

March 10, 2011

Mr. Ashok S. Bhatnagar
Senior Vice President
Nuclear Generation Development
and Construction
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 2 – REQUEST FOR ADDITIONAL
INFORMATION REGARDING FINAL SAFETY ANALYSIS REPORT
AMENDMENT RELATED TO SECTION 9.5.1 “FIRE PROTECTION SYSTEM”
(TAC NO. ME3091)

Dear Mr. Bhatnagar:

By letter dated January 11, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML100191732), the Tennessee Valley Authority (TVA) submitted Final Safety Analysis Report Amendment No. 97, which incorporates, by reference, the Watts Bar Fire Protection Report. TVA responded to earlier information requests relating to the Fire Protection Report through letters dated July 16, August 9, August 20, August 30, November 5, December 1, December 18, and December 20, 2010; and January 14, 2011.

The U.S. Nuclear Regulatory Commission staff has reviewed the information provided by TVA and has determined that additional information is needed to complete its review.

A response is required 30 days from the date of this letter.

If you should have any questions, please contact me at 301-415-2048.

Sincerely,

/RA/

Justin C. Poole, Project Manager
Watts Bar Special Projects Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-391

Enclosure:
Request for Additional Information

cc w/encl: Distribution via Listserv

Mr. Ashok S. Bhatnagar
Senior Vice President
Nuclear Generation Development
and Construction
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 2 – REQUEST FOR ADDITIONAL
INFORMATION REGARDING FINAL SAFETY ANALYSIS REPORT
AMENDMENT RELATED TO SECTION 9.5.1 “FIRE PROTECTION SYSTEM”
(TAC NO. ME3091)

Dear Mr. Bhatnagar:

By letter dated January 11, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML100191732), the Tennessee Valley Authority (TVA) submitted Final Safety Analysis Report Amendment No. 97, which incorporates, by reference, the Watts Bar Fire Protection Report. TVA responded to earlier information requests relating to the Fire Protection Report through letters dated July 16, August 9, August 20, August 30, November 5, December 1, December 18, and December 20, 2010; and January 14, 2011.

The U.S. Nuclear Regulatory Commission staff has reviewed the information provided by TVA and has determined that additional information is needed to complete its review.

A response is required 30 days from the date of this letter.

If you should have any questions, please contact me at 301-415-2048.

Sincerely,

/RA/

Justin C. Poole, Project Manager
Watts Bar Special Projects Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-391

Enclosure:
Request for Additional Information

cc w/encl: Distribution via Listserv

DISTRIBUTION: RidsOgcRp Resource RidsRgn2MailCenter Resource
PUBLIC RidsNrrDorILpwb Resource RidsNrrDraAfpb Resource
LPWB Reading File RidsNrrLABClayton Resource RidsNrrPMWattsBar2 Resource
RidsAcrsAcnw_MailCTR Resource RidsNrrDorIDpr CMoulton, NRR

ADAMS Accession No. ML110610745

*via memo

OFFICE	LPWB/PM	LPWB/LA	AFPB/BC	OGC/NLO	LPWB/BC
NAME	JPoole	BClayton	AKlein*	DRoth	SCampbell
DATE	03 / 03 /11	03 / 03 /11	2/23/11	03 / 09 /11	03 / 10 /11

OFFICIAL AGENCY RECORD

REQUEST FOR ADDITIONAL INFORMATION

WATTS BAR NUCLEAR PLANT, UNIT 2

FIRE PROTECTION REPORT

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-391

- Draft versions of these requests for additional information (RAI) were a handout for a February 15, 2011, public meeting with Tennessee Valley Authority (TVA), where they were discussed.
- A number of the RAIs involve modifications to the Fire Protection Report (FPR). This status is indicated at the end of the specific requests.
- The following RAIs from the Nuclear Regulatory Commission's (NRC's) February 9, 2011, letter involve FPR modifications: General-1, V-1, V-2, V-3, V-4, V-5, V-6, V-7, V-8, V-9, and V-10.
- In a number of the RAIs below, summary evaluations are requested. The following elements, as a minimum, are expected to be addressed by the summary: 1) identification of the issue evaluated; 2) a description of the evaluation method; 3) a discussion of key assumptions; and 4) results of the evaluation.

RAI number format Example: [RAI FPR V-1]

RAI – RAI

FPR – topic or document from which the comment originates

V – Section of the document

-1 – Sequential comment for that section

RAI FPR General-3

The staff found the side-by-side comparison versions of the selected Parts of the FPR submitted on January 25, 2011, to be useful in their review.

Provide a side-by-side comparison between Revision 40 and the “as designed” version for Parts V and VI of the FPR, similar to those provided for the other Parts [I - IV and VII - X] of the FPR.

RAI FPR General-4

It is difficult for the staff to fully understand the details of the installed detection and suppression systems for Watts Bar Nuclear Plant (WBN), Unit 2, solely from the tabular system listings in the FPR.

Describe how the Unit 2 changes are represented in the as designed drawings indicating installed fire detection and suppression systems. Also, provide the as designed versions of these drawings that include all Unit 2 and common Unit 1/2 Fire Areas.

