



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

May 30, 2012

10 CFR 50.4

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Watts Bar Nuclear Plant, Unit 2
NRC Docket No. 50-391

Subject: WATTS BAR NUCLEAR PLANT (WBN) UNIT 2 – RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION (RAI) (TAC No. ME3091)

- References:
1. Email from Justin Poole (NRC) to Gordon Arent (TVA), dated May 23, 2012 (ML12142A026)
 2. TVA letter to NRC dated April 26, 2012, "Watts Bar Nuclear Plant (WBN) Unit 2 - Transmittal of Revised Unit 1/Unit 2 As-Designed Fire Protection Report (TAC No. ME3091)"
 3. TVA letter to NRC dated August 15, 2011, "Watts Bar Nuclear Plant (WBN) Unit 2 - Transmittal of Revised Unit 1/Unit 2 As-Designed Fire Protection Report (TAC No. ME3091)"

The purpose of this letter is to respond to the request for additional information (RAI) provided in Reference 1. TVA's response to the RAI is provided in Enclosure 1. As discussed between Justin Poole, NRC Senior Project Manager, and Gordon Arent, Senior Manager Licensing, on May 29, 2012, a concern with Operator Manual Action (OMA) 732 has been identified. For fire scenarios for various rooms, the implementation of this manual action was intended to align the Essential Raw Cooling Water (ERCW) system to ensure adequate flow to the Component Cooling System (CCS) heat exchangers. TVA is currently assessing the concerns with OMA 732 which may result in changes to the FPR. Due to this, TVA is not providing an update to the FPR with the response to NRC's RAI. Depending on the changes that must be implemented for OMA 732, TVA will by June 28, 2012, either submit an update to the FPR or coordinate with NRC a schedule for the submittal of the updated FPR. When submitted, the updated FPR will address the changes discussed in Enclosure 1 in TVA's response to NRC's RAI.

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U.S. Nuclear Regulatory Commission
Page 2
May 30, 2012

TVA last provided an update to the list of Fire Protection commitments via Reference 3. This version of the commitment list included the commitments which had and had not been implemented. Provided in Enclosure 2 is an abbreviated version of the commitment list that identifies only the outstanding long-term commitments. This list reflects the wording of each commitment as it was submitted to NRC. However, for this group of commitments, completion of each commitment is required for the development of the as-constructed FPR which TVA committed to provide by October 15, 2014, in Reference 2. For the implemented commitments, closure of the commitments has been or is being documented in accordance with Nuclear Construction Project Procedure (NC-PP) 19, "Closure of Commitments/Open Items Required for Licensing." The submittal of the list provided in Enclosure 2 also satisfies the commitment made in Reference 2 to provide an updated commitment list by May 31, 2012. The new regulatory commitments made in this submittal are listed in Enclosure 3. The two commitments listed in Enclosure 3 are expected to be resolved in the near future and, therefore, are not listed in Enclosure 2.

If you should have any questions, please contact Gordon Arent at (423) 365-2004.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 30th day of May, 2012.

Respectfully,



Raymond A. Hruby, Jr.
General Manager, Technical Services
Watts Bar Unit 2

Enclosures:

1. Response to Request for Additional Information
2. Fire Protection Commitments
3. Commitment List

cc (Enclosures):

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Enclosure 1
Response to Request for Additional Information

NRC QUESTION

1. *The staff understands that (per FPR Part II section 12.1) the electric fire pumps start on actuation of suppression-related detection systems or manually, and the diesel fire pumps on low system pressure or manually. The staff is interested in the expected fire pump response in the following scenarios:*
 - *Manual actuation of a pre-action or deluge valve;*
 - *Operation of a manual hose station;*
 - *Operation of a yard fire hydrant.*

TVA RESPONSE

For the fire fighting activities listed in the question, the only personnel authorized to operate this equipment are Operations shift personnel and the Fire Brigade. These two groups are trained, as well as the remainder of the plant's personnel, to report the fire via the plant's emergency number. First, upon discovery of a fire, personnel will call this emergency number and then fight the fire as able. Upon receiving the emergency call, the Main Control Room staff will enter Abnormal Operating Instruction (AOI) 30.1, "Plant Fires." One of the early steps in this AOI is to start two electric or the diesel fire pump. For these listed manual fire fighting activities (bulleted items above), the manual fire fighting activity listed in NRC's question, may start the diesel fire pump on low pressure depending on system conditions.

