

Omaha Public Power District
444 South 16th Street Mall
Omaha, Nebraska 68102-2247
402/636-2000

May 27, 1994
LIC-94-0105

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, DC 20555

Reference: Docket No. 50-285

Gentlemen:

Subject: Licensee Event Report 94-005 for the Fort Calhoun Station

Please find attached Licensee Event Report 94-005 dated May 27, 1994. This report is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(B). If you should have any questions, please contact me.

Sincerely,

W. G. Gates

W. G. Gates
Vice President

WGG/mah

Attachment

c: LeBoeuf, Lamb, Greene & MacRae
L. J. Callan, NRC Regional Administrator, Region IV
S. D. Bloom, NRC Project Manager
R. P. Mullikin, NRC Senior Resident Inspector
INPO Records Center

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LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Fort Calhoun Station Unit No. 1	DOCKET NUMBER (2) 05000285	PAGE (3) 1 OF 4
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TITLE (4)
Failure to Appropriately Address Out-of-Tolerance Test Results for Snubbers

EVENT DATE (5)			LER NUMBER (6)			REPORT NUMBER (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
04	27	94	94	-- 005 --	00	05	27	94	FACILITY NAME	05000
									FACILITY NAME	05000

OPERATING MODE (9) 1

POWER LEVEL (10) 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER
20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)
20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Matthew H. Pohl, Shift Technical Advisor	TELEPHONE NUMBER (include Area Code) (402) 533-6820
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS
X	AB	SNB	G255	N					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On April 27, 1994, during a programmatic review of snubber history in preparation for the 1995 Refueling Outage, it was found that three snubbers tested during the 1990 Refueling Outage and two tested during the 1992 Refueling Outage were accepted as passing the as-found functional test although they did not meet the surveillance test acceptance criteria for bleed rate. This resulted in the failure to retest the snubbers during the 1992 and 1993 Refueling Outages, and the failure to sample an additional 22 snubbers during the 1990 Refueling Outage, as required by Technical Specification 3.14.

The primary cause of the event was determined to be procedural inadequacy. Contributing causes to the event were determined to be failure of the Snubber Test Operator to self-check during the initial evaluation of the test results and failure of subsequent reviewers to compare the raw data to the test results of every snubber tested.

For corrective actions, the snubber surveillance test procedure will be revised and the five snubbers in question will be functionally tested during the 1995 Refueling Outage.

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (8)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Fort Calhoun Station Unit No. 1	05000285	94	-- 005 --	00	2 OF 4

TEXT (if more space is required, use additional copies of NRC Form 388A) (17)

BACKGROUND

Shock suppressors (snubbers) are designed to prevent unrestrained pipe motion under loads that might occur during an earthquake, while allowing normal thermal motion during startup or shutdown. Hydraulic snubbers work in two directions, extension and retraction. During seismic activity, the speed at which the snubber begins to dampen the effects of seismic activity is known as "lockup," and the speed at which the snubber allows movement after it has locked up is known as bleed rate. These speeds are typically measured in inches per minute (ipm).

An inoperable snubber can increase the probability of structural damage to piping in the event of a seismic event. Technical Specification 2.18 specifies operability requirements for safety-related snubbers.

Technical Specification 3.14(2)(a) specifies that a representative sample (88) of hydraulic snubbers shall be functionally tested on a refueling frequency. Technical Specification 3.14(2)(a)(i) also states that for each hydraulic snubber above 3 which does not meet the functional test acceptance criteria, an additional sample of 22 hydraulic snubbers shall be functionally tested. In addition, any snubber that failed its previous functional test shall be retested during the next test period.

The Surveillance Test (ST) used to perform the required functional testing is procedure MM-ST-HSS-0004, "Refueling Function Test of Hydraulic Shock Suppressor Units."

EVENT DESCRIPTION

During an April 1994 programmatic review of snubber history in preparation for the 1995 Refueling Outage, it was discovered that three snubbers tested during the 1990 Refueling Outage and two tested during the 1992 Refueling Outage were accepted as passing the as-found functional test although they did not meet the ST acceptance criteria for bleed rate. The as-found acceptance criterion for temperature compensated bleed rate was 0.5 to 25 ipm. The snubbers in question did meet the acceptance criteria for as-found temperature compensated lockup rate of 1 to 36 ipm.

