

August 9, 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: ISSUANCE OF TEMPORARY PARTIAL EXEMPTION FROM 10 CFR 50.65;  
BROWNS FERRY NUCLEAR PLANT, UNIT 1 (TAC NO. MA5033)

Dear Mr. Scalice:

In response to your application dated February 4, 1999, the U.S. Nuclear Regulatory Commission has issued the enclosed temporary partial exemption from the requirements of 10 CFR 50.65 (the Maintenance Rule). Specifically, this action exempts Tennessee Valley Authority (TVA) from the explicit scoping requirements of 10 CFR 50.65(b), and instead it allows TVA to consider the defueled and long-term lay-up status of Browns Ferry Nuclear Plant (BFN) Unit 1, when establishing the scope of TVA's Maintenance Rule Program. Structures, systems, and components that perform a required function for Unit 1 in its present defueled status or that directly support the operation of Unit 2 or Unit 3 would be included in the scope of the BFN Maintenance Rule Program, but Unit 1 systems and components not required to be functional would not be required to be included in the Maintenance Rule Program.

The temporary exemption expires upon restart of the facility.

We find that the enclosed temporary exemption from the requirements of 10 CFR 50.65 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 as described in 10 CFR 50.12 are present.

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

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

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Docket No. 50-259

Enclosures: 1. Exemption  
2. Safety Evaluation

cc w/enclosure: See next page

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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Sincerely,

A handwritten signature in black ink, appearing to read "William O. Long".

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

Docket No. 50-259

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2. Safety Evaluation

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Mr. J. A. Scalice  
Tennessee Valley Authority

**BROWNS FERRY NUCLEAR PLANT**

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of )  
Tennessee Valley Authority ) Docket No. 50-259  
(Browns Ferry Nuclear Plant Unit 1) )

EXEMPTION

I.

The Tennessee Valley Authority (TVA or the licensee) is the holder of Facility Operating License No. DPR-33 for operation of the Browns Ferry Nuclear Plant (BFN) Unit 1. The license provides, 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 is a boiling-water reactor located in Limestone County, Alabama.

II.

By letter dated February 2, 1999, TVA submitted a request for exemption from certain requirements in Title 10 of the Code of Federal Regulations (10 CFR). 10 CFR 50.65(a)(1) requires, in part, that holders of operating licenses granted under 10 CFR 50.21(b) or 10 CFR 50.22 shall monitor the performance or condition of structures, systems, or components (SSCs) against licensee-established goals to provide reasonable assurance that such SSCs as defined in paragraph (b) are capable of fulfilling their intended functions. Such goals shall be established commensurate with safety and, where practical, take into account industry-wide operating experience. When the performance or condition of a structure, system, or component does not meet established goals, appropriate corrective action shall be taken. Additionally, paragraph (b) of the rule, states that, "The scope of the monitoring program

specified in paragraph (a)(1) of this section shall include safety related and non-safety related structures, systems, and components as follows:

(1) Safety related structures, systems, and components that are relied upon to remain functional during and following design basis events to ensure the integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, or the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposure comparable to the guidelines in [subsection] 50.34(a)(1) or [subsection] 100. 11 of this chapter, as applicable.

(2) Non-safety related structures, systems, or components: (i) that are relied upon to mitigate accidents or transients or are used in plant emergency operating procedures (EOPs); or (ii) Whose failure could prevent safety related structures, systems, or components from fulfilling their safety related function; or (iii) Whose failure could cause a reactor scram or actuation of a safety related system."

### III.

Section 50.12(a) of 10 CFR, "Specific exemptions," states that

The Commission may, upon application by any interested person, or upon its own initiative, grant exemptions from the requirements of the regulations of this part, which are (1) Authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security. (2) The Commission will not consider granting an exemption unless special circumstances are present.

Section 50.12(a)(2)(ii) of 10 CFR states that special circumstances are present when "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 request for exemption under the special circumstances of 10 CFR 50.12(a)(2)(ii) was found to be appropriate. Application of the regulation is not necessary to achieve the

underlying purpose of the rule for the reasons stated in the staff Safety Evaluation, dated August 9, 1999.

