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VPNPD-94-092
NRC-94-066

September 12, 1994

Document Control Desk
U.S. NUCLEAR REGULATORY COMMISSION
Mail Station P1-137
Washington, DC 20555

Gentlemen:

DOCKET 50-266
LICENSEE EVENT REPORT 94-008-00
CONTAINMENT INTEGRITY REQUIREMENTS NOT
SATISFIED DURING VALVE TESTING
POINT BEACH NUCLEAR PLANT, UNIT 1

Enclosed is Licensee Event Report 94-008-00 for Point Beach Nuclear Plant, Unit 1. This report is being submitted in accordance with 10 CFR 50.73(a)(2)(i), "Any operation or condition prohibited by the plant's Technical Specifications." The report describes a condition where containment integrity was not met during inservice valve testing.

If you require additional information, please contact us.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Bob Link'.

Bob Link
Vice President
Nuclear Power

KVA/jg

Enclosure

cc: NRC Regional Administrator
NRC Resident Inspector

9409210263 940912
PDR ADOCK 05000266
S PDR

Handwritten initials, possibly 'JF' or 'JE', with a checkmark-like flourish below them.

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
(MNB 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)

Point Beach Nuclear Plant, Unit 1

DOCKET NUMBER (2)

05000266

PAGE (3)

1 OF 6

TITLE (4)

Containment Integrity Requirements Not Satisfied During Valve Testing

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
08	12	94	94	-- 008 --	00	09	12	94	FACILITY NAME	DOCKET NUMBER
OPERATING MODE (9)		N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
POWER LEVEL (10)		100	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	
			20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)		Abstract below	
			20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)		and in Text, NRC Form 366A)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

Kenneth V. Arneson, Senior Engineer - Licensing

TELEPHONE NUMBER (Include Area Code)

(414) 221-3362

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

SUPPLEMENTAL REPORT EXPECTED (14)

YES

(If yes, complete EXPECTED SUBMISSION DATE).

X

NO

EXPECTED
SUBMISSION
DATE (15)

MONTH

DAY

YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On August 12, 1994, it was discovered that, during inservice stroke testing of the low head safety injection (SI) suction valve, 1SI-850A and 1SI-850B, a drain and vent path between the Unit 1 SI-850 and SI-851 valves was opened to the Plant Auxiliary Building (PAB). A dedicated operator was not stationed at the drain valve to shut the valve in the event of an accident which requires containment isolation. As such, containment integrity was not maintained as required by Point Beach Nuclear Plant's Technical Specifications (TS). When the SI-850 valves are stroked open, a direct path exists between the containment atmosphere and the PAB. Test procedures have been modified to station a dedicated operator at the drain valve during testing to shut the valve if an event occurs requiring containment isolation.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Point Beach Nuclear Plant, Unit 1	05000266	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 6
		94	-- 008 --	00	

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

Event Description:

On August 12, 1994, it was discovered that, during inservice stroke testing of the low head safety injection (SI) suction valves, 1SI-850A and 1SI-850B, a drain and vent path between the Unit 1 SI-850 and SI-851 valve was opened to the Plant Auxiliary Building (PAB). A dedicated operator was not stationed at the drain valve to shut the valve in the event of a accident which requires containment isolation. As such, containment integrity was not maintained as required by Point Beach Nuclear Plant's Technical Specifications (TS). When the SI-850 valves are stroked open, a direct path exists between the containment atmosphere and the PAB.

The Inservice Test (IT) procedure that resulted in the formation of a path between the containment atmosphere and the PAB was IT-40, "Safety Injection Valves (Quarterly) Unit 1." Similar test procedures are:

- IT-40A, "Safety Injection Valves 1SI-850A&B (Quarterly, Increased Frequency) Unit 1"
- IT-45, "Safety Injection Valves (Quarterly) Unit 2"
- IT-45A, "Safety Injection Valves 2SI-850A&B (Quarterly, Increased Frequency) Unit 2"

IT-40 and IT-45 are used to perform a quarterly inservice test of the SI-850 valves, as required by the ASME Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components." IT-40A and IT-45A perform the same inservice tests at a more frequent interval.

In each of these procedures, the train-specific containment sump B inlet drain valve, 1(2)SI-D14 or 1(2)SI-D15, the containment sump B common inlet drain wet pipe valve 1(2)SI-D17, and the containment sump B common inlet vent valve 1(2)SI-V5 are opened prior to stroking the SI-850 suction valve. This drains residual water in the line so it doesn't enter the containment sump during the stroke test. All of these vent and drain valves are located outside of containment. After the suction valve is cycled, the vent valve, 1(2)SI-V5, and the applicable drain valve, 1(2)SI-D14 or 1(2)SI-D15, are shut. During the period of time when the drain and vent path is opened, containment integrity is not met and when the SI-850 valve is open during the stroke test, a direct path exists between the containment atmosphere and the PAB.

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Component and System Description:

1(2)SI-850A and 1(2)SI-850B are the residual heat removal (RHR) pump suction valves for sump B. There is one valve associated with each RHR pump, and both are located inside containment in sump B. These are normally closed, ten inch valves and are used during the recirculation phase, following a loss of coolant accident. Drain valves 1(2)SI-D14, 1(2)SI-D15, and 1(2)SI-D17 and vent valve 1(2)SI-V5 are normally locked closed, 3/4 inch valves.

The SI-851 valves and the RHR system, which is a closed system, form the two boundaries for this penetration. Drain valves 1(2)SI-D14 and 1(2)SI-D15 are located between containment and the SI-851 valves. When the drain valves are open, the closed system is open and containment integrity is not met.

