



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

January 9, 1995

MEMORANDUM FOR: Document Control Desk Personnel

FROM: Peter S. Tam, Senior Project Manager  
Project Directorate II-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

A handwritten signature in black ink that reads "Peter S. Tam".

SUBJECT: WATTS BAR NUCLEAR PLANT - RECLASSIFY MEMORANDUM PUBLICLY  
AVAILABLE (TAC M72494)

Please reclassify the attached memorandum, James M. Taylor to the Chairman and Commissioners, dated January 4, 1995, as publicly available. The principal contributors F. Hebdon, J. Jaudon, C. Julian, P. Fredrickson and P. Tam have no objection to the reclassification.

Note that the memorandum has not appeared on NUDOCS as of this date. If you have not received it, please use the attached copy for docketing.

Docket Numbers 50-390  
50-391

Enclosure: 1/4/95 J. Taylor memo

Distribution:

Docket file

PUBLIC

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U.S. Nuclear Regulatory Commission  
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Washington, D.C. 20555

Gentlemen:

In the Matter of the Application of ) Docket Nos. 50-390  
Tennessee Valley Authority ) 50-391

WATTS BAR NUCLEAR PLANT (WBN) - MANAGEMENT ACTIONS TO ADDRESS QUALITY ISSUES

The purpose of this letter is to provide NRC with a description of the management actions underway at WBN as a result of recently identified construction deficiencies.

TVA met with the NRC staff on October 19, 1994, to discuss the deficiencies, their common causes and, their associated corrective actions. During that meeting, TVA described its efforts to analyze the implications of the construction deficiencies. Specifically, TVA management required the responsible line organizations to conduct systematic evaluations of the deficiencies for common causes. Using barrier-analyses or similar methods, these evaluations pointed to several common causes (e.g., management methods used to help avoid quality problems required strengthening, work practices required more attention to detail, and ownership for equipment condition required more focus). These common causes and associated resolution actions, including estimated schedules, were presented as part of the October 19 meeting.

Subsequent to that meeting, TVA has refined its analysis of these developments and the identified common causes. A principal focus of this effort was to further analyze the role of senior management in the developments. Based on this additional effort, TVA has concluded that, while all causes and resolution actions identified in the October 19, 1994, meeting were valid, two common causes required further attention. These common causes were: (1) failure of management to consistently set

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U.S. Nuclear Regulatory Commission

Page 2

NOV 14 1994

expectations and hold individuals accountable for meeting those expectations; and (2) failure of management to provide a more balanced allocation of management focus and TVA resources. While many of the actions noted in the October 19 meeting will assist in addressing these two causes, the specific resolution actions TVA has instituted to resolve these causes are provided in the enclosure to this letter.

There are a number of reasons why the first cause, lack of consistent individual accountability, resulted in quality problems at WBN. The most obvious is that, at bottom, in some work units management did not consistently establish clear expectations and assure that line personnel fully adhered to those expectations. Another reason is that during corrective action activities, some line personnel were often focused on completing their specific tasks rather than assuring that the integrated result of those actions actually resolved the problem. This was particularly evident in complex activities requiring inter-departmental solutions.

Concerning the second cause, management allocation of resources, management focus and resources were shifted in mid-1993 to assure the effectiveness of the startup program and several other areas. At that time, information available to TVA management indicated that various other efforts, such as Corrective Action Programs/Special Programs (CAPs/SPs), were being adequately addressed and, thus, this shift appeared to be a sound decision. As TVA moved into hot functional testing there was greater management focus in this area. Although the reallocated management attention and resources resulted in substantially improved programs for the areas focused on (e.g., startup), in retrospect, the change could have been better balanced with other competing concerns, such as construction verification related activities.

TVA has also instituted actions to more fully assess the extent to which the concerns identified impact other plant areas and to further validate its conclusions regarding the common causes and necessary resolution actions. These actions, discussed in the enclosure, include reviews of documents, field verification activities, and system/process reviews. As more data are obtained from these efforts, TVA may modify its resolution actions to address the new information.

