



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

August 27, 2014

APPLICANT: Tennessee Valley Authority

FACILITY: Watts Bar Nuclear Power Plant, Unit 2

SUBJECT: SUMMARY OF JULY 16, 2014, MEETING WITH TENNESSEE VALLEY
AUTHORITY REGARDING THE WATTS BAR NUCLEAR PLANT UNIT 2
OPERATING LICENSE APPLICATION

On July 16, 2014, a Category 1 public teleconference was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of the Tennessee Valley Authority (TVA). The purpose of this teleconference was for TVA staff to discuss issues related to the operating license application review for Watts Bar Nuclear Plant (WBN) Unit 2. There were two points of discussion at this meeting. The first focused on TVA's approach to address issues related to flooding analysis at the Watts Bar site, while the second focused on the NRC's requests for clarification related to TVA's partial submittal of the Fire Protection Report, which contained Parts II, III, IV, VIII, IX, and X. TVA plans to submit the remainder of the Fire Protection Report on August 15, 2014. A list of attendees for the teleconference is included in Enclosure 1. The handout discussing TVA's draft responses to the NRC's questions is included in Enclosure 2.

The new strategy TVA presented at this meeting for the flooding analysis at the Watts Bar site differs from the original path submitted as part of a License Amendment Request for WBN Unit 1 currently under review, which WBN Unit 2 planned to implement as well. Originally the staff had questions surrounding TVA's submitted justification of its use of different acceptance criteria for dam stability than what was described in the current final safety analysis report (FSAR) for WBN Unit 2 (and by extension of the current FSAR for WBN Unit 1). At this meeting, TVA discussed a new approach for handling the flooding issues related to the WBN site when encountering a probable maximum flood. TVA described that Tennessee Valley Authority River Operations (an independent authority on river operations issues including dam design and safety) (TVA River Ops) will evaluate the dams using the current methodology and criteria, and for any dams that are found to be "at-risk," these would be further examined by TVA River Ops. TVA would propose a license condition for those dams to be upgraded to meet the new current standards and for these upgrades to be implemented in a certain timeframe. TVA also stated that they would have a third party review their calculations to ensure they reached reasonable conclusions, and submit corroborating calculations using a different computer model than the one they're currently approved to use. This additional information would serve no purpose other than providing additional justification to the data gathered from the approved model. The NRC would make no regulatory decisions based solely on the additional information.

The NRC made the comment that TVA should be sure to re-examine the effects of seismic events on surrounding structures and dikes in particular the West Saddle Dike given the change in methodology they are proposing. The NRC also requested that TVA's revised submittal

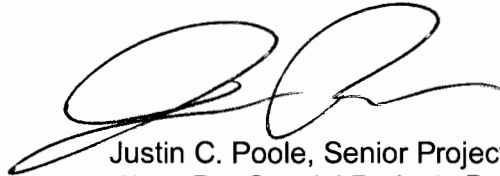
they would address the NRC's comments and concerns and planned to submit the revised request by August 31, 2014. No regulatory decisions were made during the teleconference.

During the second portion of the meeting the NRC and TVA went through each question and response found in Enclosure 2. During these exchanges, the NRC told TVA which responses satisfied their clarification requests and which ones need further explanation and/or revising of the Fire Protection Report itself. TVA stated that they would address these comments in the August 15, 2014, full submittal of the Fire Protection Report. The NRC and TVA agreed to meet at a time prior to the full submittal should further discussion be needed.

No regulatory decisions were made at this meeting.

No members of the public participated in this meeting.

Please direct any inquiries to me at 301-415-2048 or via e-mail at Justin.Poole@nrc.gov

A handwritten signature in black ink, appearing to read 'JP', is positioned above the printed name and title of Justin C. Poole.

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

Docket No. 50-391

Enclosures:

1. List of Attendees
2. TVA Handouts

cc w/encls: Distribution via Listserv

MEETING ATTENDANCE LIST

Applicant: Tennessee Valley Authority

Plant: Watts Bar Nuclear Plant, Unit 2

Subject: Construction Status

Date: July 16, 2014

Location: U.S. Nuclear Regulatory Commission
Headquarters, Room O-16B04

Time: 12:30 p.m. – 3:00 p.m.

