

June 12, 2012

MEMORANDUM TO: Eric J. Leeds, Director  
Office of Nuclear Reactor Regulation

FROM: Carl F. Lyon, Project Manager */RA/*  
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SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 1 - STATUS OF SAFETY  
CONCERN REGARDING HYDROLOGY/FLOODING SUBSEQUENT TO  
MAY 31, 2012, PUBLIC MEETING (TAC NO. MD7169)

This memorandum is to document our position, subsequent to the public meeting between senior management of the U.S. Nuclear Regulatory Commission (NRC) and the Tennessee Valley Authority (TVA) on May 31, 2012 (ADAMS Accession No. ML12157A457), that there is still no reasonable assurance of adequate safety at Watts Bar Nuclear Plant (WBN) Unit 1. In fact, the situation at WBN Unit 1 is worse because TVA's estimated probable maximum flood (PMF) level has been raised to 739.2 feet, which is an additional 0.2 feet beyond the initial 0.2 feet TVA estimated in the March 29, 2012, public meeting. At this new estimated level, some safety-related flood mitigation equipment will be flooded without compensatory measures. The thermal barrier booster pumps (TBBPs) will be flooded, and the margins to other flood mitigation equipment will be further reduced (spent fuel pool cooling pumps to less than 6 inches, and intake pumping station to less than 1 inch). Further, TVA is still evaluating the potential to compromise safety-related equipment in the intake pumping station and developing modifications to protect or mitigate the situation. TVA stated that they were reasonably certain that the additional 0.4 feet rise in PMF level was the final number and would not change, and that the calculation only lacks TVA's management review. The TBBPs are safety-related and required to function in a PMF event. TVA acknowledged that, based on the new PMF level, the TBBPs would be flooded. The temporary flood barriers to protect the TBBPs are staged, but not in place. Without them installed, the TBBPs will no longer perform their safety function in the flooding event. It is not reasonable to conclude that a staged flood barrier, which is necessary to protect flood mitigation equipment in the PMF event, is an adequate compensatory measure, nor does it regain compliance with the plant's licensing basis and the operating license.

TVA was unable to produce functionality assessments for the sand baskets at the four dams, but acknowledged that the sand baskets are depended upon for the PMF level calculations and flooding analysis. The sand baskets are not completely installed, and the NRC staff has questioned the capability of the sand baskets to perform their safety function in a flooding event.

Because the sand baskets comprise a necessary input assumption in PMF calculation, they are not “compensatory” in nature and must be ready to perform their intended function. Thus, it is not reasonable to conclude that the sand baskets are either adequate compensatory measures or reliable input assumptions. The regulations at 10 CFR 50.54(h) states that, “The licensee shall be subject to...all rules, regulations, and orders of the Commission.” The operating license states that, “The facility will operate in conformity with...the rules and regulations of the Commission....” TVA continues to be in noncompliance with NRC’s regulations related to flood protection, and; therefore, there is no reasonable assurance of adequate safety at WBN Unit 1.

A confirmatory action letter will not restore TVA to compliance with the regulations. TVA remains outside of compliance until corrective actions (e.g., NRC-approved change to the licensing basis, permanent modifications) are complete. The NRC staff still has no analysis or safety basis to allow WBN Unit 1 to continue to operate with compensatory measures in place while the flooding issues are resolved, whether through a change to the licensing basis or by permanent modifications, either of which must be approved by the staff. NRC management needs to document its basis for the continued operation of the unit during the period that TVA attempts to regain compliance with its licensing basis.

Notwithstanding the above, TVA stated that their current operability determinations will be re-evaluated once the re-analysis is completed. In fact, RIS 2005-20, Revision 1, which addresses operability determinations and functionality assessments, discusses that an operability determination or functional assessment should be done on discovering that operability or functionality is called into question. TVA has been unable to produce current operability determinations for the resident inspector staff to review. For TVA to wait until the final PMF calculation review is concluded by its management does not demonstrate a good safety perspective. Regardless, operability does not equate to adequate safety, and there must always be adequate safety.

At WBN Unit 1, the information currently available to the staff indicates that the potential flooding event is not bounded by the current licensing and design bases. Therefore, the staff’s original 1995 determination of reasonable assurance of adequate safety is no longer supported. Without additional information, the staff has no reasonable assurance of safe operation of WBN Unit 1. The NRC staff has no analysis or safety basis to allow WBN Unit 1 to continue to operate with compensatory measures in place while the flooding issues are resolved.

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Docket No. 50-390

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**ADAMS Accession No. ML12158A508**

\*previously concurred

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