



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555
January 30, 1985

Docket No: 50-390

APPLICANT: Tennessee Valley Authority
FACILITY: Watts Bar Nuclear Plant, Units 1 and 2
SUBJECT: SUMMARY OF WATTS BAR TECHNICAL SPECIFICATION MEETING

On January 22, 1985, representatives of TVA and the NRC met to discuss issues regarding the Watts Bar technical specifications. Enclosures (1) and (2) list the attendees and agenda, respectively. TVA's presentation (Enclosure 3) showed the history behind each technical specification request and TVA's proposal to resolve it. Below is a listing of the status, and actions, if any, to be taken to resolve the issues:

- 1) WOG Optimization Program
The staff informed TVA that the generic SER package on the WOG Optimization Program was before the Committee to Review Generic Requirements (CRGR), and, if the CRGR chose not to review the SER, the package would be made available to TVA. If the CRGR chose to review the package, then TVA would have to wait for the package until CRGR's review was complete.
- 2) Containment Purge Time
The staff informed TVA that the submittals made regarding the containment purge time presented enough information to justify relief to 1000 hours. However, the staff requested TVA to provide operating experience for Sequoyah over a 12 month period to justify relief beyond 1000 hours.
- 3) Hydrogen Ignitor Testing
The staff concluded that the technical specification regarding temperature measurement of the ignitor did not require changing. To resolve the problems created by the current use of an optical pyrometer, the staff told TVA that additional information regarding TVA's alternate proposal would be required, including the number of ignitors on each circuit, more details on the current and voltage criteria to be used to determine adequate temperature, and assurances that the only way the ignitor system could draw the current specified in the criteria is by proper operation.
- 4) Turbine Overspeed Protection
Although the turbine has a favorable orientation, the staff stated that part of the risk assessment with regard to turbine missiles comes from the probability that the turbine will generate a missile. This probability is based partly on use of a maintenance program to reduce turbine missile generation probability.

The staff stated that TVA should look at how removal or modification of this maintenance program would affect this probability. If the Farley proposal were to be issued, information showing that the Farley proposal was directly applicable to Watts Bar would be required.

- 5) Diesel Generator Fuel Oil Sampling
Although TVA proposed to adopt the McGuire SNUPPs technical specifications, the staff stated that since the Watts Bar facility had a different fuel oil system than McGuire, TVA would have to provide more details about the system, showing how the McGuire/SNUPPs proposal could be applied acceptably to Watts Bar.
- 6) Circuit Breakers
The staff told TVA that they would have to reconsider the TVA proposal and give them an answer later.
- 7) Fuses
The staff told TVA that they would have to reconsider the TVA proposal and give them an answer later.
- 8) Thermal Overload Breaker Bypass
The staff requested TVA to provide a statement that the thermal overload breakers are bypassed for all accidents before the staff could approve use of the Revision 5 technical specification on Watts Bar.
- 9) RCS PIV Leakage Testing
The staff informed TVA that it would have to wait until CRGR completed its review of this generic issue before changes to the STS could be implemented for Watts Bar.
- 10) Snubbers
The staff informed TVA that the modifications proposed to the snubber program were generic in nature and should go to CRGR. Therefore, the staff took the position the standard snubber technical specification would stand.

At the close of the meeting, it was agreed that TVA and the NRC staff would meet on some of these subjects again the following week.

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DESIGNATED ORIGINAL

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WATTS BAR

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Enclosure (1)

Watts Bar Tech Spec
Meeting Attendees
January 22, 1985

<u>Name</u>	<u>Organization</u>
T. J. Kenyon	DL/LB #4
R. H. Shell	TVA - Nuclear Licensing Staff
E. R. Ennis	TVA - WBNP Plant Manager
T. G. Dunning	NRC/ICSB
R. T. McCollom	TVA/WBN
J. E. Gibbs	TVA/WBN
M. V. Burzynski	TVA/WBN
D. M. Verrelli	NRC/Region II
J. P. Weise	NRC/Region II
D. P. Falconer	NRC/Region II
R. L. Perch	NRC/DL/TSRG
G. R. Ashley	TVA/WBN
David C. Harley	TVA/SNP
J. C. Pulsipher	NRC/CSB
J. Shapaker	NRC/CSB
H. K. Shaw	NRC/DE/MEB
H. L. Brammer	NRC/DE/MEB
R. Giardina	NRC/PSB
J. Knox	NRC/PSB

