

April 3, 2014

John W. Stetkar, Chairman  
Advisory Committee on Reactor Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

SUBJECT: SUPPLEMENTAL RESPONSE TO ADVISORY COMMITTEE ON REACTOR SAFEGUARDS RECOMMENDATION ON DRAFT DESIGN SPECIFIC REVIEW STANDARD FOR mPOWER SMALL MODULAR REACTOR IPWR CHAPTER 7 INSTRUMENTATION AND CONTROL SYSTEMS

Dear Mr. Stetkar:

By letter dated April 29, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13102A276), the U.S. Nuclear Regulatory Commission (NRC) staff responded to letter dated March 19, 2013 (ADAMS ML13084A057), from the Advisory Committee on Reactor Safeguards (ACRS or Committee). As indicated in that letter, the NRC staff committed to further consider the ACRS recommendations prior to issuance of the mPower Design-Specific Review Standard (DSRS). The DSRS is nearing completion and the staff has documented its progress, meetings, and position related to control of access associated with digital instrumentation and control (DI&C) systems. This letter describes staff's proposed actions.

In past interactions with the NRC staff, the ACRS communicated its position that DI&C systems (both safety and nonsafety-related) should be logically isolated from other systems through the use of hardware-based barriers to adequately control access and prevent unauthorized access or corruption. The staff acknowledges the Committee's concern and position, and agrees that this recommended approach is a method that would provide high assurance against malicious events and reasonable assurance against the nonmalicious events originating from outside a nuclear power plant's protected area.

The NRC staff's current approach addresses the safe and secure operation of DI&C systems at licensed facility through the current regulatory framework. This includes licensing reviews for safety against nonmalicious events and inspection of approved cyber security plans to provide high assurance of protection against malicious events. The staff is, however, considering changes that could be made in Title 10 of the *Code of Federal Regulations* Part 50, "Domestic Licensing of Production and Utilization Facilities," or through additional regulatory guidance for the use of hardware-based barriers in a plant design to support establishment of a defensive architecture. To that end, the staff intends to develop a SECY paper regarding a number of technical issues specific to the highly integrated instrumentation and control systems. These issues were identified through the reviews of new reactor designs. As currently envisioned, the paper will provide the Commission with options, which will include an option for rulemaking concerning the control of access at the defensive architecture boundary that the ACRS has communicated as a specific issue of concern.

Pending development of this paper, the NRC staff will continue to rely on the current regulatory framework. The staff will also continue to engage prospective new reactor applicants regarding the issue of control of access. For example, the staff included control of access as a specific discussion topic in a full-day public meeting with Generation mPower, members of the industry, and the public on November 14, 2013. The staff from the Office of New Reactors and the Office of Nuclear Security and Incident Response jointly led the control of access discussion among the attendees. The staff made it clear to Generation mPower, as well as the other attendees, that the cyber security regulation requires combined license applicants, including those who reference a certified design, to submit their cyber security plans for NRC review and approval as part of their license applications. Staff explicitly indicated that if vendors appropriately consider and incorporate cyber security measures when making DI&C system design decisions, nuclear power plant applicants who reference certified designs will be able to effectively and efficiently address cyber security during their application and construction phases. As part of this discussion, the staff highlighted defensive architecture, including boundary devices appropriate to the systems being protected, as a key component of the cyber security plan.

The NRC staff appreciates the comments and recommendations provided by ACRS and looks forward to continuing to work with the Committee in the future.

Sincerely,

*/RA/*

Mark A. Satorius  
Executive Director  
for Operations

cc: Chairman Macfarlane  
Commissioner Svinicki  
Commissioner Apostolakis  
Commissioner Magwood  
Commissioner Ostendorff  
SECY

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 Executive Director  
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 Commissioner Svinicki  
 Commissioner Apostolakis  
 Commissioner Magwood  
 Commissioner Ostendorff  
 SECY

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## REFERENCES:

1. ACRS letter, "Draft Design Specific Review Standard for mPower iPWR 7 Instrumentation and Control Systems," December 18, 2012 (ML12362A173).
2. NRC staff letter, "Response to Advisory Committee on Reactor Safeguards Recommendations on Chapter 7, "Instrumentation and Controls," of the Draft Design Specific Review Standard for the mPower Integral Pressurized-Water Reactor," February 6, 2013 (ML13004A385)
3. ACRS letter, "Draft Design Specific Review Standard for mPower iPWR Chapter 7 Instrumentation and Control Systems," March 19, 2013 (ML13084A057).
4. NRC staff letter, "Response to Advisory Committee on Reactor Safeguards Recommendation on Draft Design Specific Review Standard For mPower IPWR Chapter 7 Instrumentation and Control Systems," April 29, 2013 (ML13102A276).
5. Draft for Comment, "Design Specific Review Standard for mPower iPWR Design," Section 7.2, System Characteristics, September 19, 2012 (ML12179A151)