

February 12, 1997

Mr. Oliver D. Kingsley, Jr.
President, TVA Nuclear and
Chief Nuclear Officer
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

SUBJECT: REQUEST REGARDING NO SIGNIFICANT HAZARDS DETERMINATION FOR THE WATTS
BAR NUCLEAR PLANT, UNIT 1 SPENT FUEL POOL RERACKING AND ENRICHMENT
INCREASE (TAC NO. M96930)

Dear Mr. Kingsley:

The NRC staff is reviewing the Tennessee Valley Authority's (TVA) application of October 23, 1996 for amendment of the Technical Specifications (TS) for Watts Bar Nuclear Plant, Unit 1. The amendment would allow an increase in the spent fuel pool storage capacity and an increase from 3.5 to 5.0 percent enrichment for the fuel to be stored in the spent fuel pool. Additional information and revisions to the proposed no significant hazards consideration determination that was submitted with the application are required from TVA.

The staff notes that the application does not address all aspects that would be required to introduce fuel of an enrichment of 5.0 percent into the plant. Further revisions would be required to the reactor building fuel handling accident analysis and to the TS for the new fuel storage pool to support introduction of 5.0 percent enriched fuel. Therefore, these issues must be addressed either by amendment of the October 23, 1996 application or by further action by TVA in the future.

Sincerely,

Original signed by
Robert E. Martin, Senior Project Manager
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Docket Nos. 50-390 and 50-391

Enclosure: Request for Additional Information

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WATTS BAR NUCLEAR PLANT

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TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT

DOCKET NUMBER 50-390

The NRC staff has reviewed the proposed no significant hazards consideration (NSHC) determination submitted with TVA's application of October 23, 1996. The proposed amendment would allow an increase in the enrichment of fuel assemblies that may be stored in the spent fuel racks from 3.5 weight percent to 5.0 weight percent U-235 and would allow an increase in the storage capacity of the spent fuel pool. As a result of this review we have the following comments on the information provided by TVA in support of the three NSHC criteria.

The first criterion is that operation of the facility in accordance with the proposed amendment would not involve a significant increase in the probability or consequences of an accident previously evaluated.

The Watts Bar Final Safety Analysis Report (FSAR) includes two fuel handling accident analyses. One addresses consequences of fuel handling accidents in the reactor building and one addresses consequences of fuel handling accidents in the spent fuel pool. The amendment application does not address reanalysis of the reactor building accident. Although not explicitly required for the spent fuel pool reracking activities, reanalysis of the reactor building fuel handling accident would be required prior to moving fuel in the reactor building having an enrichment in excess of the enrichment value currently reflected in the analysis.

TVA's analysis concludes that "after installation activities have been completed, the presence of additional fuel in the pool does not increase the probability of occurrence of these four events." TVA's proposed amendment encompasses installation activities. TVA's conclusions should also encompass the effects of installation activities on its proposed NSHC determination.

The proposed amendment includes discussion of the potential for drop of a fuel pool transfer canal gate or a cask pit divider gate in its NSHC determination for the first criterion. Discuss why these activities are considered to be within the group of accidents previously evaluated for Watts Bar.

The paragraph on future load travel over the cask pit does not appear to address issues related to probability or consequences of accidents previously evaluated. Discuss why these activities are considered to be within the group of accidents previously evaluated for Watts Bar.

The paragraph on consequences of a spent fuel assembly drop states: "Thus, the consequences of this type of accident are *not changed* from previously evaluated spent fuel assembly drops that have been found acceptable by NRC."

The applicable test for satisfying this criterion is whether the proposed amendment would involve a *significant increase* in the consequences of an accident previously evaluated for Watts Bar Unit 1. The staff's review indicates that the radiological consequences of the fuel assembly drop accident reported in the application *have changed* from those last reported in the FSAR and the staff's Supplemental Safety Evaluation Report No 15. Therefore, this statement in the NSHC determination should be revised to reflect conclusions applicable for Watts Bar and to reflect consistency with the definition of the criterion in which it is discussed.

The second NSHC criterion is that operation of the facility in accordance with the proposed amendment would not create the possibility of a new or different kind of accident from any accident previously analyzed.

The present licensing basis included analysis of a fuel assembly (2059 pounds) drop accident in the reactor building and the spent fuel pool. TVA's proposed application proposes to modify the plant by adding fuel racks in the cask pit. Discuss these plans, with their attendant provisions for moving heavy loads over the cask pit, with respect to whether they meet the provisions of this criterion.