



Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381-2000

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Site Vice President, Watts Bar Nuclear Plant

OCT 23 1996

10 CFR 50.90

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

Gentlemen:

In the Matter of ) Docket No. 50-390  
Tennessee Valley Authority )

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 - REQUEST FOR LICENSE  
AMENDMENT TO TECHNICAL SPECIFICATIONS (TS) - SPENT FUEL POOL  
STORAGE CAPACITY INCREASE (WBN-TS-96-010)

In accordance with 10 CFR 50.90, the Tennessee Valley Authority (TVA) requests that Appendix A of Facility Operating License No. NPF-90, Watts Bar Unit 1 Technical Specifications, be amended to support planned modifications to increase the WBN spent fuel pool storage capacity. This amendment would revise and/or add the following sections:

TS Design Feature 4.3.1.1 - to allow an increase in the maximum initial enrichment of fuel to be stored in the spent fuel storage racks from 3.50 weight percent (wt%) U-235 to 5.0 wt% U-235. This revision would also allow a change in the spacing of stored fuel assemblies from a nominal 10.72-inches, center-to-center distance to nominal center-to-center distances of 10.375-inches in 24 flux trap rack modules proposed for installation in the pool. The ten smaller 8.972-inches burnup credit racks would be installed peripherally along the south and west pool walls and a single 15 x 15 burnup credit module to be installed in the cask pit.

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This revised design feature, also proposes fuel assembly loading arrangements in both types of rack modules which relate locations to initial enrichment and burnup provisions.

TS Design Feature 4.3.3 - to allow an increase in the spent fuel pool storage capacity from 484 to 1610 fuel assemblies and provide an additional storage capacity of 225 fuel assemblies in a proposed fuel rack storage module to be located in the cask loading area of the cask pit, for a total of 1835 fuel assemblies. Figure 4.3-1 is provided to illustrate the layout of rack modules in the pool and cask loading area.

TS Limiting Condition for Operation (LCO) 3.7.15 - additional LCO to require that the combination of initial enrichment and burnup of each stored spent fuel assembly, be in an acceptable burnup domain. Figure 3.7.15-1 graphically illustrates the relationship between fuel assembly burnup and initial enrichment which will be applicable to the stored fuel.

LCO 3.9.10 - additional LCO requirement to require boron concentration of the cask pit to be greater than or equal to 2000 parts per million (ppm) during fuel movement in the flooded cask pit.

Surveillance Requirement (SR) 3.7.15.1 - to verify by administrative means that the initial enrichment and burnup of a fuel assembly is in an acceptable burnup domain.

SR 3.9.10.1 - to require chemical analysis to verify the boron concentration in the cask pit to be greater than or equal to 2000 ppm prior to movement of fuel in the cask pit and at least once every 72 hours thereafter, during fuel movements in the cask pit area.

The addition of TS Bases B3.7.15, Spent Fuel Assembly Storage and TS Bases B3.9.10, Spent Fuel Cask Pit Boron Concentration, supports the addition of TS LCO 3.7.15 and SR 3.7.15.1, and TS LCO 3.9.10 and SR 3.9.10.1, respectively. TS Bases B3.9.9, "Spent Fuel Pool Boron Concentration," is included to correct the reference under Applicability since TS 4.3.1.1 has been revised.

Revisions to the Technical Requirements Manual (TRM) include Technical Requirement (TR) 3.9.4 and Bases TR B3.9.4 to allow loads meeting specified weight, height, and cross-sectional impact area provisions to be carried over fuel stored in the cask loading area when an impact shield is in place over that area. Figure

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3.9-1 is being added to illustrate the relationship among load, allowable height, and impact area parameters for loads to be carried over the impact shield. A note has been added to TR 3.9.4 which allows the spent fuel pool transfer canal gate and the spent fuel pool cask pit gate to travel over fuel in the spent fuel pool. A note has been added to Technical Surveillance Requirements (TSR) 3.9.4.1 that allows crane interlocks and physical stops to be defeated for activities associated with the WBN Rerack Project. TSR 3.9.4.2 is being added to provide verification that administrative requirements concerning the impact shield are met before moving loads greater than 2059 pounds over fuel in the cask pit area. TSR B3.9.4 is being modified accordingly.

The proposed TS and TRM changes are provided in Enclosure 1. A report entitled, "Spent Fuel Pool Modification for Increased Storage Capacity," prepared by TVA with assistance from its contractor, Holtec International, is provided in Enclosure 2 and supports the above TS and TRM changes. A proposed determination of no significant hazards considerations performed pursuant to 10 CFR 50.92 is provided in Enclosure 3. A proposed environmental impact evaluation is provided in Enclosure 4.

TVA has previously informed the NRC of the intent to install replacement spent fuel pool racks before irradiated fuel is placed in the pool at the end of Cycle 1 in letters dated April 21, 1995, May 13, 1996, August 6, 1996, and September 5, 1996. In order to support the Cycle 1 refueling outage, TVA intends to begin these modifications to the spent fuel pool around March 3, 1997. Therefore, TVA is requesting NRC's approval of these changes by that date.

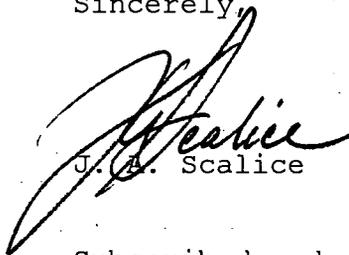
Since the changes proposed by this amendment request are such that implementation is not possible until the physical reracking occurs, TVA requests that the proposed changes become applicable upon initiation of the modifications for reracking the spent fuel pool and that the changes become fully implemented upon completion of the rerack modification.

In accordance with 10 CFR 50.91(b)(1), a copy of this proposed license amendment is being forwarded to the State Designee for the State of Tennessee.

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The commitments that are being tracked from this letter is listed in Enclosure 5. If you should have any questions concerning this matter, please contact P. L. Pace at (423) 365-1824.

Sincerely,



J. A. Scalice

Subscribed and sworn to before me  
this 23<sup>rd</sup> day of October 1996

E. Jeannette Long  
Notary Public

My Commission Expires July 1, 1997

Enclosures:

cc (Enclosures):

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