



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402-2801

May 13, 1996

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

Gentlemen:

In the Matter of	)	Docket Nos. 50-259	50-327
Tennessee Valley Authority	)	50-260	50-328
		50-296	50-390

BROWNS FERRY NUCLEAR PLANT (BFN), SEQUOYAH NUCLEAR PLANT (SQN), AND WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 RESPONSE TO NRC BULLETIN 96-02, "MOVEMENT OF HEAVY LOADS OVER SPENT FUEL, OVER FUEL IN THE REACTOR CORE, OR OVER SAFETY-RELATED EQUIPMENT," DATED APRIL 11, 1996

This letter is to provide the TVA response to the subject bulletin. In accordance with the bulletin, TVA has reviewed its plans and capabilities for handling heavy loads while the reactor is at power at BFN, SQN, and WBN in accordance with existing regulatory guidelines. TVA currently has plans for only one licensing amendment related to NUREG-0612, "Control of Heavy Loads at Power Plants." All other heavy lifting activity is within our licensing basis. TVA plans to replace the spent fuel racks at WBN before spent fuel is placed in the spent fuel pool. No heavy load movement over spent fuel is anticipated for this project while the reactor is at power. TVA is scheduled to submit a licensing amendment request for the spent fuel rack project in the fall of 1996. Additional information requested in the bulletin is contained in the enclosures to this letter.

Enclosure 1 provides the required response for BFN, Enclosure 2 provides the required response for SQN, and Enclosure 3 provides the required response for WBN Unit 1. No commitments have been made as a result of this letter.

If you have questions regarding this response, please contact Vic Whaley at (423) 751-7009.

Sincerely,

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Raul R. Baron  
General Manager  
Nuclear Assurance and Licensing

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U.S. Nuclear Regulatory Commission

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Subscribed to and sworn to before me  
this 13<sup>th</sup> day of May 1996

Sandra E. Rethgen  
Notary Public

My Commission Expires 2/98

**Enclosures**

**cc (Enclosures):**

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## ENCLOSURE 1

### BROWNS FERRY NUCLEAR PLANT (BFN) UNITS 1, 2, AND 3 RESPONSE TO NRC BULLETIN 96-02, "MOVEMENT OF HEAVY LOADS OVER SPENT FUEL, OVER FUEL IN THE REACTOR CORE, OR OVER SAFETY-RELATED EQUIPMENT"

The following provides the response for BFN on the subject bulletin. Pursuant to Section 182a, Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f), all holders of boiling-water reactor (BWR) and pressurized-water reactor (PWR) operating licenses for nuclear power reactors must submit the following written information.

#### REQUIRED RESPONSE 1

For licensees planning to implement activities involving the handling of heavy loads over spent fuel, fuel in the reactor core, or safety-related equipment within the next two years from the date of this bulletin, provide the following:

A report, within 30 days of the date of this bulletin, that addresses the licensee's review of its plans and capabilities to handle heavy loads while the reactor is at power (in all modes other than cold shutdown, refueling, and defueled) in accordance with existing regulatory guidelines. The report should also indicate whether the activities are within the licensing basis and should include, if necessary, a schedule for submission of a license amendment request. Additionally, the report should indicate whether changes to Technical Specifications will be required.

#### RESPONSE

TVA has performed a review of its plans and capabilities to handle heavy loads while the three reactors are in the various possible combinations of operating states (i.e., at power, in cold shutdown, refueling, and defueled). TVA has requirements contained in:

- The BFN Technical Specifications (i.e., Specification 5.5.C, which prohibits loads greater than 1,000 pounds being carried over spent fuel assemblies stored in the spent fuel pool).
- The other commitments related to the movement of heavy loads that are contained in the BFN licensing basis (i.e., the Updated Final Safety Analysis Report (UFSAR), the NRC's June 6, 1984, Safety Evaluation of the Control of Heavy Loads (Phase I), and the supporting TVA/NRC correspondence).

TVA's currently planned activities and capabilities to handle heavy loads while the reactors are in the various possible combinations of operating states are within the current licensing basis. TVA does not currently intend to seek changes to BFN Technical Specifications to support these activities.

