



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

ENCLOSURE 4

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 187 TO FACILITY OPERATING LICENSE NO. DPR-33

AMENDMENT NO. 200 TO FACILITY OPERATING LICENSE NO. DPR-52

AMENDMENT NO. 159 TO FACILITY OPERATING LICENSE NO. DPR-68

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2, AND 3

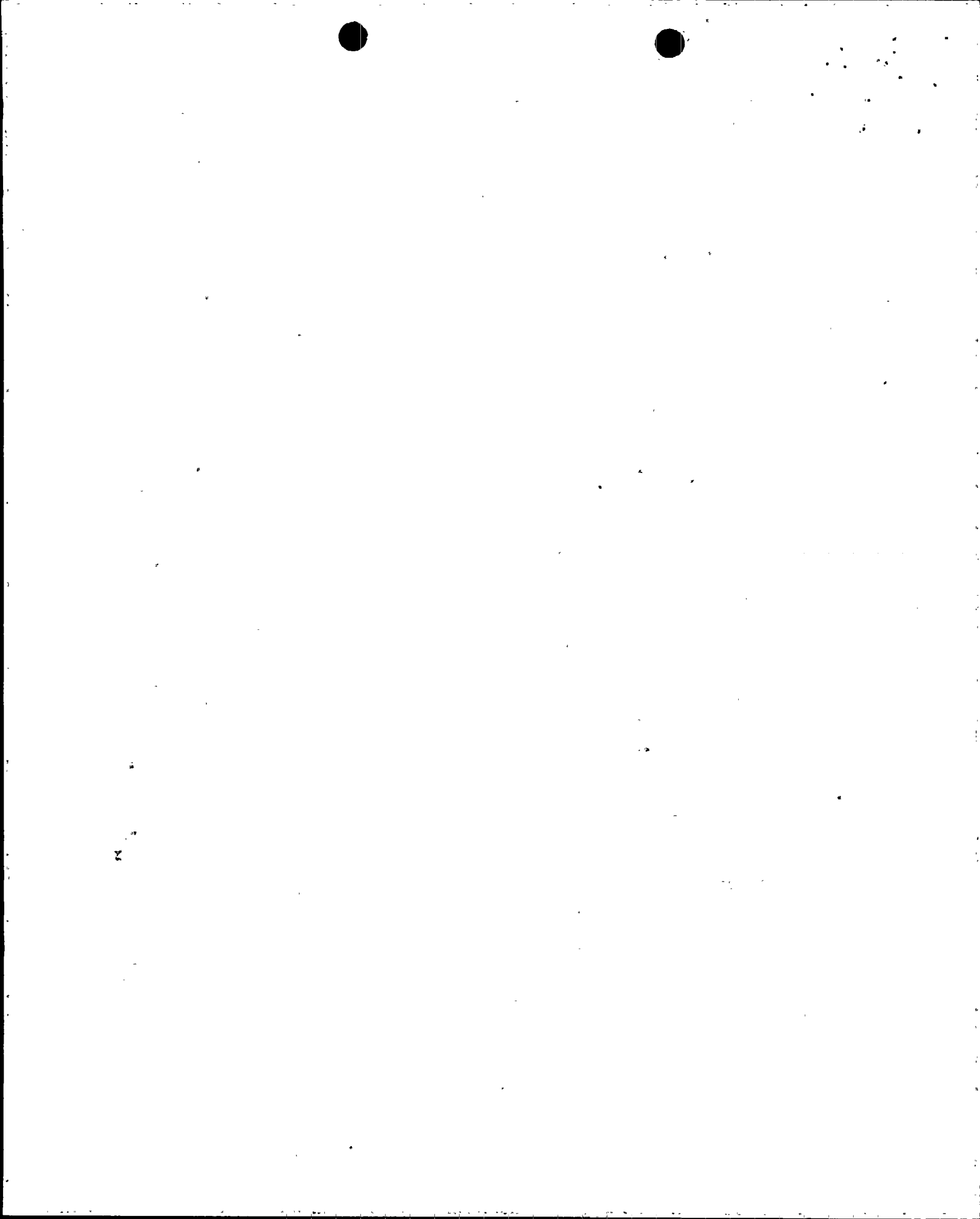
DOCKET NOS. 50-259, 50-260 AND 50-296

1.0 INTRODUCTION

By letter dated July 12, 1991, the Tennessee Valley Authority (TVA), the licensee for Browns Ferry Nuclear Plant (BFNP), Units 1, 2 and 3, proposed to amend the Technical Specifications (TS) 1.0.P and 3.7.C. Specifically, the licensee requested a revision to Definition Section 1.0.P.1, Secondary Containment Integrity for Units 1, 2, and 3 to better define the zonal concept of the secondary containment and Section 1.0.P.2 for Unit 3 to correct typographical errors such that the definition for secondary containment integrity reads the same for all three units. The licensee also requested a revision to limiting conditions for operation (LCO) Section 3.7.C.1 for Unit 3 to allow separating the Unit 3 reactor zone from the secondary containment envelope under certain conditions (prior to fuel loading) to expedite Unit 3 reconstruction efforts during Unit 2 operation. All three BFNP reactor zones and the multiplant refueling floor co-exist within the same building. In order to accommodate Unit 3 construction activities during Unit 2 operation, TVA plans to upgrade the walls separating the Unit 3 reactor zone from the refueling floor and the Unit 2 reactor zone, thereby separating the Unit 3 reactor zone from the secondary containment envelope around Unit 2. However, current TS do not recognize this plant configuration.

