

May 18, 2005

10 CFR 54

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop: OWFN P1-35
Washington, D.C. 20555-0001

Gentlemen:

In the Matter of	)	Docket Nos. 50-259
Tennessee Valley Authority	)	50-260
		50-296

**BROWNS FERRY NUCLEAR PLANT (BFN) - UNITS 1, 2, AND 3 -
LICENSE RENEWAL APPLICATION (LRA) - RESPONSE TO NRC REQUEST
FOR ADDITIONAL INFORMATION ON CLARIFICATION OF ITEM 2 OF RAI
2.3-2 AND FOLLOW-UP TO RAI 2.4-14 (TAC NOS. MC1704, MC1705,
AND MC1706)**

By letter dated December 31, 2003, TVA submitted, for NRC review, an application pursuant to 10 CFR 54, to renew the operating licenses for the Browns Ferry Nuclear Plant, Units 1, 2, and 3. As part of its review of TVA's LRA, the NRC staff, through informal requests on March 21 and 22, 2005, identified additional information needed for clarification on item 2 of RAI 2.3-2 and follow-up to RAI 2.4-14.

The enclosure to this letter contains the specific NRC request(s) for additional information and the corresponding TVA response(s).

U.S. Nuclear Regulatory Commission
Page 2
May 18, 2004

If you have any questions regarding this information, please contact Ken Brune, Browns Ferry License Renewal Project Manager, at (423) 751-8421.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 18th day of May, 2005.

Sincerely,

Original signed by:

T. E. Abney
Manager of Licensing
and Industry Affairs

Enclosure:
cc: See page 3

U.S. Nuclear Regulatory Commission
Page 3
May 18, 2005

Enclosure

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Enclosure

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cc: continued page 4

U.S. Nuclear Regulatory Commission
Page 4
May 18, 2005

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U.S. Nuclear Regulatory Commission
Page 5
May 18, 2005

TLE:BAB

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s://Licensing/Lic/BFN LR Clarification of item RAI 2.3-2.doc

ENCLOSURE

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT (BFN)
UNITS 1, 2, AND 3
LICENSE RENEWAL APPLICATION (LRA)

RESPONSE TO NRC REQUESTS FOR ADDITIONAL INFORMATION (RAI) ON
CLARIFICATION ON ITEM 2 OF RAI 2.3-2
AND FOLLOW-UP TO RAI 2.4-14

(SEE ATTACHED)

**TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT (BFN)
UNITS 1, 2, AND 3
LICENSE RENEWAL APPLICATION (LRA)**

**RESPONSE TO NRC REQUESTS FOR ADDITIONAL INFORMATION (RAI) ON
CLARIFICATION ON ITEM 2 OF RAI 2.3-2
AND FOLLOW-UP TO RAI 2.4-14**

By letter dated December 31, 2003, TVA submitted, for NRC review, an application pursuant to 10 CFR 54, to renew the operating licenses for the Browns Ferry Nuclear Plant, Units 1, 2, and 3. As part of its review of TVA's LRA, the NRC staff, through informal requests on March 21 and 22, 2005, identified additional information needed for clarification on item 2 of RAI 2.3-2 and follow-up to RAI 2.4-14. This enclosure contains the specific NRC request(s) for additional information and the corresponding TVA response(s).

NRC's Requested Clarification On RAI 2.3-2, Item 2

The NRC staff, through a verbal request on March 22, 2005, requested additional clarification on item 2 of RAI 2.3-2. The requested clarification was to confirm that all filters for safety related components were being monitored and replaced as required to assure that equipment will perform its function.

TVA Response to RAI 2.3-2, Item 2

To address this issue the first sentence of TVA's October 19, 2005, response for item 2 of RAI 2.3-2 should be replaced with the following:

"Browns Ferry has various maintenance procedures and work orders in place to assure that all filters for safety related components are being monitored and replaced as required to assure that equipment will perform its function."

