

December 1, 1994

MEMORANDUM TO: Frederick J. Hebdon, Director
Project Directorate II-4
Division of Reactor Projects - I/II, NRR

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

SUBJECT: FORTHCOMING MEETING WITH TENNESSEE VALLEY AUTHORITY
(TAC NO. M63648)

DATE & TIME: December 14, 1994
9:00 a.m. - 5:00 p.m.

LOCATION: Watts Bar Nuclear Plant
Field Services Building, Conference A
Spring City, Tennessee

PURPOSE: To discuss open issues in the fire protection program, as delineated in the attachment.

PARTICIPANTS: NRC
P. Madden, W. Miller, K. Sullivan, R. Deem, P. Tam, et al.
TVA
B. Schofield, T. Davis, W. Elliott, Alan Johnson, et al.

Docket No. 50-390

Enclosure: Issues for Discussion
in 12/14/94 Meeting

cc: See next page

*Meetings between NRC technical staff and applicants or licensees are open for interested members of the public, petitioners, intervenors, or other parties to attend as observers pursuant to "Open Meeting Statement of NRC Staff Policy," 43 Federal Register 28058, 6/28/78. Persons who wish to observe should contact the project manager at 301-504-1451 within 24 hours before the meeting.

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DATE	12/1/94		12/1/94		12/1/94			

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WATTS BAR NUCLEAR PLANT (WB)
FIRE PROTECTION PROGRAM
ISSUES FOR DISCUSSION IN 12/14/94 MEETING

By letter of April 6, 1994, the staff requested additional information (RAI) pertaining to the fire protection program. On July 1, 1994, the applicant submitted its response to this request. In its submittal, the applicant made a commitment to revise its fire protection report to incorporate several of the staff concerns and deferred its response to the post-fire safe shutdown information request. On October 21 and November 18, 1994, the applicant provided response to the post-fire safe shutdown information request. The staff has reviewed the applicant's fire protection program and the additional information. The staff concludes that certain aspects of the applicant's fire protection program are incomplete and additional information or clarification is needed. The following summarizes the areas which remain open:

A. FIRE PROTECTION PROGRAM

1. RAI Question 3 took issue with the applicant's definition of a continuous fire watch. The RAI requested the applicant to provide its technical basis for using a roving fire watch and identify how this fire watch provides the same level of fire safety to that of a fire watch that remains within a fire area on a continuous basis. In addition this RAI requested the applicant to provide an overview of the training given to fire watches.

The applicant, in its response to fire watch training, referenced documents which have not been submitted to the staff for review. In addition, the applicant did not provide an overview of the training that it proposes for fire watch personnel, therefore, the applicant's fire watch training program is an open item.

The applicant's definition of a continuous fire watch allows the fire watch to patrol multiple fire areas and zones as long as the area where the fire protection impairment is located is patrolled every 15 minutes. The applicant's bases for this definition, as stated in its July 1, 1994 submittal, is that this fire watch criteria is similar to that which was approved for TVA's Sequoyah facility. In reviewing the Sequoyah Technical Specification bases (3/4.7.12, Fire Barrier Penetrations), the staff finds the continuous fire watch definition for Watts Bar is not consistent with the continuous fire watch definition established by Sequoyah's bases. Therefore, the staff finds that the applicant's continuous fire watch definition does not provide an adequate level of fire safety, therefore, this item remains open.

2. RAI Question 5 requested that the applicant provide its technical basis for the 25% extension and how the applicant intends to assure that the testing/inspection frequency is maintained to the original specified interval without successive extensions in the frequency.

ENCLOSURE

The applicant stated that the 125% is consistent with Technical Specification test frequency. However, the applicant did not address how it intends to maintain the test/inspection frequency to the original specified interval without successive extensions in frequency. Therefore, this item remains open.

3. RAI Question 11 requested that the applicant provide information on how it intends to control smoke. This item requested that the applicant describe how it intends to vent smoke from the plant areas affected by fire. The applicant did not provide this information for review. Therefore, this item remains open.
4. RAI Question 12 requested a description of the applicant's control of combustibles program and the administrative limits placed on transient combustibles. The applicant referred to an administrative procedure, but did not provide this procedure for review. The WB fire protection plan does not adequately describe this program. Therefore, this item remains open.
5. RAI Question 17 requested information pertaining to the fire protection water supply and the fire pump capacity. In addition, it requested that the applicant compare its system to the one at Sequoyah. The applicant indicated that these systems are basically the same and that the water supply used by WB is the same as the one used by Sequoyah. Microbiologically induced corrosion is a concern with this water supply. As a result of this concern and the raw water demands, it is the staff's understanding that Sequoyah has made plans to modify this system by replacing the fire pumps and installing a potable water supply and a dedicated underground piping system. Describe the water chemistry differences between these two facilities and why the operational concerns associated with raw water demands at Sequoyah are not a concern at WB. This issue remains open.
6. RAI Question 23 requested the applicant to clarify what is meant by the term "equivalent fire barrier." The applicant did not submit the requested clarification. Therefore, this item remains open.
7. RAI Question 25 was related to internal conduit seals. The applicant provided its criteria for determining when an internal conduit seal (smoke or fire) is or is not needed. However, the applicant did not provide the technical basis for this criteria. In addition, the applicant's criteria may not provide the level of smoke and fire control for vertical conduit runs specified in NRC fire protection guidance. Therefore, this item is open.
8. RAI Question 26 requested information regarding alternative compensatory measures. The RAI requested the applicant to describe the alternative measures in detail, provide the criteria for establishing these measures, the technical basis which establishes the equivalency of these measures to a fire watch and some example

