



Tennessee Valley Authority
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June 10, 2011

10 CFR 50.54(f)

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Browns Ferry Nuclear Plant, Units 1, 2, and 3
Facility Operating License Nos. DPR-33, DPR-52, and DPR-68
NRC Docket Nos. 50-259, 50-260, and 50-296

Sequoyah Nuclear Plant, Units 1 and 2
Facility Operating License Nos. DPR-77 and DPR-79
NRC Docket Nos. 50-327 and 50-328

Watts Bar Nuclear Plant, Units 1 and 2
Facility Operating License No. NPF-90
NRC Docket Nos. 50-390 and 50-391

Subject: Response to NRC Bulletin 2011-01, "Mitigating Strategies"

The purpose of this letter is to submit the Tennessee Valley Authority's (TVA's) 30-day response to the subject bulletin in accordance with 10 CFR 50.54(f) for Browns Ferry Nuclear Plant (BFN), Sequoyah Nuclear Plant (SQN), and Watts Bar Nuclear Plant (WBN). In Bulletin 2011-01, the Nuclear Regulatory Commission (NRC) requested that all holders of operating licenses for nuclear power reactors, within 30 days of the date of the subject bulletin, provide information on their mitigating strategies programs in order to confirm compliance with 10 CFR 50.54(hh)(2).

Bulletin 2011-01 was issued on May 11, 2011. Therefore, this 30-day response is due June 10, 2011.

The Enclosure to this letter provides the information requested by NRC for TVA's BFN, SQN, and WBN sites.


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This letter does not contain any new regulatory commitments. If you have any questions concerning this matter, please contact Kara Stacy at (423) 751-3489.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 10th day of June 2011.

Respectfully,



R. M. Krich

Enclosure:

Response to NRC Bulletin 2011-01, "Mitigating Strategies"

cc (Enclosure):

NRC Regional Administrator - Region II
NRC Senior Resident Inspector - Browns Ferry Nuclear Plant
NRC Senior Resident Inspector - Sequoyah Nuclear Plant
NRC Senior Resident Inspector - Watts Bar Nuclear Plant, Unit 1
NRC Senior Resident Inspector - Watts Bar Nuclear Plant, Unit 2

ENCLOSURE

Response to NRC Bulletin 2011-01, "Mitigating Strategies" Browns Ferry Nuclear Plant, Units 1, 2, and 3 Sequoyah Nuclear Plant, Units 1 and 2 Watts Bar Nuclear Plant, Units 1 and 2

NRC Requested Action:

In order to confirm continued compliance with 10 CFR 50.54(hh)(2), within 30 days of the date of this bulletin, the NRC requests that licensees provide the following information on their mitigating strategies programs.

- 1. Is the equipment necessary to execute the mitigating strategies, as described in your submittals to the NRC, available and capable of performing its intended function?*
- 2. Are the guidance and strategies implemented capable of being executed considering the current configuration of your facility and current staffing and skill levels of the staff?*

TVA Response:

Licensing Basis for Mitigating Strategies

As required by 10 CFR 50.54(hh)(2), the Tennessee Valley Authority (TVA) has developed and implemented guidance and strategies intended to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with loss of large areas of the plant due to explosions or fire, including strategies in the following areas:

- (i) Fire fighting;
- (ii) Operations to mitigate fuel damage; and
- (iii) Actions to minimize radiological release.

As background, TVA submitted a description of mitigating strategies for Browns Ferry Nuclear Plant, Units 1, 2, and 3 (BFN); Sequoyah Nuclear Plant, Units 1 and 2 (SQN); and Watts Bar Nuclear Plant, Unit 1 (WBN), in a letter dated February 26, 2007 (Reference 1). TVA supplemented the description of the strategies in a letter dated June 29, 2007 (Reference 2). The information in References 1 and 2 specifically described the actions taken and strategies employed by TVA to meet the requirements of Section B.5.b of the Nuclear Regulatory Commission's (NRC's) Interim Compensatory Measures (ICM) Order (EA-02-026) issued February 25, 2002, as well as the NRC's Phase 1, Phase 2, and Phase 3 implementing guidance.

The NRC reviewed References 1 and 2 submittals and imposed a "Mitigation Strategy License Condition" on the Facility Operating License for each unit at BFN, SQN, and WBN, respectively.

The License Condition and accompanying safety evaluations were issued by the NRC in letters dated August 9, 2007 for WBN and SQN (References 3 and 4) and August 16, 2007 for BFN (Reference 5). The license condition requires that TVA develop and maintain strategies for addressing large fires and explosions and that include 14 specific key areas regarding fire fighting, operations to mitigate fuel damage, and actions to minimize release.

On March 27, 2009, the NRC issued a final rule (74 CFR 13969) amending its regulations to update security requirements similar to those imposed by orders issued after the attacks of September 11, 2001. The rule included new requirements for licensees to develop guidance and strategies for addressing the loss of large areas of the plant due to explosions or fires from a beyond design-basis event through the use of readily available resources. The requirements were included as 10 CFR 50.54(hh)(2). In support of the new 10 CFR 50.54(hh)(2) requirements, the NRC stated:

Current reactor licensees comply with these requirements through the use of the following 14 strategies that have been required through an operating license condition.

and

Current reactor licensees have already developed and implemented procedures that comply with the 10 CFR 50.54(hh)(2) requirements and do not require any additional action to comply with these rule provisions.