As indicated above, TVA's overall action plan to address these two concerns is contained in the enclosure to this letter. This plan builds on the management efforts reflected in TVA's October 19, 1994, presentation. The implementation details and interim results of our actions will be discussed at the scheduled November 29, 1994, management meeting. TVA previously provided the specific corrective actions for the eight deficiencies and other related corrective actions during the October 19, 1994, management meeting. These corrective actions are incorporated by reference as an enclosure to NRC's meeting summary dated November 1, 1994. The final details of the corrective actions for the

U.S. Nuclear Regulatory Commission

Page 3

NOV 14 1994

deficiencies are being addressed through TVA's individual responses to the inspection reports. TVA takes these concerns seriously. We fully understand that TVA management must see lasting results from these actions and that plans alone are not enough. We are confident that the WBN team can resolve these issues promptly and complete the construction of the plant in a quality manner. We look forward to discussing our initial results at the next meeting on November 29, 1994.

If you should have any questions on this information, contact me at (615)-365-8758.

Sincerely,



Dwight E. Nunn  
Vice President  
New Plant Completion  
Watts Bar Nuclear Plant

Enclosure

cc (Enclosure):

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## ENCLOSURE

SITE-WIDE MANAGEMENT ACTIONS

On October 19, 1994, TVA management met with NRC management to discuss issues associated with the recently identified construction problems at WBN. During the meeting, TVA provided the NRC with information regarding the common causes and resolution actions (including estimated schedules) associated with the identified problems, including the extent of condition.

TVA subsequently reviewed the problems from a broader perspective, in particular further analyzing senior management's role. Based on this additional review, TVA concluded that two common causes required further actions:

- (1) In some work units, management failed to consistently set and communicate clear expectations, establish single point accountability, and hold individuals accountable for meeting those expectations; and
- (2) the focus of senior management (and the allocation of TVA resources) was inappropriately placed on issues of perceived higher priority (e.g., preoperational testing).

These management weaknesses contributed significantly to the identified problems, including inadequate verification, resource limitations on certain activities, and poor work practices in those work units.

In addition to the actions previously discussed during the October 19, 1994 meeting, TVA has undertaken the following actions to fully address the two principal common causes identified above. Further, TVA has initiated a course of systematic evaluations in key areas at WBN to determine if these conditions have adversely affected other safety activities. These evaluations are also discussed in this enclosure.

A. Focus of Senior Management Attention and TVA Resources

1. Senior Management Oversight/Focus

- a. Q. J. Zeringue, Senior Vice President for Operations, is providing increased oversight of Startup and Operational Readiness.
- b. Mark Medford, Vice President, Engineering and Technical Services, is providing increased on-site presence to assist in managing the licensing interface and to strengthen Nuclear Assurance.

- c. With the additional senior management assistance of Mr. Zeringue and Mr. Medford, Dwight Nunn, Vice President of New Plant Completion, can focus more fully on engineering and modifications. Mr. Nunn will remain accountable for overall direction and completion of the project.

This additional management focus is currently planned to remain in place through fuel load.

## 2. TVA Resources

- a. Raul Baron, General Manager of Nuclear Assurance and Licensing, is now present full-time at WBN to provide additional QA and licensing management support.
- b. Additional experienced QA managers have been assigned to WBN from both TVA's Browns Ferry Nuclear Plant and corporate headquarters.
- c. Corporate engineering chiefs are assisting WBN engineering several days each week, as needed.

These additional resources will remain in place until the problems are corrected.

## B. Management Expectations and Individual Accountability

### 1. Increased Personnel Accountability

Additional focus is being placed on a single point of line management accountability particularly where site issues cross department boundaries. It is not sufficient for individual groups to complete their tasks. One manager must be responsible for resolving the problem. Specifically, for each NRC open item and condition adverse to quality document (CAQ), a single responsible/accountable owner is being identified. In addition, for major CAP/SP activities, formal support teams are being established with named team leaders who are accountable for assuring these areas meet applicable requirements prior to NRC review. These teams will also support the NRC team inspections to ensure that questions are promptly resolved. This process was used successfully during the recent inspections of the Cable Tray and Cable Tray Support CAP and the Conduit and Conduit Support CAP.

To ensure that the significance of technical and performance issues is fully understood by WBN personnel, a series of stand down meetings were held for all site employees. These meetings included communication of management expectations for:

- recent problem areas;
- ownership;
- design criteria;
- quality of work (e.g., take the time to "do-it-right;"

- accountability;
- work area awareness;
- consequences of actions and affects; and
- correct scope and problem identification (e.g., without retribution).