Most hose stations at WBN are attached to piping that is normally pressurized to system pressure. The exception to the above are the hose stations located in Lower Containment and the Annulus of both Reactor Buildings. The Fire Brigade (the only personnel trained to perform fire fighting functions) are trained in the use of these normally dry hose stations, which requires pushing a button next to each hose station to activate the water supply valve to the hose station. This action will also automatically start the electric fire pumps.

NRC QUESTION

2. *Part VII, Section 2.9.9.2.b, states that "... [S]ump pumps are not considered to be ignition sources (see 2.9.0 above)." Upon NRC staff review of Section 2.9.0, there is no discussion of sump pumps. Provide a technical basis for sump pumps not being considered credible ignition sources.*

TVA RESPONSE

The two small sump pumps are rated at 5 hp and are in a recessed corner of the room with no concentration of in situ combustibles near them. The only electrical cables near the pumps are the power and control circuits for the pumps, and they are routed in conduits. The only time these pumps would be energized is if there was significant leakage into the room that would require use of the pump or pumps. These circuits are properly protected electrically with breakers and/or fuses that are designed to clear a fault prior to cable ignition. In addition, NUREG/CR 6850 states: "Pumps below 5 hp are assumed to have little or no significant contribution to risk." The "Frequently Asked Question" section clarified this by stating: "Pumps with a rating of 5 hp or less are assumed to have little or no significant contribution to risk." The combination of pumps being normally de-energized, adequate circuit protection when energized, lack of in situ combustibles near the pumps, and information from NUREG/CR 6850 provides the

Enclosure 1 Response to Request for Additional Information

combustibles near the pumps, and information from NUREG/CR 6850 provides the basis for not considering the sump pumps identified in Part VII, Section 2.9.9.2.b being credible ignition sources.

Based on discussions with the NRC staff on May 17, 2012, the following statement regarding 5 hp or less motors not being considered an ignition source will be added to Section 2.9.0, "Fire Hazards Analysis (FHA) in Lieu of 10CFR50, Appendix R, Section III.G.2 Separation," of Part VII of the FPR. Provided in Enclosure 3 is TVA's commitment for the submittal of an updated FPR which will include the changes to Part VII discussed above:

Small motors of 5 hp or less are not considered credible ignition sources because there is insignificant combustible material associated with the motor. In addition some motors such as sump pump motors are normally de-energized. The power cables to the motors are properly sized and the protective devices (breaker/fuse) are designed to clear a fault before the cable reaches its auto-ignition temperature. NUREG/CR-6850 states: "Pumps with a rating of 5 hp or less are assumed to have little or no significant contribution to risk."

NRC QUESTION

3. *In Part VII, Section 2.9.21.3.a, of the FPR, the first paragraph uses the word, "required," in two different contexts. First, it states that: "The FSSD analysis would require radiant energy shielding..." Second, near the end of the paragraph, it states, "... [T]herefore, the radiant energy shield is not required." This inconsistent usage of "required" is throughout Section 2.9 of Part VII.*

Typically, in licensing documents, "required" refers to licensee requirements, such as rules or license conditions. In this context, the first usage is consistent with this usage. The second usage would not be, since it is based on the analysis performed, and not an NRC rule or license condition. Resolve the inconsistent usage of the word "required" in Part VII, Section 2.9.

