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

JUN 07 2006

10 CFR 50.90

U. S. Nuclear Regulatory Commission
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Gentlemen:

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

WATTS BAR NUCLEAR PLANT (WBN) - UNIT 1 - TECHNICAL SPECIFICATION (TS) CHANGE NO. TVA-WBN-TS-05-09 - ICE CONDENSER ICE WEIGHT INCREASE DUE TO REPLACEMENT STEAM GENERATORS - SUPPLEMENTAL INFORMATION - (TAC NO. MC 9270)

The purpose of this submittal is to provide responses to two questions discussed during a telecon with the NRC staff on April 5, 2006. These questions stem from the NRC staff's review of Technical Specification Change No. TVA-WBN-TS-05-09 submitted on December 15, 2005. Enclosure 1 of this submittal provides the TVA responses. Enclosures 2 (marked) and 3 (revised) provide replacement pages for two TS Bases pages (B 3.6-28 and B 3.6-37) due to revised containment peak pressure as a result of changes in the revised technical analysis document. Enclosure 4 provides a replacement document which supersedes the technical analysis document previously provided in the earlier submittal.

There are no regulatory commitments associated with this submittal. If you have any questions concerning this matter, please call me at (423) 365-1824.

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I declare under penalty of perjury that the foregoing is true and correct. Executed on this 7th day of June 2006.

Sincerely,

P. L. Pace
Manager, Site Licensing
and Industry Affairs

Enclosures
cc: See Page 3

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ENCLOSURE 1
WATTS BAR NUCLEAR PLANT (WBN), UNIT 1
DOCKET NO. 50-390

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE WBN-TS-05-09
SUPPLEMENT INFORMATION

1) Section 1.4.3; use of EPITOME computer code can not be found in either WCAP-15699 or in Reference 4 (WCAP-10325-P-A) Table 1-1;

The EPITOME code is not specifically called out in the Safety Evaluation Report for WCAP-10325-P-A, "Westinghouse LOCA Mass and Energy Release Model for Containment Design March 1979 Version," May 1983, but it is and always has been part of the methodology. The methodology has not changed. This code has previously been used to support WCAP-15699 for the Watts Bar ice weight optimization project. The code is being added to the FSAR.

The EPITOME code continues the FROTH post-reflood portion of the transient from the time at which the secondary side equilibrates to containment design pressure to the end of the transient. It also compiles a summary of data on the entire transient, including formal instantaneous mass and energy release tables and mass and energy balance tables with data at critical times.

A similar NRC question concerning the EPITOME code was asked and responded to by Kewaunee Nuclear Plant response dated December 15, 2003 involving their power uprate amendment request. This amendment was subsequently approved by NRC by letter dated February 27, 2004. In addition, the EPITOME code was discussed as part of Ginna Nuclear Plant's extended power uprate licensing report dated 07-31-2005 - Accession Number ML051950304 - Docket No. 50-244. The date of submittal was July 7, 2005.

2) Section 2.2, Item 21; component cooling heat exchanger flow is 7995 gpm vs 5000 gpm in WCAP-15699

The 7995 gpm flow is a conservative ERCW flow to the component cooling water (CCW) heat exchanger for normal shut down. It is non-conservative for LOCA conditions. The 5000 gpm previously used in WCAP-15699 was overly conservative. The analysis has been revised to incorporate 6315 gpm ERCW flow to the CCW heat exchanger which is the current design basis ERCW value for LOCA conditions. This revision results in an impact of approximately -0.02 psi with no change in the requested ice weight increase.

