

State of California

Public Utilities Commission
San Francisco

MEMORANDUM

Date : March 17, 2011

To : The Commission
(Meeting of March 24, 2011)

From : Chris Villarreal, Policy & Planning Division
Wendy Al-Mukdad, Energy Division
Elizabeth Dorman, Legal Division

Subject : Staff Seeks Authority to File Comments on FERC's docket on Smart Grid Interoperability Standards (FERC Docket No. RM11-2).

EXECUTIVE SUMMARY: In the Energy Independence and Security Act of 2007 (EISA), the Congress directed the Federal Energy Regulatory Commission (FERC) to institute a rulemaking to adopt Smart Grid interoperability standards after the FERC has determined that “sufficient consensus” by stakeholders has been reached on such standards in a review process led by the National Institute of Standards and Technology (NIST).¹ The CPUC Staff (Staff) here seeks California Public Utilities Commission (Commission) authorization to comment on the FERC rulemaking RM11-2, in which the FERC is considering whether there is sufficient consensus to consider the adoption of smart grid interoperability standards and protocols for interstate commerce and wholesale electricity markets.

Staff proposes to generally support the overarching goals of the EISA-directed NIST process. Staff also proposes to discuss concerns regarding the five groups of Smart Grid standards posted by the NIST, related discussions held during a January 31, 2011 FERC Technical Conference on Smart Grid Interoperability Standards, as well as questions

¹ EISA § 1305(d), Public Law No. 110-140, 121 Stats. 1492, 1788 (2007) (to be codified at 15 U.S.C. § 1735(d)).

raised in the Supplemental Notice Requesting Comments issued by the FERC on February 16, 2011. The Commission's comments are due on April 9, 2011.²

BACKGROUND: On October 7, 2010, the FERC opened a docket to collect documentation on the five groups of smart grid standards identified by the NIST as ready for FERC consideration. On January 31, 2011, the FERC held a Technical Conference on the proposed NIST Smart Grid standards to hear public comment on whether "sufficient consensus" has been reached on five families of International Electrotechnical Commission standards.

The NIST stated that it is focusing on the information models and protocols that are important to efficient and reliable grid operations. The NIST advised the FERC that it identified these standards because they are essential to uniform and interoperable communication systems throughout the grid and will accommodate the evolution of the grid and the integration of new technologies.

1. Staff Proposes to Support the Goal of the NIST Effort

The CPUC Staff proposes to support the overarching goal of the NIST effort to seek consensus regarding smart grid interoperability standards and to file comments along the following lines. The NIST has developed a collaborative process that attempts to engage Smart Grid stakeholders in identifying prospective interoperability standards and evaluating these specifications against selected criteria, which include considerations such as stakeholder consensus, domains of applicability, and especially cyber-security. Staff supports clear, high-level, consensus standards in Smart Grid development in order to avoid a national patchwork of standards that could hinder interoperability and the reliability of interstate transmission of electricity and wholesale electricity markets; while avoiding unnecessary interference with state Smart Grid development and authority over retail customers, distribution grid, and distribution-level markets, operations and service providers. The CPUC Staff has high regard for the work that the NIST has initiated and continued guidance in this very important task.

Consistent with congressional intent, the FERC's prior interpretation of the Federal Power Act and the EISA text, Staff proposes commenting that any standards and protocols eventually adopted by the FERC should provide stakeholders and regulators direction on implementation and should function as guidelines rather than necessarily being subject to FERC enforcement authority. Due to the nascent stage of Smart Grid deployment and development at the retail and distribution level, however, to the extent

² The FERC granted the Commission's motion requesting an extension of time to file comments in light of the supplemental questions issued. The Commission's motion was consistent with motions already filed by several other parties to this proceeding.

standards are adopted by the FERC, the FERC should provide guidance to local regulatory authorities on implementation of actionable and testable requirements.

2. Staff Proposes to Comment That There Is Not Sufficient Consensus on the Five Sets of Smart Grid Standards to Adopt Them as Proposed

Staff proposes to file comments supporting the majority position of the panelists at the FERC Technical Conference that there is not sufficient consensus on whether these standards sent to the FERC by the NIST have sufficiently met appropriate functionality, interoperability and cyber-security criteria. Comments will be filed along the following lines. Consistent with the text of the EISA,³ FERC should not proceed towards considering the adoption of the proposed Smart Grid standards. Rather, CPUC comments will suggest that the FERC solicit the NIST to continue to work with stakeholders and/or other relevant grid reliability organizations such as the North American Electric Reliability Corporation (NERC) and/or the Western Electricity Coordinating Council (WECC) towards developing consensus positions using certain improvements to the stakeholder process, discussed in greater detail below.

Should the FERC determine that there is sufficient consensus regarding the proposed standards, Staff requests authority to urge that the FERC's ordinary legal practices and procedures require full evidentiary, policy and legal analysis of the proposed standards and their analytical bases. In other words, FERC may not rely solely on the results of the NIST process to determine whether there is sufficient consensus regarding the proposed standards. Instead, FERC should be urged to conduct independent analysis to determine whether the ultimate proposed standards should be adopted in whole, in part, or with recommended modifications.

3. Staff Proposes to Express Concerns With The NIST Process And Suggest Improvements to Facilitate the Standards Development Process

Staff proposes to comment on the following concerns with the NIST process: First, Staff was initially unaware and uninvolved in most of the Phase 1 work which is when these five families of standards were identified as prospective interoperability standards. The Commission Staff has since become an active participating member of the Smart Grid Interoperability Panel since it began in November 2009 and has monitored and participated in the NIST and Smart Grid Interoperability Panel activities as fully as possible, given the limitations of available staff and resources.

