



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

April 2, 2009

LICENSEE: Tennessee Valley Authority

FACILITY: Watts Bar Nuclear Power Plant, Unit 2

SUBJECT: SUMMARY OF MARCH 17, 2009, MEETING WITH TENNESSEE VALLEY AUTHORITY (TVA) REGARDING CORRECTIVE ACTION PROGRAM (CAP) FOR CABLE ISSUES AT WATTS BAR NUCLEAR PLANT UNIT 2 (TAC NO. MD9182)

On March 17, 2009, a Category 1 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of TVA at NRC Headquarters, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland. The purpose of the meeting was to discuss (1) technical issues related to the electrical cable issues CAP as discussed in TVA's response dated January 14, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML090210473), to an NRC request for additional information dated November 25, 2008 (ADAMS Accession No. ML083260202) and (2) the scope of certain electrical issues presented in the September 26, 2008, TVA letter (ADAMS No. ML082750019). A list of attendees is provided as Enclosure 1.

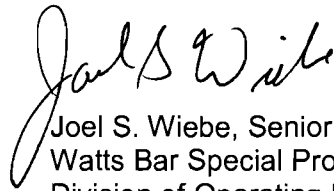
The licensee presented information (ADAMS Accession No. ML090771062) and discussed their January 14, 2009, response. The discussion included clarifications and additional detail needed for the staff's review.

The staff queried the licensee to provide additional needed clarification and detail regarding technical issues related to the licensee's January 14, 2009, response and the licensee's presentation. The clarifications and additional detail requested is provided as Enclosure 2.

The licensee agreed to respond to the requested items in writing.

Members of the public were not in attendance. Public Meeting Feedback forms were not received.

Please direct any inquiries to me at 301-415-6606 or Joel.Wiebe@nrc.gov.

A handwritten signature in black ink that reads "Joel S. Wiebe". The signature is written in a cursive style with a large initial 'J' and 'W'.

Joel S. Wiebe, 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. Requested Clarifications and Additional Detail

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LIST OF ATTENDEES

MARCH 17, 2009, MEETING WITH TENNESSEE VALLEY AUTHORITY

CORRECTIVE ACTION PROGRAM FOR CABLE ISSUES

AT WATTS BAR NUCLEAR PLANT (WBN), UNIT 2

Nuclear Regulatory Commission Participants:

<u>Name</u>	<u>Position/Title</u>	<u>Organization</u>
L. Raghavan Branch	Chief	Watts Bar Special Project Branch (WBPB),
George Wilson	Chief	Electrical Engineering Branch (EEEEB)
Robert Haag	Chief	Construction Projects Branch 3, Region II
Parick Milano	Sr. Project Manager	WBPB/DORL
Joel Wiebe	Sr. Project Manager	WBPB/DORL
Roy Mathew	Electrical Team Leader	EEEEB
Matthew McConnell	Electrical Engineer	EEEEB
Prem Sahay	Electrical Engineer	EEEEB

Tennessee Valley Authority (TVA) Participants:

Masoud Bajestani	Vice President, WBN Unit 2
Kent Brown	Manager, Electrical/Instrumentation and Controls, Corporate Engineering
Gordon Arent	Manager, New Generation Licensing, WBN Unit 2
Izhar Khan	Consulting Engineer, WBN Unit 2
Mike Shulman	Licensing, WBN Unit 2
Steven Hilmes	Engineering, WBN Unit 2

REQUESTED CLARIFICATIONS AND ADDITIONAL DETAIL

Silicon Rubber Cables

- Ten critical case conduits were evaluated for both Units. Provide the number of conduits evaluated for each Unit.
- Provide the total number of silicone rubber cables in the Watts Bar Nuclear Plant (WBN), Unit 2, population.
- Provide the process/justification used to qualify the Unit 2 cables for a 40-year life.

Cable Jamming

- Provide the results of the review of cable pulling techniques, including hand pulled versus assisted pull findings.
- If cases of assisted pull are found, provide the evaluation methodology for ensuring jamming did not occur in these cases.
- Provide a discussion of the technique for taping single conductors into a triplex configuration, along with clarification regarding which cables were subjected to the technique. Confirm that the reactor cooling pump cables were replaced and that the new cables were placed in a cable tray.
- Provide a discussion explaining why single conductor cable configurations are more bounding than multi-conductor cable configurations when addressing jamming concerns. Clarify how multi-conductor cables are not susceptible to damage from jamming.
- Provide a discussion of how the coefficient of friction was determined. Provide supporting documentation.

