



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

CNL-14-138

Order EA-12-049

August 28, 2014

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

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

Subject: **Request for Relaxation from NRC Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events"**

References:

1. NRC Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012
2. NRC Order EA-12-050, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents," dated March 12, 2012
3. NRC Order EA-13-109, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions," dated June 6, 2013
4. TVA letter to NRC, "Tennessee Valley Authority (TVA) - Overall Integrated Plan in Response to the March 12, 2012, Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049) for Browns Ferry Nuclear Plant," dated February 28, 2013

5. TVA letter to NRC, "Third Six-Month Status Report and Revised Overall Integrated Plan in Response to the March 12, 2012, Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049) for Browns Ferry Nuclear Plant (TAC Nos. MF0902, MF0903, and MF0904)," dated August 28, 2014

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued Order EA-12-049 (Reference 1) and Order EA-12-050 (Reference 2) to Tennessee Valley Authority (TVA). NRC Order EA-12-049 requires the Browns Ferry Nuclear Plant (BFN) to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities in the event of a beyond-design-basis external event. NRC Order EA-12-050 required BFN to implement requirements for reliable hardened containment vents.

On February 28, 2013, TVA submitted an Overall Integrated Plan (OIP), including a description of how compliance with the requirements described in Attachment 2 of Order EA-12-049 would be achieved at BFN. On June 6, 2013, the NRC issued Order EA 13-109 (Reference 4) which rescinded the requirements of NRC Order EA-12-050, established new requirements and revised the implementation schedule for reliable hardened containment vents capable of operation under severe accident conditions. In addition, TVA has revised its strategy and description of how compliance with the requirements of Order EA-12-049 will be achieved. As a result, in parallel with this letter and under separate cover, TVA is submitting a BFN Units 1, 2 and 3 revised OIP (Reference 5).

As described in the revised OIP, the mitigation strategies depend on reliable hardened containment venting capability consistent with implementation of NRC Order EA-13-109. The revised requirements in NRC Order EA-13-109 affect the ability of BFN Units 2 and 3 to fully implement the requirements of NRC Order EA-12-049 within the required time frame. Consequently, this letter transmits a request for relaxation from the requirements of NRC Order EA-12-049 for BFN Units 2 and 3.

In accordance with Section IV of NRC Order EA-12-049, TVA requests the Director, Office of Nuclear Reactor Regulation, to relax the schedule requirement for full implementation prescribed by Condition IV.A.2 of the Order for the reasons provided in the Enclosure to this letter.

TVA considers that the requested relaxation would constitute a change in the implementation schedule requirements of NRC Order EA-12-049 for TVA. There are no regulatory commitments contained in this letter.

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If you have any questions or require additional information, please contact Kevin Casey at (423) 751-8523.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 28th day of August 2014.

Respectfully,

J. W. Shea
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J. W. Shea
Vice President, Nuclear Licensing

Enclosure: Request for Relaxation of NRC Order EA-12-049 Requirement IV.A.2 for Browns Ferry Nuclear Plant, Units 2 and 3

cc (w/Enclosure):

NRR Director - NRC Headquarters
NRR JLD Director - NRC Headquarters
NRC Regional Administrator - Region II
NRC Senior Resident Inspector Browns Ferry Nuclear Plant
NRC Project Manager, NRR - Browns Ferry Nuclear Plant

ENCLOSURE

**REQUEST FOR RELAXATION OF NRC ORDER EA-12-049 REQUIREMENT IV.A.2
FOR BROWNS FERRY NUCLEAR PLANT, UNITS 2 AND 3**

ENCLOSURE

Relaxation Request

In accordance with Section IV of NRC Order EA-12-049 (Reference 1), TVA hereby requests relaxation of the Order requirement for TVA to complete full implementation by no later than two refueling cycles after submittal of the overall integrated plan required by Condition C.1.a of the Order, or December 31, 2016, whichever comes first.

Order Requirement from Which Relaxation is Requested

Condition IV.A.2 of NRC Order EA-12-049 requires full implementation of the Order requirements by no later than two refueling cycles after submittal of the overall integrated plan required by Condition C.1.a, or December 31, 2016, whichever comes first. The current requirement dates for full implementation of NRC Order EA-12-049 are the refueling outages ending April 2015 for BFN Unit 2 and April 2016 for BFN Unit 3.

As described in the BFN, Units 1, 2 and 3 Overall Integrated Plan (OIP) (Reference 2) for compliance with NRC Order EA-12-049, the mitigation strategies depend on reliable hardened containment venting capability consistent with implementation of NRC Order EA-12-050 (Reference 3). NRC Order EA-13-109 (Reference 4) rescinded the requirements of NRC Order EA-12-050, established additional requirements, and revised the implementation schedules for reliable hardened containment vents capable of operation under severe accident conditions. BFN is required to comply with the Phase 1 (containment wetwell) venting requirements of NRC Order EA-13-109 prior to startup from the second refueling outage that begins after June 30, 2014, or June 30, 2018, whichever comes first. The revised requirements in NRC Order EA-13-109 affect the ability of BFN Units 2 and Unit 3 to fully implement the requirements of NRC Order EA-12-049 prior to restart from the BFN Unit 2 Refueling Outage 18 (U2R18 RFO) in April 2015 and the U3R17 RFO in April 2016.