Enclosure

This item was discussed with TVA at a February 3, 2011, public meeting, where TVA agreed to provide this information.

RAI FPR General-5

It is difficult for the staff to fully understand the details of the safe shutdown systems for WBN Unit 2 solely from the summary equipment listings in the FPR.

Describe how the Unit 2 changes are represented in the as-designed drawings indicating the post-fire safe shutdown flow paths. Also, provide the as-designed versions of these drawings that include all Unit 2 and common Unit 1/2 Fire Areas.

This item was discussed with TVA at a February 3, 2011, public meeting, where TVA agreed to provide this information.

RAI FPR II-1

The submitted "as-designed" revision of the FPR deleted the following paragraph from Part II, Section 1.0 (pg. II-1):

The Plan is applicable to Unit 1 and common areas needed for safe operation of WBN Unit 1. Unit 2 equipment, components, and cables required for Unit 1 operation are specified and treated as Unit 1 equipment, components, and cables. The WBN fire protection program does not take credit for Unit 2 equipment, components, and cables which are not specified for normal operation of Unit 1.

Provide a description of the "Unit 2 equipment, components, and cables required for Unit 1 operation."

Provide a disposition of the identified equipment, components and cables. For example, is this equipment/components/cables now "dual unit," or have they been assigned to one unit or the other? If they have been assigned to Unit 1, has replacement equipment/components/cables been installed for Unit 2? Or, if it has been assigned to Unit 2, has replacement equipment/components/cables been installed for Unit 1? If the equipment/components/cables are now "dual unit," describe how dual unit operation will affect the availability of this equipment for Unit 1 operations and the steps taken to mitigate this effect.

This RAI involves an update to the FPR to incorporate the response to the RAI.

RAI FPR II-2

A number references in Part II, Section 4 are now marked "Historical Information." If this indicates that the information in these documents has been superseded, or is no longer current, identify the documents where the current, correct information is maintained. Otherwise, describe what this marking is intended to indicate, and state where the current information is maintained.

This RAI involves an update to the FPR to incorporate the response to the RAI.

RAI FPR II-3

Fire Area 15-1 does not appear to be correctly marked on the compartmentation drawings provided on January 25, 2011. Correct this error. Ensure that all Fire Areas are correctly identified on the as-designed compartmentation drawings and other submitted drawings.

This item was discussed with TVA at a February 3, 2011, public meeting, where TVA agreed to provide this information.

This RAI involves an update to the FPR to incorporate the response to the RAI.

RAI FPR II-4

Describe how the Unit 2 changes are represented in the as-designed compartmentation drawings. Also, provide the as-designed versions of the compartmentation drawings that include all Unit 2 and common Unit 1/2 Fire Areas.

This item was discussed with TVA at a February 3, 2011, public meeting, where TVA agreed to provide this information.

This RAI involves an update to the FPR to incorporate the response to the RAI.

RAI FPR II-5

Describe how the Unit 2 changes are represented in the as-designed versions of the balance of the Figures in Part II. Also, provide the as-designed versions of the balance of the figures in Part II that include all Unit 2 and common Unit 1/2 Fire Areas.

This item was discussed with TVA at a February 3, 2011, public meeting, where TVA agreed to provide this information.

This RAI involves an update to the FPR to incorporate the response to the RAI.

RAI FPR II-6

Part II, Section 12.3.3 of the FPR provides design-basis concentrations for the installed carbon dioxide suppression systems. However, soak times and the required concentrations are provided only for the Auxiliary Instrument Rooms and Diesel Generator Engine Rooms, and not for all of the installed systems.

Correct this omission and provide the design-basis information for all of the installed carbon dioxide suppression systems.

This RAI involves an update to the FPR to incorporate the response to the RAI.

RAI FPR II-7

“Ignition source fire watch” is a term used in Part II, Section 11.0, but not defined elsewhere in the document. Provide more detail for these fire watches, including whether they are continuous or roving.

This RAI involves an update to the FPR to incorporate the response to the RAI.

RAI FPR II-8

In Part II, Section 13.0.A (and other places in Part II), the FPR describes reducing a continuous fire watch in any plant area to a roving fire watch when either Unit is in Mode 5, 6, or defueled.

Provide a summary evaluation and technical justification for reducing a fire watch from continuous to roving in areas containing safe shutdown equipment for a Unit that is in Modes 1 to 4, inclusive. Include a discussion of whether this reduction would also apply to ignition source fire watches.

This RAI involves an update to the FPR to incorporate the response to the RAI.

RAI FPR II-9

Part II, Section 14.1.2 contains the following table:

<u>AREA</u>	<u>INSTRUMENT(S)</u>
Upper Containment	U-9019 on Plant Computer
Lower Containment	U-9020 on Plant Computer
[Add Unit 2	To be determined]

Provide the Unit 2 information for Part II, Section 14.1.2. Confirm that an extent of condition review of the document has been performed to identify and resolve similar instances.

This RAI involves an update to the FPR to incorporate the response to the RAI.