TVA RESPONSE

The wording throughout Part VII will be updated to address NRC's concern. The following additional updates will also be made to Part VII; (1) Clarify that cables and conduits discussed in Sections 2.9.13.3.a, 2.9.18.3.a, 2.9.20.3.a and 2.9.21.3 are separated by 20 feet, (2) correct several spelling or editorial errors, (3) add a paragraph to Section 2.9.0 to address 5 hp or less motors not being an ignition source (refer to TVA's response to Question 2 above), (4) correct the discussion in Sections 2.9.18 and 2.9.19 regarding penetrations and references, and (5) clarify throughout Section 2.9 the discussion of the use of OMAs, radiant energy shields and electrical raceway fire barrier systems to meet III.G.2. Provided in Enclosure 3 is TVA's commitment for the submittal of an updated FPR which will include the changes to Part VII discussed above.

Enclosure 1
Response to Request for Additional Information

NRC QUESTION

4. Part V, Section 2.2.2 of the FPR states:

Industry test data indicates that fire induced circuit failures will not occur immediately upon exposing cables to fire effects. Damage from an exposure fire to safe shutdown components or circuits is not expected to occur for at least 10 minutes after confirmation by plant personnel.

In the judgment of the NRC staff, this interpretation of industry test data is not supported by the test results, since fire exposure and damage cannot be generalized in such a manner. The staff intends to specifically not endorse this statement in the Safety Evaluation.

TVA RESPONSE

Section 2.2.2 of Part V of the FPR will be revised to eliminate the unnecessary paragraph and to provide additional justification regarding assumptions on automatic reactor trips. Provided in Enclosure 3 is TVA's commitment for the submittal of an updated FPR which will include the changes to Section 2.2.2 of Part V.

NRC QUESTION

5. Part III, Section 7.4.3 of the FPR states: "Restoration procedures are provided for the three fuse columns in the unlikely event of the supply protective device tripping as the result of MHIFs." Clarify:

- Are the actions for the restoration procedures taken in the main control room?
- Are these restoration procedures considered operator manual actions?
- What sort of procedures are they? (i.e., normal operation, emergency operation, etc.)

TVA RESPONSE

TVA has reviewed the electrical power systems credited for post fire safe shutdown and determined that the multiple high impedance fault (MHIF) base case analysis presented in Appendix B-1, "Justification for the Elimination of Multiple High Impedance Faults," of Revision 2 of NEI 00-01, "Guidance for Post Fire Safe Shutdown Circuit Analysis," is applicable to WBN. Based on NRC's endorsement in Section 5.5.2 of Regulatory Guide 1.189, "Fire Protection for Nuclear Power Plants," regarding the use of information contained in Appendix B-1 of NEI 00-01, TVA concludes that the restoration procedures described in FPR Part III, Section 7.4 are not necessary. Section 7.4 of FPR Part III will be revised to clarify WBN's compliance with Appendix B-1 of NEI 00-01. This update will be provided in accordance with the commitment made in Enclosure 3.

Enclosure 1
Response to Request for Additional Information

NRC QUESTION

6. *Part III, Section 4.1 of the FPR states: "Procedural controls for isolation of all potentially spurious RCS letdown paths, including pressurizer PORVs and reactor head vents, provide assurance that isolation of normal and excess letdown paths will be achieved." Clarify:*
- *Are the actions for the procedural controls taken in the main control room?*
 - *Are these procedural controls considered operator manual actions?*
 - *What sort of procedures are they? (i.e., normal operation, emergency operation, etc.)*

TVA RESPONSE

Below are specific responses to each of the bulleted items above:

First Bullet:

The Unit 2 procedures are performed in the Main Control Room. Unit 1 credits an OMA to operate a switch located on elevation 757.0 just outside the Main Control Room door.

Second Bullet:

For Unit 2 the procedures are performed in the Main Control Room and are NOT OMAs. One Unit 1 action is performed outside the Main Control Room and is considered an OMA. The remaining Unit 1 actions are not OMA.

Third Bullet:

For both units the procedures for both control room actions and OMA outside the Main Control Room are contained in AOI-30.2, "Fire Safe Shutdown."

