

MAY 22 1992

Official copy

Docket No. 50-260
License No. DPR-52

Tennessee Valley Authority
ATTN: Dr. M. D. Medford
Vice President, Nuclear
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3B Lookout Place
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Gentlemen:

SUBJECT: TEMPORARY WAIVER OF COMPLIANCE - BROWNS FERRY UNIT 2

This letter confirms the telephone conversation between Mr. O. J. Zeringue, Vice President, Browns Ferry Operations, and Mr. L. A. Reyes of my staff on May 22, 1992, granting a Regional Waiver of Compliance for Browns Ferry Unit 2. Our action was based on your written request letter dated May 20, 1992 (copy enclosed).

Technical Specification (TS) 3.7.E.1, "Control Room Emergency Ventilation," requires in part, that both trains of the Control Room Emergency Ventilation System (CREVS) be operable when any reactor vessel contains irradiated fuel. In February 1992, TVA conducted a test of the CREVS that was unsuccessful. This test and subsequent modification and maintenance activities were part of an attempt to improve the operability of the system by reducing duct air leakage. Another test is required in the immediate future to support the long lead time for procurement of additional CREVS capacity if necessary. During the test, the system will not be operable since several manual actions will be required in place of the normal automatic actuation.

Thus, TVA requested a Temporary Waiver of Compliance of TS 3.7.E.1 for a period of time not to exceed 16 cumulative hours from May 23 to May 25, 1992.

We understand that the compensatory measures which will be in effect for the duration of this waiver include:

1. Dedicated test personnel will be stationed at the "A" CREVS Unit, Unit 2 stairway door 613, and Units 1 and 3 ventilation towers.

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2. These test personnel will be trained and procedures in place for them to take the manual actions necessary to manually initiate CREVS as directed by control room operators.

This Waiver request was reviewed by the Plant Operations Review Committee (PORC) and approved by the Vice President, Browns Ferry Operations.

In addition to the above listed compensatory actions, we understand you will notify the NRC Resident Inspector prior to initiating the use of this waiver.

Should you have any questions concerning this letter, please contact us.

Sincerely,

Stewart D. Ebnetter
Regional Administrator

Enclosure:
TVA Letter dated May 20, 1992

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(cc w/encl cont'd - see page 4)

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bcc w/encl: (cont'd - see page 5)

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MAY 20 1992

O. J. "Ike" Zeringue
Vice President, Browns Ferry Operations

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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Gentlemen:

In the Matter of
Tennessee Valley Authority

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Docket Nos. 50-259
50-260
50-296

BROWNS FERRY NUCLEAR PLANT (BFN) - REQUEST FOR TEMPORARY WAIVER OF COMPLIANCE FROM THE REQUIREMENTS OF TECHNICAL SPECIFICATION 3.7.E.4, CONTROL ROOM EMERGENCY VENTILATION SYSTEM (CREVS)

This letter requests a Temporary Waiver of Compliance from the requirements of Technical Specification (TS) 3.7.E.4, "Control Room Emergency Ventilation" in order to perform testing necessary to establish system parameters for potential upgrades to the CREVS units. During the performance of this testing, the automatic initiation capability of both CREVS units will be inhibited for a limited timeframe. However, dedicated and trained personnel will be provided to restore and manually activate the CREVS in a timely manner if its function is required. With both CREVS units unable to automatically perform their design function and the Temporary Waiver of Compliance not in place, TS 3.7.E.4 would require initiation of reactor shutdown and the placement of BFN Unit 2 in cold shutdown within 24 hours.

Enclosure 1 to this letter provides: (1) background of the CREVS concerns, (2) a discussion of the specific requirements from which the waiver is requested, (3) a discussion of the circumstances surrounding the situation including the need for prompt action, and a description of why the situation could not have been avoided, (4) a discussion of compensatory actions, (5) an evaluation of the safety significance and potential consequences of the proposed request, (6) a discussion that justifies the duration of the request, (7) the basis for the conclusion that the request does not involve a significant hazards consideration, and (8) the basis for the conclusion that this request does not involve irreversible environmental consequences.

Handwritten signature/initials

U.S. Nuclear Regulatory Commission

MAY 20 1992

Pursuant to NRC guidance for Temporary Waiver of Compliance, the Plant Operations Review Committee (PORC) has reviewed and approved the waiver request for this activity. The requested action is viewed to have no safety significance since CREVS can be restarted manually in an adequate timeframe to mitigate the consequences of an accident. TVA has determined that this proposed waiver will not involve a significant increase in the probability or consequences of accidents previously evaluated; create the possibility of a new or different kind of accident from an accident previously evaluated, or involve a significant reduction in a margin of safety. Further, this proposed change does not involve any adverse environmental consequences. Therefore, TVA requests a Temporary Waiver of Compliance from the requirements of TS 3.7.E.4 for a total of 16 hours between Saturday, May 23, 1992 and Monday, May 25, 1992. A Temporary Waiver of Compliance for 16 hours is considered necessary to support test preparations, conducting the special test, restoring equipment configurations, and unanticipated delays. TVA requests this waiver be granted by Friday, May 22, 1992.

