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AUG 25 1988

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

Gentlemen:

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

BROWNS FERRY NUCLEAR PLANT (BFN) - SYSTEM PRESSURE TEST PROGRAM REQUEST FOR RELIEF (RFR) H-12

As a result of a June 29, 1988 teleconference with members of the NRC staff, TVA has revised its request for relief, H-12, to add valve 85-589 to the ASME Class 2 pressure test boundary. The revised request for relief and a clarification of this request are enclosed.

In addition the staff suggested adding a second valve, 85-229A, to the system pressure test. TVA has reviewed the suggestion and has determined that the addition of the valve to the test would not increase the margin of safety. The enclosed clarification, mentioned above, provides more information concerning TVA's review of this suggestion.

Please refer any questions regarding this matter to Patrick Carier at (205) 729-2689.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

R. Gridley, Manager
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Enclosures
cc: See page 2

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U.S. Nuclear Regulatory Commission

AUG 25 1988

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ENCLOSURE

RFR H-12 Clarification

During the NRC's preliminary review of RFR H-12, two areas were identified as needing further clarification:

1. ASME Class 2 equivalent 1/2-inch piping between valves 85-39A*, 85-589*, 85-590* and the hydraulic accumulators.

2. ASME Class 2 equivalent boundary from the hydraulic accumulators water side to valve 85-229A*.

TVA agrees with NRC's recommendation (item 1) of extending the ASME Class 2 boundary to 85-589*. It appears that 85-589* was inadvertently omitted in defining the hydrostatic test boundary. In accordance with NRC Regulatory Guide 1.26, 85-589* serves as the boundary valve for the ASME Class 2 boundary.

Based upon review of NRC Regulatory Guide 1.26, discussion with BFN Mechanical Test Section personnel, and performance of the system hydrostatic test method, TVA is justified in stopping the ASME Class 2 equivalent boundary on the water side of the hydraulic accumulators for the following reasons:

NRC Regulatory Guide 1.26 only addresses components containing water, steam, or radioactive material. The design configuration of the hydraulic control unit has a piston with pressure seals that require a pressure differential to avoid damage during testing. This limitation requires nitrogen to be supplied to the opposite side to maintain the pressure differential. During performance of the pressure test, the piston is bottomed out with nitrogen maintaining the pressure differential and manual valve 85-229A* in an open position. Testing in this manner allows the accumulator to serve as an isolation point with valve 85-229A* remaining in an open position. TVA believes there would be no increase in the margin of safety to extend the test boundary to valve 85-229A* and the current boundary is in accordance with the guidelines of Regulatory Guide 1.26.

* There are 185 valves with this number which are denoted by -1 through -185 after the flow diagram valve number.

REQUEST FOR RELIEF H-12

UNITS	-	1, 2, 3
SYSTEM	-	Control Rod Drive (CRD): 3/4-inch piping between valves FCV 85-39B* and 85-617* and 1-inch and 1/2-inch piping between valves FCV 85-39A*, 85-589*, 85-590*, and the hydraulic accumulators.
CLASS	-	ASME Code Class 2 equivalent
TEST REQUIREMENT	-	ASME Section XI, 1974 Edition, Summer 1975 Addenda, Paragraph IWC-5220(a). The system hydrostatic test pressure shall be at least 1.25 times the system design pressure (P_d) and conducted at a test temperature not less than 100°F except as may be required to meet the test temperature requirements of IWA-5230.
BASIS FOR RELIEF	-	During the analysis of the system for the hydrostatic pressure test, several potential problems were identified that could cause safety concerns with personnel and possible damage to equipment. The portion of CRD piping under evaluation has a design pressure of 1750 psig and a design temperature of 150°F. In accordance with the requirements of the 1974 Edition, Summer 1975 Addenda the hydrostatic test pressure would be 2188 psig (1.25 times design pressure). The design configuration of the hydraulic control unit at BFN has a piston with pressure seals that should not have a differential pressure greater than 300 psig to ensure they are not damaged during a test. This limitation requires nitrogen to be supplied to the opposite side of the piston within 300 psig of the hydrostatic test pressure. This design also contains a rupture disc which will burst to relieve pressure at 1900 to 2100 psig. At the hydrostatic test pressure of 2188 psig, the minimum required nitrogen pressure would be 1888 psig which would require the nitrogen tank rupture disc to be removed and plugged. This high pressure nitrogen (1888 psig) poses danger to personnel in two ways: (1) the nitrogen is pressurizing a system above its normal operating pressure; and (2) a large quantity of nitrogen is released into the space occupied by the test personnel when the nitrogen tank rupture disc is removed.

* There are 185 valves with this number which are denoted by -1 through -185 after the flow diagram valve number.

REQUEST FOR RELIEF H-12

BASIS FOR RELIEF (cont'd)-

If the test pressure is reduced to 1.1 times the design pressure, as allowed by IWC-5222 of the 1977 Edition Winter 1977 Addenda and later codes, the hydrostatic pressure will be reduced to 1925 psig, which allows the nitrogen pressure to be reduced to 1625 psig to maintain the 300 psig pressure differential. This lower nitrogen pressure (1625 psig) does not require the rupture disc to be removed. Therefore, both the lower nitrogen pressure and not removing the rupture disc will (1) reduce the amount of nitrogen released into plant spaces, (2) simplify the procedure, and (3) reduce the chance of injury to personnel or damage to equipment.

For the second 10-year interval, BFN will be updating its code of record for in-service inspection examinations and SPTs from the 1974 Edition, Summer 1975 Addenda to the latest NRC-approved code in accordance with 10 CFR 50.55a(b)(2), which will require the system hydrostatic pressure to be 1.1 times the design pressure for systems with design temperature of 200°F or less (IWC-5222). The next scheduled performance of the CRD Hydrostatic Test would be performed at the lower test pressure (1.1 times design pressure) rather than the test pressure required by the 1974 Edition, Summer 1975 Addenda (1.25 times design pressure).

For these reasons TVA feels the CRD System hydrostatic test pressure should be reduced: to minimize the risk to personnel and equipment, simplify test procedure, and perform an effective pressure test as allowed by later editions of ASME Codes.

Based on the above justification, TVA concludes that a significant decrease in safety would not result from the proposed alternate inspection below.

ALTERNATE TESTING - Perform CRD system hydrostatic pressure test at 1.1 times system design pressure (P_d) for 3/4-inch piping between valves FCV 85-39B* and 85-617* and 1-inch and 1/2-inch piping between valves FCV 85-39A*, 85-589*, 85-590*, and the hydraulic accumulators.

REFERENCE - TVA Drawing CRD 47W820-2