NRC QUESTION

7. *The description of Fire Area 2-1 (Part VI, Section 3.4.1, RHR Pump Room 1B-B) is, in part: "This is a separate fire area and the capability to achieve safe shutdown has been demonstrated through analysis." Yet, Part I, Table I-1 shows that Fire Area 2-1 has a III.G.1 Appendix R compliance strategy. This classification is only appropriate for fire areas that do not contain redundant trains of equipment or cables.*

Does Fire Area 2-1 (RHR Pump Room 1B-B) contain redundant trains of equipment or cables? If so, identify the III.G compliance strategy of this fire area, and reference the appropriate evaluation deviation that addresses the analysis. If not, the description in the FPR of this area should be aligned with the other, similar fire areas (RHR Pump Room 1A-A, as an example).

Enclosure 1
Response to Request for Additional Information

TVA RESPONSE

Fire Area 2-1 (RHR Pump Room 1B-B) does not contain redundant trains of equipment or cables.

The note at the end of FPR Part VI, Section 3.4.1 will be revised to read as follows. This change will be reflected in the version of the FPR that is submitted to fulfill the commitment made in Enclosure 3:

Note: Although this area is not provided with suppression or full area detection, fire barrier ratings are sufficient given the combustible loadings in the area. This is a separate fire area which does not contain redundant safe shutdown equipment. Therefore, a fire in this area will not endanger other safety related equipment required for safe plant shutdown. Refer to Paragraph F.11 of Part VIII of the FPR for information on conformance to Appendix A guidelines regarding this issue.

NRC QUESTION

8. *The pressurizer transmitter sense lines near the top of the pressurizer (FPR Part VII, Section 2.9.20.3.a, paragraph 5), are described as having a number of defense-in-depth features, such as limited ignition sources and combustibles, separation from other rooms, automatic suppression for the reactor coolant pumps, and no impact on plant trip for damage to FSSD components in 2RI – Unit 2 Reactor Building Inside Crane Wall. All other FSSD equipment in this room includes one or more of these additional features:*

1. *Air piping is welded steel,*
2. *Redundant cables are separated by at least 3 feet horizontally,*
3. *Cables are installed in conduit,*
4. *Alternative systems are available in the control room to shutdown the plant,*
5. *Spurious actuations are avoided by the use of dedicated conduit with no other energized conductors,*
6. *Spurious actuations are avoided since they would only occur if there were a proper polarity two or three phase hot short,*
7. *Targets are high above the floor, at least 10 feet, and/or*
8. *Redundant trains may be located in the analysis volume, but not in the room being evaluated.*

Provide information if any of these additional features apply to the pressure transmitter sense lines near the top of the pressurizer. If not, describe any additional mitigating features that provide assurance that the sense lines would not be damaged by fire.

Enclosure 1
Response to Request for Additional Information

TVA RESPONSE

TVA has reviewed the above list of defense-in-depth features and has determined that the following additional defense-in-depth features are applicable to the pressurizer pressure sensing lines near the top of the pressurizer:

- a. The sense lines from the tap on the pressurizer to the bellows (located outside of the pressurizer enclosure) consist of two parts. The parts are rigid tubing and flex hose (for thermal expansion/contraction). The flex hose is ASME Section III, Class 2 metal flex hose assembly. The rigid tubing is ASME Section III, Class 2, schedule 160 SS welded.
- b. The closest sense lines are more than 4 feet apart (horizontally) at the taps.
- c. The taps on the pressurizer and the penetrations where the sense lines exit the enclosure are more than 40 feet above the floor.

A summary of the above information will be added to Section 2.9.20.3.a, "Redundant Components in the Room," of Part VII. This change will be reflected in the version of the FPR that is submitted to fulfill the commitment made in Enclosure 3.

NRC QUESTION

9. *In the response to RAI FPR VII-30, TVA stated that for hose stations with hose lengths greater than 100 feet, additional pressure was required to account for the additional length of hose. However, the response did not include a clear conclusion that the additional pressure is sufficient to achieve the required flow rate and satisfy the minimum pressure requirement of the nozzle.*

Confirm that for the hose stations with hose lengths greater than 100 feet, the required pressures are sufficient to achieve the required flow rates and satisfy the minimum pressure requirement of the nozzles.

