

November 23, 1999

Mr. J. A. Scalice  
Chief Nuclear Officer  
and Executive Vice President  
Tennessee Valley Authority  
6A Lookout Place  
1101 Market Street  
Chattanooga, Tennessee 37402-2801

SUBJECT: BROWNS FERRY UNITS 2 AND 3, MAIN STEAM ISOLATION VALVE LEAK RATE LIMITS, REQUEST FOR ADDITIONAL INFORMATION (TAC NOS. MA6405, MA6406, MA6815 AND MA6816)

Dear Mr. Scalice:

By letter dated September 28, 1999 (TS399), you submitted a license amendment application for Browns Ferry Units 2 and 3. The application also requests exemptions to requirements contained in *Title 10, Code of Federal Regulations Part 50, Appendix J*. The proposed amendment would revise the technical specifications (TS) leakage limits for main steam isolation valves. The staff has determined that it needs additional information to determine the acceptability of the proposed TS changes and exemptions.

Our request for additional information is enclosed. These questions were discussed with Mike Morrison and Bert Morris, of your staff, in a telecon on November 23, 1999. It was agreed that TVA would respond to these questions by December 27, 1999. If you have any questions regarding this issue, please contact me at 301-415-3026.

Sincerely,

Original signed by:

William O. Long, Senior Project Manager, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-260 & 50-296

Enclosure: Request for Additional Information

cc w/enclosure: See next page

**DISTRIBUTION:**

File Center	RCorriea	PUBLIC	WLong	ACRS
SBlack	BFN R/F	BClayton	OGC	PDII-2 SC (A)
SLavie	PFredrickson	ALee	CYLi	
LBerry	KManoly	MReinhart	GHubbard	

DOCUMENT NAME: G:\PDII-2\BFNA6405RAI.wpd

To receive a copy of this document, indicate in the box: "C" = Copy without enclosure "E" = Copy with attachment/enclosure "N" = No copy \*See Previous Concurrence

OFFICE	PDII-2/PM	PDII-2/LA	EMEB:SC	SCSB	SPLB:SC	PDII-2/SC
NAME	WLong	BClayton	KManoly*	MReinhart*	GHubbard*	RCorriea
DATE	11/23/99	11/23/99	11/16/99	11/22/99	11/23/99	11/23/99

Official Record Copy

DF01

PD R ADOCK



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-001

FACSIMILE COVER PAGE

DATE: 11/23/99

TO: TVA

FAX NO: 256-729-3611

TEL NO:

FROM: Bill Long

U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR REACTOR REGULATION

FAX NO.: (301) 415-2102

TEL NO:

PAGE 1 of 5 PAGES

REMARKS:



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

November 23, 1999

Mr. J. A. Scalice  
Chief Nuclear Officer  
and Executive Vice President  
Tennessee Valley Authority  
6A Lookout Place  
1101 Market Street  
Chattanooga, Tennessee 37402-2801


SUBJECT: BROWNS FERRY UNITS 2 AND 3, MAIN STEAM ISOLATION VALVE LEAK  
RATE LIMITS, REQUEST FOR ADDITIONAL INFORMATION (TAC NOS.  
MA6405, MA6406, MA6815 AND MA6816)

Dear Mr. Scalice:

By letter dated September 28, 1999 (TS399), you submitted a license amendment application for Browns Ferry Units 2 and 3. The application also requests exemptions to requirements contained in *Title 10, Code of Federal Regulations Part 50, Appendix J*. The proposed amendment would revise the technical specifications (TS) leakage limits for main steam isolation valves. The staff has determined that it needs additional information to determine the acceptability of the proposed TS changes and exemptions.

Our request for additional information is enclosed. These questions were discussed with Mike Morrison and Bert Morris, of your staff, in a telecon on November 23, 1999. It was agreed that TVA would respond to these questions by December 27, 1999. If you have any questions regarding this issue, please contact me at 301-415-3026.

Sincerely,

  
William O. Long, Senior Project Manager, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-260 & 50-296