See Enclosure 4 for a replacement document which supersedes the technical analysis document previously provided by TVA's initial TS amendment request. The following provides a summary of inputs, bases, margins, and conservatisms changes in report text:

- Page 13 Table 1-1 Revised the steam generator (SG) dry weight assumption to reflect as-built conditions (from 140,661.4 lbm to 138,230.7 lbm)
- Page 39 Revised the ERCW flowrate to the component cooling water heat exchanger from 7,995 gpm to 6,315 gpm (per TVA letter to Westinghouse TVWES-0759, May 19, 2006)
- Page 39 Revised the RHR spray initiation modeled from 3,781.8 seconds to 3,848.3 seconds into the LOCA containment response transient

Summary of results changes in report text:

- Page 40 Revised maximum calculated containment pressure from 11.03 psig to 11.01 psig
- Page 40 Revised the peak pressure time from 6,449.9 seconds to 6,562.8 seconds
- Page 40 Revised the ice bed melt-out time from 3,628.5 seconds to 3,685.1 seconds
- Page 41 Revised the minimum amount of ice per basket to survive the blowdown phase of a LOCA from 346.3 lbm to 346.5 lbm

In addition, the tables contained in the report were also revised to incorporate results described above.

ENCLOSURE 2
WATTS BAR NUCLEAR PLANT (WBN), UNIT 1
DOCKET NO. 50-390

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE WBN-TS-05-09
MARKED PAGES

I. AFFECTED PAGE LIST

Technical Specification Bases (For Information Only)

B 3.6-28 - Replacement Page Provided
B 3.6-37 - Replacement Page Provided

B 3.6 CONTAINMENT SYSTEMS

B 3.6.4 Containment Pressure

BASES

BACKGROUND

The containment pressure is limited during normal operation to preserve the initial conditions assumed in the accident analyses for a loss of coolant accident (LOCA) or steam line break (SLB). These limits also prevent the containment pressure from exceeding the containment design negative pressure differential (-2.0 psid) with respect to the shield building annulus atmosphere in the event of inadvertent actuation of the Containment Spray System or Air Return Fans.

Containment pressure is a process variable that is monitored and controlled. The containment pressure limits are derived from the input conditions used in the containment functional analyses and the containment structure external pressure analysis. Should operation occur outside these limits coincident with a Design Basis Accident (DBA), post accident containment pressures could exceed calculated values.

APPLICABLE SAFETY ANALYSES

Containment internal pressure is an initial condition used in the DBA analyses to establish the maximum peak containment internal pressure. The limiting DBAs considered, relative to containment pressure, are the LOCA and SLB, which are analyzed using computer pressure transients. The worst case LOCA generates larger mass and energy release than the worst case SLB. Thus, the LOCA event bounds the SLB event from the containment peak pressure standpoint (Ref. 1).

Replace with 11.01

The initial pressure condition used in the containment analysis was 15.0 psia. This resulted in a maximum peak pressure from a LOCA of 10.64 psig. The containment analysis (Ref. 1) shows that the maximum allowable internal containment pressure, P_a (15.0 psig), bounds the calculated results from the limiting LOCA. The maximum containment pressure resulting from the worst case LOCA, does not exceed the containment design pressure, 13.5 psig.

(continued)

BASES

BACKGROUND (continued)

and water from a DBA. During the post blowdown period, the Air Return System (ARS) is automatically started. The ARS returns upper compartment air through the divider barrier to the lower compartment. This serves to equalize pressures in containment and to continue circulating heated air and steam through the ice condenser, where heat is removed by the remaining ice and by the Containment Spray System after the ice has melted.

The Containment Spray System limits the temperature and pressure that could be expected following a DBA. Protection of containment integrity limits leakage of fission product radioactivity from containment to the environment.

APPLICABLE SAFETY ANALYSES

The limiting DBAs considered relative to containment OPERABILITY are the loss of coolant accident (LOCA) and the steam line break (SLB). The DBA LOCA and SLB are analyzed using computer codes designed to predict the resultant containment pressure and temperature transients. No two DBAs are assumed to occur simultaneously or consecutively. The postulated DBAs are analyzed, in regard to containment ESF systems, assuming the loss of one ESF bus, which is the worst case single active failure, resulting in one train of the Containment Spray System, the RHR System, and the ARS being rendered inoperable (Ref. 2).