TVA RESPONSE

NFPA-14-1974, Section 421 states that each hose outlet shall be equipped with not more than 100 feet of approved small fire hose. Section 541 states the supply (standpipe) to the Class II hose stations shall be sufficient to maintain a residual pressure of 65 pounds per square inch gauge (psig) at the topmost outlet of each standpipe with 100 gallons per minute (gpm) flowing.

For hose station locations addressed in FPR Part VII, Section 4.3, WBN uses more than 100 feet of hose; however, the additional hose length has been compensated for by ensuring the pressure at the hose station is sufficiently high to compensate for the friction loss due to the additional hose length as discussed below.

The standpipes supplying the 1.5-inch hose stations inside the buildings were not pre-operational tested to verify the pressure/flow capacity. However, larger 2.5-inch hose stations on the same standpipes at the roof of Auxiliary and Diesel Generator Buildings were used to test the standpipes. The standpipes at the roofs were tested to demonstrate they maintained a minimum of 65 psig residual pressure at the outlet of

Enclosure 1
Response to Request for Additional Information

the standpipe with 500 gpm flowing. Since the test demonstrated the standpipes meet the residual pressure requirement (65 psig) with a greater than required flow rate (500 gpm versus 100 gpm), it is concluded that the standpipe would have greater than 65 psig residual pressure at a flow rate of 100 gpm. Furthermore, since the hose stations on the roof of these buildings are at a higher elevation than the hose stations inside the buildings, the pressure at the hose stations inside the buildings would be higher than the pressure on the roof due to the hydrostatic pressure. The minimum elevation difference for the hose station on the roof of any of the buildings to the listed hose station inside the building is 31.5 feet. The 31.5 feet of height would equate to approximately 13.5 psig of additional water pressure at the highest hose station inside the building.

The NFPA Handbook provides equations for calculating the pressure drop in fire hoses. For 1.5-inch lined fire hoses, the pressure drop is approximately 6 psi for 25 feet of hose or 12 psi for 50 feet of hose. Therefore, in order to account for a hose length of 125 feet, a standpipe residual pressure of 71 psig (65 psig + 6 psig) would result in the hose performing to the same capacity requirements as 100 feet of hose at a pressure of 65 psig. Similarly, 77 psig residual pressure would result in a 150-foot long hose performing to the same capacity requirements as 100 feet of hose at a pressure of 65 psig.

WBN uses UL listed hose nozzles which meet the flow requirements of NFPA-14-1974, Section 451.

The additional hydrostatic pressure inside the buildings compensates for the additional hose length so that the 125 foot and 150 foot hoses perform comparable to a 100 foot hose with the prescribed 65 psig residual pressure. Therefore, it is concluded that the minimum pressure requirements described in Part VII, Section 4.3 for the hose stations whose hoses exceed 100 feet are sufficient to achieve the NFPA prescribed flow rate and pressure for the hoses which exceed 100 feet in length.

Enclosure 2
Fire Protection Commitments
Open Commitments to be Completed for the
Submittal of the As-Constructed Fire Protection Report (FPR)