NRC Follow-up to RAI 2.4-14

LRA Section 2.1.7.2 states that insulation at BFN does not have an intended function within the scope of 10 CFR 54.4(a)(1) - (3). Insufficient information has been included in the LRA and the UFSAR for the staff to determine if this statement is valid at such a generic level. Insulation may be installed for a variety of reasons, e.g., system efficiency, heat load calculations, EQ purposes, etc. If the

insulation is relied upon for EQ purposes, the insulation, which is passive and long-lived, should be subject to an AMR. Provide a basis for not including any piping or equipment insulation within the scope of license renewal.

TVA Response to Follow-up to RAI 2.4-14

Based on discussions with the NRC staff, TVA has reviewed and enhanced the coverage of mechanical equipment insulation in the BFN LRA. Thermal insulation is in scope and meets the criteria of 10 CFR 54.4(a)(2) and 10 CFR 54.4(a)(3). The BFN LRA is revised as follows:

Add two intended functions to Table 2.0.1 as shown below.

Table 2.0.1 Intended Functions Abbreviations and Definitions

Function	Abbreviation	Definition
Insulate - Piping and Equipment	INSL	Control heat transfer
Insulation Jacketing Integrity	INJI	Protection of insulation

- A description of the insulation/insulation jacketing scoping is included in a new Section 2.1.7.2, shown in Attachment 1 to this response. The AMR results for insulation/insulation jacketing are provided in the new Section 3.0.2, shown in Attachment 2 to this response.

ATTACHMENT 1

(sheet 1 of 2)

2.1.7.2 Treatment of Piping and Equipment Insulation during Scoping and Screening

Insulation is used for heat conservation, temperature control, and prevention of condensation. To facilitate the aging management review, insulation is evaluated as a bulk mechanical commodity common to various systems and structures. The piping and equipment insulation is in the scope of 10 CFR 54 because it contains components that meet the criteria of 10 CFR 54.4(a)(2) and 10 CFR 54.4(a)(3). The portions of piping and equipment insulation that contain components subject to aging management review include all piping and equipment insulation associated with the structures listed below:

Structure Name

Reactor Buildings (Units 1, 2, and 3)
Primary Containment Structure (Units 1, 2, and 3)
Diesel Generator Buildings (Units 1&2 and Unit 3)
Reinforced Concrete Chimney
Intake Pumping Station
Standby Gas Treatment Building
Turbine Buildings (Units 1, 2, and 3)
Radwaste Building
Diesel High Pressure Fire Pump House
Transformer Yard
Condensate Water Storage Tanks' Foundations and Trenches
Containment Atmosphere Dilution Storage Tanks' Foundations
Ventilation Vaults
Isolation Valve Pits (1 and 3)
Service Building

UFSAR References

Additional details for Piping and Equipment Insulation are found in UFSAR 4.2, 4.3, 5.2, and 6.5.

License Renewal Drawings

None

ATTACHMENT 1

(sheet 2 of 2)

Components Subject to AMR

The component types that require aging management review are indicated in Table 2.1.7.2, Piping and Equipment Insulation.

The aging management review results for insulation and insulation jacketing are provided in Table 3.0.2.1.1

Table 2.1.7.2 Piping and Equipment Insulation

Component Type	Intended Functions
Insulation	INSL
Insulation Jacketing	INJI

ATTACHMENT 2

(sheet 1 of 7)

3.0.2 Summary of the Evaluation of Piping and Equipment Insulation

This section provides the results of the aging management review for those component types identified in Section 2.1.7.2, Piping and Equipment Insulation, as being subject to aging management review.

3.0.2.1 MATERIALS, ENVIRONMENT, AGING EFFECTS REQUIRING MANAGEMENT AND AGING MANAGEMENT PROGRAMS

3.0.2.1.1 PIPING AND EQUIPMENT INSULATION

Materials

The materials of construction for the Piping and Equipment Insulation components are:

- Asbestos
- Asbestos Cloth
- Aluminum
- Asphalt Coating
- Calcium Silicate
- Canvas
- Carbon and Low-Alloy Steel
- Cellular Elastomeric
- Ceramic Fiber Blanket
- Cloth Fabric
- Corkmastic
- Elastomers
- Fabricell
- Fiberglass
- Glass Fabric
- Foam Plastic
- Metal Reflective
- Mineral Wool
- Polymer
- PVC Tape
- Stainless Steel

ATTACHMENT 2

(sheet 2 of 7)

