

February 20, 2004

LICENSEE: Tennessee Valley Authority

FACILITY: Browns Ferry Nuclear Plant, Units 1, 2, and 3

SUBJECT: SUMMARY OF JANUARY 28, 2004, MEETING REGARDING THE LICENSE RENEWAL APPLICATION FOR THE BROWNS FERRY NUCLEAR PLANT

On January 28, 2004, the U.S. Nuclear Regulatory Commission (NRC) staff met with Tennessee Valley Authority's (TVA's) representatives at the NRC Headquarters in Rockville, Maryland. The objective of the meeting was for TVA to provide the staff with an overview of the license renewal application (LRA) for the 3 units at Browns Ferry. The meeting was classified as a Category 1 meeting. Enclosure 1 is a list of attendees and the meeting agenda. Enclosure 2 is a copy of TVA's handout that was distributed during the meeting. Enclosure 3 is a set of questions the staff provided to TVA prior to the meeting.

TVA provided background information on the restart of Unit 1. The restart of the unit is planned for May, 2007. At restart, Unit 1 will be operationally identical to Units 2 and 3.

In response to staff questions, TVA discussed: (1) current and future modifications to Unit 1 to make it identical to Units 2 and 3, (2) its aging effects evaluation and results for Unit 1 structures and components in wet layup, (3) the incorporation of past precedents into the LRA, (4) the impact on the license renewal review of planned requests for power uprates for the 3 units, and (5) boundary drawings which identify structures and components that are subject to an aging management review (as opposed to identification of structures, systems, and components within the scope of license renewal).

TVA discussed its process of identifying future modifications to Unit 1 by providing a bold box around information in the LRA. Information in the box reflects differences between Unit 1, Units 2, and 3. These differences between units will be eliminated by restart.

With regard to the Unit 1 wet layup program, TVA noted that, although details of its evaluation of aging effects for Unit 1 structures and components in the wet layup program were not included in the LRA, this information is available for inspection on site.

TVA provided examples of the results of its evaluation of previously approved staff positions (past precedents) of prior LRAs and stated that the results would be provided to the staff in February.

In response to staff questions, TVA stated that the Browns Ferry LRA bounds the current licensing basis for Units 2 and 3, and does not reflect the anticipated uprates for the 3 units (20% uprate for Unit 1 and 15% uprate for Units 2 and 3).

TVA clarified that the boundary drawings which accompanied the LRA are color-coded to identify components that are within scope and subject to an aging management review (AMR). Specifically, components that are within scope based on the 10 CFR 54.4(a)(1) or (a)(3) criteria are identified in red on the boundary drawings, while components within scope based on the 10 CFR 54.4(a)(2) criterion are identified in blue on the boundary drawings. The staff was concerned that the boundary drawings identified only components that are within scope and subject to an AMR. TVA pointed out that some previous applicants had taken this approach.

A draft of this meeting summary was provided to TVA to allow them to comment prior to the summary being issued.

/RA/

William Burton, Senior Project Manager
License Renewal Section A
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket Nos.: 50-259, 50-260, 50-296

Enclosures: As stated

cc w/encls: See next page

10 CFR 54.4(a)(2) criterion are identified in blue on the boundary drawings. The staff was concerned that the boundary drawings identified only components that are within scope and subject to an AMR. TVA pointed out that some previous applicants had taken this approach.

A draft of this meeting summary was provided to TVA to allow them to comment prior to the summary being issued.

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Accession nos.:

1. Note to Licensee: Tennessee Valley Authority w/Encl(s), 1, 3, and Svc. List: **ML040560506**
2. Tennessee Valley Handouts (Encl. 2, slides): **ML040570314**
3. Pkg: **ML040560546**

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NAME:	M. Jenkins	W.Burton	S.Lee
DATE:	02/20/04	02/20/04	02/20/04

OFFICIAL RECORD COPY

ATTENDANCE LIST
NUCLEAR REGULATORY COMMISSION STAFF MEETING
WITH TENNESSEE VALLEY AUTHORITY
AT NRC HEADQUARTERS
LICENSE RENEWAL OVERVIEW
JANUARY 28, 2004

NRC

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W. Burton
K. Chang
G. Cheruvenki
M. Cora
K. Cozens
D. Cullison
S. Dennis
N. Dudley
G. Galletti
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K. Hsu
N. Iqbal
P. Kuo
C. Lauron
A. Lee
S. Lee
Y. Li
M. Lintz
A. Pal
J. Raval
J. Strnisha
R. Subbaratnam
F. Talbot
S. West
J. Wu

TVA

T. Abney
G. Adkins
M. Morrison
J. Valente

Members of the Public

B. Gitnick (ISL)
E. Patel (ISL)
R. Wells (Constellation Nuclear)

MEETING BETWEEN THE NRC STAFF AND THE TENNESSEE VALLEY AUTHORITY
LICENSE RENEWAL APPLICATION
FOR THE BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2, AND 3
ROCKVILLE, MARYLAND
ROOM O-10B4
AGENDA