NAME	TITLE	ORGANIZATION
Anthony Minarik	Project Manager	NRC/NRR/DORL/Watts Bar Special Projects Branch
Justin Poole	Sr. Project Manager, WBN 2	NRC/NRR/DORL/Watts Bar Special Projects Branch
Siva Lingam	Project Manager, WBN 1	NRC/NRR/DORL/Watts Bar Special Projects Branch
Jeanne Dion	Project Manager	NRC/NRR/DORL/Watts Bar Special Projects Branch
Andy Hon	Project Manager, SQN	NRC/NRR/DORL/LP2-2
Yuan Cheng	Hydrologist	NRC/NRR/DE/EMCB
Yong Li	Acting Branch "Chief	NRC/NRR/DE/EMCB
Dan Hoang*	Sr. Engineer	NRC/NRR/DE/EMCB
Daniel Frumkin	Senior Fire Protection Engineer	NRC/NRR/DRA/AFP

NAME	TITLE	ORGANIZATION
Charles Moulton	Fire Protection Engineer	NRC/NRR/DRA/AFP
Scott Shaeffer*	Branch Chief	NRC/ Region II/DRS
Gordon Arent	Director, WBN Licensing	TVA
Erin Henderson	Director, SQN Licensing	TVA
Rusty Stroud	Licensing	TVA
Bill Crouch	Engineering	TVA
Bob Bryan*	Licensing	TVA
John Sturky*	Licensing	TVA
Charles Brush*	Fire Protection	EPM

*via teleconference

ENCLOSURE 2

DRAFT RESPONSES FROM TVA
RE: FIRE PROTECTION REPORT

Discussion topics/RAIs for the public meeting with TVA
regarding changes to selected sections of the WBN FPR

NRC Question 1 - Part II, page 8:

The revision regarding major modifications and new installations could be interpreted to mean that new installations may be installed to a historical code of record. Although this may be appropriate for modifications, even major modifications, no basis is provided for relying on historical codes of records for new installations.

- ☐ Provide a justification for relying on historical codes of records for new installations.

Response: It is TVA's intention to utilize the most recent version of the NFPA Code when installing totally new installations. We retained the reference to the original Code of Record only for situations where we expand/add to an existing feature. In this case, the expansion could be considered a "new" installation; however, we would want to make the expansion the same as the previously existing feature for maintenance and operational fidelity.

NRC Question 2 - Part II, page 11:

The Corporate Engineering Chief Engineer is listed as the Authority Having Jurisdiction (AHJ). This is inconsistent with NRC regulatory guidance; Regulatory Guide 1.189, Revision 2, section 1.8.6, states: "The AHJ (as described in NFPA documents) refers to the Director of NRR . . . , or designee, consistent with the authority specified in 10 CFR 1.43, 'Office of Nuclear Reactor Regulation.'"

- ☐ Provide a description and examples of who is considered the AHJ for specific fire protection program changes.

Response: Consistent with the WBN fire protection report Revision 4 as approved by SSERs 18 and 19, the Authority Having Jurisdiction (AHJ) for TVA nuclear power facilities is the Corporate Engineering Chief Engineer who has the authority for approving equipment, installations or procedures. The Chief Engineer's staff serves as the central point of contact with other organizations for fire protection related matters. NFPA 1 provides the following definition:

A.3.2.2 Authority Having Jurisdiction (AHJ)

The phrase "authority having jurisdiction," or its acronym AHJ, is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the AHJ may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal, chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the AHJ. In many circumstances, the property owner or his or her designated agent assumes the role of the AHJ; at government installations, the commanding officer or departmental official may be the AHJ.