Item No.	Reference & Commitment Number	Commitment
6.	2 (111905993)	The resolutions contained in Appendix B of the Multiple Spurious Operation (MSO) Evaluation Report shall be implemented prior to Unit 2 fuel load.
7.	2 (111905994)	PWROG Scenario 13a: "Charging Pump Runout" shall be confirmed to be within the bounds of CCP operation during the large break LOCA analysis prior to Unit 2 fuel load.
17.	4 (112068531)	Figures representing the as-constructed plant configuration will be provided after construction completion. [RAI FPR General - 4]
20.	4 (112068578)	Upon performing the final plant walkdowns as prescribed in FPR Sections 2.1.1, 2.4.3, and 2.3, TVA will review the information and submit the results for NRC approval if they differ from the assumptions and details provided in Part V or the other parts of the FPR. Otherwise, TVA will inform the NRC when the walkdowns are complete and that no revisions to the FPR were required. [RAI FPR V-3]
23.	4 (112068748)	The barriers separating the Unit 2 Reactor Building from the Refueling Floor will be configured and controlled the same as the Unit 1 Reactor Building Equipment Hatch. [RAI FPR VII-1]
30.	6 (112249875)	The referenced conflicts and inconsistencies between Part II, Section 14.2 "Water Supply" and the "Fire Pump Inoperability and Compensatory Actions" Table have been reviewed, and Section 14.2 and the Table have been revised to reflect consistency between the two parts. The revised table is included as Attachment 2 to this letter and will be incorporated into the FPR as part of the As-Constructed update of the FPR prior to Unit 2 initial fuel load. (Letter Item 24. [NRC Question (RAI FPR II-34)])
37.	7 (112294554)	The operator manual action timelines shall include the time required for getting the lantern. (Enclosure 4, Question 12. NRC Question (RAI FPR V-10))
39.	8 (112331325)	Additionally, it has been determined that the RES M-20A & M-20C materials are no longer available and Unit 2 will be replaced with a compatible material, such as 3M E54, that will provide equal or greater protection than the M-20A & M-20C. [Enclosure 1, Letter Item 2. NRC Question (RAI FPR II-42)]
42.	8 (112331447)	WBN design criteria WB-DC-30-13, "10CFR50, Appendix R, Type I, II, and III Circuits – Unit 1 / Unit 2" will be revised to define the evaluation methodology and specify the applicable circuit failure criteria in accordance with NEI-00-01 Revision 2 and RG 1.189, Revision 2. [Enclosure 1, Letter Item 29. NRC Question (RAI FPR MSO-1)]
43.	8 (112331509)	The term "backup control stations" should have been "auxiliary control system" and the WBN Unit 2 MSO Report Revision 1 will be revised to state "auxiliary control system." [Enclosure 1, Letter Item 33. NRC Question (RAI FPR MSO-6)]

Enclosure 2
Fire Protection Commitments
Open Commitments to be Completed for the
Submittal of the As-Constructed Fire Protection Report (FPR)

Item No.	Reference & Commitment Number	Commitment
44.	9 (112345687)	As resolution of this RAI, TVA commits to completing prior to Unit 2 fuel load the modifications and document revisions required to resolve the common MSOs identified in Appendix C submitted in TVA letter to NRC dated August 20, 2010 (Reference 3).
52.	10 (112384234)	TVA will complete the resolution actions for the MSO scenarios affecting Unit 2 prior to the Unit 2 fuel load. (Letter Item # 15, [NRC RAI FPR MSO-10])
53.	10 (112384277)	The statement in FPR Part IV, Section 1.0, "fires in the building that could result in abandonment of the main control room (MCR)," is correct. There are fires in the control building that will not result in MCR abandonment. The WBN Unit 2 MSO Report, Revision 1, will be revised to eliminate this apparent contradiction. (Letter Item # 16, [NRC RAI FPR MSO-11])
54.	11 (112444565)	Validation of the Unit 2 Operator Manual Action (OMA) performance times will be demonstrated prior to Unit 2 fuel load.
55.	11 (112444572)	Emergency lighting and communications for the Unit 2 OMAs will be demonstrated during the Unit 2 OMA validation walkdowns.
56.	11 (112444575)	The post fire safe shutdown procedures [Abnormal Operating Instruction (AOI) 30.2] will be revised for dual unit operation prior to Unit 2 fuel load.
57.	11 (112444581)	The feasibility and reliability evaluation will be reviewed and modifications, as needed, incorporated when the combustible loadings are finalized. These actions will be completed prior to Unit 2 fuel load.
58.	12 (112488301)	Piping and hose stations will be added in the following areas for Unit 2 operation: [Letter # 2. NRC Question (RAI FPR VII-2.2)] a. Two sprinkler systems in the Unit 2 Reactor Building. These are pre-action sprinkler systems, normally dry with an air supervision of the piping. b. Two sets of hose stations in the Unit 2 Reactor Building. These hose stations are fed from a sprinkler system type deluge valve thus they will normally be dry also but will not have air supervision. c. Sprinkler system for the protection of the charcoal beds in the Unit 2 Containment Purge Air filter housing. This will be a pre-action sprinkler system but will not have air supervision.
59.	12 (112488384)	Existing Unit 1 hose stations that presently are not required by the FPR to provide protection to operating equipment will be re-classified to providing protection for operating equipment when Unit 2 goes on line. [Letter # 2. NRC Question (RAI FPR VII-2.2)]