January 28, 2004

- | | | |
|-----|--|-----------------------|
| I | Introduction/Opening remarks | 1:00 p.m. - 1:10 p.m. |
| II | Presentation of the license renewal application (LRA) | 1:10 p.m. - 1:40 p.m. |
| III | Integration of Unit 1 Restart and License Renewal Activities (LRA Section 3.0.1 and Appendix F) | 1:40 p.m. - 2:40 p.m. |
| IV. | Explanation of methodology used in determining consistency with Generic Aging Lessons Learned (GALL) and previously approved staff positions | 2:40 p.m. - 3:30 p.m. |
| V | Public Comments | 3:30 p.m. - 4:00 p.m. |
| VI. | Adjourn | 4:00 p.m. |

KICKOFF MEETING

KEY ISSUES FROM STAFF

1. With regard to Unit-1 SSCs that will remain in service at restart, what process/procedure/methodology was followed to determine:
 - a. Which SSCs would remain in service at restart?
 - b. Of these SSCs, which are within the scope of license renewal and subject to an AMR?
 - c. Have these SSCs been compared to those on Units 2 and 3?
 - d. Are there any differences (material and operational environment) between the SSCs in Unit 1 and those in Units 2 and 3? If so, what are the differences in aging effects that require management and how will the Unit 1 aging effects be managed? (Provide an example of an AMR table similar to those in LRA Section 3)?
 - e. Are there any differences in the pre-restart environments and the operational environments for Unit 1 SSCs that will remain in service at restart? If so, how did TVA evaluate pre-restart aging effects, how do they compare with operational aging effects, and what is the impact of these pre-restart aging effects on aging management during the period of extended operation? How will they be managed during the period of extended operation? Are there any differences in managing these aging effects from managing the aging effects on the corresponding SSCs on Units 2 and 3?
 - f. Did TVA develop a methodology to answer these questions? Is the methodology and the supporting records in an auditable and retrievable form?
2. Please discuss TVA's plans regarding restart and power uprates
3. Does the licensing basis used to determine what systems & components are within the scope of license renewal reflect the proposed power uprates, or is the information in the LRA based on the plants as they exist today?
4. Do the drawings include any modifications that will be made as part of the proposed power uprate?
5. We have been told that there are separate organizations for Unit 1 and Units 2 and 3. Does this mean that the staff could work with the Unit 1 TVA organization during the March outage?

6. LRA Tables 2.3.2.1 and 3.2.2.1, "Containment System," does not list the housing for the dampers and exhaust fans and housing for the valve bodies for the reactor building ventilation subsystem (system is described in LRA Page 2.3-17). Please clarify that why these components are not within the scope of the license renewal and not subject to an AMR in accordance with 10 CFR 54.4 and 10CFR 54.21.
7. Similarly, LRA Tables 2.3.3.8 and 3.2.2.8, "Ventilation System," (consists of radioactive waste building ventilation system and diesel generator ventilation subsystem) does not list the housing for the dampers, exhaust fans and housing for the valve bodies, and heating and cooling coil (heat exchangers) housings. Please clarify that why these components are not within the scope of the license renewal or subject to an AMR in accordance with 10 CFR 54.4 and 10 CFR 54.21.
8. LRA Tables 2.3.3.9 and 3.3.2.9, "Heating, Ventilation, and Air Conditioning System," (system consists of various subsystems including control room emergency ventilation system, ventilation for cable spreading rooms and control bay mechanical equipment rooms, recirculation for reactor building board rooms, Unit 3 DG building board rooms, ventilation for battery rooms) does not list the housing for the dampers and exhaust fans , housing for the valve bodies, and pressure boundary sealants to maintain positive pressure with respect to the surrounding areas. Please provide justification for their exclusion from the scope of license renewal and not subject to an AMR in accordance with 10 CFR 54.4 and 10 CFR 54.21.
9. LRA Tables 2.3.2.2 and 3.2.2.2, "Standby Gas Treatment System," does not list the housing for the dampers and exhaust fans , housing for the valve bodies, pressure boundary (maintaining negative pressure with respect to the surrounding areas) sealants, and heating and cooling coil (heat exchangers) housings. Please provide justification for their exclusion from the scope of the license renewal and subject to an AMR in accordance with 10 CFR 54.4 and 10 CFR 54.21.
10. FSAR Section 10.12.5.2, "Turbine Building," is included as part of the HVAC systems but not included in the above LRA ventilation systems. Please provide justification for the exclusion of the turbine building ventilation system from the scope of the license renewal and subject to an AMR in accordance with 10 CFR 54.4 or include them in the scope of the license renewal and subject to an AMR in accordance with 10 CFR 54.4 and 10 CFR 54.21.
11. Provide detailed information on the effects of the fire, including fire fighting and subsequent cleanup activities, on the aging effects of structures and components (SC's) within the scope of license renewal. Include those components that were scavenged and/or refurbished for use in Units 2 and 3. (Include a discussion of aging effects that are sensitive to chemistry control and have long incubation periods, such as cracking.)
12. For each system in Unit 1 within the scope of license renewal, discuss the environment during the layup period. Compare this to the environment during normal operation with respect to the applicable aging effects. (Include a discussion of aging effects that are sensitive to chemistry control and have long incubation periods, such as cracking).