TVA is a governmental installation and has previously defined the AHJ as described above. Regulatory Guide 1.189 is a relatively new document to which WBN Unit 1 is not committed and thus the definition of AHJ should remain consistent with the previously approved version. WBN

Discussion topics/RAIs for the public meeting with TVA
regarding changes to selected sections of the WBN FPR

utilizes the provisions of Generic Letter 86-10 to determine when changes are required to be submitted to the NRC for approval.

Other sections of the NFPA Code provide further definition of the responsibilities of the AHJ. These responsibilities are at a much lower level of detail than the NRC typically gets involved.

NRC Question 3 - Part II, pages 16 and 17:

- ☐ Provide clarification regarding whether actions taken in the auxiliary control room are considered Operator Actions or Operator Manual Actions.

Response: Operator manual actions as defined in NUREG 1852 includes only “those actions performed by operators to manipulate equipment and components from outside the main control room to achieve and maintain post-fire hot shutdown, but not including “repairs”. As stated in footnote number 1 on page 1-1 of NUREG 1852, operator manual actions do not include any actions within the main control room or the action(s) associated with abandoning the main control room in the case of fire.

NEI-00-01, Appendix E, Section E, Revision 2 states, “Any actions taken by the operator in the Control Room are not considered to be operator manual actions and are considered to be an acceptable means of effecting safe shutdown for the selected success path. Similarly, an action taken by an operator at a location outside of the Control Room, e.g. Remote Shutdown Panel, Local Control Station, that is specifically designed with local controls, e.g. hand switches, for the purpose operating plant equipment is not considered to be an operator manual action. The use of this latter set of equipment, however, must be assured to be free of fire damage and capable of being operated in the time required given the potential environmental conditions caused by the fire at the location of the equipment and along the travel path to the equipment.”

The WBN auxiliary control room controls (hand switches) are specifically designed for the purpose of operating plant equipment and their operation would not be considered OMAs per the guidance on NEI-00-01, Appendix E, Section E.2, Revision 2. However, for conservative timing purposes, TVA considers auxiliary control room actions taken by an assistant unit operator (AUO) in response to an auxiliary building fire to be Operator Manual Actions (OMAs) and subject to the 100% time margin acceptance criteria (FPR Part V, Section 2.1.2) which is based on NUREG 1852. In such cases the unit operator manages the unit to achieve safe shutdown from the main control room while the AUO performs specific auxiliary control room actions. For alternative shutdown due to a control building fire requiring abandonment of the main control room, actions taken in the auxiliary control room are considered Operator Actions (similar to actions taken in the main control room) but are demonstrated to meet the 100% margin acceptance criteria (FPR Part V, Section 2.1.2). For both scenarios which credit actions in the auxiliary control room, TVA has ensured the equipment and its circuits are free of fire damage and capable of being operated within the allowable time (typically 100% time margin) given the potential environmental conditions caused by the fire at the control location and along the travel path to the control location.

Successful demonstration (i.e., achievement of 100% time margin for actions in the auxiliary control room) of the main control room abandonment procedure was achieved by reordering steps to accomplish the “required” steps earlier in the process. This resulted in a small delay of some of the previously earlier steps; however, even though it is less efficient overall, no adverse impacts were created by the new procedure order.

Discussion topics/RAIs for the public meeting with TVA
regarding changes to selected sections of the WBN FPR

NRC Question 4 - Part II, pages 19 to 22:

It appears that TVA has replaced the Part II discussion of fire protection program management organization, authorities, and responsibilities with references to other documents. 10 CFR 50.48(a) requires the program to include this information.

- ☐ Justify the replacement of the information regarding the fire protection program organization, authorities, and responsibilities, with references to other documents.

Response: The organizational information was removed based on the information contained in the NRC safety evaluation (June 26, 1991) regarding the TVA organizational topical report (TVA-NPOD89-A). The safety evaluation states that "TVA intends to reference the Topical Report TVA-NPOD-A in license applications, the Updated Final Safety Analysis Report (UFSAR), Technical Specifications (TSs), the Nuclear Quality Assurance Plan, and other documents that may refer to the TVA Nuclear Power organization". The Fire Protection Report was originally a part of the FSAR but was later moved into a separate document and is considered included in the UFSAR via a reference in UFSAR Sections 1.1.2 and 9.5.1. Based on the above guidance, the fire protection related information was removed from the FPR and placed with a reference to organizational topical report TVA-NPOD89-A which was submitted to the NRC via TVA letter dated September 5, 2013.

