnel who will be subject to the training standard. GSOC and GTC do not support expanding the applicability of the PER-005-1 training requirements to any other personnel. GSOC and GTC further argue that time spent expanding training requirements to other personnel will take away from their job of supporting their operating personnel, a use of time and resources that could actually decrease reliability.

With respect to the Order No. 693 directive to expand training to include generator operators centrally-located at a generation control center with a direct impact on the reliable operation of the Bulk-Power System, several commenters raise issues regarding the substance of the original directive. These issues also are beyond the scope of the timing issue the Commission raises in the NOPR. For example, Constellation notes that in developing training requirements for generator operators the Reliability Standard should not create onerous training obligations or impose training requirements that conflict with or make existing programs less effective. E.ON comments that there is no sound basis for imposing the same or similar training requirements mandated for transmission operations on generator personnel. E.ON urges the Commission to weigh the complexity of mandating individual plant-specific training programs against the incremental benefit to Bulk-Power System reliability. EPSA seeks clarification regarding several aspects of the scope and intent of the Commission's directive to expand the applicability of PER-005-1 to include generator operators. Specifically, EPSA asks the Commission to reaffirm its finding in Order No. 693 that the training will apply only to

77 NERC Comments at 21.

employees at generator operators' centrally-located dispatch centers or when a single generator and dispatch center are at the same site. EPSA seeks as well Commission guidance regarding the sufficiency and consistency of existing Regional Transmission Organization/Independent System Operator (RTO/ISO) training programs applicable to generator operators with respect to the reliability training needs identified in the NOPR. EPSA also objects to the suggestion in the NOPR that, in the event that communication is lost with the grid operator, a generator operator would take unilateral action for which its personnel would require training.

With respect to the Order No. 693 directive that NERC consider whether EMS personnel should be incorporated into the system operator training Reliability Standard, BGE comments that no separate training is needed for EMS personnel, as EMS personnel already are regularly trained. EEI states that, because the skills and functions of EMS personnel are unique, the development of training requirements for EMS support personnel should take place as a separate, stand-alone development project.

Commission Determination

GSOC and GTC, E.ON, and Constellation raise issues regarding the substance and scope of the original Order No. 693 directives. Such comments are a collateral attack on Order No. 693 and will not be re-addressed. Such issues should be vetted through NERC's standards development process as part of the standards drafting and balloting, and ultimately may be raised in comments in a future Commission proceeding in which the proposed standard(s) or modified standard(s) are before the Commission.

Associated Electric expressed concern that the NOPR definition of the "operations planning and operations support staff" who should receive training pursuant to the Order No. 693 directive is "broad and will encompass operations planning and operation support staff who engage in tasks that do not directly affect the reliable operation of the bulk electric system."[78] The Commission clarifies that the scope of the Reliability Standard or modification to a Reliability Standard to address training for "operations planning and operations support staff" is limited by the qualifications stated in Order No. 693. Specifically, in Order No. 693, the Commission directed the ERO to develop a modification to PER-002-0 that extends applicability of the training requirements to the operations planning and operations support staff of transmission operators and balancing authorities.[79] The Commission further clarified that such directive applies *only* to operations planning and operations support personnel who: "carry out outage coordination and assessments in accordance with Reliability Standards IRO-004-1 and TOP-002-2, and those who determine SOLs and IROLs or operating nomograms in

78 Associated Electric's Comments at 6. Associated Electric states that, in the NOPR, the Commission "defines" operations planning and operations support staff as persons "who carry out outage planning and assessments and those who develop SOLs and IROLs, or operating nomograms for real-time operations."
79 Order No. 693, FERC Stats. & Regs. ¶ 31,242 at P 1393.

accordance with Reliability Standards IRO-005-1 and TOP-004-0."[80] The NOPR did not expand or alter the scope of this directive as set forth in Order No. 693.

EPSA requests clarification of several statements in the NOPR regarding the Order No. 693 directive related to expanding the applicability of the system operator training Reliability Standard to include certain generator operators. First, EPSA expresses concern that the NOPR discussion broadly addresses generator operator personnel in a way that could be construed as subjecting all generator operator personnel, regardless of the disposition of the generating unit and how it fits into the grid and the topology of the grid, to the system operator training requirements. Therefore EPSA seeks clarification that the Commission did not intend for the NOPR to expand the Order No. 693 directive. We confirm that we have not modified the scope of applicability of the Order No. 693 directive regarding generator operator training.[81] As described in Order No. 693, the directive applies to generator operator personnel at a centrally-located dispatch center who receive direction and then develop specific dispatch instructions for plant operators under their control. Those generator operator personnel must receive formal training of the nature provided to system operators under PER-005-1.[82] As clarified in Order No. 693, this group of personnel would include a generator operator's dispatch personnel where a single generator and dispatch center are located at the same site.[83]