These meetings have been completed.

One specific area where management expectations need to be more clearly defined is in field engineering. A clear set of limits and associated management controls will be reinforced by the end of November 1994.

## 2. Increased QA/QC Focus

TVA has determined that until line accountability expectations are internalized and met, increased management attention for WBN Nuclear Assurance (NA) is necessary to provide greater assurance of compliance with requirements. To this end, and as noted above, TVA has relocated several key managers and other QA personnel to the site, and has provided for increased focus by the Vice President of Engineering and Technical Services.

To assist in reinforcing appropriate line expectations, TVA has increased the level of QA and QC inspection activities with an emphasis on field verification. QA is now reviewing all condition adverse to quality documents (CAQs), CAPs/SPs, and NRC open items at closure. Feedback on rejected items is provided directly to department management. The 100% review of open items will continue until TVA is confident that the documents are being properly closed.

TVA management has also clarified site expectations for the contractor QC organization (i.e., SWEC) to include expectations regarding inspection attitudes. In addition, a team of senior SWEC management personnel are reviewing the existing expectations and directions established for SWEC quality control personnel. This directed assessment will look for inspection adequacy, use and control of out of scope findings, and any failures to document corrected deficiencies. This review is scheduled to be completed by November 20, 1994. The results will be discussed with the General Manager of Nuclear Assurance and Licensing for further enhancements in the QC area.

## C. Enhanced Verification To Assure Problems Are Bounded

TVA has also instituted actions to more fully assess the extent to which the problems identified impact other plant areas and to further validate its conclusions regarding the common causes and necessary resolution actions. As more data are obtained from these efforts, TVA may modify its resolution actions to address the new information. These actions are noted below:

### 1. Corrective Actions

TVA line organizations are reevaluating corrective action documents closed in the last 12 months to ensure they effectively resolved the identified concerns. The 12-month period was chosen as the period in which problems first surfaced in the construction completion areas (i.e., CAPs/SPs; unauthorized work, etc.). This review is well underway and is scheduled to be completed in early December 1994. Results will be evaluated to determine if additional lookback is required. In parallel, NA will assess these reevaluations to ensure their effectiveness. This NA assessment is scheduled to be completed in January, 1995.

### 2. NRC Open Items

To confirm that issues similar to the eight construction deficiencies do not exist in other WBN closure packages, TVA requested that the packages be put "on hold" until detailed field verifications could confirm their adequacy. These "on hold" packages are being field verified, as applicable. Prior to releasing the "on hold" packages, each item will go through the same management review and NA verification as a new closure package. One of the reviews for these packages is by a Senior Review Panel, after the line organizations and NA have completed their reviews. Not only does this provide an additional confirmation, it also is a valuable feedback tool for the upstream verification processes.

TVA is also reevaluating those packages which had been reviewed and closed by NRC in the last 12 months. As with corrective action documents, this activity will ensure that the identified concerns were effectively resolved. This reevaluation is scheduled to be completed by December 1994.

### 3. Comprehensive Re-evaluation of Technical Areas

Recent electrical construction deficiencies have raised additional concerns regarding the quality of electrical installation activities. To assist in assessing the extent of these electrical problems, the overall electrical design and installation will be verified through a technical review. In addition, the Residual Heat Removal system will be verified during this review. This multi-discipline review will be performed by a team of technical personnel (e.g., contractors) with engineering/modifications and QA experience. Many of the construction programs associated with the completion of WBN will be evaluated as part of this technical review.

This assessment will focus on whether the installation activities adequately and consistently conform to design output requirements. Administrative review of controlled documents and field walkdowns will be utilized. Among the specific tasks to be accomplished are the following:

- Review of General Construction Specifications, G-38 and G-40;

- Review of the implementing procedures (i.e., Modification and Addition Instructions and Maintenance Instructions) for the above specifications; and
- Review of corrective actions for the related CAPs/SPs, employee concerns, and CAQs.

Although TVA has no current indications of problems in the non-electrical areas, as a prudent management action, TVA will perform technical reviews in other technical areas (e.g., mechanical and civil) to provide additional assurance that these areas are being implemented as designed. These reevaluations are scheduled to be completed in January 1995.