Enclosure 2
Fire Protection Commitments
Open Commitments to be Completed for the
Submittal of the As-Constructed Fire Protection Report (FPR)

Item No.	Reference & Commitment Number	Commitment
70.	17 (112549702)	The following design changes will be implemented prior to Unit 2 fuel load or startup, as applicable: EDCR 53217; EDCR 53287; EDCR 53288; EDCR 53290; EDCR 53291; EDCR 53292; EDCR 53293; EDCR 53296; EDCR 54103; DCN 52606; EDCR 54795; EDCR 54796; EDCR 54797; EDCR 54798; EDCR 54799; and EDCR 54819 (Letter Item # 15, NRC Question RAI FPR III-17)
108.	19 (112783894)	TVA confirms there will be procedures for each affected room that address each OMA. The OMAs identified in the FPR are to be verified by walkdowns and documented in AOI 30.2 prior to fuel load. The statement that a room does not have dedicated procedures for fire safe shutdown will be deleted for the evaluations. These revised evaluations will be included in the next FPR submittal. [Letter item # 16. NRC Question (RAI FPR VII-22)] [Item 14 of Enclosure 2 of letter T02 110930 001]
118.	20 (112868246)	Performance demonstration walkdowns described in Section 2.2.1 of part V will be performed for alternate shutdown operator manual actions, and the timing of those walkdowns for Unit 2 will consider that the control room operators will need to travel from the Main Control Room to the Auxiliary Control Room or other Auxiliary Control System (ACS) locations, as applicable. These performance demonstration walkdowns will be performed prior to Unit 2 fuel load. [Letter Item # 2. [2] (RAI FPR IV-5)] [Item 2 of Enclosure 2 of letter T02 111028 001]
123.	21 (112970585)	In response to the NRC request, TVA is preparing a new table (Table I-2) that will be added to Part I of the Fire Protection Report. The table will list the specific paragraphs of Appendix R, Section III. G (e.g. III.G.1; III.G.2.a, b, c, d, e, f; III.G.3) that are credited by the post fire safe shutdown analysis for each analysis volume. TVA will provide the requested table by December 22, 2011 and incorporate it into the "As-Constructed" FPR. [from Enclosure 3 of Letter T02 111130 001]
124.	22 (113315590)	The WBN Unit 2 estimated completion schedule will be finalized in the near future. This estimate will include a revised schedule for the submittal of the as-constructed FPR. TVA will communicate the updated schedule for the as-constructed FPR to NRC as soon as it is available.
125.	23	The fire protection strategy error affects both design calculations and the FPR. This discovery was identified to NRC by telecon on April 11, 2012. TVA expects to complete the reanalysis and submit the revised FPR by April 27, 2012. That submittal will include a description of the strategy error and the resulting impact.
126.	24	TVA will ensure that the as-constructed FPR conforms to the as-constructed configuration of the plant. Based on the current completion schedule for WBN Unit 2, the as-constructed FPR will be submitted to NRC no later than October 15, 2014.