EPSA also seeks clarification regarding the statement in the NOPR that: "[I]n the event communication is lost, the generator operator personnel must have had sufficient training to take appropriate action to ensure reliability of the Bulk-Power System."[84] EPSA expresses concern that this statement suggests that if communication is lost with the grid operator, the generator operator must take unilateral action for which it requires training. EPSA notes that generator operators do not take such unilateral action nor do they have access to information to make such decisions. Therefore, EPSA asks the Commission to make clear that while communication should be addressed in training requirements for centrally located generator operator dispatch employees, the Commission is not extending related responsibilities or training requirements to generator operator employees. We grant the requested clarification, and affirm that we are not modifying the Order No. 693 directive regarding training for certain generator operator dispatch personnel, nor are we expanding a generator operator's responsibilities.[85]

EPSA also raises the issue of potentially overlapping or duplicative training programs. EPSA notes that training requirements already exist in organized markets and compliance with them is a condition for market participation, citing PJM and CAISO as examples, and asserts that new training requirements should either mesh with or build upon those already in place. EPSA further notes that regional transmission organizations and independent system operators

80 *Id.* P 1372.
81 *See id.* P 1359-61.
82 *See id.* P 1360.
83 *Id.* P 1361.
84 NOPR, FERC Stats. & Regs. ¶ 32,661 at P 58.
85 *See* Order No. 693, FERC Stats. & Regs. ¶ 31,242 at P 1359-65.

have training programs for generator operators that ensure that grid participants are well trained on grid operations and the needs of grid operators. EPSA believes that any modified or new Reliability Standard related to generator operator training should not conflict with or supplant the organized markets' existing training requirements. Accordingly, EPSA states that the Commission's "acknowledgment of these existing programs and how they might fit with the expansion of PER-005-1 would provide useful guidance for Project 2010-01."[86] The Commission believes that, in the above-discussion regarding the systematic approach to training, the systematic approach to training methodology is flexible enough to build on existing training programs by validating and supplementing the existing training content, where necessary, using systematic methods.[87] It is important that the relevant generator operator personnel receive the necessary training. Our determination is not intended to limit the source of that training, provided that it meets the requirements of the Reliability Standard.

With respect to the time frame within which NERC should complete the unaddressed training directives, the Commission recently issued on order on NERC's three year assessment.[88] That order requires NERC to identify and address all Reliability Standards prioritization matters when submitting its annual Reliability Standard Development plan, beginning with the plan for 2012.[89] The Commission recognizes the importance of a collaborative approach to setting priorities for Reliability Standard projects and NERC's need for flexibility in setting project priorities in order to efficiently utilize the technical expertise available to NERC's standards drafting teams. We anticipate that NERC will include this project in its assessment of its Reliability Standards priorities. With respect to the Order No. 693 directive to consider whether personnel that support EMS applications should be included in the training Reliability Standard, we accept NERC's commitment to satisfy this directive by August 23, 2012.

9. EXPLAIN ANY PAYMENT OR GIFTS TO RESPONDENTS

No payments or gifts have been made to respondents.

10. DESCRIBE ANY ASSURANCE OF CONFIDENTIALITY PROVIDED TO RESPONDENTS

The Commission generally does not consider the data filed to be confidential. However, certain standards may have confidentiality provisions in the standard.

11. PROVIDE ADDITIONAL JUSTIFICATION FOR ANY QUESTIONS OF A SENSITIVE NATURE THAT ARE CONSIDERED PRIVATE.

86 EPSA Comments at 8.
87 *See supra* at P 45 & n.40.

88 *North American Electric Reliability Corporation*, 132 FERC ¶ 61,217 (2010).

89 *Id.* P 102.

There are no questions of a sensitive nature that are considered private.

12. ESTIMATED BURDEN OF COLLECTION OF INFORMATION

The Commission's estimates regarding the number of respondents for this rule is based on the NERC compliance registry as of May 12, 2010. The approved Reliability Standards enlarge the scope of applicability to include reliability coordinators, but otherwise continue to impose training requirements on transmission operators and balancing authorities. Thus for this proceeding, the Commission considers the reporting burden only with respect to reliability coordinators.

According to the NERC compliance registry, there are sixteen entities registered as reliability coordinators. However, under NERC's compliance registration program, entities may be registered for multiple functions. Thus, of the sixteen entities registered as reliability coordinators, nine are also registered as balancing authorities and, as such, must comply with currently effective Reliability Standards governing system operator training.

In addition to the change in burden due to the new reliability standards (program change) the Commission has re-estimated the total number of respondents under FERC-725A (agency adjustment). The following table shows the program change from the Reliability Standards approved in this proceeding. The Commission provides further explanation regarding the agency adjustment following the table below and in item 15.