³ EISA section 1305, subdivision (d) states in part that the FERC shall institute a proceeding to adopt smart-grid standards only *after* "the [NIST] work has led to sufficient consensus in the Commission's judgment . . .[.]"

Second, Staff is concerned that the Smart Grid Interoperability Panel Governing Board decision-making process that these five families of standards were ready to be presented to FERC for consideration was not adequately transparent and lacked clear criteria. At times CPUC Staff have been refused invitations to working group meetings, and has therefore struggled to remain informed of and obtain access to ongoing standards development meetings. Because of the potential importance of these standards to state programs, it is essential that regulatory staff have access to all meetings where standards are being developed. To do otherwise is inconsistent with the directions from the NIST, and is inconsistent with the type of stakeholder, regulatory and public input that ordinarily forms the basis of FERC directives.

4. Staff Proposes to Comment on the Quality of the Initial Proposed Standards

The CPUC Staff is concerned about the analytical bases for the proposed standards. For example, as discussed during the FERC Technical Conference, best practices from a variety of disciplines widely used in e-commerce, internet banking, and corporate security, including NIST's own standards, were not utilized in the development of the Proposed Standards.⁴ Technical problems have prevented even Cyber Security Working Group (CSWG) members from accessing and reviewing certain standards.⁵ Despite such hindrances, the CSWG identified cyber-security problems arising from the use of internet security standards that are years out of date.⁶ To date, the Smart Grid Interoperability Panel (a more than 600 member panel) has not had the opportunity to review or adopt criteria, nor to select which standards have met these criteria, much less consider what standards may be ready for adoption by regulators. Based upon its participation in the SGIP process, the CPUC Staff believes and proposes to comment that there have not been sufficient systems analyses of the impacts of implementation of these standards, nor a complete end-to-end cyber and physical security review of implementation of these standards.

More fundamentally, the standards development process is largely based on a business use case analysis perspective, which focuses on the goals of specific business agents. Due to issues described herein, regulatory agencies and other consumer representatives are not likely to have sufficient knowledge or understanding of the proposed standards. Similarly, much of the standards development process is effected by information technology/communications experts who are focused on interoperability standards. The process used to date lacks sufficient input from experts in power system, control system and protection system engineering. Staff proposes to express the concern that such

⁴ Technical Conference Transcript at p. 42.

⁵ Technical Conference Transcript at p. 42.

⁶ Technical Conference Transcript at p. 40.

limited analysis is likely to lead to gaps in analysis of the functionality of the proposed standards with existing legacy grid systems as well as new Smart Grid elements as they are developed. For example, the Proposed Standards presume existing use of a Supervisory Control and Data Acquisition (SCADA) communication standard for electric substation communications that is not widely used in the United States. Staff requests authority to recommend that the FERC assure that proceedings to develop standards include in-depth and expanded systems analysis of any proposed standards, and that regulatory and customer perspectives are effectively incorporated in the development of such proposed standards. Therefore, Staff request authority to request that the FERC either provide guidance to the NIST regarding more comprehensive and open stakeholder processes, and/or leverage existing reliability organizations with relevant expertise, such as the NERC or the WECC, to facilitate such improvements.

5. Staff Proposes to Comment on the Lack of Regulatory Staff Participating in Development and Review of the Proposed Standards

The CPUC Staff proposes to express concern about the ability of state commission regulatory staff to participate in the process of developing and reviewing standards in the various working groups. Many of the standards development organizations require fees to participate, require purchase of standards materials; and, in the case of International Electrotechnical Commission, is located in Europe. For example, the UCAIug charges members based on their annual revenue; in the case of the State of California, this annual fee would be \$5000 to allow a single CPUC Staff member to review materials and participate. The NIST has recognized that such financial barriers have impeded NIST's own review of the proposed standards.⁷ As a result, it is unclear how much regulatory staff was able to participate in the creation of the standards, or will be able to continue to input on the review and revision/development of future standards. Therefore, Staff proposes to request that such fees are waived for state regulatory Commissions' staff and that group meetings are accessible through teleconference and/or web conference media or are held in various regions of the country. Additionally, because of the CPUC's current lack of access to the proposed standards, it is unclear to what extent the CPUC may be able to use these standards in any future CPUC proceedings where it may consider adoption of specific standards as directed by Senate Bill 17, or even comment upon the proposed standards at the FERC.⁸

ACTION REQUESTED: Staff request authority to submit comments on the Technical Conference and Supplemental Notice Requesting Comments issued by the FERC on February 16, 2011 consistent with existing and developing California state law⁹ and

⁷ Technical Conference Transcript at p. 42.

⁸ Cal. Pub. Util. Code, Sec. 8362, subd. (a).

⁹ Senate Bill 17 (Padilla), Chapter 327, Statutes of 2009, available at http://www.leginfo.ca.gov/pub/09-10/bill/sen/sb_0001-0050/sb_17_bill_20091011_chaptered.html.

CPUC decisions on Smart Grid issues,¹⁰ in addition to comments consistent with the discussion above.

For questions or further information, please contact the assigned staff: **Elizabeth Dorman (EDD/3-1415)**.

¹⁰ E.g., <http://docs.cpuc.ca.gov/published/proceedings/R0812009.htm>.