

March 14, 2000

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 NUCLEAR PLANT, UNITS 2 AND 3 - ISSUANCE OF  
EXEMPTION FROM 10 CFR PART 50, APPENDIX J (TAC NOS. MA6815 AND  
MA6816)

Dear Mr. Scalice:

In response to your application dated September 28, 1999, as revised by letter dated February 4, 2000, the U.S. Nuclear Regulatory Commission has issued the enclosed exemption from the requirements of Title 10, Code of Federal Regulations (10 CFR), Part 50, Appendix J. Specifically, this action permits Tennessee Valley Authority to exclude main steam isolation valve leakage from the overall integrated leakage rate test measurements required by Section III.A of Appendix J, Option B, and from the sum of local leak rate test measurements required by Section III.B of Appendix J, Option B.

Based on its review, the staff finds that granting an exemption from the requirements of 10 CFR Part 50, Appendix J, is authorized by law, will not present an undue risk to public health and safety, and is consistent with the common defense and security, and that special circumstances described in 10 CFR 50.12 are present. Accordingly, your request has been granted.

A copy of the exemption has been forwarded to the Office of the Federal Register for publication.

Sincerely,

*/RA/*

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 and 50-296

Enclosure: Exemption

cc w/enclosure: See next page

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Based on its review, the staff finds that granting an exemption from the requirements of 10 CFR Part 50, Appendix J, is authorized by law, will not present an undue risk to public health and safety, and is consistent with the common defense and security, and that special circumstances described in 10 CFR 50.12 are present. Accordingly, your request has been granted.

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UNITED STATES OF AMERICA  
 NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
Tennessee Valley Authority	)	Docket Nos. 50-260, 50-296
	)	
(Browns Ferry Nuclear Plant Units 2 & 3)	)	

EXEMPTION

I.

The Tennessee Valley Authority (TVA or the licensee) is the holder of Facility Operating License No. DPR-52 for operation of the Browns Ferry Nuclear Plant Unit 2 (BFN-2) and DPR-68 for Unit 3 (BFN-3). The licenses provide, among other things, that the licensee is subject to all rules, regulations, and orders of the U.S. Nuclear Regulatory Commission (Commission or NRC) now or hereafter in effect.

BFN-2 and BFN-3 are boiling-water reactors located in Limestone County, Alabama.

II.

Title 10 of the Code of Federal Regulations (10 CFR), Section 50.54(o), requires that primary reactor containments for water-cooled power reactors be subject to the requirements of Appendix J to 10 CFR Part 50. Appendix J specifies the leakage test requirements, schedules, and acceptance criteria for tests of the leak tight integrity of the primary reactor containment and systems and components which penetrate the containment. Option B, Section III.A requires that the overall integrated leak rate must not exceed the allowable leakage ( $L_a$ ) with margin, as specified in the Technical Specifications (TS). The overall integrated leak rate, as specified in the 10 CFR Part 50, Appendix J definitions, includes the contribution from main steam isolation valve (MSIV) leakage. By letter dated September 28, 1999, as supplemented

by letter dated February 4, 2000, the licensee has requested exemption from Option B, Section III.A, requirements to permit exclusion of MSIV leakage from the overall integrated leak rate test measurement.

Option B, Section III.B of 10 CFR Part 50, Appendix J requires that the sum of the leakage rates of all Type B and Type C local leak rate tests be less than the performance criterion (La) with margin, as specified in the TS. The licensee also requests exemption from this requirement, to permit exclusion of the MSIV contribution to the sum of the Type B and Type C tests.

The MSIV leakage effluent has a different pathway to the environment. It is not directed into the secondary containment and filtered through the standby gas treatment system as is other containment leakage. Instead, the MSIV leakage is directed through the main steam drain piping into the condenser and is released to the environment as an unfiltered ground level effluent. The licensee analyzed the MSIV leakage pathway for the increased leakage (from 46 scfh to 168 scfh), and the containment leakage pathway separately in a dose consequences analysis. The calculated radiological consequences of the combined leakages were found to be within the criteria of 10 CFR Part 100 and GDC-19. The staff reviewed the licensee's analyses and found them acceptable as described in a safety analysis accompanying amendments to be issued concurrently with this exemption. By separating the MSIV leakage acceptance criteria from the overall integrated leak rate test criteria, and from the Type B and C leakage sum limitation, the BFN-2 and BFN-3 containment leakage testing program will be made more consistent with the limiting assumptions used in the associated accident consequences analyses. The amendments associated with this exemption will revise Technical Specification Surveillance Requirement 3.6.1.3.10 to limit the maximum allowable combined MSIV leakage to 150 scfm, which is less than the analytical limit of 168 scfm. Therefore, the staff finds the proposed exemptions from Appendix J to separate MSIV leakage from other

containment leakage to be acceptable.