cases where they would be implemented. The applicant indicated that the alternative measures would be used when a normal fire watch would be too restrictive, however, the applicant did not establish the technical basis for when these measures would be used and how they are equivalent to the primary compensatory measure. Therefore, this item is still open.

B. POST-FIRE SAFE SHUTDOWN CAPABILITY

1. RAI Question 2 requested a summary of the systems used to achieve hot shutdown and subsequent cold shutdown for each fire zone/area. In addition, it was requested that the applicant identify the trains used, their separation, the fire protection features provided for the preferred shutdown path, potential manual operator actions, the type of action, and where these actions take place. With respect to cold shutdown repairs, it was requested that the applicant provide a summary of these repairs for each affected fire zone/area, the resources, materials, and equipment needed to implement repairs. This information is not included in the WB Fire Protection Report. This report does not provide sufficient information to evaluate the ability to achieve and maintain post-fire safe shutdown conditions and the fire protection features provided for safe shutdown capability. The applicant's report is, therefore, incomplete.

On October 21, 1994, the applicant provided a partial response to this request and committed to complete its response by November 18, 1994. In the partial response, the applicant indicated that the verbal description for the KEYS shown on the shutdown logic diagram is included in the Fire Protection Report. In fact description of the KEYS is not included in this report. In addition, the applicant did not address the request for information pertaining to the fire protection features provided in each fire zone/area for the preferred shutdown path, therefore, the applicant's response is considered incomplete.

C. FIRE PROTECTION SURVEILLANCE AND TESTING

1. RAI Question 1 requested the applicant to clarify its position regarding compensatory measures for inoperable automatic suppression capability.

Function B fire detection devices, in addition to its fire suppression system initiation function, perform a early warning function. Therefore the operability of the Function B devices impacts both the early warning function and the fire suppression system initiation function. The applicant's fire protection operating requirements (section 14.3.1, and 14.4.1) specifies that continuous fire watch would be required when the Function B devices are inoperable. However, if the fire suppression system is inoperable and the early warning function of the Function B detection devices are operable, the applicant's fire protection

operating requirements (section 14.3.3 and 14.4.2) require a roving fire watch to be established. This is not consistent with past Standard Technical Specification (STS) spray and/or sprinkler system and CO₂ action statements. The STS action statements require a continuous fire watch when a fire suppression system is declared inoperable. Therefore, this item is open.

D. THERMO-LAG FIRE BARRIER TEST PROGRAM

1. The applicant has not submitted its test results and associated reports for its Phase 2 Thermo-Lag fire barrier test program. The applicant has indicated that the Phase 2 results will not be available for review until December 1994. Therefore, the staff review of the applicant's Thermo-Lag fire barrier test program is incomplete.

E. OTHER ISSUES

1. The applicant, in its fire protection plan, has not confirmed that the plant equipment used to achieve and maintain post-fire safe shutdown from either inside or outside the main control room is included in the plant Technical Specifications (TS) in accordance with the guidance of Generic Letters 81-12 and 88-12. Therefore, the applicant's request to use the standard license condition remains open.
2. The applicant has requested a deviation from Section III.G.2.b of Appendix R which requires separation of redundant trains of safe shutdown cables and equipment by a horizontal distance of more than 20-feet with no intervening combustibles. In addition to the provision to provide the spacial separation this section of Appendix R requires that automatic fire detection and suppression be installed in the area. This deviation would allow intervening combustibles in the 20-foot spacial separation zone between redundant safe shutdown trains. Cable insulation in open ladder-type trays are the primary intervening combustibles. The applicant bases its deviation request on the enhanced automatic sprinkler system design in these areas.

The staff is concerned that the presence of these intervening combustibles will add to the fire's intensity at the ceiling and that they could provide a path for fire propagation between the redundant safe shutdown trains, specifically, when the enhanced sprinkler system protecting these zones is inoperable. Based on the safety significance a fire in these intervening combustible zone areas could have on plant shutdown, the staff finds the applicant's proposed compensatory measures (hourly fire watch) inadequate, therefore, the acceptability of this deviation is open.

WATTS BAR CLEAR PLANT

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