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CNSS830593

September 27, 1983

Mr. John T. Collins, Regional Administrator U.S. Nuclear Regulatory Commission Region IV 611 Ryan Plaza Drive Suite 1000 Arlington, Texas 76011



TE-22

Dear Sir:

This report is submitted in accordance with Section 6.7.2.B.2 of the Technical Specifications for Cooper Nuclear Station and discusses a reportable occurrence that was determined during leak rate testing. A licensee event report form is also attached.

Report No .:	50-298-83-13
Report Date:	September 27, 1983
Occurrence Date:	August 31, 1983
Facility:	Cooper Nuclear Station
	Brownville, Nebraska 6832

During the Spring 1983 Refueling Outage all primary containment double "O" ring seals, testable expansion bellows, electrical penetrations, and testable isolation valves were tested in accordance with Technical Specifications Section 4.7.A.2.f and Tables 3.7.2 through 3.7.4. This report describes a condition which may have resulted in failure to meet the limiting condition for operation established in Section 3.7.A.2 of the Technical Specifications. There were a total of 47 Type "B" penetrations and 46 Type "C" penetrations tested. There were 20 Type "C" penetrations that were found to be leaking above established limits which necessitated repair and retest.

Leak rate limits for each penetration are arbitrary limits established from the preoperational local leak rate test results. No electrical penetrations, double "O" ring seals, or testable bellows were leaking excessively. Listed below is a summary of each primary containment penetration which was repaired due to a high leakage rate.

### X-7A

Main Steam Isolation Valves. MS-AO-80A (inboard isolation valve) and MS-AO-86A (outboard isolation valve).

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initial leakage was found to be 13.42 cfh. The established limit is 5.0 softh and the Technical Specification is 11.5 softh per valve. MS-AO-86A was digassembled. The disc and seat of the main and pilot valve were lapped. After repair, the leakage was reduced to .42 cfh. MS-AO-80A was not repaired or adjusted; therefore, primary containment would have been maintained by the inboard isolation valve MS-AO-80A. The leaking valve is a 24" air operated angle globe valve manufactured by Rockwell.

# X-7C

Main Steam Isolation Valves. MS-AO-80C (inboard isolation valve) and MS-AO-86C (outboard isolation valve).

Initial leakage was found to be 12.93 cfh. The established limit is 5.0 scfh and the Technical Specification is 11.5 scfh per valve. MS-AO-86C was disassembled. The disc and seat of the main and pilot valve were lapped. After repair, the leakage was reduced to 1.6 cfh. MS-AO-80C was not repaired or adjusted; therefore, primary containment would have been maintained by the inboard isolation valve MS-AO-80C. The leaking valve is a 24" air eperated angle globe valve manufactured by Rockwell.

# X-7D

Main Steam Isolation Valves. MS-AO-80D (inboard isolation valve) and MS-AO-86D (outboard isolation valve).

Initial leakage was found to be 20.2 cfh. The established limit is 5.0 scfh and the Technical Specification is 11.5 scfh per valve. Leakage was determined to be 6.92 cfh through MS-AO-80D and 13.28 cfh through MS-AO-86D. MS-AO-80D and MS-AO-86D were both disassembled. The discs and and seats of the main and pilot valves were lapped. Even though both valves were repaired, MS-AO-80D initial leakage was below the Technical Specification limit of 11.5 scfh. Both valves are a 24" air operated angle globe valve manufactured by Rockwell.

# X-8

Main Steam Line Drain. MS-MO-74 (inboard isolation valve) and MS-MO-77 (outboard isolation valve).

Initial leakage was found to be 9.19 cfh. The established limit is 1.5 scfh. MS-MO-74 was disassembled, the disc and seat were lapped, and valve reassembled. MS-MO-77 was disassembled, the gate and seat were lapped, and the valve was reassembled. After repair, the leakage was 0 scfh. MS-MO-74 is an Anchor 3" gate valve and MS-MO-77 is an Anchor 3" gate valve.

### X-9A

Reactor Feedwater Supply Line. RF-16CV (inboard line A feedwater check valve).

Initial leakage was found to be 1059.6 cfh. The established limit is 5.0 scfh. RF-16CV was disassembled and the seat was lapped. A new valve disc was installed with a soft seat ring. The hinge pins, bushings, pressure seals, and seal rings were replaced. After the repair, leakage was reduced to 0 scfh. RF-16CV is an Anchor 18" tilting disc check valve.

## X-9A

Reactor Feedwater Supply Line. RF-15CV (outboard line A feedwater check valve), RCIC-AO-22 (RCIC pump discharge testable check valve), and RCIC-MO-17 (RCIC pump discharge testable check valve bypass).