Enclosure: Request for Additional Information

cc w/enclosure: See next page

REQUEST FOR ADDITIONAL INFORMATION

BROWNS FERRY UNITS 2 AND 3

APPLICATION DATED SEPTEMBER 28, 1999

1. Section 5.2 of the March 3, 1999 safety evaluation for NEDC-31858, states that a secondary ALT path to the condenser, having an orifice, should exist. Your application states that in the event that FCV-1-58 were to fail to open, the leakage flow would split, with part of the flow going to the condenser via a 0.1875 inch diameter orifice in a normally open bypass around FCV 1-58, and the remainder going to the condenser via normal leakage paths through the main steam stop/control valves and through the high pressure turbine. It is noted that NEDC-31858 para. 6.1.1(2) states that the ALT flow path should, based on the radiological dose methodology, be at least 1-square inch in internal cross sectional area. Please describe the effect on offsite dose and control room habitability, of this single failure. In particular, will dose consequences remain acceptable in the event of single-failure of FCV-1-58?
2. Your application indicates that sealing steam supply valve, PCV 1-147, will be modified so that it fails closed instead of open. Assuming that fails-open was the original "safe" fail position, please confirm that the new fail position will not adversely affect the capability to mitigate design basis accidents and other postulated events.
3. Your application indicates that check valves are to be added to preheater steam lines to ensure ALT boundary integrity. Please describe any proposed measures surveillance tests for these valves. Does the use of these valves create a single-failure concern?
4. In allowing nonseismic piping to perform an engineered safety feature (ESF) function, it is expected that licensees will include the ALT system in the American Society of Mechanical Engineers (ASME) Section XI inservice inspection (ISI) and inservice testing programs, and perform augmented ISI and motor-operated valve inspections in a manner consistent with ongoing ASME and approved risk-based programs applicable to ESF piping systems. Please confirm if this is your intention.

Also, your application states that the most limiting single active failure would be failure of valve FCV-1-58 to open. Please describe any augmented periodic testing (i.e., Generic Letter (GL) 89-10/GL 96-05 diagnostics) that will be performed on this valve.

5. Section 4.1.2 of your EQE Report identifies the load combinations and stress allowables utilized in seismic assessments. Please provide a discussion of the extent to which the criteria used are consistent with the licensing basis requirements for other engineered safety features.
6. Referring to Page 10 of the EQE Report, and noting that different Class I buildings at Browns Ferry Nuclear Plant have different vertical soil amplification factors, please explain the basis for the specific scaling factors selected for the Turbine Building.

7. In Table 4-8 and Figures 4-2 thru 4-5 of the EQE Seismic Evaluation Report, only Moss Landing Units 6 & 7 condensers are provided for comparison with the Browns Ferry condensers. This is too limited to support a finding that the earthquake experience database demonstrates the seismic adequacy of Browns Ferry's condensers. Please provide additional condenser data.

As stated in the staff's March 3, 1999 safety evaluation, there is no standard at the present time, endorsed by NRC, that provides guidance for determining the required number of piping and equipment items, that should be referenced in the earthquake experience database when utilizing the BWROG methodology. Therefore, you are responsible for ensuring the sufficiency of the above data submitted for staff review and determination. If sufficient data are not provided for the condenser, the NRC may require that the condenser be analytically evaluated against all the pertinent operating and design loadings, in accordance with the plant's design basis methodology and criteria.

8. The radiological analysis description provided in the application does not provide an adequate basis for the staff to determine whether or not those analyses are acceptable. The staff notes that the reported increase in doses appears to be inconsistent with the proposed eight fold increase in the allowable MSIV leakage. Please provide the analysis assumptions, methods, and input parameters used in your calculations, in sufficient detail for the staff to resolve the apparent inconsistency and, if deemed necessary by the staff, to perform independent calculations to confirm your reported results. Your response should identify any changes made to the assumptions, methods, and inputs used in analyses previously approved by the NRC for Browns Ferry Units 2 and 3.
9. Your application requests an exemption from the requirement that MSIV leakage be included the overall Type A leakage limit (in addition to the  $0.6 L_a$  limit for the sum of Types B and C penetration leakage). Is it your understanding that this is consistent with NEDC-31858? Is there a valid need for this exemption?

Mr. J. A. Scalice  
Tennessee Valley Authority

**BROWNS FERRY NUCLEAR PLANT**

cc:

Mr. Karl W. Singer, Senior Vice President  
Nuclear Operations  
Tennessee Valley Authority  
6A Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

Mr. Mark J. Burzynski, Manager  
Nuclear Licensing  
Tennessee Valley Authority  
4X Blue Ridge  
1101 Market Street  
Chattanooga, TN 37402-2801

Mr. Jack A. Bailey, Vice President  
Engineering & Technical Services  
Tennessee Valley Authority  
6A Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

Mr. Timothy E. Abney, Manager  
Licensing and Industry Affairs  
Browns Ferry Nuclear Plant  
Tennessee Valley Authority  
P.O. Box 2000  
Decatur, AL 35609

Mr. John T. Herron, Site Vice President  
Browns Ferry Nuclear Plant  
Tennessee Valley Authority  
P.O. Box 2000  
Decatur, AL 35609

Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
Browns Ferry Nuclear Plant  
10833 Shaw Road  
Athens, AL 35611

General Counsel  
Tennessee Valley Authority  
ET 10H  
400 West Summit Hill Drive  
Knoxville, TN 37902

State Health Officer  
Alabama Dept. of Public Health  
RSA Tower - Administration  
Suite 1552  
P.O. Box 303017  
Montgomery, AL 36130-3017

Mr. N. C. Kazanas, General Manager  
Nuclear Assurance  
Tennessee Valley Authority  
5M Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

Chairman  
Limestone County Commission  
310 West Washington Street  
Athens, AL 35611

Mr. Robert G. Jones, Plant Manager  
Browns Ferry Nuclear Plant  
Tennessee Valley Authority  
P.O. Box 2000  
Decatur, AL 35609