Enclosure 2
Fire Protection Commitments
Open Commitments to be Completed for the
Submittal of the As-Constructed Fire Protection Report (FPR)

REFERENCE FOR COMMITMENT SOURCE

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| 2. | TVA to NRC letter dated August 20, 2010, "Watts Bar Nuclear Plant (WBN) Unit 2 – Fire Protection Program (TAC No. ME0853) – Commitment to Provide Additional Information on Multiple Spurious Operation (MSO) Scenarios" |
| 4. | TVA to NRC letter dated March 16, 2011, "Watts Bar Nuclear Plant (WBN) Unit 2 – Request for Additional Information Regarding Final Safety Analysis Report (FSAR) Amendment Related to Section 9.5.1 "Fire Protection System" (TAC No. ME3091)" |
| 6. | TVA to NRC letter dated May 6, 2011, "Watts Bar Nuclear Plant (WBN) Unit 2 – Request for Additional Information Regarding 'Fire Protection Report' (TAC No. ME3091)" |
| 7. | TVA to NRC letter dated May 18, 2011, "Watts Bar Nuclear Plant (WBN) Unit 2 – Fire Protection Program (TAC No. ME0853) – Submittal of Information to Address Commitment in Support of Response to Fire Protection Report Request for Additional Information (RAI) and Revision to TVA March 16, 2011 RAI Response" |
| 8. | TVA to NRC letter dated May 26, 2011, "Watts Bar Nuclear Plant (WBN) Unit 2 - Request for Additional Information (RAI) Regarding 'Fire Protection Report' (TAC No. ME3091)" |
| 10. | TVA to NRC letter dated June 17, 2011, "Watts Bar Nuclear Plant (WBN) Unit 2 - Request for Additional Information Round 5 Regarding 'Fire Protection Report' (TAC No. ME3091)" |
| 11. | TVA to NRC letter dated July 1, 2011, "Watts Bar Nuclear Plant (WBN) Unit 2 – Request for Additional Information (RAI) Regarding Final Safety Analysis Report (FSAR) Amendment Related to Section 9.5.1, 'Fire Protection System' (TAC No. ME3091)" |
| 12. | TVA to NRC letter dated July 22, 2011, "Watts Bar Nuclear Plant (WBN) Unit 2 - Corrosion Related Portion of NRC's Request for Additional Information (RAI) Round 6 Regarding 'Fire Protection Report' (TAC No. ME3091)" |
| 17. | TVA to NRC letter dated August 5, 2011, "Watts Bar Nuclear Plant (WBN) Unit 2 – Request for Additional Information (RAI) Group 6 Regarding "Fire Protection Report" (TAC No. ME3091)" |
| 19. | TVA to NRC letter dated September 30, 2011, "Watts Bar Nuclear Plant (WBN) Unit 2 - Request for Additional Information (RAI) Group 7 Regarding "Fire Protection Report" (TAC No. ME0853) |
| 20. | TVA to NRC letter dated October 28, 2011, "Watts Bar Nuclear Plant (WBN) Unit 2 – Request for Additional Information (RAI) Group 8 Regarding "Fire Protection Report" (TAC No. ME3091) |
| 21. | TVA to NRC letter dated November 30, 2011, "Watts Bar Nuclear Plant, Unit 2 - Transmittal of Revised Unit 1/Unit 2 As-Designed Fire Protection Report (TAC NO. ME3091) |
| 22. | TVA to NRC letter dated March 13, 2012, "Watts Bar Nuclear Plant (WBN) Units 1 and 2 – Fire Protection Report – Revision of Commitments" |
| 23. | TVA Letter to NRC dated April 12, 2012, "Watts Bar Nuclear Plant (WBN) Unit 2 – Response to Request for Additional Information (RAI) Related to the Fire Protection Report, Group 8 (TAC NO. ME3091)" |
| 24. | TVA Letter to NRC dated April 26, 2012, Watts Bar Nuclear Plant (WBN) Unit 2 – Transmittal of Revised Unit 1/Unit 2 As-Designed Fire Protection Report (TAC NO. ME3091) |

Enclosure 3

Commitment List

1. Depending on the changes that must be implemented for OMA 732, TVA will by June 28, 2012, either submit an update to the FPR or coordinate with NRC a schedule for the submittal of the updated FPR.
2. When submitted, the updated FPR will address the changes discussed in Enclosure 1 in TVA's response to NRC's RAI.