## **REQUIRED RESPONSE 2**

For licensees planning to perform activities involving the handling of heavy loads over spent fuel, fuel in the reactor core, or safety-related equipment while the reactor is at power (in all modes other than cold shutdown, refueling, and defueled) and that involve a potential load drop accident that has not previously been evaluated in the FSAR, submit a license amendment request in advance (6-9 months) of the planned movement of the loads so as to afford the staff sufficient time to perform an appropriate review.

## **RESPONSE**

TVA's currently planned activities and capabilities to handle heavy loads while the reactors are in the various possible combinations of operating states are within the current BFN licensing basis. A license amendment is not required to support these activities.

## **REQUIRED RESPONSE 3**

For licensees planning to move dry storage casks over spent fuel, fuel in the reactor core, or safety-related equipment while the reactor is at power (in all modes other than cold shutdown, refueling, and defueled) include in item 2 above, a statement of the capability of performing the actions necessary for safe shutdown in the presence of radiological source term that may result from a breach of the dry storage cask, damage to the fuel, and damage to safety-related equipment as a result of a load drop inside the facility.

## **RESPONSE**

TVA does not currently plan to move dry storage casks over spent fuel, fuel in the reactor core, or safety-related equipment within the next two years from the date of this bulletin.

## **REQUIRED RESPONSE 4**

For licensees planning to perform activities involving the handling of heavy loads over spent fuel, fuel in the reactor core, or safety-related equipment while the reactor is at power (in all modes other than cold shutdown, refueling, and defueled), determine whether changes to Technical Specifications will be required in order to allow the handling of heavy loads (e.g., the dry storage canister shield plug) over fuel assemblies in the spent fuel pool and submit the appropriate information in advance (6-9 months) of the planned movement of the loads for NRC review and approval.

## RESPONSE

TVA's currently planned activities and capabilities to handle heavy loads while the reactors are in the various possible combinations of operating states are within the current licensing basis. TVA does not currently intend to seek changes to BFN Technical Specifications.

Although TVA does not take credit for NRC reviews, for completeness of the record, it should be noted that NRC reviewed TVA's actions to implement Unresolved Safety Issue A-36, Control of Heavy Loads - Phases I and II, and Multi-Plant Action C-10, Heavy Loads Phase I, prior to the recent restart of Unit 3. The adequacy of TVA's actions to implement these two items is documented in Inspection Report 95-38, dated August 7, 1995.

## ENCLOSURE 2

### SEQUOYAH NUCLEAR PLANT (SQN) UNITS 1 AND 2 RESPONSE TO NRC BULLETIN 96-02 "MOVEMENT OF HEAVY LOADS OVER SPENT FUEL, OVER FUEL IN THE REACTOR CORE, OR OVER SAFETY-RELATED EQUIPMENT"

The following provides the response for SQN on the subject bulletin. Pursuant to Section 182a, Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f), all holders of boiling-water reactor (BWR) and pressurized-water reactor (PWR) operating licenses for nuclear power reactors must submit the following written information.

#### REQUIRED RESPONSE 1

For licensees planning to implement activities involving the handling of heavy loads over spent fuel, fuel in the reactor core, or safety-related equipment within the next two years from the date of this bulletin, provide the following:

A report, within        days of the date of this bulletin, that addresses the licensee's review of its plans and capabilities to handle heavy loads while the reactor is at power (in all modes other than cold shutdown, refueling, and defueled) in accordance with existing regulatory guidelines. The report should also indicate whether the activities are within the licensing basis and should include, if necessary, a schedule for submission of a license amendment request. Additionally, the report should indicate whether changes to Technical Specifications will be required.

#### RESPONSE

TVA has performed a review of its plans and capabilities to handle heavy loads while the two SQN reactors are in the various possible combinations of operating states (i.e., power operation, start-up, hot standby, hot shutdown, cold shutdown, refueling, and defueled). TVA's review was performed against the licensing basis requirements contained in:

- NRC Safety Evaluation Report (SER) for the Control of Heavy Loads on SQN Units 1 and 2 dated March 26, 1985, and the associated Technical Evaluation Report (TER) for the Control of Heavy Loads, Tennessee Valley Authority, SQN, Units 1 and 2, dated January 31, 1985, (NRC Docket No. 50-327 and -328, NRC TAC No. 47130), and the supporting correspondence.
- SQN Final Safety Analysis Report
- SQN Technical Specifications

TVA's currently planned activities are limited to those associated with normal plant operation and refueling. The ability to handle these heavy loads while the reactors are in the various possible combinations of operating states are within the current licensing basis. No changes to plant Technical Specification are required to support these activities.