Enclosure (2)

Agenda

Watts Bar Technical Specification
Meeting

- 9:30 Introduction

- 9:35 WOG Optimization Program

- 9:45 Containment Purge Time
Hydrogen Ignitor System

- 10:00 Turbine Overspeed Protection
D.G. Fuel Oil Testing
Circuit Breakers
Fuses
Thermal Overload Bypass Device

- 11:00 RCS Leakage
Snubbers

ENCLOSURE (3)

TVA PRESENTATION

WOG TECH SPEC OPTIMIZATION PROGRAM

- o WOG TOPS program is designed primarily to reduce the frequency of testing on the analog channels in the reactor protection system. Basis for the changes have been submitted to NRC via WCAP 10271.
- o NRC safety evaluation report (SER) has been written and signed by Harold Denton. They expect to issue it shortly.
- o The parts of the program TVA is asking for are approved in the SER.
- o Approval of these changes prior to licensing will save TVA the cost of a formal tech spec change and eliminate a change to the surveillance scheduling program after licensing.

PURGE TIME

- o Present tech specs limit purge and vent time to less than 500 hours per year.
- o Sequoyah study indicated need for 2000 hours per year. Of course, actual purge time will depend on capacity factor.
- o Sequoyah has a 1000 hour per year purge limit. Some of the reasons include outages and a tech spec change. NRC made an administrative change rather than increase the time limit or the number of lines that could be opened.
- o Ice condensers required more purge time because of more inspection entries and to control radioactivity concentrations inside the ice condenser.
- o The ice condenser requires more vent time because of the very narrow band that containment pressure must be maintained in. The amount of vent time is a function of the number of air operated valves that operate inside containment.
- o The amount of vent time is a function of containment design and its sensitivity to changes in outside air temperature.
- o In accordance 10 CFR Part 50.91, TVA is requesting 2000 hours to avoid an emergency tech spec change.

HYDROGEN IGNITOR TESTING

- o TVA requested in September 1982 that ignitor surface temperature measurements be replaced with current measurements and cleanliness inspections.
- o As a result of this request NRC revised the Watts Bar tech specs, including the Proof and Review copy, to require current measurements and cleanliness inspections.
- o The advance final draft copy of the tech specs, issued in December 1984 reverted back to requirements for temperature measurements in lieu of any other testing. No reason was provided by NRC for this change in position.
- o TVA believes that current measurements that are correlated to a previously measured surface temperature provide adequate assurance that the ignitors will function properly.
- o Reasons why temperature measurements are not acceptable to TVA stem from occupational safety concerns and scheduling problems.
- o Ignitors in the upper portions of the containment can only be accessed for temperature measurements via scaffolding built on top of the polar crane trolley and from a bucket suspended from the crane hook. Both tasks are occupational hazards.
- o The polar crane is the critical path item during a refueling outage. Testing the ignitors during this period would require an extension of the refueling by at least two days.
- o Testing during power operation would require more time because of restricted access. It would add to radiation exposure totals. It would present a greater occupational hazard than testing during a refueling outage.

TURBINE OVERSPEED PROTECTION

- o NRC General Design Criteria 4 requires missile protection. Turbine missiles are included under this requirement.
- o TVA has chosen to meet GDC 4 by favorable orientation of the turbines and believes that turbine overspeed protection is not required for nuclear safety related reasons. On the other hand, TVA maintains turbine overspeed protection for economic reasons.
- o TVA contends that no safety issue exists at Watts Bar with respect to turbine missiles. This position is based on two key points: orientation of turbines and very low strike probability for turbine missiles.
- o Orientation - TVA turbines centerlines are oriented perpendicular to the safety related buildings.
- o Low strike probability - Conservative analysis submitted in FSAR demonstrated that the probability of a turbine missile striking safety related structures is less than NRC acceptance criteria.
- o TVA pays a penalty in longer steamlines from two steam generators because of the orientation chosen for the turbines.
- o Turbine valve stroke testing at power is costly because of power reductions required during the testing. The testing can also lead to unnecessary power/xenon oscillations late in cycle life because of the power reductions.
- o Turbine valves associated with recirculation type steam generators do not exhibit scale buildup that would threaten valve operation. Impurities in the feedwater are kept in the recirculated water in the steam generator and leave via steam generator blowdown.
- o NRC's NUREG 1024 "Technical Specifications - Enhancing the Safety Impact" recommended that turbine overspeed protection requirements be eliminated from all standard technical specifications.