Pursuant to 10 CFR 51.32, the Commission has determined that granting of this exemption will have no significant effect on the quality of the human environment (64 FR 43228).

This exemption is effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:  
Suzanne C. Black, Deputy Director  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland,  
this 9th day of August 1999

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FOR THE NUCLEAR REGULATORY COMMISSION



Suzanne C. Black, Deputy Director  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland,  
this 9th day of August 1999



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST FOR TEMPORARY EXEMPTION FROM THE REQUIREMENTS OF 10 CFR 50.65

(THE MAINTENANCE RULE)

BROWNS FERRY NUCLEAR PLANT - UNIT 1

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-259

1.0 INTRODUCTION

By letter dated February 4, 1999, Tennessee Valley Authority (TVA), the licensee for the Browns Ferry Nuclear Plant (BFN) - Units 1, 2 and 3, requested that the U.S. Nuclear Regulatory Commission (NRC) provide a temporary exemption, pursuant to the provisions of 10 CFR 50.12(a), from the requirements of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants" for BFN Unit 1. As stated in the letter, the requested exemption is to remain in effect until TVA decides to return Unit 1 to operation, at which time full implementation and re-evaluation of the maintenance rule program will be required.

2.0 REGULATORY REQUIREMENTS

Paragraph (a)(1) of the rule requires, in part, that "Each holder of an operating license under §§50.21(b) or 50.22 shall monitor the performance or condition of structures, systems, or components, against Licensee-established goals, in a manner sufficient to provide reasonable assurance that such structures, systems, or components, as defined in paragraph (b), are capable of fulfilling their intended functions. Such goals shall be established commensurate with safety and, where practical, take into account industry-wide operating experience. When the performance or condition of a structure, system, or component does not meet established goals, appropriate corrective action shall be taken." Additionally, paragraph (b) of the rule, states that the scope of the monitoring program specified in paragraph (a)(1) of this section shall include safety related and non-safety related structures, systems, and components as follows:

"(1) Safety related structures, systems, and components that are relied upon to remain functional during and following design basis events to ensure the integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, and the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposure comparable to the guidelines in §50.34(a)(1) or §100.11 of this chapter, as applicable.

"(2) Non-safety related structures, systems, or components: (i) that are relied upon to mitigate accidents or transients or are used in plant emergency operating procedures (EOPs); or

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(ii) Whose failure could prevent safety related structures, systems, or components from fulfilling their safety related function; or (iii) Whose failure could cause a reactor scram or actuation of a safety related system."

### 3.0 BACKGROUND

During the period of April 4 - 18, 1997, the NRC conducted an inspection of the implementation of the maintenance rule, 10 CFR 50.65 at BFN. The results of that inspection were documented in NRC combined Inspection Reports 50-259/97-04, 50-260/97-04, and 50-297/97-04 (IR 97-04) issued May 21, 1997. The results of IR 97-04 determined that, in general, TVA's actions to implement the rule for BFN Unit 1 were technically adequate to support the interface functions with BFN Units 2 and 3 and that the BFN Unit 1 systems required to maintain spent fuel pool cooling were properly scoped in the rule. However, an Unresolved Item (URI 50-259/97-04-01) was identified for BFN Unit 1 concerning the acceptability of TVA's approach to addressing the SSCs required to be within the scope of §50.65 (b).

As described in IR 97-04, TVA's approach for the limited scoping of BFN Unit 1 SSCs was based on (1) the long-term shutdown and defueled status of the plant, (2) procedural controls that would require re-evaluation of scoping considerations if BFN Unit 1 conditions were to change, and (3) the docketed commitment to notify the NRC of any plans to return the unit to operation, which would require Commission approval prior to restart. However, the inspection team was concerned with TVA's methodology, which excluded the majority of the SSCs required to be within the scope of §50.65(b) for a facility licensed under §50.21(b) or §50.22 (i.e., the high pressure coolant injection, reactor core isolation cooling, main steam and reactor water recirculation systems were not included in the scope). The inspection team also identified that performance monitoring, data collection, and trending activities were not being performed on these systems.

