| LIMITING CONDITIONS FOR OPERATION | SURVEILLANCE REQUIREMENT |
|---|---|
| 3.7 CONTAINMENT SYSTEM | 4.7 CONTAINMENT SYSTEM |
| 6. System A may be considered operable with FCV 84-8B inoperable provided that all active components in System B and all other active components in System A are operable. | 2. When FCV 84-8B is inoperable, each solenoid operated air/nitrogen valve in System B shall be cycled through at least one complete cycle of full travel and each manual valve in System B shall be verified open at least once per week. |
| 7. Specification 3.7.G.6 and 4.7.G.2 are in effect until the next cold shutdown of unit 1 after July 20, 1984 or until 180 days after that date. | |

ENCLOSURE 2
DESCRIPTION AND JUSTIFICATION
TVA BFNP TS 198

ENCLOSURE 2

Description

Page 248a is being added temporarily to permit operation of unit 1 with FCV 84-8B (CAD supply to the torus--System A) inoperable until the next cold shutdown. Additional surveillance has been added to the components in System B.

Justification

FCV 84-8B was declared inoperable on July 17, 1984 at 2000 hours when the valve failed to open during surveillance testing. The valve cannot be repaired without breaking primary containment, therefore, requiring the unit to be brought to a cold shutdown before repairs can be made. This situation meets the requirements of an emergency situation as described in 10 CFR 50.22(a)(5).

Safety Analysis

The CAD System is designed to dilute hydrogen and oxygen in the primary containment which may be generated in post-LOCA conditions. It is a two-train system with each train having valves to admit nitrogen to the torus and drywell to delivery enough nitrogen flow to keep post-LOCA hydrogen below four percent and oxygen below five percent. The system also have valves to vent containment atmosphere to the Standby Gas Treatment System from the drywell and torus.

By design, torus hydrogen and oxygen are controlled by adding nitrogen from the CAD System directly into the torus via FCV 84-8B and FCV 84-8C. However, nitrogen introduced into the drywell will displace drywell atmosphere into the torus through the downcomers and effectively dilute both volumes. Inoperability of FCS 8f4-8B will leave only one path to introduce nitrogen directly into the torus and thus relaying up the downcomer path as a backup for dilution of the torus atmosphere.

In the plant safety analysis, no credit is taken for intervolume mixing between the drywell and torus. However, if nitrogen is only added to the drywell, a mixing flow toward the torus will be established. It will be further augmented if venting if done through the torus vent path. Flow between torus and drywell is also induced by intermittent operations of drywell sprays. Current operating instructions provide for adding and venting as necessary to control hydrogen in both the torus and drywell and to operate drywell sprays intermittently to promote mixing.

Surveillance intervals on valves in the redundant train (System B) have been increased from once per month to once per week to decrease the probability of an undetected failure.

As stated in a letter from D. G. Eisenhut to All Licensees of Operating Reactors dated May 8, 1984, and our response dated July 2, 1984, the Commission has determined that a Mark I BWR plant such as Browns Ferry has been found not to rely upon purge/repressurization systems (CAD System) as the primary means of hydrogen control. Although this

determination was not permission to operate with the CAD System less than fully operable, it should be considered in the safety evaluation for this temporary condition.

The overall effectiveness and reliability of the CAD System is not being reduced significantly due to this temporary condition and further the system is not needed at all to accomplish the design basis intent of combustible gas control. Therefore, there is neglible effect on safety.

ENCLOSURE 3
SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION
TVA BFNP TS 198

ENCLOSURE 3

Basis for Determination of No Significant Hazards

The Commission has provided examples of amendments that are not likely to involve significant hazards considerations (48FR14870). Example (vi) involves a change which in some way reduces a safety margin but the results of the changes are clearly within all acceptance criteria with respect to the system or component specified in the Standard Review Plan. The proposed change involves the potential for inability to admit nitrogen to the torus from the CAD system. A single failure in the CAD system would be required to create this situation. The consequences of such a failure are that a possible reduction in the amount of mixing of containment atmosphere may take place; however, intermittent operation of containment sprays as called for by operating instruction is listed in Standard Review Plan 6.2.5., Criteria 3 as an acceptable means of ensuring mixing for combustible gas control.

The condensation of steam and atmospheric temperature changes that result from operation of containment sprays create large amounts of containment atmosphere to transfer between the drywell and torus to equalize pressure. The atmosphere in the torus is monitored during post-accident conditions, and dilution and mixing operations such as nitrogen addition and spraying are initiated as needed to alleviate high concentrations of combustible gas. The plant configuration and operation after this change is implemented are clearly within all acceptance criteria of the Standard Review Plan and therefore this example applies.