



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20556

ENCLOSURE

SAFETY EVALUATION REPORT

CATAWBA NUCLEAR STATION, UNITS 1 AND 2

1. Relief Requests

1.1. Valve Relief Requests #A4 and #A5

1.1.1. Relief Request. The licensee has requested relief from exercising valves 1(2)*CA173, auxiliary feedwater pump safety/non-safety suction boundary check, in accordance with the requirements of Section XI, Paragraph IWV-3521, and has proposed to verify valve closure by valve disassembly each refueling outage.

1.1.1.1. Licensee's Basis for Requesting Relief--System design does not provide any indication for verifying valve closure upon flow reversal.

Alternate Testing Verification of ability to prevent reverse flow will be performed during refueling. During each refueling, the valve will be disassembled and the plates will be mechanically exercised.

1.1.2. Evaluation--These valves form the boundary between the safety-related nuclear service water system, the auxiliary feedwater pump suction, and the non-safety-related main condenser circulating water system and perform a safety function in the closed position when the upstream and downstream motor operated valves receive an automatic signal to open. System flow or pressure cannot be used to verify them closed without the possibility of introducing raw water into the suction piping of the auxiliary feedwater pumps and from there into the steam generators. Chemical impurities in the raw water would upset the secondary water chemistry control and could cause chemical stress damage to the steam generators. Due to the design of this system, the only practical way to demonstrate that these valves close upon flow reversal is valve disassembly and inspection. Disassembly cannot be performed quarterly because that results in the loss of the ultimate heat sink to the steam generators. Disassembly during cold shutdowns could delay reactor startup because of the time required to drain the necessary piping.

Based on the impracticality of verifying valve closure quarterly and during cold shutdowns and the burden on the licensee if these Code requirements were imposed, valve disassembly during refueling outages should be sufficient to demonstrate valve operability and, therefore, relief is granted from the exercising requirements of Section XI of the ASME Boiler and Pressure Vessel Code, 1980 Edition through Winter 1981, pursuant to 10 CFR 50.55a(g)(6)(i). This relief is authorized by law and will not endanger life or property or the common defense and security and is otherwise in

*1(2) designates Units 1 and 2, respectively.

the public interest given due consideration to the burden upon the licensee that could result if the Code testing requirements were imposed on the facility.

2. Cold Shutdown Justifications

2.1. Valve Relief Request #A1

2.1.1. Cold Shutdown Justification--Valves 1(2)CA37, 1(2)CA41, 1(2)CA45, 1(2)CA49, 1(2)CA53, 1(2)CA57, 1(2)CA61, and 1(2)CA65, steam generator auxiliary feedwater header checks, cannot be exercised during power operation because that would result in feeding cold water into the steam generators. This is not desirable during power operation since flow through these valves would subject the steam generator feedwater nozzles to unnecessary thermal shock. Testing during cold shutdown is not desirable due to the steam generators being in wet layup conditions. Testing at a time prior to Mode 2 allows normal steam generator levels to be established and the system aligned for standby readiness.

Alternate Testing--Exercise valves (full-stroke) to the position required to fulfill their function following cold shutdown prior to entering Mode 2.

2.1.2. Evaluation--The technical justification to test these valves prior to entering Mode 2 (as stated above in the alternate testing) is acceptable. Such testing is allowed by the ASME Code and does not require relief.

2.2. Valve Relief Request #F5

2.2.1. Cold Shutdown Justification--Valve 1(2)ND28A, centrifugal charging pumps residual heat removal heat exchanger outlet suction, cannot be exercised during power operation because opening the valve provides a flow path from the refueling water storage tank to the suction of the centrifugal charging pumps. This could result in a plant transient due to an increase in the reactor coolant system boron inventory.

Alternate Testing--Valve will be full-stroke exercised to the position required to fulfill its function and stroke timed during cold shutdown.

2.2.2. Evaluation--The technical justification to test this valve during cold shutdowns is acceptable. Such testing is allowed by the ASME Code and does not require relief.

2.3. Valve Relief Request #H22

2.3.1. Cold Shutdown Justification--Valves 1(2)NI332A and 1(2)NI333B, centrifugal charging pumps refueling water storage tank suctions, cannot be exercised during power operation because failure of one of them in the open position while testing would align the refueling water storage tank to the suction of the charging pumps. This would result in an increase in reactor coolant system boron inventory and could result in plant shutdown.

Alternate Testing--These valves will be full-stroke exercised to the position required to fulfill their function and stroke timed during cold shutdown.

2.3.2. Evaluation--The technical justification to test these valves during cold shutdowns is acceptable. Such testing is allowed by the ASME Code and does not require relief.