Based on further evaluation, the level of organizational detail provided in the organizational topical report is sufficient for an overall description of the site such as would be provided in a UFSAR or TS but may not be sufficient to fulfill the requirements of 10CFR50.48 (a) for the Fire Protection Program. Consequently, TVA will restore the FPR Part II, Section 7.0 organizational description to a level of detail similar to that provided previously.

- ☐ Provide information such that the NRC staff can review the fire protection program organization, authorities, and responsibilities in accordance with 10 CFR 50.48(a).

Response: TVA will provide an updated organizational description in Part II, Section 7.0 in the August 15, 2014 submittal.

- ☐ Provide an explanation of how changes are managed to the referenced documents, and how those changes are controlled.

Response: Since the organizational information will be restored to the FPR, this question is considered not applicable. The organizational information in the FPR will be included as part of the FPR updates submitted on a schedule consistent with 10 CFR 50.71(e).

NRC Question 5 - Part II, page 37:

- ☐ In light of the change in 12.3.1, provide a description of how fire pumps are started in the event of manual initiation of a preaction sprinkler system.

Response: Site personnel are trained via General Employee Training to notify the main control room when any fire is detected. The WBN fire response procedure AOI-30.1, "Plant Fires", "Operator Actions Guidelines" directs the main control room staff to ensure the available fire pumps are running.

Discussion topics/RAIs for the public meeting with TVA
regarding changes to selected sections of the WBN FPR

NRC Question 6 - Part II, page 38:

- ☐ In light of this deletion, provide a summary of the design criteria for the carbon dioxide systems. If a system doesn't meet the code of record, provide a discussion here (in Part II) or an evaluation in the appropriate part of the FPR.

Response: The Carbon Dioxide system meets the concentration requirements of NFPA-12 for deep seated fires and surface fires. The requirements of the referenced system description are the same as those previously in the Fire Protection Report. Deviation from the NFPA requirement would require a revision to the FPR (Part X) which would require NRC approval.

NRC Question 7 - Part II, starting on page 43:

- ☐ Provide a description of the wireless fidelity (wi-fi) system's capability.

Response: See separate page.

- ☐ Explain the capabilities the wi-fi system regarding coverage and quality assurance for components (power supply, radios, transmitters, and repeaters) as compared to the two-way plant radio system.

Response: See separate page.

- ☐ Confirm that in the event of postulated fires that may damage the two-way radio system that the wi-fi system will be available to support fire fighting and safe shutdown communication.
Response: See separate page.

NRC Question 8 - Part II, page 50:

- ☐ TVA should note that the deletion of (old) note 4 does not remove the program requirement described in the text of this section.

Response: Old note 4 was not referred to in the old version of the table and was thus removed. As noted by this question, the verbiage was retained in the text above the table and is included in the WBN procedures which govern penetrations through the Auxiliary Building Secondary Containment Envelope (ABSCE). The requirement addressed by these seals is for ABSCE and not fire protection and thus was not a fire protection program requirement. TVA does not consider this to be a change in overall plant requirements.

NRC Question 9 - Part II, page 56:

- ☐ Explain and justify why the text requiring trained personnel was deleted from the description of the requirements for the use of CCTV as a compensatory measure.

Response: Fire watch personnel are formally trained regarding their duties, methods, expectations. The closed circuit televisions (CCTVs) are one of the basic tools used by the

Discussion topics/RAIs for the public meeting with TVA
regarding changes to selected sections of the WBN FPR

trained fire watches. The use of the CCTV requires no formal training (joy stick operation only) and is considered "skill of the trade" due to the simplicity of its use. The statement about "trained personnel" was removed to clarify there is no formal training for the use of the CCTV. As an alternative, the wording could have been changed to "CCTVs are monitored by **fire watch** personnel at a frequency..."