Support in Vertical Conduits

- Provide a definition and characterization of the term “rework” as applied to cable trays, including examples.
- Provide the basis for the determination that “creep” did not occur in the vertical conduits.
- Provide the basis for “hand-lifting” cables.

Support in Vertical Trays

- Provide a summary as to how the vertical cable trays were assessed to determine that no cable damage occurred.
- Provide a discussion that clarifies that no credit was taken for tie-wraps to support vertical cables.

Proximity to Hot Pipe

- Provide a definition and characterization of the term “rework” as applied to raceways, including examples.
- Provide the methodology used for developing the criteria for “Hot Pipe” configurations.
- Provide the basis and assumptions for characterizing the piping fluid and ambient room temperatures.

- Confirm that walk downs of “Hot Pipe” configurations will be conducted as part of project completion to ensure field run configurations meet installation specifications.
- Provide Tennessee Valley Authority’s (TVA’s) G-40 specification.

Cable Pullby

- WBN Final Safety Analysis Report (FSAR), Section 8.3, does not require an evaluation when the fill percentage exceeds that cable fill criteria. The licensee agreed to submit a correction to the FSAR, including defining when performing evaluations is an acceptable alternative.
- Provide the current WBN Unit 2 conduit fill percentages. Provide the number of conduits with greater than 35 percent and 40 percent fill for moderate and high risk cables.
- Confirm that new cables will be pulled in accordance with TVA’s G-38 specification.

Bend Radius

- Submit the Bend Radius Report, including interviews with cable vendors.

Splices

- Provide a definition and characterization of the term “rework” as applied to splices for cables in mild environments.
- Confirm that splices, which had the potential for moisture intrusion, were replaced.

Side Wall Bearing Pressure

- Provide a discussion of how the 43 cable samples that were evaluated were extrapolated to all cable configurations and how margin was applied to side wall bearing pressure limitations.
- Provide the cable manufacturer’s certificate of conformance to the TVA specified side wall bearing pressure.

Pulling Cable Through 90-Degree Condulets and Mid-Route Flexible Conduits

- Provide a discussion of why 12 and 14 gauge wire was determined to be limiting.

Computerized Cable Routing System (CCRS) Software and Database Verification and Validation

- Provide a discussion as to how cable materials are tracked and can be recovered using mark numbers. Describe how this information will be linked to the notes in the Integrated Cable and Raceway Design System (ICARDS) for future use.
- Provide documentation as to how the use of mark numbers is accomplished at WBN.
- The note in ICARDS appears to indicate that the cable insulation for all cables that are important to safety (i.e., cables other than environmentally qualified cables) have not been verified. Confirm that the cable properties (e.g., insulation material) will be verified for all cables that are important to safety.

Other

- Provide a clarification of design cable length versus installed cable length, including a discussion as to how each length is used. Confirm that the cable lengths from pull cards will be used for electrical calculations for WBN Unit 2 and not from ICARDS.
- Provide a discussion of the medium voltage cable testing program. Provide the results of the program.
- Provide the methodology used for installation of conduit.
- Provide a specific discussion for each item in the CAP (ADAMS Accession No. ML073540992) forwarded by TVA letter dated February 15, 1989 (ADAMS Accession No. ML073540990) that resolved Physical Separation and Electrical Isolation.
- Provide a specific discussion for each item in the CAP (ADAMS Accession No. ML073540992) forwarded by TVA letter dated February 15, 1989 (ADAMS Accession No. ML073540990) that resolved the Torque Switch and Overload Relay Bypass Capability for Active Safety Related Valves.

Please direct any inquiries to me at 301-415-6606 or Joel.Wiebe@nrc.gov.

/ra/

Joel S. Wiebe, Senior Project Manager
Watts Bar Special Projects Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-391

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ADAMS Accession No. **PKG ML090770080**
Meeting Summary ML090910150

Meeting Notice ML090560427
Handouts ML090771062

OFFICE	DORL/LP-WB/PM	DORL/LP-WB/LA	DORL/LP-WB/BC	DORL/LP-WB/PM
NAME	JWiebe	BClayton	LRaghavan	JWiebe
DATE	04/02/09	04/02/09	04/02/09	04/02/09

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