### III.

Pursuant to 10 CFR 50.12, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR Part 50 when (1) the exemptions are authorized by law, will not present an undue risk to public health and safety, and are consistent with the common defense and security, and (2) when special circumstances are present. Special circumstances are present whenever, according to 10 CFR Part 50.12(a)(2)(ii), "Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule. . . ."

The licensee's exemption request was submitted in conjunction with a TS amendment application to increase the allowable leak rate for MSIVs. (The proposed amendment will be issued concurrently with this exemption.) The exemption and amendments together would implement the recommendations of Topical Report NEDC-31858, "BWR Report for Increasing MSIV Leakage Rate Limits and Elimination of Leakage Control Systems." The topical report was evaluated by the staff and accepted in a safety evaluation dated March 3, 1999. The special circumstances associated with MSIV leakage testing are fully described in the topical report. These circumstances relate to the monetary costs and personnel radiation exposure involved with maintaining MSIV leakage limits more restrictive than necessary to meet offsite dose criteria and control room habitability criteria.

The underlying purpose of the rule which implements Appendix J (i.e., 10 CFR 50.54(o)) is to assure that containment leak tight integrity is maintained (a) as tight as reasonably achievable and (b) sufficiently tight so as to limit effluent release to values bounded by the analyses of radiological consequences of design basis accidents. The staff has determined

that the intent of the rule is not compromised by the proposed action.

IV.

Accordingly, the Commission has determined that, pursuant to 10 CFR Part 50.12, an exemption is authorized by law and will not present an undue risk to the public health and safety, and that there are special circumstances present, as specified in 10 CFR 50.12(a)(2). An exemption is hereby granted from the requirements of Sections III.A and III.B of Option B of Appendix J to 10 CFR Part 50. The exemption allows exclusion of MSIV leakage from the overall integrated leak rate test measurement and from the sum of Type B and C test measurements used to determine compliance with TS surveillance requirements for containment integrity.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this exemption will have no significant impact on the quality of the human environment (65 FR 10844).

This exemption is effective upon issuance and will be implemented prior to startup of Cycle 12 for Browns Ferry Unit 2 and prior to startup of Cycle 10 for Browns Ferry Unit 3.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

John A. Zwolinski, Director  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland  
this 14th Day of March 2000.

that the intent of the rule is not compromised by the proposed action.

IV.

Accordingly, the Commission has determined that, pursuant to 10 CFR Part 50.12, an exemption is authorized by law and will not present an undue risk to the public health and safety, and that there are special circumstances present, as specified in 10 CFR 50.12(a)(2). An exemption is hereby granted from the requirements of Sections III.A and III.B of Option B of Appendix J to 10 CFR Part 50. The exemption allows exclusion of MSIV leakage from the overall integrated leak rate test measurement and from the sum of Type B and C test measurements used to determine compliance with TS surveillance requirements for containment integrity.

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IV.

Accordingly, the Commission has determined that, pursuant to 10 CFR Part 50.12, an exemption is authorized by law and will not present an undue risk to the public health and safety, and that there are special circumstances present, as specified in 10 CFR 50.12(a)(2). An exemption is hereby granted from the requirements of Sections III.A and III.B of Option B of Appendix J to 10 CFR Part 50. The exemption allows exclusion of MSIV leakage from the overall integrated leak rate test measurement and from the sum of Type B and C test measurements used to determine compliance with TS surveillance requirements for containment integrity.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this exemption will have no significant impact on the quality of the human environment (65 FR 10844).

This exemption is effective upon issuance and will be implemented prior to startup of Cycle 12 for Browns Ferry Unit 2 and prior to startup of Cycle 10 for Browns Ferry Unit 3.

FOR THE NUCLEAR REGULATORY COMMISSION  
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John A. Zwolinski, Director  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland  
this 14th Day of March 2000.

**DISTRIBUTION: See transmittal letter to J. Scalice**

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**BROWNS FERRY NUCLEAR PLANT**

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