



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 220 TO FACILITY OPERATING LICENSE NO. DPR-33  
AMENDMENT NO. 194 TO FACILITY OPERATING LICENSE NO. DPR-68

TENNESSEE VALLEY AUTHORITY  
BROWNS FERRY NUCLEAR PLANT, UNITS 1 AND 3  
DOCKET NOS. 50-259 AND 50-296

1.0 INTRODUCTION

By letter dated March 31, 1994, the Tennessee Valley Authority (the licensee) requested changes to Technical Specifications (TS) for the Browns Ferry Nuclear Plant (BFN) Units 1 and 3. The proposed changes would revise the Limiting Conditions for Operation and Surveillance Requirements relating to temperature detection instruments that initiate isolation of the High Pressure Coolant Injection System (HPCI) and Reactor Isolation Cooling System (RCIC) turbine main steam supply lines in the event of a line break.

2.0 DISCUSSION AND EVALUATION

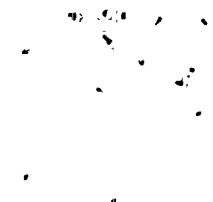
2.1 Technical Specification Changes

The proposed changes are conservative in that temperature setpoints for steamline isolation would be lowered, thus resulting in earlier isolation and greater sensitivity to smaller breaks. The new setpoints were determined analytically and incorporate sufficient margins to prevent spurious actuation of isolation valves. The bimetal sensors and instrument logics are not being changed, nor are the surveillance test intervals. However, the proposed amendment does (in addition to changing setpoints) revise the action to be taken in the event of an inoperable channel. The revised action requirements would allow continued operation with an inoperable channel placed in a tripped condition within 24 hours.

TS changes similar to those requested for BFN Units 1 and 3 TS were approved for BFN Unit 2 on January 10, 1991. The staff has reviewed this BFN Unit 2 evaluation, and has confirmed that BFN Units 1 and 3 are of similar design to BFN Unit 2. The staff finds that, similar to BFN Unit 2, the proposed setpoints for BFN Units 1 and 3 provide appropriate isolation protection in the event of a HPCI or RCIC steam line rupture. Therefore, the TS changes for BFN Units 1 and 3 are acceptable for those units on the same basis given for BFN Unit 2 in its January 10, 1991 evaluation.

9503200318 950316  
PDR ADDCK 05000259  
P PDR

ENCLOSURE 3



## 2.2 Concerns Regarding Inoperable Instrumentation

In the Safety Evaluation accompanying the January 10, 1991 BFN Unit 2 amendment, the staff raised a generic concern regarding the action of placing an inoperable HPCI/RCIC isolation instrument channel (trip system) in the tripped condition for an unlimited time period. When operating in such a condition, the isolation function is still single-failure proof from the standpoint that a single sensor failure will not prevent a required isolation. However, the logic is no longer such that a single failure will not cause an inadvertent isolation.

The concern was that this logic configuration could reduce the reliability of the HPCI and RCIC systems when they are operating under accident conditions. The staff has further considered this question and concluded that the likelihood of a spurious ESF isolation actuation, and the associated required actions that must be taken, provide a strong motivation for timely repair of instruments in a tripped channel and thus avoid prolonged operation or startup with a channel in a tripped condition. Therefore, the staff's concerns raised in the January 10, 1991 Safety Evaluation are resolved.