Initial leakage could not be accurately measured, but it was determined to exceed established limits. The established limit is 7.0 scfh. RF-15CV was disassembled and the seat was lapped. A new valve disc was installed with a soft seat ring. The hinge pins, bushings, pressure seals, and seal rings were replaced. After the repair, leakage was reduced to 0 scfh. RF-15CV is an Anchor 18" tilting disc check valve.

#### X-9B

Reactor Feedwater Supply Line. RF-14CV (inboard line B feedwater check valve).

Initial leakage could not be accurately measured, but it was determined to exceed established limits. The established limit is 5.0 scfh. RF-14CV was disassembled and the seat was lapped. A new valve disc was installed with a soft seat ring. The hinge pins, bushings, pressure seals, and seal rings were replaced. After the repair, leakage was reduced to 0 scfh. RF-14CV is an Anchor 18" tilting disc check valve.

# X-9B

Reactor Feedwater Supply Line. RF-13CV (outboard line B feedwater check valve), HPCI-AO-18 (HPCI pump discharge testable check valve), and HPCI-MO-57 (HPCI pump discharge testable check valve bypass).

Initial leakage could not be accurately measured, but it was determined to exceed established limits. The established limit is 7.0 scfh. RF-13CV was disassembled and the seat was lapped. A new valve disc was installed with a soft seat ring. The hinge pins, bushings, pressure seals, and seal rings were replaced. HPCI-A0-18 was disassembled, the disc and seat were lapped, and the valve was reassembled. HPCI-M0-57 was disassembled, the disc and seat were lapped, and the valve was reassembled. After the repair, leakage was reduced to 0 scfh. RF-13CV is an Anchor 18" tilting disc check valve, HPCI-A0-18 is an Atwood & Morrill 14" testable check valve, and HPCI-M0-57 is a Conval 2" globe valve.

### X-10

RCIC Turbine Steam Supply Line. RCIC-MO-15 (inboard isolation valve) and RCIC-MO-16 (outboard isolation valve).

Initial leakage was found to be 7.74 cfh. The established limit is 2.0 scfh. RCIC-MO-16 was disassembled, the gate lapped, the seat cleaned, and the valve was reassembled. After repair, the leakage was reduced to .89 cfh. The leaking valve is an Anchor 3" gate valve.

## X-13A

RHR Loop "A" Supply to RPV. RHR-MO-25A (inboard injection block valve) and RHR-MO-27A (outboard injection block valve).

Initial leakage was found to be 40.53 cfh. The established limit is 10 scfh. RHR-MO-25A was disassembled, found a hair line crack through the gate, welded the crack in the gate, and machined the gate seating surface. The valve seat was lapped and the valve was reassembled. RHR-MO-27A was not repaired or adjusted; therefore, primary containment would have been maintained by this valve. After repair, the leakage was reduced to 8.27 cfh. RHR-MO-25A is an Anchor 24" gate valve.

# X-25

Purge and Vent Supply to Drywell. PC-232MV (inboard isolation valve) and PC-238AV (outboard isolation valve).

Initial leakage was found to be 353.46 cfh. The established limit is 5.0 scfh. PC-232MV was disassembled and the rubber seating ring was replaced. PC-238AV was disassembled and the rubber seating ring was replaced. After repair, the leakage was reduced to 1.73 cfh. PC-232MV and PC-238AV are Allis-Chalmers 24" butterfly valves.

## X-26

Purge and Vent Exhaust from the Drywell. PC-231MV (inboard isolation valve), PC-306MV (inboard isolation valve bypass), PC-246AV (outboard isolation valve), and ACAD-1310MV (ACAD drywell vent).

Initial leakage was found to be 78.7 cfh. The established limit is 5.0 scfh. PC-306MV was disassembled, the seat and gate were lapped, and the valve was reassembled. After repair, the leakage was reduced to 4.83 cfh. PC-246AV and ACAD-1310MV were not repaired or adjusted; therefore, primary containment would have been maintained by the outboard isolation valves. PC-306MV is an Anchor 2" gate valve.

### X-39B

ACAD "B" Loop Supply to the Drywell. ACAD-1311MV (inboard isolation valve) and ACAD-1312MV (outboard isolation valve).

Initial leakage was found to 0.46 cfh. The established limit is 0.1 scfh. ACAD-1311MV was replaced with a new valve identical to the old one. After repair, the leakage was reduced to 0.09 cfh. ACAD-1311MV is an Anchor 1" gate valve.

