



April 7, 2011

The Honorable Jon Wellinghoff
Chairman
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Dear Chairman Wellinghoff:

The National Institute of Standards and Technology (NIST) appreciates the opportunity to comment in response to the Commission's Supplemental Notice Requesting Comments, dated February 16, 2011, as well as the opportunity to participate in the Commission's January 31, 2011 Technical Conference on Smart Grid Interoperability Standards (RM11-2-000). The Technical Conference highlighted the challenges of the tasks Congress has given the Commission and NIST in carrying out our respective responsibilities under the Energy Independence and Security Act of 2007 (EISA) with regard to Smart Grid interoperability standards. There are few historical precedents for a system as large and complex as the Smart Grid in which interoperability standards have been developed through a consensus process and subsequently considered for adoption into regulation.

The Technical Conference highlighted the fact that many stakeholders continue to believe that FERC's potential adoption of Smart Grid standards may lead to their becoming mandatory and enforceable. In addition, stakeholders are confused about the contextual meaning of the term "consensus." I presented NIST's views on these matters at the Technical Conference, and would like to highlight the following key points:

- NIST encourages the Commission to provide forward-looking guidance to accelerate industry use of interoperability standards by endorsing the use of the NIST Interoperability Framework as implementation guidance, rather than mandating the use of individual standards.
- NIST appreciates the fact that the Commission's policy statements have been clear in stating that the Commission does not intend to mandate or enforce Smart Grid interoperability standards. NIST believes that it would be helpful for the Commission to reinforce its past policy statements in this regard and clarify what "adoption" implies.

EISA directs that "at any time after the Institute's work has led to sufficient consensus in the Commission's judgment, the Commission shall 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."

It is significant that EISA states that FERC should adopt standards and protocols "as may be necessary" to achieve smart grid functionality and interoperability. In considering what is necessary for interoperability, it is noteworthy that the telecommunications industry implemented the vast majority of interoperability standards on a voluntary basis. Indeed, national infrastructures, such as the telephone network and the internet, have been developed and operate with few if any mandatory

standards. Of the hundreds of consensus standards that define interoperability in the telephone network, there are only a small number that are associated with regulatory mandates. To the extent that industry already plans to use standards in the NIST Framework to achieve interoperability, it is not necessary and would be counterproductive for FERC to mandate the use of particular standards.

However, the electric grid has a tradition of using many proprietary, customized systems that may make interoperability difficult to achieve, and with significant investments of public funds now being made in Smart Grid infrastructure, there is some urgency to move toward use of interoperable standards in a timely way. FERC's role should be forward looking and provide guidance to industry rather than backward looking checking for compliance. FERC can send appropriate signals to the marketplace by recommending use of the NIST Framework without mandating compliance with particular standards. NIST believes that it would be impractical and unnecessary for FERC to adopt individual interoperability standards.

By the time the Commission adopts rules on the many individual standards needed to achieve interoperability in the Smart Grid, which could take years, significant investments in grid modernization will already have occurred and there is the danger that a lot of investment will be made in proprietary systems that do not support interoperability. NIST believes that the intent of EISA can be best served by FERC issuing a policy statement endorsing the NIST Framework as guidance to achieve interoperability of the Smart Grid, rather than adoption of individual standards. Further, FERC could request implementation roadmaps from utilities and determine if they have adequately addressed interoperability based on the NIST Framework.

Despite FERC's policy statement that EISA does not grant FERC authority to enforce standards, many stakeholders appear to believe that standards, if adopted, will become mandatory either under FERC's other authorities or through adoption by state regulators in their areas of jurisdiction. Many stakeholders are concerned that mandating standards will not allow industry adequate flexibility and may have costly unintended consequences. NIST believes that it would be helpful for FERC to reinforce its policy statements indicating that it does not intend to mandate or enforce interoperability standards adopted under EISA and clarify what adoption implies.

In this regard, different regulatory approaches may be appropriate for security and reliability than for standards necessary to achieve functionality and interoperability. Cybersecurity has been a critical aspect of the NIST and Smart Grid Interoperability Panel (SGIP) work from the start. NIST IR 7628, "Guidelines for Smart Grid Cyber Security" is a part of the NIST Framework. NIST is also playing a leadership role in a new joint effort with the Department of Energy (DOE) and the North American Electric Reliability Corporation (NERC) involving stakeholders from the public and private sectors, in order to comprehensively develop guidelines for a cybersecurity risk management process for the electric sector, including federal utilities.

During the technical conference, representatives of utilities expressed concerns about the degree to which utilities have provided input to the NIST and SGIP processes on reliability, implementability and cyber security aspects of standards. NIST agrees that, although utilities have been participating in the

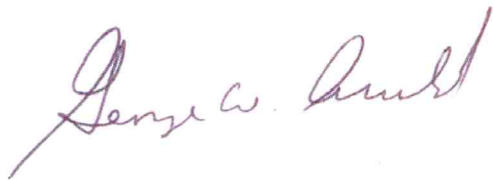
process, increased participation by the utility industry should be encouraged. NIST is working with the utility industry and the SGIP to refine SGIP processes to facilitate increased utility participation in addressing reliability, cyber security and implementability issues.

EISA directs NIST's work "to coordinate development of a framework that includes protocols and model standards for information management to achieve interoperability of smart grid devices and systems...with input and cooperation from...other relevant Federal and State agencies; . . and from private entities . . ." The NIST Release 1 Framework, resulting from an open public consensus process described in my testimony, was published in January 2010. The interoperability framework includes a high-level reference model, an initial list of standards, and establishes a new organization – the SGIP – to provide ongoing stakeholder input to the evolution of the standards.

EISA leaves it to the Commission to judge when "the Institute's work has led to sufficient consensus." With respect to the term "sufficient consensus" in the context of NIST's work as the coordinator of the Smart Grid interoperability framework, NIST believes that consensus on standards is established at two levels. First, consensus on what standards should be included in the NIST Framework, and second, consensus on the technical content of individual standards. With regard to the content of individual standards, NIST requires that the standard setting organizations (SSOs) whose standards are included in the NIST Framework have open, transparent consensus processes to develop and evolve the standards consistent with the principles of the National Technology Transfer and Advancement Act and Office of Management and Budget Circular A119. With regard to consensus about the content of the NIST Framework, NIST has employed an open and transparent process with numerous opportunities for public review and comment that were described in my January 31, 2011 statement. The NIST process has and will continue to evolve to incorporate improvements suggested by stakeholders.

On behalf of NIST, I thank the Commission for this opportunity to comment, and look forward to continuing opportunities to work with the Commission to optimize the usefulness of our efforts and its outputs.

Sincerely,

A handwritten signature in blue ink that reads "George W. Arnold". The signature is written in a cursive, flowing style.

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