NRC Question 10 - Part II, page 63:

- ☐ For 14.2.1(a) and (b), justify the use of "and/or" for establishing compensatory measures.

Response: Fire watches (hourly versus continuous) would be established corresponding to the areas/elevations for which the fire detection equipment is either operable or inoperable. The wording refers to "if the fire detection for the area is operable (or inoperable)." It would not be reasonable to establish a fire watch on one elevation based on the status of the fire detection on a different elevation. Fire watches will be established on **both elevations**; however, the frequency will be based on the operability of the detection on **each floor**. It is **not necessary** to establish continuous fire watches on both elevations if the **detection** on only one of the elevations is inoperable. No further clarification to the wording is warranted.

- ☐ Describe the conditions where one elevation would be excluded from needing the compensatory measures, and the conditions where both would.

Response: For 14.2.1.a.1, if the fire detectors on elevation 713 feet were operable, an hourly fire watch on that elevation would be established. If the fire detectors on that elevation were not operable, a continuous fire watch in accordance with 14.2.1.a.2 would be required. The same is true for elevation 737 feet.

- ☐ For 14.2.1(b), justify the reduction in areas requiring compensatory measures.

Response: In response to WBN PER 786848, a detailed evaluation was performed of the areas originally listed but which were **later deleted** since it was demonstrated that sufficient fire pumps were available **such that the condition did not apply**. For those areas that remain, compensatory measures (fire watches) are established to ensure the fire pump capacity is not affected by fire in these areas.

NRC Question 11 - Part II, page 67:

- ☐ For 14.2.5(b), justify entering 14.2.3 in 48 hours, rather than when the diesel fire pump is restored.

Response: It was not TVA's intent to allow the plant to delay entering 14.2.3, instead the plant would enter 14.2.3 at the same time as the diesel fire pump is restored. In order to prevent any confusion on this process, TVA will revise the 14.2.b as follows:

"restore the diesel driven fire pump within 48 hours

- AND -

and enter 14.2.3 ."

Discussion topics/RAIs for the public meeting with TVA
regarding changes to selected sections of the WBN FPR

A review of the remainder of Section 14 did not identify any other similar occurrences.

NRC Question 12 - Part II, page 68:

- ☐ For 14.2.8, describe the difference between being controlled by a "procedure" versus "an approved configuration control method".

Response: Configuration control is accomplished using methods which are controlled by procedures; however, the actual document controlling the situation is not considered a "procedure". In this case, the control of the inhibited circuit can be accomplished under several different processes (e.g., hold orders, temporary alteration, design change, etc). All of these methods are controlled by a procedure. However, the hold order itself is not considered a procedure therefore the wording was clarified to refer to an approved configuration control method.

NRC Question 13 - Part II, pages 70 and 71

- ☐ Note that "13.0" no longer has subsections "D" or "E".

Response: The correct number should be 13.1 rather than 13.0. This change was not recognized when Section 13.0 was subdivided and the corresponding section number changed. TVA will correct the error.

- ☐ Describe the purpose of the changes to 14.3.1(b)(1), (b)(2)(a), and (b)(3)(a).

Response: This change was intended as a clarification only (no change in processes) since it is not practical to use traditional fire watches in inaccessible areas such as the lower containment. Fire watches in inaccessible areas utilize alternative methods such as temporary detectors and closed circuit television.

NRC Question 14 - Part II, page 79:

- ☐ TVA should discuss this addition during the public meeting.

Response: This section was added as a result of an issue identified originally at Sequoyah. It was identified that the Technical Specifications allowed the closure of Pressurizer Block valves as an interim solution if a Pressurizer Power Operated Relief Valve (PORV) was leaking. As discussed in the Technical Specification 3.4.11 Bases, this is acceptable for design basis accidents since the PORVs are not credited for immediate operation. The operators would have time to open the block valves if the PORV operation was imminent. However, it was identified that certain fires had the capability to damage the cables to the block valve that corresponds to the PORV credited for that fire. In order to prevent this occurrence, fire watches are established in accordance with the table.

