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FINDING OF NO SIGNIFICANT IMPACT
TENNESSEE VALLEY AUTHORITY
FUKUSHIMA RESPONSE STRATEGY
HAMILTON AND RHEA COUNTIES, TENNESSEE AND LIMESTONE COUNTY, ALABAMA

In response to Nuclear Regulatory Commission (NRC) requirements, the Tennessee Valley Authority (TVA) proposes to develop, implement, and maintain a strategy to improve the ability of each TVA operating nuclear plant to cope with a severe accident, also known as a Beyond Design Basis external event. The proposed strategy would incorporate lessons learned from the May 2011 events at the Fukushima Dai-ichi nuclear power plant in Japan. The proposed strategy would address TVA's abilities to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities at its operating nuclear plants in the event of a severe accident. The proposed strategy would be implemented at TVA's Watts Bar Nuclear Plant (WBN), Sequoyah Nuclear Plant (SQN), and Browns Ferry Nuclear Plant (BFN).

The proposed strategy is in response to NRC's Tier 1 recommendations, i.e., actions which should be started without unnecessary delay and for which sufficient resource flexibility exists. Tier 2 and 3 recommendations, which are more long-term in nature, are not incorporated into the proposed actions.

TVA has analyzed the potential impacts of this proposed strategy and associated actions in an environmental assessment (EA). The EA is incorporated by reference. The EA incorporates by reference information from the 1972 *Final Environmental Statement, Watts Bar Nuclear Plant Units 1 and 2*, the 1995 *Final Supplemental Environmental Review, Operation of Watts Bar Nuclear Plant*, the 2002 *Final Supplemental Environmental Impact Statement for Operating License Renewal of the Browns Ferry Nuclear Plant in Athens, Alabama*, the 2007 *Final Supplemental Environmental Impact Statement, Completion and Operation of Watts Bar Nuclear Plant Unit 2, Rhea County Tennessee*, and the 2011 *Final Supplemental Environmental Impact Statement, Sequoyah Nuclear Plant Units 1 and 2 License Renewal, Hamilton County, Tennessee*.

Two alternatives were considered in the EA. Under the No Action Alternative, TVA would not implement NRC requirements to develop and implement mitigation strategies for coping with Beyond Design Basis events. Non-compliance with the NRC requirement would likely result in the loss of operating licenses at BFN, SQN, and WBN. However, to provide a baseline for comparing the potential effects of implementing the two alternatives, the assumption was made that operations at BFN, SQN, and WBN would continue indefinitely in accordance with current conditions, guidelines, and procedures under the No Action Alternative.

Under the Action Alternative, TVA would implement the actions required by NRC at WBN, SQN, and BFN to avoid or mitigate the effects of a severe accident. Some of the NRC requirements involve inspections of existing procedures, equipment, and facilities to determine if changes or upgrades are necessary. These inspections would not cause any environmental effects and are not considered in this EA. Any physical changes determined to be necessary as a result of these inspections would be the subject of further environmental review prior to their implementation.

Specific actions under the Action Alternative include the following activities:

- Replace polychlorinated byphenyl-containing transformers at BFN.
- Construct concrete FLEX[1] equipment storage buildings at BFN, SQN, and WBN to house emergency equipment, including large (approximately 3-MW) diesel-powered generators, necessary to cope with an extended station blackout of 72 hours or longer.
- Install as many as three diesel generators having ratings of approximately 225 kVA per site on the roofs of existing buildings at BFN, SQN, and WBN.
- Harden the condensate storage tanks (CSTs) and associated piping and pumps at BFN, SQN, and WBN by constructing a concrete or metal housing around the tanks, constructing new tanks having more robust designs, or implementing other mitigating measures to ensure reactor pressure vessel cooling water is available.
- Conduct general construction-type activities associated with minor upgrades to existing systems. These could include excavation for building foundations or piping/conduit, soil borings, installation of buried pipes, wires or other structures, installation of concrete or metal foundations/footings, covering of bare ground with pavement or gravel, and the temporary installation of work trailers.
- Modify the vent system at BFN to prevent cross flow between units and to provide for simultaneous venting of all three units. Install in-line filters in these vents.
- Provide a remote station to house a pneumatic supply to allow manual operation of the vent system from a safe location at BFN.
- Modify the BFN effluent radiation monitor to maintain operation during an extended station blackout or install a new monitoring system with an uninterruptible power supply.

The Action Alternative is the preferred alternative.

Implementation of the Action Alternative would not cause any effects to wetlands or local wetland functions. No state- or federally listed threatened or endangered species would be affected under the Action Alternative. Likewise, there would be no effects to historic properties, including sites eligible for inclusion on the National Register of Historic Places.

Minor construction-related effects to air quality are anticipated, but these would be temporary. Similarly, construction activities would produce solid wastes in the form of construction debris, but quantities are not expected to be large, and disposal of all wastes will be in accordance with current procedures. The proposed activities are consistent with Executive Order 11988 (Floodplain Management) and constructed structures would be located above the elevation of the Probable Maximum Flood. Potential effects to visual character, groundwater resources, local surface waters, aquatic life, terrestrial life, and transportation resources would be minor and insignificant. Implementation of the Action Alternative would improve TVA's ability to cope with a Beyond Design Basis event. Thus, the potential for inadvertent releases of radioactive materials would be reduced, and TVA's ability to keep the subject plants operational following a Beyond Basis Design event would be improved. Likewise, the proposed actions would provide minor economic benefits to the local area.

[1] "FLEX" equipment refers to portable or easily dispatched emergency equipment such as pumps, generators, and hoses that can be used to provide cooling capability and electrical power during an emergency.

Mitigation

TVA will implement standard operating procedures and appropriate best management practices during construction and operation of the proposed facilities to reduce the potential for adverse environmental effects.

In accordance with NRC requirements, TVA will take appropriate measures to avoid adverse effects to onsite drainage following a Probable Maximum Precipitation (PMP) event. These measures include locating and constructing the FLEX equipment storage buildings such that the floor elevations will be above the controlling PMF elevation. Similarly,construction or hardening of CSTs at BFN, SQN, and WBN, as well as the hardening of the Mark I vent system at BFN, will be planned and designed such that this equipment and associated structures do not interfere with PMP site drainage or adversely affect onsite PMP elevations.

Conclusion and Findings

Based on the findings listed above and the analyses in the EA, we conclude that the proposed action of developing and implementing a strategy for responding to Beyond Design Basis events at BFN, SQN, and WBN would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.

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Date Signed