Data Collection Requirements Contained in RM09-25-000	No. of New Respondents[90]	No. of Responses	Record-keeping[91] Hours Per Respondent	Total Annual Record-keeping Hours
PER-005-1, R1.1: RCs, TOs, and BAs must create a list of bulk electric system reliability-related tasks performed by system operators.	7	7	40	280
PER-005-1, R1.2: RCs, TOs, and BAs shall design and develop learning objectives	7	7	60	420

90 Only seven of the 16 registered reliability coordinators are not currently subject to training requirements as balancing authorities.

91 The proposed Reliability Standards do not impose any reporting requirements.

and training materials based on its task list.				
PER-005-1, R2: RCs, TOs, and BAs shall verify system operators' ability to perform each assigned task from applicable task list.	7	7	80	560
PER-005-1, M1: RCs, TOs, and BAs must have available for inspection evidence of using a systematic approach to training to establish and implement a training program.	7	7	50	350
PER-005-1, M1.1: RCs, TOs, and BAs must have available for inspection its company-specific, reliability-related task list.	7	7	10	70
PER-005-1, M1.2: RCs, TOs, and BAs must have available for inspection its learning objectives and training materials.	7	7	10	70
PER-005-1, M1.3: RCs, TOs, and BAs must have available for inspection system operator training records.	7	7	10	70
PER-005-1, M1.4: RCs, TOs, and BAs must have available for inspection evidence that it performed an annual training program evaluation.	7	7	25	175
PER-005-1, M2: RCs, TOs, and BAs must have available for inspection evidence that it verified that its system operators can perform each assigned task from the training task list.	7	7	20	140

PER-005-1, M3: RCs, TOs, and BAs must have available for inspection their training records evidencing that each system operator received 32 hours of emergency operations training.	7	7	20	140
PER-005-1, M3.1: RCs, TOs, and BAs must have available for inspection training records evidencing that each system operator received emergency training using simulation technology.	7	7	20	140
Total				2415 Hours

Total Annual hours added due to RM09-25: Recordkeeping = 2415 hours.

Current OMB inventory for FERC-725A:

Total Hours = 1,163,460 (reporting) + 117,990(recordkeeping) = **1,281,450**.

As recorded in ROCIS:[92]
Number of responses/respondents: 1,439
Reporting hours per response: 808.5198
Recordkeeping hours per response: 81.9944

New inventory due to the program change in RM09-25 (excluding the agency adjustment in respondent universe):

Total Hours = 1,163,460(reporting) + 120,405(recordkeeping) = **1,283,865**

New inventory requested (program change and agency adjustment):

Total Hours= **1,728,581** (1,568,528(reporting) + 160,053(recordkeeping)) (rounded off)

Requested in ROCIS:
Number of responses/respondents: 1,940

92 ROCIS calculates an average across all respondent types. Order 693 provides estimates of the hours per respondent by respondent type. The new inventory presented here is based on an increase in the average across all respondent types and does not attempt to re-estimate the hours per respondent by respondent type.

Reporting hours per response: 808.5198
Recordkeeping hours per response: 82.5015

Reporting Hours: The number of hours per response has not changed as result of the agency adjustment. The number of respondents has increased due to using a current estimate of the respondent universe (discussed more fully in item 15).

Recordkeeping Hours: The number of hours per response has changed due to the additional hours imposed by the program change as discussed previously. The following shows the calculation details for the total recordkeeping hours. Order 693 (Docket No. RM06-16) introduced 113,880 recordkeeping hours (applied to all 1439 respondents at the time). The hours per respondent for recordkeeping for Order 693 were 79.138. Adjusting for the revised estimate in the number of respondents leads to a total of 153,529 recordkeeping hours.

Order 729 (Docket No. RM08-19) and Order 742 (Docket No. RM09-25) introduced recordkeeping hours that only apply to certain entities: 4110 hours and 2415 hours respectively. Adding these hours to the adjusted hours from the above paragraph yields 160,053 recordkeeping hours (153,529 + 4110 + 2415) and an average of 82.5015 hours per response (160,053/1940) = 82.5015.

13. ESTIMATE OF THE TOTAL ANNUAL COST BURDEN TO RESPONDENTS

Information Collection costs for RM09-25: The Commission estimates the costs to comply with the recordkeeping burden associated with the approved Reliability Standards are:

Recordkeeping = 2415 hours @ $120/hour[93] = $289,800.

Total costs = **$289,800.**

Current OMB inventory for FERC-725A:

Reporting = 1,163,460 @ $114/hour = $132,634,440
1,163,459.99 hours @ 114 per hour (average cost of attorney ($200 per hour), consultant ($150), technical ($80) and administrative support ($25)).