Environment

The Piping and Equipment Insulation components are exposed to the following environments:

- Inside air (external)
- Outside air (external)

ATTACHMENT 2

(sheet 3 of 7)

Table 3.0.2.1.1: Piping and Equipment Insulation - Summary of Aging Management Evaluation								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Insulation	INSL	Asbestos	- Inside air (external) - Outside air (external)	None	None	None	None	J,1
Insulation	INSL	Calcium silicate	- Inside air (external) - Outside air (external)	None	None	None	None	J,1
Insulation	INSL	Cellular elastomeric	- Inside air (external) - Outside air (external)	None	None	None	None	J,1
Insulation	INSL	Ceramic fiber blanket	Inside air (external)	None	None	None	None	J,1
Insulation	INSL	Corkmastic	Inside air (external)	None	None	None	None	J,1
Insulation	INSL	Fabricell	Inside air (external)	None	None	None	None	J,1

ATTACHMENT 2

(sheet 4 of 7)

Table 3.0.2.1.1: Piping and Equipment Insulation - Summary of Aging Management Evaluation								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Insulation	INSL	Fiberglass	- Inside air (external) - Outside air (external)	None	None	None	None	J,1
Insulation	INSL	Foam plastic	- Inside air (external) - Outside air (external)	None	None	None	None	J,1
Insulation	INSL	Metal reflective	Inside air (external)	None	None	None	None	J,1
Insulation	INSL	Mineral wool	- Inside air (external) - Outside air (external)	None	None	None	None	J,1
Insulation Jacketing	INJI	Asbestos cloth	- Inside air (external) - Outside air (external)	None	None	None	None	J,1

ATTACHMENT 2

(sheet 5 of 7)

Table 3.0.2.1.1: Piping and Equipment Insulation - Summary of Aging Management Evaluation								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Insulation Jacketing	INJI	Aluminum	- Inside air (external) - Outside air (external)	Insulation jacket degradation	Systems Monitoring Program (B.2.1.39)	None	None	J, 2
Insulation Jacketing	INJI	Asphalt coating	Outside air (external)	None	None	None	None	J, 1
Insulation Jacketing	INJI	Canvas	- Inside air (external) - Outside air (external)	Insulation jacket degradation	Systems Monitoring Program (B.2.1.39)	None	None	J, 2
Insulation Jacketing	INJI	Carbon and low-alloy steel	Inside air (external)	Insulation jacket degradation	Systems Monitoring Program (B.2.1.39)	None	None	J, 2
Insulation Jacketing	INJI	Cloth fabric	- Inside air (external) - Outside air (external)	Insulation jacket degradation	Systems Monitoring Program (B.2.1.39)	None	None	J, 2

ATTACHMENT 2

(sheet 6 of 7)

Table 3.0.2.1.1: Piping and Equipment Insulation - Summary of Aging Management Evaluation								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Insulation Jacketing	INJI	Elastomers	- Inside air (external) - Outside air (external)	Insulation jacket degradation	Systems Monitoring Program (B.2.1.39)	None	None	J, 2
Insulation Jacketing	INJI	Fiberglass	Inside air (external)	None	None	None	None	J, 1
Insulation Jacketing	INJI	Glass fabric	Inside air (external)	None	None	None	None	J, 1
Insulation Jacketing	INJI	Polymer	- Inside air (external) - Outside air (external)	Insulation jacket degradation	Systems Monitoring Program (B.2.1.39)	None	None	J, 2
Insulation Jacketing	INJI	PVC tape	- Inside air (external) - Outside air (external)	Insulation jacket degradation	Systems Monitoring Program (B.2.1.39)	None	None	J, 2
Insulation Jacketing	INJI	Stainless steel	- Inside air (external) - Outside air (external)	None	None	None	None	J, 1

ATTACHMENT 2

(sheet 7 of 7)

Table Notes:

Industry Standard Notes:

Note J: Neither the component nor the material and environment combination is evaluated in NUREG-1801.

Plant Specific Notes:

1. There are no applicable aging effects for insulation/insulation jacketing in the identified environment. This is consistent with industry guidance/experience.
2. The aging effects identified for insulation jacketing in the identified environment are consistent with industry guidance/experience.