



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

CNL-15-206

October 8, 2015

10 CFR 50.4

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-001

Watts Bar Nuclear Plant, Unit 2
Construction Permit No. CPPR-92
NRC Docket No. 50-391

Subject: **WATTS BAR NUCLEAR PLANT UNIT 2 – RESPONSE TO FOLLOW-UP QUESTION REGARDING SUBMITTAL OF ELECTROMAGNETIC INTERFERENCE (EMI) SURVEY RESULTS**

Reference: TVA Letter to NRC, CNL-15-165, "Watts Bar Nuclear Plant Unit 2 – Submittal of Electromagnetic Interference (EMI) Survey Results," dated August 20, 2015 (ML15232A540)

On August 20, 2015, Tennessee Valley Authority (TVA) submitted to the Nuclear Regulatory Commission (NRC) the Electromagnetic Interference (EMI) Survey results for Watts Bar Nuclear Plant (WBN), Unit 2 (Reference). The EMI survey of the main control room and the auxiliary instrument room was performed to show the field strength of radiated EMI around critical equipment. Teleconferences were held between the NRC and TVA staff on September 14 and 16, 2015, to discuss NRC questions regarding the exclusion distance for using radios, and the relationship between the field strength and the distance from the equipment that is being tested for radiated susceptibility as presented in the reference letter. During these teleconferences, TVA committed to perform a radio test, keying the radios at various frequencies next to radiation monitors to ensure there is no exclusion distance for using the radios at WBN Unit 2.

The enclosure to this letter provides the radio test results summary and conclusion.

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There are no new regulatory commitments made in this letter. Should you have questions regarding this submittal, please contact Gordon Arent at (423) 365-2004.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 8th day of October 2015.

Respectfully,



J. W. Shea
Vice President, Nuclear Licensing

Enclosure:

Electromagnetic Interference (EMI) Radio Tests Results Summary and Conclusion

cc (Enclosure):

U.S. Nuclear Regulatory Commission, Region II
NRC Project Manager - Watts Bar Nuclear Plant, Unit 2
NRC Senior Resident Inspector - Watts Bar Nuclear Plant, Unit 2

Enclosure

Watts Bar Nuclear Plant, Unit 2

Electromagnetic Interference (EMI) Radio Test Results Summary and Conclusion

Summary:

Testing was performed under Work Order 117194618 to determine the Radiation Monitor (RM) model 1000's (High Range Containment RMs) susceptibility to a radio being keyed in close proximity to the RM. The test was performed by keying a radio from distances of 3 feet (ft.) to 0 ft. (adjacent to the monitor) from the RM face at increments of 1 ft. while monitoring the RM's rate meter indication, recorder and alarms. The test was performed on RM 2-RM-090-271-A. This RM is identical to the other High Range Containment RMs (2-RM-090-272, -273, and -274) and therefore the testing is representative of the other three RMs.

The radios tested were the Harris models XG-75 and XG-100 which are the two radios utilized at the Watts Bar Nuclear Plant site in the Main Control Room. The model XG-100 is the higher power of the two radios since it is not dependent on radio repeaters. Both model radios were tested on all 16 available channels. No impact could be seen at any distance when the test was conducted using the model XG-75 radio. The model XG-100 did cause defections on the RM's rate meter when the radio was placed adjacent to the RM's face. No deflection was seen when the monitor was tested at distances of 1 ft., 2 ft., or 3 ft. Additional testing was performed using the model XG-100 to determine the impact on the RM at a 3 inch distance from the RM. At the 3 inch distance, the radio had no impact on the RM.

Conclusion:

The model XG-75 radio had no impact on the RM model 1000 at any distance, including adjacent to the RM. The model XG-100 radio had no impact to the RM at a distance greater than 3 inches. It did impact the RM when placed adjacent to the RM's face.

With consideration that:

- plant general training prohibits use of radios adjacent to panels;
- the impracticality of using a radio at less than 3 inches to the panel's face, and;
- that the High Range Containment RMs do not have any actuation functions (indication only);

the Tennessee Valley Authority considers the susceptibility of EMI to the model XG-75 and XG-100 radios to be acceptable with no restrictions.