13. Discuss additional inspections to manage the aging effects described above, or to confirm the absence of aging effects.
14. Describe startup inspections or other startup activities that will ensure aging caused by the fire and layup does not impact the intended functions of the equipment within the scope of license renewal.
15. The GALL considers the aging of an operating reactor. For many SCs, the applicant has claimed that the AMR is consistent with GALL. Explain how that conclusion was reached for equipment on Unit 1, considering the layup.
16. The staff's understanding is that BFNPP will propose an extended power uprate while the LRA is being reviewed. Please confirm.
17. The LRA is not clear with respect to the assumed power level. (Even the TLAA on fluence provides no information.)
18. If the LRA assumes the higher power level, explain how the differences in plant licensing basis and operating conditions at the higher power level have been addressed. Also discuss how the Dresden/Quad Cities operating experience has been addressed.
19. LRA Section 3.0.1 provides a summary of the evaluation of the Unit 1 Layup and Preservation Program and states that an evaluation was performed to determine if any new aging effects required management during the renewal term as a result of the layup environments imposed on key in-scope Unit 1 systems. However, the summary does not provide sufficient details for the staff to make a reasonable assurance finding. Therefore, the staff requests the applicant to provide details of the evaluation to assess its adequacy by providing details to include, but not limited to, the following:
 - a. Assumptions of the evaluation and their bases.
 - b. Detailed list of all components, materials, environments, aging effects and AMPs implemented during the layup period and the AMPs to be implemented during the period of extended operation.
 - c. Discussion of the results of a verification inspection of the key in-scope systems used as the justification for the evaluation.
 - d. Discussion of the results of the periodic monitoring of these environments used in combination with periodic inspection of components.
 - e. Detailed discussion on the bases for concluding that no additional aging effects are identified from the layup period.
 - f. Discussion of the differences between the AMPs implemented during the layup period and the AMPs to be implemented during the period of extended operation. If the AMPs to be implemented during the period of extended operation are consistent with a GALL AMP, then discuss the bases for concluding that expansions to these programs are not needed.

20. Will the current requirements of 10 CFR 50.49 be applied for qualification of the new components?
21. Explain the aging effects of temperature (hot spot) and moisture on the existing components during the nonoperational period.
22. Is there an EQ master list for Unit 1.
23. The information provided in LRA (specifically, Section 3.0.1) is insufficient for the staff to make a conclusion of what went on during the long layup period. As far as any potential, additional aging is concerned, we are not sure what has taken place for those components in the Unit 1 ESF and steam and power conversion systems that are affected. This concern also applies to the Units 2 and 3 components which were originally installed in Unit 1.
24. The applicant needs to provide a detailed discussion of how the AMR of each of the components involved in the layup were performed, under all pertinent environment/material combinations. This should include, but not be limited to, the methodologies used and the justification for the conclusion made. The applicant needs to address the latent effect of the long layup period on the components' aging effects. A simple statement of "no aging effects found," or the like, is not sufficient.
25. Discuss the impact of the layup on the information provided in LRA Tables 3.2.1 and 3.4.1. Identify the AMR items and components which are potentially affected by the layup, and discuss how the components will be affected in its consistency with GALL.
26. In LRA Tables 3.2.2.1 thru 3.2.2.7, and Tables 3.4.2.1 thru 3.4.2.7, identify the component types that are affected by the Unit 1 layup, including those which are now installed in Units 2 and 3. Provide similar, separate Tables 3.2.2.x and Tables 3.4.2.x, for each of the ESF and steam and power conversion systems that are potentially affected by the layup. These tables should include all the component types affected by the layup and their AMR results. The AMR should include the aging effects for the components due to the latent effects of the wet layup. To avoid a potentially lengthy list of RAIs from the staff, the applicant would need to make a conscious effort in providing all the necessary information.
27. Identify SSC's that will be replaced prior to U1 restart.
28. Identify programs used to replace them.
29. Identify bases for accepting them for operation.
30. Identify SSC's not replaced, i.e., those that remain from ~1985: "original."
31. Provide bases for acceptance of "original" SSC's for operation after U1 restart, to include period of extended operation during license renewal.
32. If not identified above, identify the inspection and maintenance programs that were in effect on these "original" SSC's since ~1985.

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