- ☐ Justify not including the second Unit 1 block valve in the table, or correct the table.

Response: The second Unit 1 block valve cabling does not transverse rooms for which the corresponding PORV is credited.

Discussion topics/RAIs for the public meeting with TVA
regarding changes to selected sections of the WBN FPR

- ☐ Justify continued operation of a unit with both block valves inoperable, or modify this section.

Response: PORV Operability is determined in accordance with Technical Specification (TS) 3.4.11. The TS states that separate condition entry is allowed for each PORV. If two block valves are inoperable, TS 3.4.11.F and 3.4.11.G direct the restoration of block valves or require a shutdown. As discussed in TS Bases 3.4.11, closing a block valve due to a leaking PORV does not cause the block valve or PORV to be declared inoperable. Plant operation with inoperable block valves is governed by the Technical Specifications. This section of the FPR is addressing a condition of closed but operable block valves; therefore, no change to the FPR is warranted.

NRC Question 15 - Part II, page 80:

- ☐ Justify the deletion of 14.1.d.

Response: The Containment Purge Filter Units were originally considered required safety related equipment and the corresponding fire detection could only be tested during refueling outages when the purge equipment was not required. In accordance with License Amendment 92, the Containment Purge equipment was removed from the safety analysis and the detectors are now tested during plant operation in accordance with Testing and Inspection Requirement (TIR) 14.1.b.

NRC Question 16 - Part II, page 103:

- ☐ For B.14.2.1, provide an explanation for why the electric driven fire pumps are not credited for Auxiliary Building areas.

Response: The paragraph cited states that the electric fire pumps are not credited where the diesel fire pump is only pump credited or in other words where the diesel pump is the only one available. For an example refer to Part VI, Section 3.12.9.7. In these locations, the fire could disable the electric pumps. In the other areas of the Auxiliary Building, both the electric and diesel driven pumps are available.

NRC Question 17 - Part II, page 128:

- ☐ Where is damper inspection addressed, considering the deleted sentence?

Response: The inspections of fire dampers are performed in accordance with Fire Operating Requirement instruction 0-FOR-304-3, "Fire Damper (Internal) Visual Inspection-Auxiliary, Control and Diesel Generator Building". This is similar to the other requirements of the FPR Part II Testing and Inspection Requirements (TIRs) which are implemented in Fire Operating Requirement instructions.

NRC Question 18 - Part II, pages 138 to 141:

- ☐ For, B.14.10.o-r TVA should plan to explain these additions.

Response: These requirements and their Bases were added due to modifications performed to support Multiple Spurious Operation (MSO) scenarios. The modifications were performed to

Discussion topics/RAIs for the public meeting with TVA
regarding changes to selected sections of the WBN FPR

replace operator manual actions with control room operator actions. They have been added for both Unit 1 and Unit 2.

NRC Question 19 - Part III, page 5:

Section 3.2, "Initial Assumptions," includes the assumption that a plant fire could cause a trip resulting in $T=0$. The operator manual action analysis, in Part V and elsewhere, assumes that operators will have time to return to the control room before the plant trip.

- Provide a technical justification which demonstrates that this change to initial assumptions, that is assuming a fire can cause a plant trip, is considered in the operator manual action analysis for recall of auxiliary unit operators (AUOs) to the main control room.

Response: A preliminary version of FPR Part V, Section 2.2.2 containing the requested information was provided in response to RAI question FPR V-13.1 provided in TVA letter dated September 30, 2011 (T02 110930 001). The final version of FPR Part V, Section 2.2.2 as shown below will be submitted in the August 15, 2014 submittal:

2.2.2 Operator Locations Prior to Initiating Operator Manual Actions and $t=0$
Definition

For the purposes of developing the safe shutdown procedures, all operators performing operator manual actions are dispatched from the main control room for fires in most plant locations, or from the Auxiliary Control Room for Control Building fires. The basis for dispatch locations is that the operators must obtain the operator-specific safe shutdown procedures from these locations.