## 3.0 SUMMARY

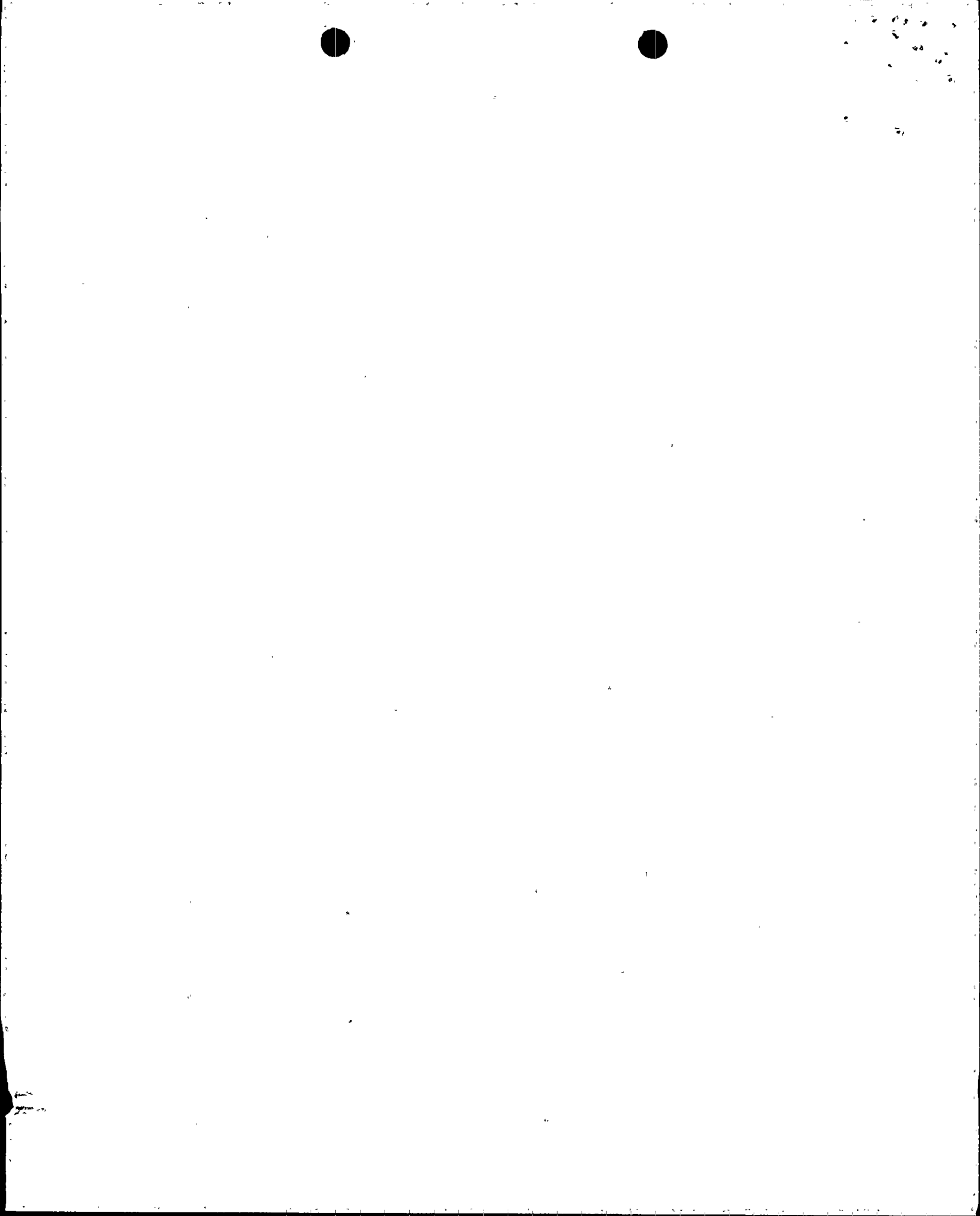
The proposed changes to the BFN Units 1 and 3 TS are consistent with changes previously reviewed and approved for BFN Unit 2. The changes are similarly acceptable for BFN Units 1 and 3. Therefore, the licensee's proposed amendments of the BFN Units 1 and 3 TS are acceptable.

## 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Alabama State official was notified of the proposed issuance of the amendment. The State official had no comments.

## 5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes the surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (59 FR 42347). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

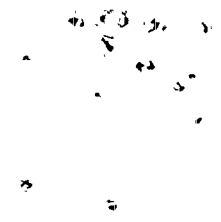


6.0 CONCLUSION

The Commission has concluded, based upon the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations, and (3) issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: W. Long

Dated: March 16, 1995



Mr. Oliver D. Kingsley, Jr.  
Tennessee Valley Authority

BROWNS FERRY NUCLEAR PLANT

cc:

Mr. O. J. Zeringue, Sr. Vice President  
Nuclear Operations  
Tennessee Valley Authority  
3B Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

Mr. Pedro Salas  
Site Licensing Manager  
Browns Ferry Nuclear Plant  
Tennessee Valley Authority  
P.O. Box 2000  
Decatur, AL 35602

Dr. Mark O. Medford, Vice President  
Engineering & Technical Services  
Tennessee Valley Authority  
3B Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

TVA Representative  
Tennessee Valley Authority  
11921 Rockville Pike, Suite 402  
Rockville, MD 20852

Mr. D. E. Nunn, Vice President  
New Plant Completion  
Tennessee Valley Authority  
3B Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, NW., Suite 2900  
Atlanta, GA 30323

Mr. R. D. Machon, Site Vice President  
Browns Ferry Nuclear Plant  
Tennessee Valley Authority  
P.O. Box 2000  
Decatur, AL 35602

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

General Counsel  
Tennessee Valley Authority  
ET 11H  
400 West Summit Hill Drive  
Knoxville, TN 37902

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

Mr. P. P. Carrier, Manager  
Corporate Licensing  
Tennessee Valley Authority  
4G Blue Ridge  
1101 Market Street  
Chattanooga, TN 37402-2801

State Health Officer  
Alabama Department of Public Health  
434 Monroe Street  
Montgomery, AL 36130-1701

Mr. T. D. Shriver  
Nuclear Assurance and Licensing  
Browns Ferry Nuclear Plant  
Tennessee Valley Authority  
P.O. Box 2000  
Decatur, AL 35602



1

1771