136 FERC ¶ 61,039
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

[Docket No. RM11-2-000]

Smart Grid Interoperability Standards

(Issued July 19, 2011)

AGENCY: Federal Energy Regulatory Commission.

ACTION: Order.

SUMMARY: Section 1305(d) of the Energy Independence and Security Act of 2007 directs the Commission to institute a rulemaking proceeding to adopt such standards and protocols as may be necessary to insure smart-grid functionality and interoperability in interstate transmission of electric power, and regional and wholesale electricity markets once it is satisfied that the work of the National Institute of Standards and Technology has led to "sufficient consensus" on smart grid interoperability standards. The Commission finds that there is insufficient consensus for the five families of standards under consideration. For this reason, the Commission will not institute a rulemaking proceeding at this time with respect to these standards and terminates this docket. In this order, the Commission encourages stakeholders to actively participate in the NIST interoperability framework process to work on the development of interoperability standards and to refer to that process for guidance on smart grid standards.

DATES: This order is effective [insert date of publication in the FEDERAL REGISTER].

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SUPPLEMENTARY INFORMATION:

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Before Commissioners: Jon Wellinghoff, Chairman;
Marc Spitzer, Philip D. Moeller,
John R. Norris, and Cheryl A. LaFleur.

Smart Grid Interoperability Standards Docket No. RM11-2-000

ORDER ON SMART GRID INTEROPERABILITY STANDARDS

(Issued July 19, 2011)

1. This order takes action on the five families of standards identified as ready for consideration by regulatory authorities by the National Institute of Standards and Technology (NIST). The order relies on information gathered at technical conferences held on November 14, 2010 and January 31, 2011 in this proceeding and on responses to the Supplemental Notice Requesting Comments issued February 16, 2011 (Supplemental Notice) seeking additional information on smart grid interoperability standards and the standards development process. In this order, we find insufficient consensus to institute a rulemaking proceeding at this time to adopt the five families of standards. Going forward, we encourage utilities, smart grid product manufacturers, regulators, and other smart grid stakeholders to actively participate in the NIST interoperability framework

process[1] to work on the development of interoperability standards and to refer to that process for guidance on smart grid standards.

I. Background

2. Section 1301 of the Energy Independence and Security Act of 2007 (EISA) provides that "it is the policy of the United States to support the modernization of the Nation's electricity transmission and distribution system to maintain a reliable and secure electricity infrastructure that can meet future demand growth and to achieve" a number of benefits.[2] EISA describes this modernization, efforts known collectively as the smart grid, by listing new characteristics to be incorporated in our nation's power systems.[3]

3. To achieve these benefits, EISA directs NIST to coordinate the development of a framework to achieve interoperability of smart grid devices and systems, including

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[1] The NIST interoperability framework process includes the work and outputs of a number of groups and events organized by NIST to achieve the goal of an interoperable smart grid. These groups include the Smart Grid Interoperability Panel (SGIP) along with its committees and working groups. Outputs include the NIST Framework and Roadmap for Smart Grid Interoperability Standards, Release 1.0, NIST Special Publication 1108 (Jan. 2010), *available at* http://www.nist.gov/public_affairs/releases/upload/smartgrid_interoperability_final.pdf; Guidelines for Smart Grid Cyber Security, NIST Interagency Report 7628 (Aug. 2010), *available at* http://csrc.nist.gov/publications/PubsNISTIRs.html; and various documents related to new or modified standards produced by Priority Action Plan working groups. These materials along with descriptions of the various groups, their memberships, tasks, and timelines can all be accessed at http://collaborate.nist.gov/twiki-sggrid/bin/view/SmartGrid/WebHome.

[2] Public Law No. 110-140, 121 Stat. 1492, 1783-84, to be codified at 15 U.S.C. 17381 (2007).

[3] The characteristics of the smart grid are listed in EISA section 1301. *Id.*

protocols and model standards for information management.[4] Once the Commission is satisfied that NIST's work has led to "sufficient consensus" on smart grid interoperability standards, EISA directs the Commission to "institute a rulemaking proceeding to adopt such standards and protocols as may be necessary to insure smart-grid functionality and interoperability in interstate transmission of electric power, and regional and wholesale electricity markets."[5]

4. In August 2009, NIST launched a plan to expedite the development of smart grid interoperability standards. NIST led the smart grid community in a participatory public process to identify applicable standards, as well as priorities for additional standardization activities. In January 2010, NIST released its *Framework and Roadmap for Smart Grid Interoperability Standards*, Release 1.0, identifying a number of standards that are applicable to the ongoing development of the smart grid.[6] NIST also oversaw the establishment of the Smart Grid Interoperability Panel (SGIP), a public-private partnership providing an ongoing process to support the evolution of the NIST interoperability framework process.

5. On October 6, 2010, NIST notified the Commission by letter that it had identified five families of standards as ready for consideration by regulators. The letter explained

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[4] EISA sec. 1305(a), to be codified at 15 U.S.C. 17385(a).

[5] EISA sec. 1305(d), to be codified at 15 U.S.C. 17385(d).