Justification for Relaxation Request

BFN, Units 1, 2 and 3 have a General Electric Mark I containment design, and TVA has installed a direct wetwell (torus) vent in response to NRC Generic Letter 89-16 (Reference 5) in order to improve the plant's capability to prevent and mitigate a severe accident. NRC Order EA-13-109 contains additional requirements for severe accident capable containment venting in response to lessons learned from the Fukushima Dai-ichi accident. BFN, Units 1, 2 and 3 are required to comply with the wetwell venting requirements of NRC Order EA-13-109 prior to restart from the U1R11 RFO in November 2016; the U2R19 RFO in April 2017; and, the U3R18 RFO in March 2018 respectively. Implementation of mitigation strategies pursuant to NRC Order EA-12-049 is required prior to restart from the U1R11 RFO in November 2016; the U2R18 RFO in April 2015; and, the U3R17 RFO in April 2016. The mitigation strategies described in the BFN, Units 1, 2 and 3 OIP rely on wetwell venting in order to maintain containment within design limits and mitigate torus water temperature rise, thereby allowing the Reactor Core Isolation Cooling (RCIC) system to continue to take suction from the torus and provide core cooling.

TVA originally intended to establish primary containment venting capability in full compliance with NRC Order EA-12-049 mitigation strategies concurrent with implementation of the containment venting requirements in NRC Order EA-12-050.

NRC subsequently issued NRC Order EA-13-109, which rescinded NRC Order EA-12-050, added new requirements for containment venting, and extended the schedule for full compliance with wetwell venting requirements by one refueling outage for BFN. Therefore, TVA requests deferral of full compliance with NRC Order EA-12-049 until restart from the U2R19 RFO in April 2017 and the U3R18 RFO in March 2018, in order to enable coordination of plant modifications and related evaluations as needed to achieve compliance with the wetwell venting requirements of NRC Order EA-13-109. Until the full containment wetwell venting capability required by Order EA-13-109 is implemented, BFN Units 2 and 3 will maintain the containment venting capability previously installed in response to NRC Generic Letter 89-16, "Installation of a Hardened Wetwell Vent" (Reference 5). TVA will implement the other requirements of NRC Order EA-12-049 mitigation strategies in accordance with the original schedule prescribed by NRC Order EA-12-049 (prior to restart from the U2R18 RFO and the U3R17 RFO), and will rely on the use of the existing torus venting capabilities in the interim. This schedule relaxation request only applies to the hardened containment vent portion of the mitigation strategies of NRC Order EA-12-049 for BFN Units 2 and 3. BFN Units 2 and 3 will rely on use of the existing torus venting capabilities in the interim. Because the NRC Order EA-12-049 and EA-13-109 compliance dates for BFN Unit 1 occur in the same refueling outage, BFN Unit 1 will be in full compliance with NRC Orders EA-12-049 and EA-13-109 prior to start-up from the U1R11 RFO in November 2016.

Based on current regulatory requirements and plant capabilities, a sequence of events similar to those encountered at the Fukushima Dai-ichi station is considered to be unlikely to occur in the United States. TVA will use its existing torus venting capabilities in support of NRC Order EA-12-049 mitigation strategies, in accordance with the schedule requirements of NRC Order EA-12-049, Condition IV.A.2. Therefore, the proposed schedule relaxation for full compliance with NRC Order EA-12-049 does not adversely affect nuclear safety or involve any significant increase in risk.

Changes to containment venting requirements consistent with NRC Order EA-13-109 implementation by the U2R19 RFO and the U3R18 RFO will provide additional defense-in-depth to mitigate beyond-design-basis events. Based on the change in containment venting requirements and schedule milestones imposed by NRC Order EA-13-109, TVA considers that full implementation of the NRC Order EA-12-049 requirements at BFN according to the prescribed schedule, would involve undue hardship with no appreciable increase in safety.

Accordingly, TVA requests that the NRC Order EA-12-049, Condition IV.A.2, full implementation milestone for BFN, be relaxed to prior to restart from the U2R19 RFO in April 2017 and the U3R18 RFO in March 2018.

Precedents

This relaxation request is similar to the PSEG Nuclear LLC, Hope Creek Generating Station request for relaxation request submitted on April 16, 2014 (Reference 6) and granted by the NRC on May 20, 2014 (Reference 7).

Conclusion

Full compliance with the mitigation strategy implementation schedule requirements of NRC Order EA-12-049 at BFN would result in hardship or unusual difficulty without a compensating increase in the level of safety. Therefore, in accordance with Section IV of NRC Order EA-12-049, TVA requests relaxation of the schedule requirement described in Condition IV.A.2 of NRC Order EA-12-049, to allow full compliance with NRC Order EA-12-049 to be completed prior to restart from the U2R19 RFO in April 2017 and the U3R18 RFO in March 2018.

References

1. NRC Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond Design Basis External Events," dated March 12, 2012
2. TVA letter to NRC, "Third Six-Month Status Report in Response to the March 12, 2012, Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049) for Browns Ferry Nuclear Plant (TAC Nos. MF0902, MF0903, and MF0904), dated August 28, 2014
3. NRC Order EA-12-050, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents," dated March 12, 2012
4. NRC Order EA-13-109, "Order Modifying Licenses with Regard to Reliable · Hardened Containment Vents Capable of Operation Under Severe Accident Conditions," dated June 6, 2013
5. NRC Letter, "Installation of a Hardened Wetwell Vent (Generic Letter 89-16)," dated September 1, 1989
6. PSEG Nuclear LLC Letter to NRC, "PSEG Nuclear LLC's Request for Relaxation from NRC Order EA-12-049, "Order Modifying License with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" - Hope Creek Generating Station," dated April 16, 2014
7. NRC Letter to PSEG Nuclear LLC, "Hope Creek Generating Station - Relaxation of the Schedule Requirements for Order EA-12-049 "Issuance of Order to Modify Licenses with Regard to Requirements for Beyond-Design-Basis External Events," dated May 20, 2014