As a result, the mitigating strategies described in References 1 and 2 are those by which TVA complies with 10 CFR 50.54(hh)(2), and are those TVA evaluated in response to Bulletin 2011-01. In order to be consistent with the existing documentation for the internal reviews performed by TVA following the Fukushima event, the discussion below refers to the mitigating strategies associated with 10 CFR 50.54(hh)(2) as B.5.b strategies.

TVA Response to Fukushima Daiichi Event

In days immediately following the Fukushima event, TVA began an assessment of the implications of the Fukushima Daiichi events for BFN, SQN, and WBN based on information available at the time. In light of available information, the review considered the ability of the plants to respond to (1) design-basis events, (2) beyond design-basis events, and (3) combinations of events not previously considered such as simultaneous or near simultaneous earthquakes and floods (stacked events) at a single site and simultaneous events at multiple sites. The events covered by the review included, but were not limited to B.5.b events (e.g., loss of large areas of the plant due to fires and explosions). The objectives of the Fukushima response were to review TVA's existing readiness to natural or man-made disasters, identify possible gaps, vulnerabilities, or enhancements and provide short, intermediate, and long-term recommendations to improve overall capability to respond to such events.

As part of the response review, TVA examined the current readiness to implement the B.5.b mitigating strategies at each site. Specifically, TVA examined whether equipment associated with the B.5.b mitigating strategies is available and capable of performing its intended function. In addition, TVA conducted reviews to verify that the procedures to implement the mitigating strategies are in place and can be executed. TVA also examined the qualification of operators and support staff to ensure they were current and sufficient to execute the strategies. Finally, TVA examined applicable agreements and contracts, such as Memoranda of Understanding, to

verify that they were in place and capable of meeting the conditions needed to mitigate consequences of these types of events.

TVA completed initial assessments for BFN, SQN, and WBN in April 2011 and subsequently continued to assess readiness to implement mitigating strategies for B.5.b and other events. Based on these assessments, TVA has determined that with regard to mitigating strategies in place to comply with B.5.b requirements at BFN, SQN, and WBN:

- (1) For equipment associated with B.5.b mitigating strategies described in the References 1 and 2 submittals, equipment is available and capable of performing its intended function. As part of the review of applicable equipment, TVA either walked down or performed testing (or verified performance within the previous 90 days) of related tests, preventative maintenance, procedures, and checklists.
- (2) Procedures and guidance to implement B.5.b strategies are in place and capable of being executed considering the current configuration of the plants and with current staffing and skill levels. As part of the review, TVA determined that the qualifications of operators and support staff needed to implement the procedures and work instructions are current.

Through its review, TVA has identified the opportunity to enhance its ability to implement B.5.b strategies and to improve its ability to respond to a range of severe events. These enhancements and improvements are being pursued through TVA's corrective action program. TVA remains confident in its ability to execute B.5.b mitigating strategies while enhancements are being implemented.

Information from TVA's assessments was made available to the NRC inspectors to support NRC's implementation of Temporary Instruction 2515/183, "Follow-up to the Fukushima Daiichi Nuclear Station Fuel Damage Event." The NRC's reports for BFN, SQN, and WBN were issued on May 13, 2011.

Watts Bar, Unit 2, is currently under construction and will respond as appropriate to the information requested in this Bulletin, consistent with approach provided by Watts Bar, Unit 1, during the process of obtaining the operating license.

References

- 1) Letter from TVA to NRC, "TVA Nuclear (TVAN) - Mitigation Strategy Assessment and Closure Process for Phases 1, 2, and 3," dated February 26, 2007.
- 2) Letter from TVA to NRC, "TVA Nuclear (TVAN) Supplemental Response - Mitigation Strategy Assessments and Closure Process for Phases 1, 2, and 3," dated June 29, 2007.
- 3) Letter from NRC to TVA, "Watts Bar Nuclear Plant, Unit 1 - Conforming License Amendment to Incorporate the Mitigation Strategies Required by Section B.5.b of Commission Order EA-02-026 and the Radiological Protection Mitigation Strategies Required By Commission Order EA-06-137 (TAC No. MD4621)," dated August 9, 2007.
- 4) Letter from NRC to TVA, "Sequoyah Nuclear Plant, Units 1 and 2 Conforming License Amendments to Incorporate the Mitigation Strategies Required by Section B.5.b of

Commission Order EA-02-026 and the Radiological Protection Mitigation Strategies Required By Commission Order EA-06-137 (TAC Nos. MD4619 and MD4620),” dated August 9, 2007.

- 5) Letter from NRC to TVA, “Browns Ferry Nuclear Plant, Units 1, 2, and 3, Conforming License Amendments to Incorporate the Mitigation Strategies Required by Section B.5.b of Commission Order EA-02-026 and the Radiological Protection Mitigation Strategies Required By Commission Order EA-06-137 (TAC Nos. MD4616, MD4617 and MD4618),” dated August 16, 2007.