A summary list of commitments contained in this letter is provided in Enclosure 2. If you have any questions, please contact R. R. Baron, Manager of Site Licensing, at (205) 729-7566.

Sincerely,



O. J. Zeringue

Enclosure

cc (Enclosure):

NRC Resident Inspector
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ENCLOSURE 1
BROWNS FERRY NUCLEAR PLANT (BFN)
REQUEST FOR TEMPORARY WAIVER OF COMPLIANCE

BACKGROUND:

The Control Room Emergency Ventilation System (CREVS) is designed to protect the control room operators by automatically starting on receipt of a control room isolation signal and pressurizing the main control bay habitability zone with filtered outdoor air during accident conditions that could result in radioactive releases. This filtered air maintains the control room at a positive pressure so that all leakage should be outleakage. The CREVS uses charcoal adsorbers to assure the removal of radioactive iodine from the air and high efficiency particulate absolute (HEPA) filters for removing radioactive particulate matter. There are two redundant 500 cfm CREVS trains.

The Control Bay ventilation towers, located on the north wall of the reactor building, provide the outside air for the Control Building supply ductwork. Ventilation fans, which are located in the ventilation towers, pressurize the supply ductwork that traverses the main control bay habitability zone. These fans operate during the accident recovery period (30 days) to supply necessary cooling for essential equipment. The CREVS units take suction from these positively pressurized ducts.

During the Unit 2 Cycle 5 outage, an employee concern identified a specific condition that could impact the ability of the CREVS to provide an environment suitable for personnel occupancy. The Control Building air supply ducts are not designed or fabricated to be leak tight. Unfiltered outside air could leak from the seams/joints of the supply air ducts that traverse the control bay habitability zone. This duct leakage could result in make-up air bypassing the CREVS and introducing potentially contaminated and unfiltered outside air into the control bay habitability zone.

Duct leakage was not accounted for in the previous control room dose calculations. A condition adverse to quality report was initiated and this was determined to be an unanalyzed condition. A survey of the ducts that pass through the habitability zone was completed and the ducts that contributed to the unfiltered inleakage were identified. A representative section of duct was leak tested and the results were used to estimate the total leakage of the supply duct work. Duct leakage was estimated to be 2750 CFM.

General Design Criterion (GDC) 19 - Control Room, limits control room operator doses to 5 rem whole body, or its equivalent to any part of the body (30 rem thyroid). When TVA postulated a LOCA, coupled with the unfiltered inleakage and winds from the SSE, S or SSW sectors at speeds greater than thirty six miles per hour that could offset the negative pressure maintained in the secondary containment by the standby gas treatment system (SGTS) and produce ex-filtration from the reactor building, the resulting thyroid doses would be in excess of the GDC 19 limits unless compensatory actions were taken.

ENCLOSURE 1
BROWNS FERRY NUCLEAR PLANT (BFN)
REQUEST FOR TEMPORARY WAIVER OF COMPLIANCE
(CONTINUED)

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During the current Unit 2 operating cycle (Cycle 6), TVA temporarily modified the operability requirements for the CREVS in the Units 1, 2, and 3 Technical Specifications. This change involved annotating the limiting conditions for operation (LCOs) 3.7.E.1, 3.7.E.3, and 3.7.E.4 by an asterisk and defining the CREVS as being inoperable because it did not meet its design basis for essentially zero unfiltered inleakage.

Power operations and fuel movement are acceptable until just prior to startup for Unit 2 Cycle 7. During Cycle 6, CREVS is being maintained functional by performing all applicable surveillances. In the event that the applicable surveillances are not successfully performed or the CREVS is otherwise declared inoperable, the actions required by the LCOs must be complied with. Operation of Unit 2 during Cycle 6 was approved based upon the low probability of a postulated LOCA coupled with the high wind condition and the compensatory actions instituted by BFN.

Testing of the Control Bay Habitability Zone (CBHZ) is required to determine if the CREVS is adequately sized to pressurize the CBHZ. The testing involves isolating the ventilation systems that may contribute to the unfiltered inleakage, pressurizing the CBHZ to 1/8 inch positive water pressure, and determining the flow rates required to maintain the pressure in the CBHZ.

DISCUSSION OF REQUIREMENTS:

Technical Specification Limiting Conditions for Operation (LCO) 3.7.E.1 requires both redundant CREVS be operable at all times when any reactor vessel contains irradiated fuel, except as specified in LCO 3.7.E.3. When one of the CREVS is made or found to be inoperable, reactor operation or refueling operations are permissible only for the succeeding seven days unless such equipment is sooner made operable. If these conditions cannot be met, LCO 3.7.E.4 requires reactor shutdown be initiated and all reactors be in Cold Shutdown within 24 hours and refueling operations be terminated within two hours.

