

UNITED STATES NUCLEAR REGULATORY COMMISSIONTENNESSEE VALLEY AUTHORITYDOCKET NO. 50-390WATTS BAR NUCLEAR PLANT, UNIT 1ENVIRONMENTAL ASSESSMENT AND FINDING OFNO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission or NRC) is considering issuance of an amendment to Facility Operating License No. NPF-90, issued to Tennessee Valley Authority (the licensee), for operation of the Watts Bar Nuclear Plant (WBN), Unit 1, located in Rhea County, Tennessee.

ENVIRONMENTAL ASSESSMENTIdentification of the Proposed Action:

The proposed amendment would include provisions in Technical Specification (TS) 4.3 which allows for the storage of fuel assemblies having a maximum nominal enrichment of 5.0 weight percent (w/o) Uranium 235 (U-235) in the new fuel storage racks and would revise requirements governing the placement of fuel assemblies in the new fuel storage pit. The proposed action is in accordance with the licensee's application for amendment dated May 6, 1998, as supplemented on June 5, 1998.

The Need for the Proposed Action:

The proposed changes are needed so that the licensee can use higher fuel enrichment to provide the flexibility of extending the fuel irradiation and to permit operation for longer fuel cycles.

Environmental Impacts of the Proposed Action:

The Commission has completed its evaluation of the proposed revisions to the TS. The proposed revisions would permit use of fuel assemblies enriched to a maximum nominal of 5.0 w/o U-235. The safety considerations associated with reactor operation with higher enrichment and extended irradiation have been evaluated by the NRC staff. The staff has concluded that such changes would not adversely affect plant safety. The proposed changes have no adverse effect on the probability of any accident. The higher enrichment, with increased fuel burn-up, may slightly change the mix of fission products that might be released in the event of a serious accident, but such small changes would not significantly affect the consequences of serious accidents. No changes are being made in the types or amounts of any radiological effluents that may be released offsite. There is no significant increase in the allowable individual or cumulative occupational radiation exposure.

The environmental impacts on the uranium fuel cycle and transportation resulting from the use of higher enrichment fuel and extended irradiation were discussed in the NRC staff Environmental Assessment and Finding of No Significant Impact published in the FEDERAL REGISTER on February 29, 1988 (53 FR 6040). These impacts were also discussed in the staff assessment entitled, "NRC Assessment of the Environmental Effects of Transportation Resulting from Extended Fuel Enrichment and Irradiation," dated July 7, 1988. This assessment was published in connection with an Environmental Assessment related to the Shearon Harris Nuclear Plant, Unit 1, which was published in the Federal Register (53 FR 30355) on August 11, 1988, as corrected on August 24, 1988 (53 FR 32322). As indicated therein, the environmental cost contribution of an increase in the fuel enrichment of up to 5.0 w/o percent U-235 and irradiation limits of up to 60,000 gigawatt days per metric ton (GWD/MT) are either unchanged or may, in fact, be reduced from those summarized in 10 CFR 50.51(b), Table S-3, and in Table S-4

as set forth in 10 CFR 51.52(c). These findings are applicable to the proposed increase at Watts Bar given that the proposal involves fuel enrichment of up to 5.0 w/c U-235 and burnup of less than 60,000 GvD/MT. Accordingly, the Commission concludes that there are no significant radiological environmental impacts associated with the proposed amendment.

With regard to potential non-radiological impacts of reactor operation with higher enrichment and extended irradiation, the proposed action involves features located entirely within the restricted area as defined in 10 CFR Part 20. It does not affect non-radiological plant effluents and has no other environmental impact. Accordingly, the Commission concludes that there are no significant non-radiological environmental impacts associated with the proposed action.

Alternatives to the Proposed Action:

Since the Commission concluded that there are no significant environmental effects that would result from the proposed action, any other alternative would have equal or greater environmental impacts and need not be evaluated.

The principal alternative would be to deny the requested amendment (no-action alternative). This would not reduce the environmental impact of plant operations and would result in reduced operational flexibility.

Alternative Use of Resources:

This action does not involve the use of any resources not previously considered in the Final Environmental Statement for WBN, Units 1 and 2, dated April 1995.

Agencies and Persons Consulted:

In accordance with its stated policy, on October 22, 1998, the staff consulted with the Tennessee State official, Mr. E. Nanney of the Division of Radiological Health, regarding the environmental impact of the proposed action. The State official had no comments.

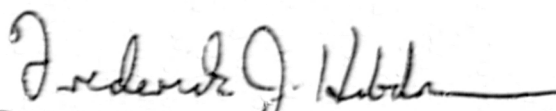
FINDING OF NO SIGNIFICANT IMPACT

The staff has reviewed the proposed modification to WBN, Unit 1, TS relative to the requirements set forth in 10 CFR Part 51. Based upon the environmental assessment, the staff has concluded that there are no significant radiological or non-radiological impacts associated with the proposed action and that the proposed license amendment will not have a significant effect on the quality of the human environment. Therefore, the Commission has determined, pursuant to 10 CFR 51.31, not to prepare an environmental impact statement for the proposed amendment.

For further details with respect to the proposed action, see the licensee's letter dated May 6, 1998, as supplemented by letter dated June 5, 1998, which are available for public inspection at the Commission's Public Document Room, The Gelman Building, 2120 L Street, NW., Washington, DC, and at the local public document room located at the Chattanooga-Hamilton County Library, 1001 Broad Street, Chattanooga, Tennessee.

Dated at Rockville, Maryland, this 18th day of November 1998.

FOR THE NUCLEAR REGULATORY COMMISSION



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