RAI FPR II-10

Part II, Section 12.10.2, of the FPR states that Electrical Raceway Fire Barrier Systems (ERFBS) are used to provide raceway protection at WBN Unit 2. However, the fire protection report does not provide information regarding testing criteria, test standards, or regulatory guidance used to assure that installed ERFBS meet design requirements.

Provide the technical basis that the installed ERFBS meet design requirements. Include references to the design requirements.

For any deviations to the design requirements, special cases, etc., include in the FPR a summary evaluation and technical justification for those deviations.

This RAI involves an update to the FPR to incorporate the response to the RAI.

RAI FPR II-11

In Part II, Section 14.10.3 [pg. II-58], a change was made to the approved version of the FPR to allow an evaluation to be performed to justify using alternate means to provide Fire Safe Shutdown (FSSD) when required equipment cannot be returned to Operable status within the required time.

Provide a summary evaluation and technical justification that supports this change. Additionally, discuss the status of the “alternate means” going forward. For example,

- What would be the duration of the alternative?
- Would the alternative become the primary means of achieving FSSD?
- Would the new systems/equipment/components need to be added to the FSSD analysis, and the old systems/equipment/components removed from the analysis?

This RAI involves an update to the FPR to incorporate the response to the RAI.

RAI FPR III-1

Note 5 to Table 3-3 identifies analyses related to the 5th Vital Battery that are to be completed in the future. This Note has not been updated between Revision 5 and the as-designed version of the FPR.

Have the analyses identified in Note 5 to Table 3-3 been completed?

If so, provide a summary of the results and any resolutions necessary for identified issues. Also, ensure that the FPR is updated to reflect the completed analyses.

If not, provide a schedule for: completion of the analyses; issue resolutions; and incorporation of the results into the FPR.

This RAI involves an update to the FPR to incorporate the response to the RAI.

RAI FPR III-2

Figures VI-1 through VI-14 are identified as compartmentation drawings in Part III, Section 10.3.1 (page III-39) of the FPR, but not included in the submitted version. This appears to be an error. If it is, correct it. Otherwise, provide the figures.

This RAI involves an update to the FPR to incorporate the response to the RAI.

RAI FPR III-3

Describe how the Unit 2 changes are represented in the as-designed versions of Figures III-1 through III-5 in Part III of the FPR. Also, provide the as-designed versions of the Figures for Part III.

This item was discussed with TVA at a February 3, 2011, public meeting, where TVA agreed to provide this information.

This RAI involves an update to the FPR to incorporate the response to the RAI.

RAI FPR III-4

There are a series of actions that operators must take to defeat a Safety Injection/Coolant Injection (SI/CI) signal for Unit 1 [Table 6-2]. TVA has stated that similar actions are not needed for Unit 2.

Describe the plant changes that resulted in Unit 2 not needing to defeat an SI/CI signal. Provide a summary evaluation and technical justification for this change from the Unit 1 program. This material should be included in an appropriate location in the FPR.

This item was discussed with TVA at a February 3, 2011, public meeting, where TVA agreed to provide this information.

This RAI involves an update to the FPR to incorporate the response to the RAI.

RAI FPR VI-1

DRAFT RAI FPR VI-1 was resolved at the February 15, 2011, public meeting with TVA.

RAI FPR VI-2

DRAFT RAI FPR VI-2 was withdrawn by the NRC staff.

RAI FPR VI-3

In a number of instances in the Part VI tables, control designators in contain "XXX," for example, "2-HS-3-XXX-A" [pg VI-743]. Other, similar, controls seem to have numerical designators in place of "XXX." Is this the correct control designator or is it a placeholder? If it is a placeholder, correct the error.

This RAI involves an update to the FPR to incorporate the response to the RAI.

RAI FPR VI-4

In a number of locations in Part VI, Fire Area numbers have been deleted and no replacement information inserted. Two examples are the entries for Doors A157 and A158 on page VI-270.

Confirm that an extent of condition review of the document has been performed to identify and resolve these and similar instances.

This RAI involves an update to the FPR to incorporate the response to the RAI.

RAI FPR VII-1

The deviation and justification for the large equipment hatch between the refueling floor and the Unit 2 reactor building (Part VII, Section 4.7) has been deleted. Additionally, a reference to this

deviation was deleted in Part II, Section 12.10. However, the deviation is still referenced in Part VI, Section 3.15.3 [pg.VI-269].

Resolve this conflict. Also, provide a technical justification for this change (the deletion of the deviation and accompanying justification).

This RAI involves an update to the FPR to incorporate the response to the RAI.

RAI FPR VIII-1

The "Plant Conformance" entry for item D.3.f: [the same addition is also made in a number of similar locations]

"New cable insulation is IEEE-383-qualified cable if possible." [pg. VIII-30]

The addition of "if possible" to this sentence brings it into conflict with one of the elements cited as mitigating intervening combustibles for safe shutdown:

"Limited flame spread of cable insulation/jacket material - New cables meet IEEE-383 vertical tray test and most old cables are covered with flame retardant coating." [pg. III-39]

Resolve this conflict. If TVA intends to keep the addition to Part VIII, provide a summary evaluation and technical justification for the change, including the requisite change to Part III.

This RAI involves an update to the FPR to incorporate the response to the RAI.