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RULEMAKINGS AND
ADJUDICATIONS STAFF

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May 1, 2012
U7-C-NINA-NRC-120036

Secretary, U.S. Nuclear Regulatory Commission,
Washington, DC 20555–0001
ATTN: Rulemakings and Adjudications Staff

Subject: Advance Notice of Proposed Rulemaking (ANPR) on Station Blackout (SBO); Docket: NRC-2011-0299

Dear Secretary:

On March 20, 2012, the NRC published an Advanced Notice of Proposed Rulemaking (ANPR) in the Federal Register (77 Fed. Reg. 16175), requesting comments on various issues related to possible revisions to NRC's station blackout (SBO) rule. The ANPR is intended to address Recommendation 4.1 in NRC's Near Term Task Force (NTTF) Report on the accident at Fukushima Daiichi. Nuclear Innovation North America LLC (NINA) appreciates the opportunity to respond to the ANPR.

NINA is the lead applicant for combined licenses for South Texas Project (STP) Units 3 and 4, which will consist of two Advanced Boiling Water Reactors (ABWRs). NINA is also a member of the Nuclear Energy Institute (NEI) and endorses the comments of NEI on the ANPR. In light of our endorsement of NEI's comments, we will not be addressing all of the questions in the ANPR but instead offer the overarching comments contained in the attachment to this letter on behalf of the ABWR Design Center Working Group.

If you have any questions, please contact me at (361) 972-7136 or Bill Mookhoek at (361) 972-7274.

Scott Head
Manager, Regulatory Affairs
South Texas Project Units 3 & 4

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Attachment: Comments on ANPR (SBO)

Template = SECY-067

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Alternate AC Source

NRC's current SBO rule in 10 CFR 50.63 permits the use of an alternate ac source as a means of withstanding an SBO. Several plants, including the ABWR, rely upon an alternate ac source to satisfy the SBO rule. Specifically, the ABWR utilizes a black-start capable combustion turbine generator as the alternate ac power source. Any revision to or augmentation of the SBO rule should continue to allow the use of an alternate ac source as a means of withstanding an SBO. In support of the continued credit for alternate ac sources, we note the following:

- The units at Fukushima Daiichi did not have an alternate ac source. If an alternate ac source had been available (and properly protected from the tsunami), an accident likely would not have occurred.

- Continuing to allow credit for alternate ac sources would not obviate the need for applicants and licensees to comply with other NRC requirements designed to ensure adequate reactor core cooling, containment, and spent fuel pool (SFP) cooling in the event of a beyond-design-basis event. Such requirements include 10 CFR 50.54(hh)(2) and the recently issued Order on mitigation strategies for beyond-design-basis external events (EA-12-049). In that regard, NINA (like the rest of the nuclear industry) has endorsed NEI's proposed Diverse and Flexible Mitigation Capability (FLEX) concept as a means of satisfying the Order.

In summary, alternate ac power sources provide a redundant, diverse, and protected means of providing power to all systems required to cope with a SBO. In any new or amended rule, NRC should continue to allow credit for such sources.

Avoidance of Inconsistencies between Implementation of Recommendations 4.1 and 4.2

The NRC is implementing Recommendation 4.2 in the NTTF Report through the Order associated with EA-12-049 and upcoming guidance. That Order requires licensees to implement a three-phase approach for mitigating beyond-design-basis external events: The initial phase requires the use of installed equipment and resources to maintain or restore core cooling, containment and SFP cooling capabilities. The transition phase requires providing sufficient, portable, onsite equipment and consumables to maintain or restore these functions until they can be accomplished with resources brought from off site. The final phase requires obtaining sufficient offsite resources to sustain those functions indefinitely.

If properly implemented, the requirements in the Order essentially accomplish the purpose of Recommendation 4.1. Therefore, to avoid inconsistencies between the Order and any SBO rulemaking, the SBO rulemaking should include a grandfather clause. In particular:

- A licensee that satisfactorily implements the Order should be excepted from the revised or new SBO rule.

- A pre-existing application (i.e., either a license application or a design certification application) that demonstrates that the application contains provisions equivalent to the provisions in the Order should be excepted from the revised or new SBO rule.

In summary, the revised or new SBO rule should not force a licensee or applicant to make changes in provisions that were deemed sufficient by the NRC to satisfy the provisions of the Order in EA-12-049. To ensure that the provisions are enforceable against pre-existing applications, the license or design certification could include a condition requiring NRC approval for any change that would not satisfy the terms of the Order.

If the NRC elects to apply any new rule to licensees that have implemented Recommendation 4.2, the NRC should perform a cost-benefit evaluation under the applicable Backfit Rule. We believe that, given the safety enhancements that will be achieved through Recommendation 4.2, any incremental benefits from Recommendation 4.1 will likely be far exceeded by the incremental costs.