TS 15.3.6.A(a) states, "The containment integrity (as defined in TS 15.1) shall not be violated when a nuclear core is installed in the reactor unless the reactor is in the cold shutdown condition."

TS 15.1.d states, "Containment integrity is defined to exist when:

- 1) All non-automatic containment isolation valves and blind flanges are closed as required.
- 2) The equipment hatch is properly closed.
- 3) At least one door in each personnel air lock is properly closed.
- 4) All automatic containment isolation valves are operable or are secured closed.
- 5) The uncontrolled containment leakage satisfies Specification 15.4.4."

TS 15.4.4 states that the total leakage from Type "B" and "C" tests shall not exceed 0.6La. Type B and C tests measure leakage across individual containment penetrations. The allowable leakage for PBNP is 0.4% (weight) per day at the containment design pressure of 60 psig. The largest pipe diameter of the vent and drain path opened during the valve stroke testing is 3/4 inch. A calculation has determined that leakage through a 3/4-inch hole will exceed the value of 0.6La at containment design pressure.

Cause:

A similar event occurred on July 13, 1994 and is documented in LER 266/94-007-00. The corrective action for this event was to revise procedures IT-40, 40A, 45, and 45A to require the stationing of a

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dedicated operator at the drain and vent valves when the valves are open during the performance of the test. These procedure revisions were to be issued prior to the next scheduled performance of the test.

The revised procedures were issued during the day shift on August 12, 1994. The next performance of the stroke test of the SI-850 and SI-851 valves was scheduled for Unit 1 on 8/14/94, using IT-40. However, the operating crews have some scheduling flexibility on when to perform the tests for which they are responsible. The operating crew responsible for the next performance of IT-40 began their week on the midshift of August 12, 1994. The Duty Shift Superintendent (DSS) made the decision to perform IT-40 during that shift. Thus, the test was performed several hours prior to the issuance of the revised procedures.

The DSS and the operating crew were unaware of the similar July 13, 1994, event and the pending procedure changes to IT-40, 40A, 45, and 45A. All Licensee Event Reports (LERs) are placed in the Operations Notebook in the Control Room for operators to review. The LER documenting the July 13, 1994, event was issued on August 12, 1994, and was therefore not in the Operations Notebook during the midshift earlier that morning.

The Operations Planner who assembled the work package for that operating crew considered including a directive stating that a revision to IT-40 was to be issued on August 12, 1994, and to wait for that revision prior to performing the test. However, since the test was scheduled for August 14, 1994, he felt the directive was not necessary.

Corrective Action:

A Condition Report was initiated on August 15, 1994. This report was used to document the condition and initiate corrective action. A review of the event was performed in response to this Condition Report.

All Operations personnel were informed of the event and of the many potential opportunities that should have prevented it, such as the directive on the work package and the DSS and operating crew being aware of the July 13, 1994 event.

A Root Cause Evaluation was initiated to determine the root cause for this event and determine appropriate corrective actions.

Procedures IT-40, IT-40A, IT-45, and IT-45A were revised to require stationing a dedicated operator at drain valves 1(2)SI-D14 or 1(2)SI-D15 when either of these valves are open during the associated procedure. The dedicated operator would be required to shut the associated drain

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valve should an event occur that would require containment isolation, thereby restoring containment integrity. The revised procedures were issued on August 12, 1994.

In the future, all Condition Reports associated with a reportable event will be placed in the Operations Notebook as soon as they are initiated. In this way, operators can be made aware of reportable events prior to issuance of the related LER. When the LER is issued, it will be placed in the Operations Notebook along with the associated Condition Report.

Additionally, Technical Specification Change Request 163 was submitted to the NRC on November 23, 1993. This change request was submitted in order to propose revisions that will clarify operability requirements for containment penetrations. The proposed revisions in this change request are similar to specifications included in the Westinghouse Owner's Group Improved Standard Technical Specifications (NUREG 1431). This change request will allow intermittent operation of valves associated with containment penetrations if a dedicated operator is stationed at the penetration to isolate it should an event occur which requires containment isolation.

Reportability:

This licensee event report is being submitted in accordance with the requirements of 10 CFR 50.73(a)(2)(i), "Any operation or condition prohibited by the plant's Technical Specifications."

Safety Assessment:

When the drain and vent valves between 1SI-850 and 1SI-851 are opened during the performance of IT-40, containment integrity is not met. During the period of time when the drain and vent valves are open and either 1SI-850A or 1SI-850B is stroked open, a 3/4 inch path is established from containment, through the open SI-850 valve, through the open vent and drain path, into the PAB. This results in an unmonitored release path into the PAB. However, 1SI-850A or 1SI-850B are open for only a short period of time during these tests. Additionally, 1SI-850A and 1SI-850B are hydraulically-operated valves that could have been shut if an accident occurred during the test procedure. It would have also been possible to isolate the affected containment penetration by manually shutting the associated vent and drain valves. The total time the drain and vent valves are open during the test is approximately one hour. The probability of an accident which causes core damage during this time is 1.57E-8.

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Similar Occurrences:

A review licensee event reports was performed to identify other reports that describe violations of containment integrity during routine testing or other evolutions. The following licensee event reports were identified:

- 266/94-007-00 Containment Integrity Requirements Not Satisfied During Valve Testing
- 266/85-008-00 Loss of Containment Integrity (Airlock Interlock Failure)
- 301/93-001-00 Failure of Steam Generator Sample Isolation Valve to Fully Shut
- 301/81-003-00 AOV-2083, Steam Generator Sample Line Isolation Valve Fails to Shut