

August 1, 2013

Dr. J. Sam Armijo, Chairman
Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: RESPONSE TO ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
REGARDING PROPOSED RULEMAKING ON STATION BLACKOUT
MITIGATION STRATEGIES

Dear Dr. Armijo:

I am responding to your letter of June 17, 2013 (available under Agencywide Documents Access and Management System (ADAMS) Accession No. ML13161A247), that provided the views of the Advisory Committee on Reactor Safeguards (ACRS) on the U.S. Nuclear Regulatory Commission (NRC) staff's draft regulatory-basis document, "Rulemaking for Station Blackout Mitigation Strategies" (ADAMS Accession No. ML13077A453). The NRC staff has considered the six conclusions and recommendations provided in your letter and has these responses:

ACRS Conclusion and Recommendation 1: There is sufficient regulatory basis to proceed with the development of a station blackout mitigation strategies (SBOMS) rule to enhance reactor protection against the consequences of extended loss of all offsite and onsite ac power.

NRC Staff Response: The staff agrees and is proceeding to the proposed rule stage after it publishes the final SBOMS regulatory basis.

ACRS Conclusion and Recommendation 2: The staff should continue to explore the concept of a robust supplemental ac power source to be used to restore power following a beyond-design-basis external event.

NRC Staff Response: The staff agrees and plans to continue to pursue this element of the SBOMS regulatory framework.

ACRS Conclusion and Recommendation 3: Neither Nuclear Energy Institute 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide" (ADAMS Accession No. ML12242A378), nor the Japan Lessons-Learned Project Directorate's Interim Staff Guidance JLD-ISG-2012-01, "Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (ADAMS Accession No. ML12229A174) provides sufficient guidance for evaluating the feasibility and reliability of the manual actions necessary to implement the mitigating strategies called for by Order EA-12-049, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (ADAMS Accession No. ML12054A735). The guidance for the SBOMS rule should address this issue.

NRC Staff Response: The staff plans to examine the issue of manual actions more closely to determine whether the guidance supporting EA-12-049 is sufficient for the SBOMS rulemaking.

Specifically, the staff will examine the adequacy of the guidance for assessing the mitigation strategies in the course of the review of the integrated plans and the post-full-compliance verification inspection program for the order. As part of this process, the staff will assess the merits of providing additional guidance, such as that in Appendix C, "Evaluation of Manual Actions," to JLD-ISG-2012-05, "Guidance for Performing the Integrated Assessment for External Flooding" (ADAMS Accession No. ML12311A214), for deterministically evaluating the feasibility and reliability of manual actions with respect to the re-evaluation of flooding hazard levels.

ACRS Conclusion and Recommendation 4: Although Order EA-12-049 and the proposed new rule are intended to address beyond-design-basis external events, all considerations of "robustness" are expressed in terms of design-basis events. The staff should consider the results from the ongoing integrated assessments of seismic, flooding, and high-wind hazards to determine whether the available margins for these hazards are adequate for the development of mitigating strategies.

NRC Staff Response: The staff agrees with the ACRS. The final SBOMS rulemaking regulatory basis has been clarified, principally through the addition of language in Section 3.1 to clearly denote the difference in the regulatory approaches that have been taken post-Fukushima as compared to the applicable Near-Term Task Force (NTTF) recommendations. The staff recognizes the importance of the activities associated with NTTF 2.3 and 2.1, from the standpoints of both (a) identifying and resolving any external event protection type vulnerabilities and (b) addressing the potential for such changes to impact mitigation strategies, specifically with regard to the reasonable protection of equipment. Since the intent of the SBOMS rulemaking would be to provide mitigation capability for extreme external events, information from NTTF Recommendation 2.1 regulatory activities would be relevant and need to be addressed and could result in changes to the facility. These changes could include changes to: installed equipment; portable equipment; portable equipment connections; and/or guidance and strategies. Consistent with Order EA-12-049 and related regulatory guidance, it is expected that the SBOMS rule would contain requirements to maintain the SBOMS capabilities, including the protection afforded the equipment consistent with any updated hazard analyses. The staff anticipates that the supporting SOC and regulatory guide would indicate that the meaning and intent of this provision would be to ensure that new information or operating experience feedback (e.g., new information about a reevaluated hazard) that impacts the SBOMS equipment and strategies would need to be addressed, and the SBOMS strategies and equipment protection would be updated accordingly.

ACRS Conclusion and Recommendation 5: Failure of decay heat removal capability as an independent or common-cause event is not within the scope of the mitigating strategies order or the proposed SBOMS rule. An increase in scope to include loss of decay heat removal as a separate condition and not just as a consequence of extended loss of ac power should be considered as part of the staff efforts on NTTF Recommendation 1 and the Risk Management Task Force (RMTF) program development.

NRC Staff Response: The staff agrees that the issue of the failure of decay heat removal capability (initially identified as Unresolved Safety Issue A-45 in NUREG-0705, "Identification of New Unresolved Safety Issues Relating to Nuclear Power Plants: Special Report to Congress," dated March 1981) is outside the scope of EA-12-049 and the SBOMS rulemaking. However, the staff disagrees with the ACRS suggestion that the failure of decay heat removal as an independent or common cause be considered within the ongoing activities associated with

NTTF Recommendation 1 and the RMTF Report. NTTF Recommendation 1 addresses regulatory framework issues, and is not focused on specific technical issues. The RMTF is focused on a risk-informed, defense-in-depth, regulatory framework for the entire agency. Accordingly, the staff working groups addressing NTTF Recommendation 1 and the RMTF Report consider the issue of failure of decay heat removal being independent or common-cause as outside their scope and are not addressing that issue.

The staff also notes that NUREG/CR-6832, "Regulatory Effectiveness of Unresolved Safety Issue (USI) A-45 'Shutdown Decay Heat Removal Requirements'," dated August 2003 (ADAMS Accession No. ML032250456), concluded that the issue had been effectively resolved. The staff sees no reason to reopen the issue at this time, especially in view of the fact that some of the post-Fukushima actions, most notably actions involving Mark I and II vents (ordered in EA-13-109 (ADAMS Accession No. ML13130A067)) and the issuance of the mitigation strategies order (EA-12-049), would further reduce the risk of loss of decay heat removal capability.

ACRS Conclusion and Recommendation 6: Further briefings with the staff will be needed to review and assess the technical adequacy and robustness of the mitigating strategies developed by licensees in response to Order EA-12-049.

NRC Staff Response: The staff agrees and intends to schedule additional interactions with ACRS concerning the implementation of EA-12-049.

Sincerely,

/RA Micheal R. Johnson for/

R. W. Borchardt
Executive Director
for Operations

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

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Sincerely,
/RA Michael R. Johnson for/

R. W. Borchardt
 Executive Director
 for Operations

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

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ADAMS Accession No(s): PKG: ML131760139; Response: ML13189A125 *via e-mail

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