#### **REQUIRED RESPONSE 2**

For licensees planning to perform activities involving the handling of heavy loads over spent fuel, fuel in the reactor core, or safety-related equipment while the reactor is at power (in all modes other than cold shutdown, refueling, and defueled) and that involve a potential load drop accident that has not previously been evaluated in the FSAR, submit a license amendment request in advance (6-9 months) of the planned movement of the loads so as to afford the staff sufficient time to perform an appropriate review.

#### **RESPONSE**

TVA's currently planned activities involving the handling of heavy loads over spent fuel, fuel in the reactor core, or safety-related equipment while the reactor(s) are at power are limited to those associated with normal plant operation or refueling. None of these activities involve a load drop in excess of those documented as part of the current SQN licensing basis. A license amendment is not required to support these activities.

#### **REQUIRED RESPONSE 3**

For licensees planning to move dry storage casks over spent fuel, fuel in the reactor core, or safety-related equipment while the reactor is at power (in all modes other than cold shutdown, refueling, and defueled) include in item 2 above, a statement of the capability of performing the actions necessary for safe shutdown in the presence of radiological source term that may result from a breach of the dry storage cask, damage to the fuel, and damage to safety-related equipment as a result of a load drop inside the facility.

#### **RESPONSE**

TVA does not currently plan to move dry storage casks over spent fuel, fuel in the reactor core, or safety-related equipment within the next two years from the date of this bulletin.

#### **REQUIRED RESPONSE 4**

For licensees planning to perform activities involving the handling of heavy loads over spent fuel, fuel in the reactor core, or safety-related equipment while the reactor is at power (in all modes other than cold shutdown, refueling, and defueled), determine whether changes to Technical Specifications will be required in order to allow the handling of heavy loads (e.g., the dry storage canister shield plug) over fuel assemblies in the spent fuel pool and submit the appropriate information in advance (6-9 months) of the planned movement of the loads for NRC review and approval.

#### **RESPONSE**

As indicated above, TVA's planned activities and capabilities to handle heavy loads while the reactors are in various possible combinations of operating states are within the current licensing basis. TVA does not currently intend to seek changes to Technical Specifications with regards to heavy loads.

Although TVA does not take credit for NRC reviews, for completeness of the record, it should be noted that NRC inspectors reviewed TVA's actions associated with GL 81-07, "Control of Heavy Loads." Based on NRC's safety evaluation report dated March 29, 1989, "Control of Heavy Loads," the NRC inspectors concluded that the issue for SQN is closed. This is documented in inspection report 89-09 dated May 9, 1995.

### ENCLOSURE 3

#### WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 RESPONSE TO NRC BULLETIN 96-02, "MOVEMENT OF HEAVY LOADS OVER SPENT FUEL, OVER FUEL IN THE REACTOR CORE, OR OVER SAFETY-RELATED EQUIPMENT"

The following provides the response for WBN on the subject bulletin. Pursuant to Section 182a, Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f), all holders of boiling-water reactor (BWR) and pressurized-water reactor (PWR) operating licenses for nuclear power reactors must submit the following written information.

#### REQUIRED RESPONSE 1

For licensees planning to implement activities involving the handling of heavy loads over spent fuel, fuel in the reactor core, or safety-related equipment within the next two years from the date of this bulletin, provide the following:

A report, within 30 days of the date of this bulletin, that addresses the licensee's review of its plans and capabilities to handle heavy loads while the reactor is at power (in all modes other than cold shutdown, refueling, and defueled) in accordance with existing regulatory guidelines. The report should also indicate whether the activities are within the licensing basis and should include, if necessary, a schedule for submission of a license amendment request. Additionally, the report should indicate whether changes to Technical Specifications will be required.