BREAKERS

- The deletion of the limit of 10 percent to the remedial testing part of surveillance requirement 4.8.3.3.a is unduly restrictive. Additional representative sampling has always been part of NRC's remedial testing policy. This is true for ice weighing, snubber testing, and other testing for electrical devices. Molded-case circuit breakers should not be singled out for more restrictive testing.
- As documented in the letter from L. M. Mills to E. Adensam dated May 14, 1984 (A27 840514 005), "molded-case circuit breakers have an excellent record of reliability" (NEMA Standard AB2-1980). There is no reason to suspect that the failure of a single device is anything other than a random failure. The recent change to this surveillance requirement seems, however, to suggest that molded-case circuit breakers are more prone to failure than experience would lead one to believe.
- TVA requests that the 10 percent limit on remedial testing be reinstated. The molded-case circuit breakers are highly reliable. They do not warrant this more restrictive response. The removal of the 10 percent limit cause two problems for TVA. First, the additional cost increased because of a random failure increases ninefold with the current surveillance requirement. This is an economic penalty not warranted by the excellent performance of molded-case circuit breakers. Second, a random failure increases the testing manpower requirement ninefold.
- This makes outage planning, scheduling, and execution more difficult because workloads can increase significantly.

FUSE TESTING

- o TVA requested in September 1982 that functional testing be replaced with visual inspections and a fuse maintenance program. This proposal was identical to one worked out between TVA and NRC on the Sequoyah docket.
- o As a result of this request NRC revised the Watts Bar tech specs, including the Proof and Review copy, to require visual inspection and a fuse maintenance program.
- o The advance final draft copy of the tech specs, issued in December 1984 reverted back to requirements for functional testing instead of visual inspection. No reason was provided by NRC for this change in position.
- o TVA chose to use fuses to comply with Regulatory Guide 1.61 because they are more reliable than circuit breakers and do not require periodic testing to ensure continued operability.
- o Reasons why functional testing is not acceptable to TVA are threefold: no proven technical reason for resistance measurements, system not designed for this kind of testing, and programmatic concerns.

THERMAL OVERLOADS

- o Regulatory Guide 1.106 lists three alternatives for accomplishing motor operated valve protection. TVA has chosen to comply with position C.1.b:

Those thermal overload protection devices that are normally in force during plant operation should be bypassed under accident conditions.

- o The requirement to calibrate the thermal overload devices that are bypassed under accident conditions is unduly restrictive, expensive, and not warranted by regulation. The thermal overload devices perform no safety function. They are for economic protection. The bypass devices perform the safety function and are tested in accordance with the technical specifications.
- o This change was submitted to NRC with justification by letter from L. M. Mills to E. Adensam dated September 15, 1982 (A27 820915 002). It was approved by NRC shortly thereafter. The letter from D. S. Kansmer to E. Adensam dated July 27, 1983 (A27 830727 008), resubmitted those changes from the September 15, 1982, submittal that were not approved. The thermal overload change was not included in that submittal.

PIV TESTING

- o Present tech specs arbitrarily set a 1 gpm leakage limit per pressure isolation valve, corrected to full system pressure.
- o Most valves have to be tested before the reactor coolant system heats up to prevent the leakage fluid from flashing to steam and altering the measurement.
- o Testing is done in accordance with ASME Section XI which requires leakage extrapolation be done according to the classic square root method.
- o Testing has to be done in a certain sequence to prevent disturbing a tested valve by avoiding flow through it. Testing starts at a low system pressure and steadily increases.
- o The present limit unnecessarily penalizes larger valves and those that have to be tested at the lower pressures. Larger valves can have a higher overall leakage for the same seat condition and lower pressure test measurements have a larger increase as a result of the square root extrapolation.
- o Most check valves tend to seat better as the differential pressure increases.
- o TVA has justified leakage limits up to 9 gpm per valve by very conservative methods.
- o NRC has prepared a generic tech spec that is based on nominal valve size: 0.5 gpm per inch of valve diameter up to a maximum of 5 gpm.
- o NRC has approved this kind of change for Farley Nuclear Plant (letter dated October 15, 1984).

MEETING SUMMARY DISTRIBUTION

Docket No(s): 50-390

NRC PDR

Local PDR

NSIC

PRC System

LB #4 r/f

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