**ENCLOSURE 1
BROWNS FERRY NUCLEAR PLANT (BFN)
REQUEST FOR TEMPORARY WAIVER OF COMPLIANCE
(CONTINUED)**

Dedicated test personnel will be stationed at:

- (1) The A CREVS Unit in the Mechanical Equipment Room on the west side of the CBHZ for manual start of the unit. Normally, the Unit is in the Automatic Mode for automatic actuation if isolation of the CBHZ is required. This Unit will be taken off the Automatic Mode to allow for the proper positioning of CBHZ isolation dampers for the test configuration.
- (2) Unit 2 Stairway Door 613 for manual closure of the door. The apparatus used for the pressurization of the CBHZ will be attached to the door jam and the door opened to support the test configuration. The test apparatus does not have to be removed in order to close the door. This door is normally closed in order to maintain the CBHZ integrity.
- (3) Unit 1 Vent Tower in order to manually start the ventilation fans in that tower. These fans are normally in operation and provide a positive pressure on the A CREVS Unit. The CREVS system is balanced to provide its design flow rate with these fans in operation. The fans will not be in operation during the test.
- (4) Unit 3 Vent Tower in order to manually start the ventilation fans in that tower. These fans are also normally in operation and provide a positive pressure on the B CREVS Unit. The fans will not be in operation during the test.

The manual actions required to be taken by the dedicated test personnel will be directed by the operators in the main control room. Once notified that the manual actions are to be instituted, the response time of the test personnel to initiate startup of the equipment required to restore CREVS operability is comparable to that of automatic initiation.

EVALUATION OF THE SAFETY SIGNIFICANCE AND POTENTIAL CONSEQUENCES:

The requested action is viewed to have no safety significance since CREVS can be started in an adequate time to mitigate the consequences of an accident. Performance of the special test will be used to evaluate the integrity of the CBHZ. Therefore, no safety significant potential consequences were identified.

ENCLOSURE 1
BROWNS FERRY NUCLEAR PLANT (BFN)
REQUEST FOR TEMPORARY WAIVER OF COMPLIANCE
(CONTINUED)

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DISCUSSION OF CIRCUMSTANCES:

During a plant outage on February 24, 1992, a special test was conducted to determine if the CREVS was adequately sized to pressurize the CBHZ. This test was conducted by isolating the CBHZ, including the supply and exhaust fans and ductwork that provide ventilation air to and from the outside, isolating the CREVS, and pressurizing the CBHZ by using a test fan capable of 4500 cfm. Based on boundary sealing activities performed prior to the test, it was expected that a flow of approximately 1000 cfm would be sufficient to pressurize the CBHZ. However, after the flow reached 2840 cfm during the test, the test was stopped. Numerous leakage paths were subsequently identified. Modification and maintenance activities were implemented to reduce the leakage.

As previously discussed, the identified concerns with CREVS must be corrected prior to startup from the Unit 2 Cycle 6 outage. The performance of this special test and the Temporary Waiver of Compliance necessary for the performance of this special test during power operations is required in order to determine if the CREVS is adequately sized to pressurize the CBHZ. The results of the special test on February 24, 1992 was not foreseen and the inspections, modifications and maintenance required prior to retest could not have been accomplished during that outage. This test is required to be performed in the near term in order to support the long lead time for procurement of additional CREVS capacity, if required.

DISCUSSION OF COMPENSATORY ACTIONS:

Several manual actions are being substituted for the normal automatic CREVS capability during the special test. Each manual action will have a dedicated individual whose actions will be governed by instructions in the Special Test Procedure. These personnel will be trained to perform their actions, in addition to the normal pretest briefing. Communications between the main control room and testing personnel will be by two-way radio and will be verified prior to commencement of the test.

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**ENCLOSURE 1
BROWNS FERRY NUCLEAR PLANT (BFN)
REQUEST FOR TEMPORARY WAIVER OF COMPLIANCE
(CONTINUED)**

DURATION OF THE REQUEST:

This special test was conducted on February 24, 1992 to determine if the CREVS was adequately sized to pressurize the CBH2. Based on this experience, a Temporary Waiver of Compliance for 16 hours is considered necessary to support test preparations, conducting the special test, restoring equipment configurations, and unanticipated delays.

SIGNIFICANT HAZARDS CONSIDERATION:

Since CREVS can be started manually in an adequate time to mitigate the consequences of an accident and the special test will be used to evaluate the integrity of the CBH2, TVA has determined that this proposed waiver will not involve a significant increase in the consequences of accidents previously evaluated or involve a significant reduction in a margin of safety. Since the operation of CREVS, its failure to operate, or its mal-operation is not a precursor to an accident previously evaluated, the proposed waiver will not result in an increase in the probability of, or create the possibility of, a new or different kind of accident from an accident previously evaluated.

ENVIRONMENTAL CONSEQUENCES:

The proposed Temporary Waiver of Compliance has been reviewed against the criteria of 10 CFR 51.22 for environmental considerations. The proposed change does not involve a significant hazards consideration, nor increase the types and amounts of effluents that may be released offsite, nor significantly increase individual or cumulative occupational radiation exposures. Therefore, the proposed Temporary Waiver of Compliance meets the criteria for categorical exclusion from the requirement for and environmental impact statement.

**ENCLOSURE 2
BROWNS FERRY NUCLEAR PLANT (BFN)
SUMMARY OF COMMITMENTS**

TVA will perform the special test as described in this submittal.