



Consumers
Power

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May 22, 1989

Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT -
LICENSEE EVENT REPORT 89-009 - (LOOSE VALVE OPERATOR TO STEM COUPLING RESULTS
IN INOPERABLE CONTAINMENT ISOLATION VALVE)

Licensee Event Report (LER) 89-009 (Loose Valve Operator to Stem Coupling
Results in Inoperable Containment Isolation Valve) is attached. This event
is reportable to the NRC per 10CFR50.73(a)(2)(i)(b).

Brian D Johnson
Staff Licensing Engineer

CC Administrator, Region III, USNRC
NRC Resident Inspector - Palisades

Attachment

OC0589-0024-NL02

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) PALISADES NUCLEAR PLANT	DOCKET NUMBER (2) 0 5 0 0 0 2 5 5	PAGE (3) 1 OF 0 3
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TITLE (4)
LOOSE VALVE OPERATOR TO STEM COUPLING RESULTS IN INOPERABLE CONTAINMENT ISO VALVE

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 NAMES			DOCKET NUMBER(S)		
0	4	21	8	9	8	9	0	0	N/A			0 5 0 0 0		
									N/A			0 5 0 0 0		

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

OPERATING MODE (9) N	20.402(b)	20.405(e)	80.73(a)(2)(iv)	73.71(b)
	20.405(a)(1)(i)	80.38(a)(1)	80.73(a)(2)(v)	73.71(e)
	20.405(a)(1)(ii)	80.38(a)(2)	80.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 305A)
	20.405(a)(1)(iii)	X 80.73(a)(2)(i)	80.73(a)(2)(vii)(A)	
	20.405(a)(1)(iv)	80.73(a)(2)(ii)	80.73(a)(2)(vii)(B)	
20.405(a)(1)(v)	80.73(a)(2)(iii)	80.73(a)(2)(ix)		

LICENSEE CONTACT FOR THIS LER (12)

NAME C S Kozup, Technical Engineer, Palisades Plant	TELEPHONE NUMBER	
	AREA CODE 6 1 6	NUMBER 7 6 4 - 8 9 1 3

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
E	JM	ISV	M120	Yes					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

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

Abstract

At 0845 on April 21, 1989, Plant electricians identified that the locking nut on the valve operator to valve stem coupling bolt was not fully torqued for containment sump isolation valve, CV-1104 [JM;ISV]. The loose coupling resulted in loss of valve position indication in the Control Room and the valve being declared inoperable due to the potential for a loss of preload on the valve seat. The reactor was critical with the Plant operating at 80 percent of rated power when the condition was identified.

Containment isolation valve CV-1104 is an air to open, spring to close control valve and is one of two valves in a series which isolate containment penetration MZ-52. In completing repairs to CV-1104, its upstream isolation valve CV-1103 was locked closed by removal of its air supply. At 1200 physical repairs to CV-1104 were completed and an applicable Technical Specification leak rate surveillance was satisfactorily performed.

The failure of the valve operator to stem coupling has been attributed to inadequate tightening of the locking nut for the coupling bolt. In arriving at this conclusion, the potential for tampering was also investigated and ruled out. Failure to ensure adequate tightening has been attributed to inadequate or ineffective maintenance.

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		8 9	0 0 9	0 0	0	2	OF 0 3

TEXT (If more space is required, use additional NRC Form 368A's) (17)

Description

At 0845 on April 21, 1989, Plant electricians identified that the locking nut on the valve operator to valve stem coupling bolt was not fully torqued for containment sump isolation valve, CV-1104 [JM;ISV]. The loose coupling resulted in loss of valve position indication in the Control Room and the valve being declared inoperable due to the potential for a loss of preload on the valve seat. The reactor was critical with the Plant operating at 80 percent of rated power when the condition was identified.

Containment isolation valve CV-1104 is an air to open, spring to close control valve and is one of two valves in a series which isolate containment penetration MZ-52.

CV-1104 is a globe valve oriented such that system pressure and flow assist valve closing. The valve operator's spring is preloaded to between 2400 lb_f and 6000 lb_f. This is verified by observing the air pressure at which the valve starts to open. The opening air pressure must fall within the range of 12 to 30 psig. As identified by Plant electricians, the spring was relaxed by 3/16 of an inch which related to a preload reduction of 338 lb_f based on a spring constant of 1800 lb_f per inch. Since initial valve preload was not known, the preload left after the 3/16 inch spring relaxation could not be directly computed. However, even if the preload was at its minimum value of 2400 lb_f, CV-1104 would still have had a preload of 2062 lb_f remaining.

Palisades Technical Specification (TS) 3.6.1.a requires that containment integrity be maintained unless the reactor is in the cold shutdown condition. TS 1.4.d defines containment integrity to exist when all automatic containment isolation valves are operable or locked closed. As noted in a letter from Consumers Power to the NRC dated June 2, 1982 and a TS change request for Palisades submitted to the NRC on September 15, 1988, "Section 3.6.4.c of the CE Standard Technical Specification (STS) permits containment isolation valves to be inoperable provided the affected penetration is isolated by deactivating at least one automatic valve on the closed position within four hours". After initiating an urgent work order for repair of CV-1104 and verifying past local leak rate test results of CV-1103 (the upstream isolation valve for penetration MZ-52), the air supply to CV-1103 was isolated thereby locking it closed. These actions were completed at 0915, and within the intent of with the June 2, 1982 letter, a four hour Limiting Condition of Operation was entered. Consumers Power intent to proceed with repairs and in regard to the actions described above are believed to be prudent in that the Plant would be maintained in a stable condition with the Containment Building isolated. This information was verbally transmitted to an NRC Resident Inspector at approximately 1000.

At 1200, physical repairs to CV-1104 were completed and TS Surveillance Procedure RO-32-52, "Local Leak Rate Test (LLRT) Procedure for Penetration

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

MZ-52", had been satisfactorily performed. At 1412, all administrative clearances had been completed and CV-1104 was declared operable.

Cause Of The Event

The failure of the valve operator to stem coupling has been attributed to inadequate tightening of the locking nut for the coupling bolt. In arriving at this conclusion, the potential for tampering was also investigated and ruled out. Failure to ensure adequate tightening has been attributed to inadequate or ineffective maintenance.

Corrective Action

A review of additional installed Masoneilan valves was performed to identify those with common couplings which may be susceptible to the identified condition and to check for proper tightening of the operator to stem locking nut for the coupling bolt. This review identified 14 valves with couplings common to CV-1104. All 14 valves were inspected with no problems noted. The Masoneilan service manual was reviewed for torque values; however, none were noted. Per conversations with the vendor, the only direction given was standard torquing based on stud size.

A requirement will be added to the Mechanical Planning Guide for verifying coupling torquing requirements while planning work orders. A method will be developed for addressing coupling tightness for actuated valves within work order steps.

Lessons learned from this event will be reviewed with Quality Control (QC) personnel and incorporated into QC instructions on future work orders.

Analysis Of The Event

During the time that CV-1104 was declared inoperable, CV-1103 was operable or locked closed by removal of its air supply. Therefore, containment integrity was maintained and no threat to the health and safety of the public was presented.

This event is being reported per 10CFR50.73 (a)(2)(i)(B) as an operational condition prohibited by TS.

Additional Information

CV-1104 is a Masoneilan, model 38-20571, control valve.