There are two scenarios for determining the time at which a reactor is tripped. One scenario is that the fire develops to a point that it damages equipment that initiates an automatic reactor trip. The second scenario is that the MCR staff trips the reactor after assessing the fire and determines that tripping the reactor is necessary. The time at which the reactor is tripped is defined as $t=0$.

There are no differences in the actions or timing requirements following $t=0$ for the two scenarios. This is because a fire that grows to the point of causing damage that results in an automatic reactor trip will have been assessed by plant personnel prior to the trip as a challenging fire with the potential to damage structures, systems, or components necessary for safe shutdown. It is not credible for a fire to rapidly develop and trip the reactor before the control room is aware of and in the process of assessing the fire. The rooms which contain equipment capable of tripping the reactor do not have high concentrations of combustible material and thus a rapidly developing fire would not be credible. Furthermore, a fire directly on a component capable of tripping the reactor has a very low probability of developing into a fire that could challenge the safe shutdown capability since this type of equipment is contained within cabinets and would not be expected to affect other nearby components (i.e., would not result in spurious operations or loss of control). Because multiple concurrent reactor protection system (RPS) logic inputs are necessary to initiate an automatic reactor trip, a fire induced automatic reactor trip is not the first observed circuit failure resulting from the fire. For this to occur, a fire has to develop to the point that multiple cables located in redundant, physically separated raceways are affected. The decision to trip the reactor manually is reached prior to or about the same time as the level of fire damage required to cause an automatic reactor trip. During this evaluation time, the

Discussion topics/RAIs for the public meeting with TVA
regarding changes to selected sections of the WBN FPR

control room would recall the personnel for performing the actions outside the control room and they would be dispatched if necessary by the post fire safe shutdown procedures.

Fire locations subject to high energy rapidly developing fires (e.g. electrical board rooms and transformer rooms) do not contain cables or equipment whose failure may initiate an automatic reactor trip. The control room is alerted of a fire in its early stages either by the fire detection system or as a result of visual observation by plant personnel. The operator's initial response is described above.

The time requirements for completion of operator manual actions are based on defining the initiating time $t = 0$ as the time when the reactor is tripped. This definition of the analytical $t = 0$ is appropriate because the operator manual actions are required to stabilize the plant or maintain it in a stable condition after reactor trip. The operator manual actions are not required to maintain the operating status of plant equipment prior to tripping the reactor because the reactor is considered to be in a stable operating condition prior to reactor trip. Once a trip is initiated, either automatically or manually, the preventive OMAs are performed to prevent spurious equipment operation and to ensure safe shutdown can be accomplished. Since the actions are preventive rather than reactive, they are performed per procedure rather than using process instrumentation or other indication to diagnose a need for the action.

There are very few situations where reactive action must be taken based upon fire damage to equipment or cables rather than trip initiation. In these situations the normal plant system operating procedure provides the reactive response while the FSSD procedure is preventive (action taken before fire damage causes a need for the action). For example:

1. Electrical power distribution board fire – The normal response and the safe shutdown action are the same; de-energize the board prior to extinguishing the fire.
2. Spurious start of a containment air return fan. The fan must be stopped. Existing system operating procedures require securing the fan (opening the breaker) which is the same action required for fire safe shutdown.

NRC Question 20 - Part III, page 85:

- ☐ Are analysis volumes 076 and 076A new analysis volumes based on a non-physical attribute?

Response: Analysis Volumes (AV) 076 and 076A are for the same physical location (i.e., not a result of a physical barriers) but the two AV numbers are used to represent different power source conditions in accordance with 10 CFR 50 Appendix R Section III.L.3. Analysis volumes 076 and 076A are both for a postulated fire in the control building which is an alternative or dedicated shutdown area. The only difference between the two analysis volumes is the electrical power source. Analysis volume 076A assumes that electrical power for the control building is available from the power grid (offsite) while analysis volume 076 assumes that the offsite power source is lost and safe shutdown is achieved using only electrical power that is available onsite (emergency diesel generators, batteries, and inverters).