Recordkeeping = $2,132,555
Labor = 117,990 @ $17/hour (file/record clerk) = $2,005,830

93 This cost is higher than the recordkeeping estimates used in Order 693. This is due to the more technical nature of these recordkeeping requirements as is explained in the Final Rule RM08-13. *See Transmission Relay Loadability Reliability Standard*, 130 FERC ¶ 61,221, at P 327 (2010) (Final Rule).

Storage[94] = $126,725

Total Costs: Reporting ($132,634,440) + Recordkeeping ($2,132,555) = **$134,766,995.**

New inventory of total costs[95] due to RM09-25 and increase in number of respondents:

Reporting = (1,163,460 + 405,068[96]) @ $114/hour = $178,812,192

Recordkeeping = $3,096,366
Labor = (157,638 @ $17/hour) + (2,415 @ $120/hour) = $2,679,846 + $289,800 = $2,969,646
Storage = $126,725

Total Costs: Reporting ($178,812,192) + Recordkeeping ($3,096,371) = **$181,908,563**

14. ESTIMATED ANNUALIZED COST TO FEDERAL GOVERNMENT

The estimate of the cost to the Federal Government is based on salaries for professional and clerical support, as well as direct and indirect overhead costs. Direct costs include all costs directly attributable to providing this information, such as administrative costs and the cost for information technology. Indirect or overhead costs are costs incurred by an organization in support of its mission. These costs apply to activities which benefit the whole organization rather than anyone particular function or activity. The total estimate for Order 693 requirements are that 3.5 FTE's will review the Reliability standards at the Commission or a total cost of 3.5 x $137,874 = $482,559[97]. For the two Reliability Standards discussed here the Commission does not expect to incur any direct costs as a result of filings or analysis. However, to do the data clearance for this collection the Commission estimates an additional annual cost of $1,528.

The total cost to the Federal Government for FERC-725A is **$484,087** ($482,559+$1,528).

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

Personnel training is important to ensuring the reliability of the Bulk-Power System, as recognized in Order No. 693 and the Blackout Report. NERC states that the proposed Reliability Standards "are a significant improvement over the existing Reliability Standards" and recommends Commission approval of the standards as a "significant step in strengthening

94 This cost estimate originated in Order 729 (Docket No. RM08-19) and results from 137 respondents paying and average of $975 each for offsite storage.
95 A complete treatment of the costs is given here, while in ROCIS, only the cost of the records storage is shown.
96 These are the hours associated with the increased number of respondents: 501 respondents X 808.5198 hours per respondent (or response) = 405,068 hours.
97 This is based on a FY2010 FTE costs for the Commission.

the quality of operator training programs as necessary for the reliability of the [B]ulk-[P]ower [S]ystem."[98]

In addition to increasing the burden due to the approved reliability standards the Commission is also increasing the burden due to a reevaluation of the total number respondents under FERC-725A. In Order 693, issued March 16, 2007, the Commission estimated 1,439 entities would have to comply. As of November 16, 2010, the NERC Registry included a total of 1,940 entities that are subject to FERC-725A. In this proceeding, the Commission is adjusting the burden in line with this new estimate of applicable entities.

Finally, the Commission is also standardizing the manner in which it addresses the cost burden in ROCIS/Reginfo. Only those costs not associated with burden hours will be reported in ROCIS. In terms of this collection it means only the costs for the record storage facilities will be reported in ROCIS/Reginfo. The supporting statement will continue to detail all the costs.

16. TIME SCHEDULE FOR THE PUBLICATION OF DATA

The filed Reliability Standards are available on the Commission's eLibrary document retrieval system in Docket No. RM09-25-000. The Commission requires that all Commission-approved Reliability Standards be available on the ERO's website, with an effective date (http://www.nerc.com/page.php?cid=2|20).

There are no other publications or tabulations of the information.

17. DISPLAY OF THE EXPIRATION DATE

It is not appropriate to display the expiration date for OMB approval of the information collected. The information will not be collected on a standard, preprinted form which would avail itself to that display. The information contained in these Reliability Standards requires applicable entities to develop and maintain certain information, subject to audit by a Regional Entity, such as documentation to show a development and delivery of a training program for system operators, verification of system operator capabilities to perform tasks, and training records to show compliance with requirements.

18. EXCEPTIONS TO THE CERTIFICATION STATEMENT

The data collected for these recordkeeping requirements are not used for statistical purposes. Therefore, the Commission does not use, as stated in item no. 19(i), "effective and efficient statistical survey methodology." The information collected is case specific to each Reliability Standard.

98 NERC Petition at 5.

B. COLLECTION OF INFORMATION EMPLOYING STATISTICAL METHODS.

This is not a collection of information employing statistical methods.