#### RESPONSE

TVA has performed a review of its plans and capabilities to handle heavy loads while the reactor is at power (at modes other than cold shutdown, refueling, and defueled). TVA has requirements contained in:

- The WBN Technical Requirements Manual (TRM) 3.9.4 which prohibits loads greater than 2059 pounds from travel over fuel assemblies.
- Other commitments related to the movement of heavy loads that are contained in the licensing basis (i.e., the FSAR, proposed FSAR changes, the Technical Specification, the NRC's Safety Evaluation Report (SER) 13 that evaluated TVA's response to NUREG-0612 for WBN dated July 28, 1993).

During WBN's review of this issue, a discrepancy was identified where prescribed maintenance activities could have resulted in handling of heavy loads in a manner not previously addressed in WBN's current licensing basis. The discrepancy was identified in Table III, Note 4, in WBN's letter dated July 28, 1993, concerning the revised response to Generic Letter 81-07, "NUREG-0612 - Control of Heavy Loads at Nuclear Power Plants," and WBN's maintenance procedure for controlling movement of heavy loads. These documents indicated that safe load paths for movement of the deep well pumps (Essential Raw Cooling Water, High Pressure Fire Protection, and Traveling Water Screen Wash pumps) at the Intake Pump Station were not specified since the individual component sections weigh less than 2059 lbs. WBN has determined that some of these pump component sections weigh in excess of 2059 lbs. However, safe load paths are provided for the pumps on WBN drawing 44W411-10. This issue has been documented under the WBN corrective action program, and the appropriate procedure has been revised.

TVA plans to replace the spent fuel racks before spent fuel is placed in the spent fuel pool. No heavy load movement over spent fuel is planned for this project while the reactor is at power. TVA plans to submit a licensing amendment request and modification package for the spent fuel rack project in the fall of 1996. No other heavy load movements, outside WBN's licensing basis, are planned while the reactor is at power.

#### **REQUIRED RESPONSE 2**

For licensees planning to perform activities involving the handling of heavy loads over spent fuel, fuel in the reactor core, or safety-related equipment while the reactor is at power (in all modes other than cold shutdown, refueling, and defueled) and that involve a potential load drop accident that has not previously been evaluated in the FSAR, submit a license amendment request in advance (6-9 months) of the planned movement of the loads so as to afford the staff sufficient time to perform an appropriate review.

#### **RESPONSE**

As discussed above, TVA's planned activities and capabilities to handle heavy loads while the reactor is at power and that involve potential load drops, are within the current licensing basis, except for the spent fuel pool rerack project previously noted in response 1. A license amendment request is scheduled to be submitted within the above specified timeframe.

### **REQUIRED RESPONSE 3**

For licensees planning to move dry storage casks over spent fuel, fuel in the reactor core, or safety-related equipment while the reactor is at power (in all modes other than cold shutdown, refueling, and defueled) include in item 2 above, a statement of the capability of performing the actions necessary for safe shutdown in the presence of radiological source term that may result from a breach of the dry storage cask, damage to the fuel, and damage to safety-related equipment as a result of a load drop inside the facility.

### **RESPONSE**

TVA does not plan to move dry storage casks over spent fuel, fuel in the reactor core, or safety-related equipment within the next two years from the date of this bulletin.

### **REQUIRED RESPONSE 4**

For licensees planning to perform activities involving the handling of heavy loads over spent fuel, fuel in the reactor core, or safety-related equipment while the reactor is at power (in all modes other than cold shutdown, refueling, and defueled), determine whether changes to Technical Specifications will be required in order to allow the handling of heavy loads (e.g., the dry storage canister shield plug) over fuel assemblies in the spent fuel pool and submit the appropriate information in advance (6-9 months) of the planned movement of the loads for NRC review and approval.

### **RESPONSE**

As discussed above, there are no planned movements of loads that will require a Technical Specification change in regards to heavy loads. TVA plans to submit a licensing amendment request for the spent fuel pool rerack project in advance of the movement of the loads for NRC's review and approval. TVA is currently evaluating documentation that may be affected by this modification. However, there should be no spent fuel in the pool at the time this modification is performed, as completion is scheduled before the first refueling outage.

Although TVA does not take credit for NRC reviews, for completeness of the record, it should be noted that the NRC reviewed TVA's actions to implement NUREG-0612, Control of Heavy Loads at Nuclear Power Plants, at WBN before the receipt of the operating license for Unit 1. The adequacy of TVA's actions to implement these items is documented in NRC's Inspection Reports 95-72, 95-47, and 94-19.