- ☐ How is this addressed in the description of analysis volume partitioning?

Discussion topics/RAIs for the public meeting with TVA
regarding changes to selected sections of the WBN FPR

Response: As discussed above, there is no physical barrier/partitioning involved in Analysis Volume 076 versus 076A but is instead a difference in the assumptions regarding onsite versus offsite power.

NRC Question 21 - Part III, page 87:

- ☐ Provide a justification for the deletion of fire area 57 / AV-085.

Response: Fire Area 57 (AV-085) is the Additional Diesel Generator Building which is not required for fire safe shutdown, does not impact fire safe shutdown and contains no fire safe shutdown equipment; therefore, it has been deleted from the analysis and the report for clarity.

NRC Question 22 - Part III, diagrams:

- ☐ The NRC reviewers could not determine whether there were any changes made to these diagrams. TVA should discuss this at the public meeting.

Response: The only change made to Figures III-1, III-2, III-3, III-4 or III-5 was an update of the Reference Document/Calculations block on Figures III-1 and III-2. The change that was made replaced the references to Calculation EDQ00099920090012 with references to Calculation WBN-0SG4-031. The information in the EDQ00099920090012 calculation which is the basis for the dual unit FPR will be used to replace the information in the WBN-0SG4-031 calculation for the single unit operation FPR. The current single unit calculation number will be retained for continuity with other FPR related reference documents. The other "changes" shown on the redline markup of the Part III figures are due to format changes within the word processor version and are not changes to the information contained in the report.

NRC Question 23 - Part IV, page 1:

- ☐ Describe what is meant by the term "onsite power".

Response: "Onsite power" is the electrical power provided from the four Emergency Diesel Generators (1A, 2A, 1B & 2B) and the station batteries. As discussed in Question 20 above, the analysis for alternative shutdown for Analysis Volume 076 (Control Building) is conducted twice, once assuming only offsite power is available and a second time assuming only onsite power is available.

NRC Question 24 - Part VIII, starting on page 25:

- ☐ TVA should discuss the new diesel generator installations, including details of their locations, separation from other plant locations, and installed detection and suppression systems.

Response: The two new diesel generators are located on the Auxiliary Building roof in two new rooms (786.0-A5 and 786.0-A6). These rooms are separated from adjacent Auxiliary Building rooms by 3-hour fire rated barriers. Each room is provided with automatic suppression and detection. The new diesel generators are provided for response to beyond design basis events (Fukushima scenarios) and are not required for fire safe shutdown nor do they impact fire safe

Discussion topics/RAIs for the public meeting with TVA
regarding changes to selected sections of the WBN FPR

shutdown. Further details of the installation will be included in the August 15, 2014 submittal of
FPR Part VI.

DRAFT

July 11, 2014

address the issues related to the failure or non-failure of the West Saddle Dike. TVA stated that they would address the NRC's comments and concerns and planned to submit the revised request by August 31, 2014. No regulatory decisions were made during the teleconference.

During the second portion of the meeting the NRC and TVA went through each question and response found in Enclosure 2. During these exchanges, the NRC told TVA which responses satisfied their clarification requests and which ones need further explanation and/or revising of the Fire Protection Report itself. TVA stated that they would address these comments in the August 15, 2014, full submittal of the Fire Protection Report. The NRC and TVA agreed to meet at a time prior to the full submittal should further discussion be needed.

No regulatory decisions were made at this meeting.

No members of the public participated in this meeting.

Please direct any inquiries to me at 301-415-2048 or via e-mail at Justin.Poole@nrc.gov

/RA/

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

Docket No. 50-391

Enclosures:

1. List of Attendees
2. TVA Handouts

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OFFICE	DORL/LPWB/PMiT	DORL/LPWB/PM	DORL/LPWB/LA	DORL/LPWB/BC	DORL/LPWB/PM
NAME	AMinarik	JPoole	BClayton	JQuichocho	JPoole
DATE	8/26/14	8/19/14	8/19/14	8/26/14	8/27/14

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