Subsequently, the NRC informed TVA by letter dated July 30, 1997, that absent the certification per §50.82(a)(1) for licensed facilities in a decommissioning status, all the requirements of §50.65 applied to BFN Unit 1. Specifically, the NRC's letter stated that the existing scope of SSCs for BFN Unit 1 was inconsistent with the requirements of the rule. The NRC's letter also provided the following three alternatives to TVA in order to address the existing condition:

- (1) Revise the scope of the maintenance rule monitoring program for BFN Unit 1 to include structures, systems and components as specified in paragraph (b) of the rule, or
- (2) Submit a written certification to the NRC as specified in 10 CFR 50.82 (a)(1) that TVA has decided to permanently cease BFN Unit 1 operations, or
- (3) Petition the NRC for an exemption from the requirements of the rule that are not currently being met.

The staff requested TVA to describe which of these three alternatives it considered to be applicable or propose another course of action that it believed satisfied the requirements of the rule. TVA responded by letter dated September 29, 1997, asserting that TVA did not consider the selection of any of the three alternatives warranted because TVA's program to implement the maintenance rule for BFN Unit 1 was in compliance with 10 CFR 50.65.

the provisions of 50.65(a)(2) to BFN Unit 1, because they could not demonstrate that the affected SSCs would remain capable of performing their intended functions. All of the newly scoped BFN Unit 1 SSCs would, therefore, be placed in an (a)(1) status under the rule. As stated by TVA, the performance or condition monitoring of many of the BFN Unit 1 SSCs would not satisfy the established program goals, and corrective action would be required in accordance with §50.65(a)(1). TVA reiterated that they have no established plans to restart BFN Unit 1, and no recovery activities are currently being conducted on the unit. Therefore, TVA's proposed approach would define the corrective actions as those necessary before the unit could restart, which would result in the newly scoped BFN Unit 1 SSCs remaining in an (a)(1) status for an indefinite period of time.

Based on the information contained in the April 3, 1998 letter, the staff concluded that the proposed approach did not satisfy the requirements of §50.65(a)(1) in that the rule requires, in part, that each holder of an operating license "shall monitor [emphasis added] the performance or condition of structures, systems, or components, against licensee-established goals, in a manner sufficient to provide reasonable assurance that such structures, systems, and components, as defined in paragraph (b), are capable of fulfilling their intended functions." Contrary to this requirement, TVA's proposed approach for BFN Unit 1 does not demonstrate the effective monitoring of SSCs against established goals, in that no provisions for actively confirming the performance or condition of SSCs within the scope of the rule are defined nor does it establish goals that are commensurate with safety. Furthermore, the consideration of industry-wide operating experience required by (a)(1) was not addressed in TVA's proposal. Therefore, the staff has determined that TVA is not in compliance with §50.65 at BFN Unit 1.

#### 4.0 EVALUATION

As described in 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 the public health and safety, and are consistent with the common defense and security, and (2) when special circumstances are present. In accordance with the provisions of §50.12, the staff reviewed TVA's request for a temporary exemption from the requirements of 10 CFR 50.65(b), as described in their letter to the NRC dated February 4, 1999. Specifically, the staff reviewed TVA's justification related to the special circumstances which would support the request for an exemption to the requirements of §50.65(b), described in Sections (ii), (iii), and (v) of 10 CFR 50.12 (a)(2) which state:

- “(i) Application of the regulation in the particular circumstance would not serve the underlying purpose of the rule....”
- “(ii) Compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated....”
- “(v) The exemption would provide only temporary relief from the applicable regulation and the licensee or applicant has made a good faith effort to comply with the regulation....”

As described in TVA's exemption request, "The underlying purpose of the maintenance rule is to ensure that SSCs of nuclear power plants be maintained so that the plant SSCs will perform

their intended function when required." The exemption request also states, "In its current long-term defueled and administrative hold status, most of the Unit 1 systems are not required to perform the functions required to be monitored by 10 CFR 50.65(b) and cannot perform these functions due to the lay-up status of the unit," and further states "TVA will implement the Maintenance Rule for Unit 1 systems not currently under the scope of the rule at restart."