[6] *See supra* note 1.

that the identified standards, developed by the International Electrotechnical Commission (IEC), help to enable efficient and secure exchanges of information within and across smart grid domains.[7] The Commission then designated Docket No. RM11-2-000 for a possible rulemaking proceeding pursuant to section 1305(d) of EISA, noting that no determination had yet been made regarding whether there is "sufficient consensus" for the standards.

6. The Commission together with a number of state utility regulatory commissions held a joint technical conference to discuss the identified standards on November 14, 2010 at a meeting of the National Association of Regulatory Utility Commissioners in Atlanta, GA. Some of the information presented about the identified standards, including responses by panelists to questions from state commissioners, raised concerns about whether there was sufficient consensus to adopt these identified standards. To further explore the level of consensus on the identified standards, the Commission convened an additional technical conference on January 31, 2011 in

[7] The IEC is an international standards development organization located in Geneva, Switzerland. The five families of standards include: IEC 61968: Application Integration at Electric Utilities-System Interfaces for Distribution Management; IEC 61970: Energy management system application program interface; IEC 61850: Communication Networks and Systems for Power Utility Automation; IEC 60870-6 series: Telecontrol protocols compatible with ISO standards and ITU-T recommendations; and IEC 62351: Power systems management and associated information exchange – Data and communications security.

Washington, DC.[8] Based on the discussion at the conference, the Commission issued a Supplemental Notice on February 16, 2011 soliciting comments on a number of additional questions concerning the impact of adoption under EISA, how the Commission could judge whether sufficient consensus had been reached, how the Commission should proceed with its consideration of the standards, and related topics.

II. Discussion

7. The Commission supports the development of a modernized, secure electric power system that can support consumer needs, enhance reliability, and facilitate advanced technology to enable demand response, wide-area situational awareness, energy storage, electric transportation, and other potentially beneficial grid services and functions.[9] However, we find that there is insufficient consensus at this time to adopt, under section 1305(d) of EISA, the five families of IEC standards that NIST identified in its October 6, 2010 letter to the Commission. Commenters are nearly unanimous that we should not adopt these standards at this time, citing concerns with cyber security deficiencies and potential unintended consequences from premature adoption of individual standards. The Commission agrees with commenters' concerns, observant that certain aspects of the current NIST process were not in place during development of the NIST Framework document and identification of the IEC standards. Accordingly, the

[8] More information about the conference is available at: http://www.ferc.gov/industries/electric/indus-act/smart-grid.asp.

[9] *See, e.g.*, *Smart Grid Policy*, 128 FERC ¶ 61,060 (2009).

Commission is not instituting a rulemaking proceeding pursuant to section 1305(d) of EISA.

8. In response to the Supplemental Notice issued February 16, 2011, the Commission received extensive comments on a wide variety of topics, in addition to the topic of sufficient consensus. For example, some commenters urge the Commission to take a stronger role in the standards process, while others suggest that the Commission defer to NIST. Relying on the language in EISA section 1305(d), several commenters believe that it may not be "necessary" to adopt any standards. Additionally, some commenters call on the Commission to provide guidance with respect to smart grid interoperability standards and the standards development process. Several commenters request that the Commission define relevant terms such as interoperability, or establish goals and objectives, set functional priorities, or provide guidance on cyber security for the electric power system.

9. In its comments, NIST suggests that the Commission could send appropriate signals to the marketplace by recommending use of the NIST Framework without mandating compliance with particular standards. NIST adds that it would be impractical and unnecessary for the Commission to adopt individual interoperability standards.

10. We believe that the best vehicle for developing smart grid interoperability standards is the NIST interoperability framework process, including the work of the SGIP and its committees and working groups. This work includes harmonization and extensions of existing smart grid interoperability standards as well as the development of new standards. The SGIP brings together smart grid stakeholders from numerous

industries and areas of expertise to guide the development of smart grid interoperability standards within the context of the NIST interoperability framework process. The SGIP mission is supported by several standing committees on architecture and testing/certification as well as a permanent working group for addressing smart grid cyber security.

11. The Commission recognizes and appreciates the comprehensiveness of the smart grid interoperability framework process developed by NIST. Although some commenters raise concerns regarding NIST's initial efforts as its processes were first being developed, many other commenters point to and endorse recent and planned process improvements. These planned improvements include an enhanced SGIP role in reviewing existing as well as new smart grid interoperability standards, the establishment of a preliminary testing process, the establishment of a process to identify cyber security design principles, and efforts to better address reliability and implementation concerns within the SGIP process. Therefore, we encourage utilities, smart grid product manufacturers, regulators, and other smart grid stakeholders to actively participate in the NIST interoperability framework process to work on the development of interoperability standards and to refer to that process for guidance on smart grid standards.

12. The Commission notes that EISA identifies system security, including cyber security, as both a smart grid characteristic and function[10] and recognizes the work NIST

[10] *See* EISA sections 1301 and 1306(d).

has done to provide guidance to industry on this issue. Stakeholders concerned with smart grid cyber security should actively participate in the NIST interoperability framework process, including the SGIP Cyber Security Working Group.

13. For the reasons discussed above, we decline to institute a rulemaking proceeding to adopt these five families of standards at this time.

The Commission orders:

Docket No. RM11-2-000 is hereby terminated.

By direction of the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.