#### X-210B

RHR Loop "B" Minimum Flow Line. RHR-MO-16B (RHR pumps minimum flow bypass), RHR-11CV (RHR pump B minimum flow check valve), and RHR-13CV (RHR pump D minimum flow check valve).

Initial leakage was found to be 1704.49 cfh. The established limit is 1.0 scfh. RHR-MO-16B was disassembled, the seat and disc was lapped, and the valve was reassembled. RHR-11CV and RHR-13CV were disassembled, the discs and seats were cleaned, and the valves were reassembled. After repair, the leakage was reduced to 0.71 cfh. RHR-MO-16B is an Anchor 4" gate valve. RHR-11CV and RHR-13CV are Anchor 3" check valves.

# X210B & 211B

RHR to Suppression Pool. RHR-MO-34B (suppression pool cooling inboard isolation valve), RHR-MO-38B (suppression pool inboard spray isolation valve), and RHR-MO-39B (suppression pool cooling and spray outboard isolation valve).

Initial leakage was found to be 44.14 cfh. The established limit is 8.0 scfh. RHR-MO-34B was disassembled, the seat was machined, the disc seating surface was weld built up and machined, and the valve was reassembled. RHR-MO-39B was disassembled, the seat and gate were machined, and the valve was reassembled. After repairing these valves, the leakage was reduced to 1.26 cfh. RHR-MO-34B is an Anchor 18" globe valve and RHR-MO-39B is an Anchor 18" gate valve.

## X-212

RCIC Turbine Exhaust to the Suppression Chamber. RCIC-15CV and RCIC-37.

Initial leakage was found to be 48.86 cfh. The established limit is 1.0 scfh. RCIC-37 was replaced with a new valve identical to the old one. RCIC-15CV was disassembled, the seat was lapped, the seating surface of the disc was machined, and the valve was reassembled. After repair, the leakage was reduced to 0.98 cfh. RCIC-15CV is an Anchor 8" check valve and RCIC-37 is an Anchor 8" globe valve.

### X-220

Primary Containment Purge and Vent Exhaust from Suppression Chamber. PC-230MV (inboard isolation valve), PC-245AV (outboard isolation valve), PC-305MV (inboard isolation bypass), and ACAD-1308MV (ACAD torus vent).

The initial leakage was found to be 113.8 cfh. The established limit is 5.0 scfh. PC-230MV was disassembled and the rubber seating ring replaced. After repair, the leakage was 4.55 cfh. PC-245AV was not repaired or adjusted; therefore, primary containment would have been maintained by the outboard isolation valve. PC-230MV is an Allis-Chalmers 24" butterfly valve.

#### X-223B

Core Spray Pump "B" Minimum Flow Recirc Line. CS-MO-5B (Core Spray pump minimum flow recirc isolation).

The initial leakage was found to be 881.6 cfh. The established limit is 1.0 scfh. CS-MO-5B was disassembled, a new seat installed, the gate was lapped, and the valve reassembled. After repair, the leakage was 0 cfh. CS-MO-5B is an Anchor 3" gate valve.

## X-225A

RHR Pump "A" Suction from Torus. RHR-MO-13A (suction isolation valve).

The initial leakage was found to be 4.61 cfh. The established limit is 3.0 scfh. RHR-MO-13A was disassembled, the seat was lapped, a new disc installed, and the valve reassembled. After repair, the leakage was reduced to 3.0 cfh. RHR-MO-13A is an Anchor 20" gate valve.

#### X-226

HPCI Pump Suction from the Suppression Chamber. HPCI-MO-58.

Initial leakage was found to be 25.91 cfh. The established limit is 3.0 scfh. HPCI-MO-58 was disassembled, the gate and seat were polished, and the valve was reassembled. After repair, the leakage was 4.44 cfh. Even though the leakage was above the established limit, further repair was not initiated because of the safety margin in the established limits. HPCI-MO-58 is an Anchor 16" gate valve.

In accordance with Section 4.7.A.2 of the Technical Specifications, the total leakage rate shall not exceed the equivalent of 0.6 La (189 scfh) of the primary containment volume per 24 hours at 58 psig. All valves were tested at  $\geq$  58 psig with the exception of the MSIV's as prescribed in Section  $\overline{4.7.A.2.f.}$  Pressure decay was used to determine the leakage. The total as-found leakage was approximately 4305 cfh. After repair of the leaking valves, the leak rate was reduced to less than 72 scfh.

Sincerely,

B.V. Thomason

P. V. Thomason Division Manager of Nuclear Operations

PVT:1b Attach.