The staff agrees with TVA's position that because of the defueled and long term lay-up status of BFN Unit 1, the safety functions of the affected SSCs will not be required until the restart of BFN Unit 1. Therefore, the staff concurs with TVA's position that because of the particular circumstances that exist at BFN Unit 1, the application of the maintenance rule to the entire population of SSCs required to be within the scope of §50.65(b) for an operating facility, would not serve the underlying purpose of the rule.

Additionally, as stated in TVA's temporary exemption request, "Strict compliance with the 10 CFR 50.65(a)(1) requirement of the rule for timely corrective actions would result in unnecessary expenditure of considerable funds and resources to bring equipment into conformance with the goals related to the intended safety functions of BFN Unit 1 SSCs. Review of the rule and the Statements of Consideration indicate that the application of the rule to a plant in an extended lay-up period was not contemplated."

The staff agrees with TVA's position that the application of the rule to a plant in an extended lay-up period was not contemplated during the development of the rule. Accordingly, the staff concurs with TVA's position, concerning the provisions of §50.12(a)(2)(iii), in that compliance with the requirements of §50.65(a)(1) for the implementation of timely corrective actions in order to bring equipment into conformance with the goals related to the intended safety functions of BFN Unit 1 SSCs would result in the expenditure of significant resources that were not contemplated when §50.65 was adopted.

TVA's exemption request also states that they have implemented a program that is designed to comply with the purpose and intent of the maintenance rule for BFN Unit 1. This program which was described in a letter to the NRC dated September 29, 1997, utilizes a scoping methodology which is "slightly" different from the methodology endorsed by the staff in NRC Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." TVA further stated that, for BFN1 in its current defueled status, most of the BFN Unit 1 SSCs are not required to perform the functions that would be monitored under the maintenance rule and that these SSCs cannot perform these functions due to the lay-up status of the unit. The BFN Unit 1 systems that perform a required safety function in the defueled condition or that directly support BFN Unit 2 or Unit 3 operation are included in the maintenance rule program as appropriate. The lay-up status of BFN Unit 1 was appropriately recognized and factored into the scoping of BFN Unit 1 SSCs for the maintenance rule program. As stated by TVA, the current maintenance rule program also explicitly requires that the scoping of BFN Unit 1 SSCs be re-evaluated if the status of Unit 1 changes.

The staff agrees that the maintenance rule program for BFN Unit 1, described in TVA's letter to the NRC dated September 29, 1997, represents an exception to the scoping methodology described in Regulatory Guide 1.160. However, as determined by the staff, the attributes of TVA's current maintenance rule program for BFN Unit 1, appear to be adequate to address the limited scope of SSCs necessary to support the interface functions with BFN Units 2 and 3 and to monitor the performance or condition of all SSCs associated with the storage, control, and

maintenance of spent fuel in a safe condition. Therefore, the staff concurs with TVA's current maintenance rule implementation program, which explicitly requires that the scoping of Unit 1 SSCs be re-evaluated if the status of Unit 1 changes.

## 5.0 CONCLUSION

As a result of the review of TVA's request for a temporary exemption from the requirements of 10 CFR 50.65, dated February 4, 1999, the staff has concluded that pursuant to the provisions of 10 CFR 50.12(a), the exemption should be granted. Specifically, based on the established scope of TVA's maintenance rule program for BFN Unit 1 systems that support the interface functions with BFN Unit 2 and 3 and the determination that BFN Unit 1 SSCs required to maintain spent fuel pool cooling are properly monitored and maintained to assure safe plant operation, the staff has determined that the approval of the requested temporary exemption from the explicit scoping requirements of §50.65(b) will not present an undue risk to the public health and safety. TVA's request for temporary exemption also states that the current BFN maintenance rule program requires that if Unit 1 conditions change, the affected SSCs will be reevaluated for 10 CFR 50.65 applicability.

Principal Contributors: Robert M. Latta  
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Date: August 9, 1999