2.0 EVALUATION

The licensee indicated that the current Definition 1.0.P.1 for Units 1, 2, and 3 of secondary containment is confusing in that the secondary containment is discussed in terms of reactor building and not in terms of unit reactor zones and the refueling zone. The proposed change to this section does not reflect a change to the secondary containment boundary, but serves to better define the boundary in terms of zones which is consistent with Definitions 1.0.P.2 (reactor zone secondary containment) and 1.0.P.3 (refueling zone secondary containment). The licensee considers this change to be administrative in nature and therefore justified. The staff concurs with the licensee's rationale and finds the proposed change acceptable, since it does not change secondary containment requirements.



The licensee proposed revision to definition 1.0.P.2 (for Unit 3) to correct typographical errors so that the definition of secondary containment integrity reads the same for all three units is also administrative in nature and therefore acceptable.

The current LCO 3.7.C.1 requires that the "secondary containment integrity shall be maintained in the reactor zone at all times except as specified in 3.7.C.2." The licensee proposed changes to 3.7.C.1 for Unit 3 would add a note which modifies the applicability of 3.7.C.1 as

"LCO not applicable until just prior to loading fuel into the Unit 3 reactor vessel, provided the Unit 3 reactor zone is not required for secondary containment integrity for other units."

The BFNPF Final Safety Analysis Report (FSAR) provides a performance based criteria that requires the secondary containment to be designed such that the standby gas treatment system (SGTS) will be able to maintain the secondary containment at a negative 0.25-inch of water pressure following a design basis earthquake (DBE). The primary purpose of the secondary containment is to limit the release of radioactive effluents during and following a design basis accident (DBA). The licensee indicated that although the probability of a DBA and a DBE occurring simultaneously is extremely low, it upgraded secondary containment penetration seals in order to conform with FSAR commitment. BFNPF's secondary containment penetration program resolved this concern for Unit 2 operations by an evaluation of the penetrations through secondary containment whose boundary was formed by the outer boundary of the reactor building. However, the program did not address inter-zonal penetrations between the refueling floor and other reactor zones.

The licensee indicated that the potential flow paths between the Unit 3 reactor zone and the refueling floor, and between the Unit 3 and the Unit 2 reactor zones will be designed and modified as required, to ensure that the total post-DBE inleakage flow into the secondary containment boundary required for Unit 1 and 2 operation (Units 1 and 2 zones and the refueling floor) would be within the capability of the SGTS to maintain the required 0.25-inch of water vacuum. These modifications will ensure that the safety objectives of the secondary containment system will be met for operations within Units 1 and 2 and any potential release of radioactive material due to operations of these units will be within the guideline values given in the applicable parts of 10 CFR 20 and 10 CFR 100.

Based on the discussion above, the staff finds the proposed TS changes acceptable. If Unit 3 is defueled, and the Unit 3 reactor zone is not required for the secondary containment integrity of Units 1 and 2 (i.e., Unit 3 inter-zonal walls designed and modified as required), then there is no necessity to maintain secondary containment around the Unit 3 reactor zone and no impact on the operability of secondary containment for the other unit(s) requiring secondary containment. The proposed TS change does not change the method of isolation or



operation of secondary containment or method of operating the SGTS which is used to process radioactive effluents. The allowable SGTS flow and corresponding reactor building in-leakage will be maintained in accordance with TS requirements and thus there is no impact on either the 10 CFR 20 or 10 CFR 100 dose analysis. The proposed changes do not significantly increase the probability or consequences of an accident previously evaluated, create the possibility of a new or different accident or reduce the margin of safety.

Based on this evaluation, the staff concludes that the following TS changes are acceptable: Definition 1.0.P revised to better define the zonal concept of secondary containment for Units 1, 2, and 3; Definition 1.0.P.2 corrected for a typographical error for Unit 3 only; and limiting condition for operation 3.7.C for Unit 3 revised to allow separating the Unit 3 reactor zone from the secondary containment envelope under certain conditions prior to fuel load.

### 3.0 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.

### 4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation and use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves 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 amendment involves no significant hazards consideration, and there has been no public comment on such finding (56 FR 49926). Accordingly, the amendment meets 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 amendment.

### 5.0 CONCLUSION

The Commission has concluded, based on 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Dated: November 18, 1991