The DBA analyses show that the maximum peak containment pressure of 10.64 psig results from the LOCA analysis, and is calculated to be less than the containment design pressure. The maximum peak containment atmosphere temperature results from the SLB analysis. The calculated transient containment atmosphere temperatures are acceptable for the DBA SLB.

Replace with

11.01

(continued)

ENCLOSURE 3
WATTS BAR NUCLEAR PLANT (WBN), UNIT 1
DOCKET NO. 50-390

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE WBN-TS-05-09
REVISED PAGES

II. AFFECTED PAGE LIST

Technical Specification Bases (For Information Only)

B 3.6-28 - Replacement Page Provided
B 3.6-37 - Replacement Page Provided

B 3.6 CONTAINMENT SYSTEMS

B 3.6.4 Containment Pressure

BASES

BACKGROUND

The containment pressure is limited during normal operation to preserve the initial conditions assumed in the accident analyses for a loss of coolant accident (LOCA) or steam line break (SLB). These limits also prevent the containment pressure from exceeding the containment design negative pressure differential (-2.0 psid) with respect to the Shield Building annulus atmosphere in the event of inadvertent actuation of the Containment Spray System or Air Return Fans.

Containment pressure is a process variable that is monitored and controlled. The containment pressure limits are derived from the input conditions used in the containment functional analyses and the containment structure external pressure analysis. Should operation occur outside these limits coincident with a Design Basis Accident (DBA), post accident containment pressures could exceed calculated values.

APPLICABLE SAFETY ANALYSES

Containment internal pressure is an initial condition used in the DBA analyses to establish the maximum peak containment internal pressure. The limiting DBAs considered, relative to containment pressure, are the LOCA and SLB, which are analyzed using computer pressure transients. The worst case LOCA generates larger mass and energy release than the worst case SLB. Thus, the LOCA event bounds the SLB event from the containment peak pressure standpoint (Ref. 1).

The initial pressure condition used in the containment analysis was 15.0 psia. This resulted in a maximum peak pressure from a LOCA of 11.01 psig. The containment analysis (Ref. 1) shows that the maximum allowable internal containment pressure, P_a (15.0 psig), bounds the calculated results from the limiting LOCA. The maximum containment pressure resulting from the worst case LOCA, does not exceed the containment design pressure, 13.5 psig.

(continued)

BACKGROUND (continued)

and water from a DBA. During the post blowdown period, the Air Return System (ARS) is automatically started. The ARS returns upper compartment air through the divider barrier to the lower compartment. This serves to equalize pressures in containment and to continue circulating heated air and steam through the ice condenser, where heat is removed by the remaining ice and by the Containment Spray System after the ice has melted.

The Containment Spray System limits the temperature and pressure that could be expected following a DBA. Protection of containment integrity limits leakage of fission product radioactivity from containment to the environment.

APPLICABLE SAFETY ANALYSES

The limiting DBAs considered relative to containment OPERABILITY are the loss of coolant accident (LOCA) and the steam line break (SLB). The DBA LOCA and SLB are analyzed using computer codes designed to predict the resultant containment pressure and temperature transients. No two DBAs are assumed to occur simultaneously or consecutively. The postulated DBAs are analyzed, in regard to containment ESF systems, assuming the loss of one ESF bus, which is the worst case single active failure, resulting in one train of the Containment Spray System, the RHR System, and the ARS being rendered inoperable (Ref. 2).

The DBA analyses show that the maximum peak containment pressure of 11.01 psig results from the LOCA analysis, and is calculated to be less than the containment design pressure. The maximum peak containment atmosphere temperature results from the SLB analysis. The calculated transient containment atmosphere temperatures are acceptable for the DBA SLB.

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ENCLOSURE 4
WATTS BAR NUCLEAR PLANT (WBN), UNIT 1
DOCKET NO. 50-390

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE WBN-TS-05-09
REPLACEMENT DOCUMENT FOR TECHNICAL ANALYSIS DOCUMENT PREVIOUSLY
PROVIDED BY TVA'S INITIAL TS AMENDMENT REQUEST