Take Advantage of Lessons Learned from Implementation of Recommendation 4.2

As indicated above, there is a large amount of overlap between Recommendations 4.1 and 4.2. Licensees are currently in the process of implementing Recommendation 4.2 and the requirements of EA-12-049, including developing appropriate guidance. Given the benefits to be achieved from implementation of Recommendation 4.2, there is no urgency to complete implementation of Recommendation 4.1. Instead, NRC should take a deliberate approach to implementation of Recommendation 4.1, and should fully account for the lessons learned from implementation of Recommendation 4.2 before developing a proposed rule pursuant to Recommendation 4.1. Absent such a deliberate approach, it is likely that any rule will later need to be revised to account for the lessons learned from implementation of Recommendation 4.2.

Deterministic versus Performance-Based Requirements

In some areas, the ANPR identifies the potential for very prescriptive requirements for mitigating SBOs. NINA strongly recommends that the NRC take a performance-based approach (similar to the provisions in the Order for EA-12-049) rather than prescribe deterministic requirements for SBO equipment.

For example, Question IV.B.7.b asks whether NRC should require that SBO equipment be protected against the design-basis external flood plus an additional 10 feet. Such a requirement is objectionable for several reasons:

- First, it would be arbitrary since there is no technical basis for the selection of 10 feet (or any other value) in the SBO rule.

- Second, such a requirement could have unintended adverse consequences. For example, locating equipment at a higher elevation to protect against beyond-design-basis floods would make the equipment more susceptible to earthquakes.

- Third, such a requirement is inconsistent with the FLEX concept endorsed by the industry, which ensures adequate protection against natural phenomena by providing dispersal of equipment in diverse locations of the plant as well as providing for pre-staged offsite equipment.

- Fourth, such a requirement is unnecessary for some plants for which it is not credible to postulate a flooding event more severe than the design-basis flood. For example, the design-basis flood at STP corresponds to a Main Cooling Reservoir dam failure. If 10 feet were added to the design-basis flood level, the resulting flood elevation would be higher than the water level behind the dam, which is physically impossible.

Similarly, NRC should not require that any specific scenarios (specific natural phenomena, specific component failures such as loss of dc power, specific design margins, or specific plant conditions) be postulated. Any such requirements would be largely arbitrary, and would likely be both over-inclusive and under-inclusive. Instead, any rule should be performance-based, similar in approach to that taken by the Commission when it issued 10 CFR § 50.54(hh)(2).

In summary, NINA fully endorses the concept previously stated by the Commission (and reiterated in the ANPR) that a performance-based approach should be the guiding principle, and that SBO "approaches should be flexible and able to accommodate a diverse range of circumstances and conditions." (77 Fed. Reg. at 16179).

Equipment Classification and Qualification

The NRC explains in the ANPR that the SBO rule does not require systems and equipment used to cope with an SBO to meet 10 CFR Part 50, Appendix B quality assurance requirements for safety-related equipment (77 Fed. Reg. at 16178). However, the ANPR does not indicate whether this issue is up for reconsideration in any future SBO rulemaking. SBO equipment should not be classified as safety-related or Class 1E, nor should such equipment be subject to environmental and seismic qualification requirements. By definition, SBO equipment is intended to address beyond-design-basis events. Therefore, such equipment does not meet the definition of safety-related or Class 1E. Furthermore, because such equipment is not safety-

related or Class 1E, it should not be subject to the requirements for environmental or seismic qualification that are applicable to safety-related or Class 1E equipment.

Level of Detail in the Rule

In some areas, the ANPR suggests requirements for the SBO rule that would result in an excessive level of detail. For example, the questions within Section IV.D of the ANPR ask what requirements for inspection, testing, quality assurance and corrective action, what requirements for procedures and training, and what requirements for staffing should be included in the SBO rule. Such issues are peripheral to the purpose of the SBO rule and are much better addressed in guidance documents.

Purpose and Format for the Rule

The current SBO rule in 10 CFR 50.63 has served well to enhance the safety of nuclear plants. In the ANPR, the NRC discusses whether to revise the requirements of Section 50.63 in the new rule and the relationship between the existing rule and any proposed new requirements. The current rule should be left as-is.

In implementing Recommendation 4.1, the NRC should promulgate a new rule. The new rule should not be classified as an SBO rule. Instead, the purpose of the rule should be to provide reliable alternate means of maintaining the capabilities for core cooling, containment, and spent fuel pool cooling occurring over an extended period following an external beyond-design-basis event. Such capabilities would be available not only during an SBO, but also during beyond-design-basis conditions. The focus of the rule should be on ensuring the existence of such capabilities, not on achieving a particular end state or a specific core damage frequency. Thus, the rule should focus on improving defense-in-depth, rather than achieving a particular end-state.

Public Meeting

The ANPR raises a number of detailed technical and regulatory questions that can best be addressed through a dialogue with stakeholders. We urge the NRC to conduct a public technical meeting before moving forward with any further rulemaking initiative.

In summary, NINA agrees with the goal that nuclear power plants should have the capability to provide for core cooling, containment, and spent fuel pool cooling for an extended period following an external beyond-design-basis event. As the NRC codifies that concept in its regulations, it should be careful not to be unduly prescriptive or unnecessarily burdensome, and should allow applicants and licensees flexibility with respect to the manner in which that goal is achieved.