When performing the ST, the Snubber Test Operator incorrectly categorized the snubbers as passing the ST by circling "Pass" on the individual data sheets for each of the above snubbers. Subsequent reviews of the data sheets failed to detect the incorrectly categorized test failures.

Since the snubber test results were not identified as failures, they were not included in the testing samples for the 1992 and 1993 Refueling Outages. This resulted in violating Technical Specification 3.14(2)(d) which requires, in part, that "... snubbers which failed the previous functional test shall be retested during the next test period."

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TEXT (if more space is required, use additional copies of NRC Form 366A) (17)

In addition to the three unidentified failures in 1990, one failure was identified during the 1990 Refueling Outage bringing the total number of 1990 failures to four. Technical Specification 3.14(2)(a)(i) states that "For each hydraulic snubber above 3 which does not meet the functional test acceptance criteria, an additional sample of 22 hydraulic snubbers shall be functionally tested." Therefore, an additional sample of 22 snubbers should have been tested during the 1990 Refueling Outage, but was not since only one of the four failures was recognized.

This event was determined to be reportable pursuant to 10 CFR 50.73(a)(2)(i)(B) due to the failure to satisfy Technical Specifications 3.14(2)(a)(i) and 3.14(2)(d).

SAFETY ASSESSMENT

The effect of this event on nuclear safety was negligible. Bleed rates lower than acceptance criteria minimum values would not impair the snubbers' ability to perform their function during normal operations or as a seismic control device. In fact, low bleed rates imply that a snubber will behave in a more rigid fashion. However, following a seismic event in which the snubber locks up, the low bleed rates might prolong the period needed for the snubber to release. This would be undesirable in the unlikely scenario where a thermal movement event immediately followed a seismic event.

In each of the five cases, the snubber was rebuilt due to service life considerations, functionally tested, and successfully reinstalled in the plant during the refueling outage in which it was tested. The current status of all 5 snubbers, therefore, is that they are operable and able to maintain the structural integrity of the reactor coolant system during and following a seismic event.

Historically, out-of-tolerance snubber bleed rates have not been a concern at Fort Calhoun Station.

CONCLUSIONS

A Root Cause Analysis (RCA) was performed following the discovery of the failure to identify the five snubbers which did not meet the ST acceptance criteria. The root cause was determined to be an inadequate procedure. Procedure MM-ST-HSS-0004 did not contain procedural steps to ensure test data would be thoroughly reviewed to ensure that all test results were within acceptance criteria. As a result, the individuals responsible for reviewing the ST results, in some cases, apparently reviewed only the "Pass/Fail" designation for each snubber, and not the actual bleed rate measurements. The actual bleed rate test measurements were available to the reviewer in all cases, however, if this data was not reviewed, an incorrect "Pass/Fail" determination by the Snubber Test Operator would not have been identified in the ST review process.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (5)			PAGE (3)
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TEXT (if more space is required, use additional copies of NRC Form 388A) (17)

Contributing causes to the event were determined to be failure of the Snubber Test Operator to self-check during the initial evaluation of the test results and failure of subsequent reviewers to compare the raw data to the test results of every snubber tested.

CORRECTIVE ACTIONS

The following corrective actions have been or will be completed:

1. Procedure MM-ST-HSS-0004 will be changed by July 29, 1994 to include necessary steps to ensure the measured test data is thoroughly reviewed and compared with the acceptance criteria for each snubber.
2. As a result of LER 93-010, "Failure to Address Low Halon Tank Pressure Following Surveillance Test," a training hotline dated August 2, 1993 and a memorandum from the Plant Manager dated July 27, 1993 were distributed to select plant personnel to provide improved guidance for the conduct of ST review.
3. The five snubbers in question will be retested during the 1995 Refueling Outage pursuant to Technical Specification 3.14(2)(d).
4. Individual data sheets for all hydraulic snubbers tested during the 1985 Refueling Outage and later were reviewed to compare raw data collected with test results. No additional failures to identify out-of-tolerance test results were found. All hydraulic snubbers tested previous to the 1985 Refueling Outage have been rebuilt and tested.

PREVIOUS SIMILAR EVENTS

LER 93-003 reported inadequate administrative controls to ensure that the test frequency was adjusted. LER 93-010 reported the failure of a surveillance test to include the necessary steps to assign responsibility for verification of data for acceptability and failure to self check.