



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

April 1, 2011

10 CFR 50.4(b)(6)
10 CFR 50.34(b)

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

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

Subject: Watts Bar Nuclear Plant (WBN) Unit 2 – Final Safety Analysis Report (FSAR) – Response to Request for Additional Information

This letter responds to a request for additional information (RAI) regarding Unit 2 FSAR Section 9.3.2.6 for the Post Accident Sampling System (PASS).

Enclosure 2 contains the commitments contained in this letter. If you have any questions, please contact Bill Crouch at (423) 365-2004.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 1st day of April, 2011.

Respectfully,

A handwritten signature in black ink, appearing to read 'D Stinson', written over a horizontal line.

David Stinson
Watts Bar Unit 2 Vice President

DD30
NRR

Reference:

1. TVA to NRC letter dated October 11, 2010, "Watts Bar Nuclear Plant (WBN) Unit 2 - Submittal of Information to Address Commitments Regarding the Radiological Emergency Plan (TAC No. ME0853),"

Enclosures:

1. Response to RAI Regarding Unit 2 FSAR Section 9.3.2.6
2. Commitments Contained in Letter

Attachments:

1. CECC-EPIP-9, "Emergency Environmental Radiological Monitoring Procedures"
2. CECC-EPIP-15, "EP Field Support Staff Radiological Emergency Procedure"
3. EPIP-13, "Initial Dose Assessment for Radiological Emergencies"

cc (Enclosures):

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ENCLOSURE 1

Response to RAI Regarding Unit 2 FSAR Section 9.3.2.6

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

Preliminary RAI for FSAR 9.3.2 (taken from e-mail from NRC dated 04/28/2010)

Section 9.3.2

9.3.2-01 *Section 9.3.2.6 states that the "...existing Post Accident Sampling System (PASS) is being abandoned in place and disconnected for Unit 2. By letter dated June 14, 2000, the NRC issued "Safety Evaluation Related to Topical Report WCAP-14986, Revision 1, "Westinghouse Owners Group Post Accident Sampling System Requirements (TAC No. MA4176)." This safety evaluation addressed the staff's review of WCAP-14986, Revision 1 and concluded that the topical report provided a basis to eliminate the PASS as a required system for sampling the parameters listed in Section 4 of the safety evaluation. The staff identified four licensee required actions in Section 4.1 of the safety evaluation that must be fulfilled by a licensee that would eliminate PASS for sampling the identified 15 parameters in accordance with WCAP-14986 and the safety evaluation. A summary of the required actions are:*

- 1. Establish a capability for classifying fuel damage events at the Alert level threshold (typically this is 300 microcuries per milliliter dose equivalent iodine).*
- 2. Develop contingency plans for obtaining and analyzing highly radioactive samples of reactor coolant, containment sump, and containment atmosphere.*
- 3. A licensee must determine for its own plant(s) that no decrease in the effectiveness of the emergency plan will result from the removal/downgrade of the PASS.*
- 4. Licensees will maintain offsite capability to monitor radioactive iodines.*

The applicant is requested to provide a description of how they comply with the required actions.

Response:

- Four Regulatory Guide 1.97, safety-related high range radiation monitors (2-RE-90-271, -272, -273, and -274) are located within the containment. The monitors have display and alarms in the Main Control Room. Calculation TI-RPS-162, Revision 10 was issued to establish the monitor responses for fuel damage at 300 microcuries per gm dose equivalent iodine. The calculation was issued as design output for use in core damage assessment.

TVA to NRC letter dated October 11, 2010 (Reference 1.) submitted draft Unit 1/2 Nuclear Power Radiological Emergency Plan procedure (NP-REP), Appendix C, Revision 92xx. The calculation information was included in Section 1.0, Event 1.1, Initiating Condition 1.1.5 of this draft NP-REP.

For an intact reactor coolant system (RCS), RCS sampling can be accomplished from the Hot Sample Room for classifying fuel damage at the Alert range. This sampling process will be proceduralized.

ENCLOSURE 1

Response to RAI Regarding Unit 2 FSAR Section 9.3.2.6

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

2. Unit 2 will implement the sampling requirements without the utilization of a dedicated Post Accident Sampling System (PASS) by obtaining alternate liquid reactor coolant and containment sump samples and upper and lower containment atmosphere samples.

Calculation WBNAPS3-124, Revision 0 was performed to determine the doses to personnel obtaining a liquid reactor coolant or containment sump sample from the Hot Sample Room following a postulated loss of coolant accident (LOCA). This calculation satisfies the requirements of NUREG-0737, II.B.2 and II.B.3 by demonstrating that the mission can be accomplished without exceeding 5 rem whole body dose or equivalent per 10 CFR 50, Appendix A, GDC 19. It was concluded that this mission can be accomplished without exceeding the dose limits with the following required special conditions:

- a. The dose rate at one inch from the sample vessel does not exceed $1.178\text{E}+06$ mrem/hr. The dose rate decreases to less than the not-to-exceed limit of $1.178\text{E}+06$ mrem/hr within about 5 hours of the accident.
- b. Protective clothing with a self-contained breathing apparatus (SCBA) (protection factor of 10,000) shall be worn.
- c. A lead pig with a minimum of one inch Pb is staged in the Hot Sample Room.

Calculation WBNAPS3-125, Revision 0 was performed to determine the doses to personnel obtaining a containment atmosphere grab sample from upper and lower containment radiation monitors RE-90-106 and RE-90-112 sample lines following a postulated LOCA. The calculation satisfies the requirements of NUREG-0737, II.B.2 and II.B.3 by demonstrating that the mission can be accomplished without exceeding 5 rem whole body dose or equivalent per 10 CFR 50, Appendix A, GDC 19. It was concluded that this mission can be accomplished without exceeding the dose limits with the following special requirements:

- a. The mission may not begin prior to 24 hours post-accident.
- b. The collection time for the iodine/particulate filter sample must not exceed 45 seconds.
- c. Protective clothing with an SCBA (protection factor of 10,000) must be worn.
- d. A lead pig with a minimum of one inch Pb is available for the transport of the samples.

Procedures will be issued prior to startup to perform the following after a postulated LOCA:

- obtain a liquid reactor coolant or containment sump sample from the Hot Sample Room, and
- obtain a containment atmosphere grab sample from upper and lower containment radiation monitors RE-90-106 and RE-90-112 sample lines.

3. In accordance with 10 CFR 50.54(q), a plant-specific evaluation has been made. The evaluation determined that there is no decrease in the effectiveness of the Emergency Plan as a result of the downgrade/removal of Unit 2's PASS.

ENCLOSURE 1

Response to RAI Regarding Unit 2 FSAR Section 9.3.2.6

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

- 4. Post accident offsite monitoring of radioactive iodines is required by existing plant emergency procedures EPIP-13, "Initial Dose Assessment for Radiological Emergencies," and CECC-EPIP-15, "EP Field Support Staff Radiological Emergency Procedure." The detailed process and methodology of monitoring is described in procedure CECC-EPIP-9, "Emergency Environmental Radiological Monitoring Procedures." Copies of these three procedures are attached. These EPIPs do not require revision.**

ENCLOSURE 2

Commitments Contained in Letter

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

- 1. The process for sampling for 300 microcuries per milliliter dose equivalent iodine from the Hot Sample Room for classifying fuel damage at the Alert threshold will be proceduralized prior to fuel load.**
- 2. Procedures for taking the samples discussed in the response to part 2. of the RAI will be issued prior to fuel load.**
- 3. Changes to the core damage assessment and termination and recovery EIPs associated with the actions of responses 1. and 2. will be issued prior to fuel load.**