NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104

EXPIRES 04/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), 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.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Millstone Nuclear Power Station Unit 2	05000336	1 OF 3

TITLE (4)

Invalid Local Leak Rate Test of Fuel Transfer Tube Flange due to Blockage of Test Port with Silicon Rubber Sealant Compound

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
12	17	96	96	-- 041 --	00	01	15	97	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
POWER LEVEL (10)	000	20.2201(b)	20.2203(a)(2)(v)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)
		20.2203(a)(1)	20.2203(a)(3)(i)	50.73(a)(2)(ii)	50.73(a)(2)(x)
		20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71
		20.2203(a)(2)(ii)	20.2203(a)(4)	50.73(a)(2)(iv)	OTHER
		20.2203(a)(2)(iii)	50.36(c)(1)	50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
		20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
R. T. Laudenat, MP2 Nuclear Licensing Manager	(860) 444-5248

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)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO				

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

On December 17, 1996 at 0400 during the removal of the blind flange from the fuel transfer tube, it was discovered that the local leak rate test (LLRT) port for the blind flange seal was plugged. Thus, the LLRT performed following the last assembly of the blind flange as required by Technical Specification Surveillance Requirement 4.6.1.1.d was not valid. The fuel transfer tube blind flange is a primary containment isolation device and is required to be leak tested by Technical Specification Surveillance Requirement 4.6.1.1.d after each closure. The blind flange was last installed on June 4, 1995 by a work order during the last refueling outage. During this installation, a silicon rubber sealant compound was used to hold the blind flange O-rings in place during assembly. Excess sealant was squeezed into the test port located between the O-rings when the blind flange was torqued into place. This problem was not identified until the blind flange was subsequently removed on December 17, 1996 to support the current outage.

The cause of this event was the lack of procedural guidance detailing an acceptable method for holding the O-ring in place during installation and detailing any cautions in the use of sealants near the test pressurization port.

As a result of this event, a procedure will be developed to control the assembly/disassembly of the fuel transfer tube blind flange.

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Millstone Nuclear Power Station Unit 2	05000336	96	-- 041 --	00	2 OF 3

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

I. Description of Event

On December 17, 1996 at 0400 during the removal of the blind flange from the fuel transfer tube [DF], it was discovered that the local leak rate test (LLRT) port for the blind flange seal was plugged. Thus, the LLRT performed following the last assembly of the blind flange as required by Technical Specification Surveillance Requirement 4.6.1.1.d was not valid. At the time of discovery of this event, the unit was in Mode 5 at 0 percent power.

The fuel transfer tube blind flange is a primary containment [NH] isolation device and is required to be leak tested by Technical Specification Surveillance Requirement 4.6.1.1.d after each closure. The blind flange was last installed on June 4, 1995 by a work order during the last refueling outage. During this installation, a silicon rubber sealant compound was used to hold the blind flange O-rings [SEAL] in place during assembly. Excess sealant was squeezed into the test port located between the O-rings when the blind flange was torqued into place. This problem was not identified until the blind flange was subsequently removed on December 17, 1996 to support the current outage.

The work order used to install the blind flange during the last refueling outage did not specify the use of any material to hold the O-rings in place even though a glue material was used during mock up tests prior to initial installation in 1989 (see Analysis of Event below). Additionally, the work order did not provide a caution to ensure that the test port would remain clear during installation of the blind flange.

LLRTs were performed on the fuel transfer tube blind flange on June 5, 1995 (post assembly) and on August 8, 1996 (prior to disassembly) with acceptable values of 55 standard cubic centimeters per minute (SCCM) and 20 SCCM, respectively. However, since the test port was plugged with the silicon rubber sealant compound, the LLRTs did not provide accurate leakage rates for the blind flange seals. Therefore, the testing requirements of Technical Specification Surveillance Requirement 4.6.1.1.d were not met during the last operating cycle.

This event is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B), any operation or condition prohibited by the plant's Technical Specifications.

II. Cause of Event

The cause of this event was the lack of procedural guidance detailing an acceptable method for holding the O-ring in place during installation and detailing any cautions in the use of sealants near the test pressurization port.

III. Analysis of Event

The fuel transfer tube extends through the containment wall and allows for fuel movement between the refueling pool inside containment and the spent fuel pool in the auxiliary building. The containment penetration consists of the fuel transfer tube (36-inch diameter stainless steel tube) installed inside a 42-inch sleeve. The fuel transfer tube is fitted with a blind flange in the refueling pool and a standard gate valve in the spent fuel pool transfer canal to allow closure of the containment penetration when primary containment integrity is required. The blind flange connection includes two concentric O-rings which fit into machined grooves in the mating flange on the fuel transfer tube. A test connection is provided between the O-rings to allow leak testing of this containment boundary.

The use of O-rings to replace the original flexible gaskets was established in 1989 as part of a plant modification. This modification implemented several changes to make the removal and installation of the blind flange easier, and, thus, reduced the time spent in the high radiation area at the fuel transfer tube.

Plugging of the test port with the sealant would have prevented the pressurization of the space between the O-rings and, therefore, testing of the leak tightness of the containment boundary. Although the leak tightness of the O-ring seal was not tested, it is not likely that the leakage rate through this penetration was unacceptable. The double O-ring design would require that both O-rings leak to create a pathway out of containment. After the removal of the blind flange, both O-rings were observed intact within their grooves with no damage noted. Also, although the sealant prevented the testing of the leak-tightness, the sealant would be expected to enhance the seal between the flange surfaces. Additionally, the integrated leakage rate test which exposes the blind flange and transfer tube externals to containment design pressure was successfully performed several days after the blind flange was installed and tested. Based on the above, this event is not considered to be safety significant.

IV. Corrective Action

As a result of this event, a procedure will be developed to control the assembly/disassembly of the fuel transfer tube blind flange. This procedure will include appropriate precautions to ensure that the LLRT test connection/port will not be blocked during the installation of the blind flange. This procedure will be completed prior to assembly of the fuel transfer tube blind flange during the current outage.

V. Additional Information

No previous similar events were identified which involved the invalidation of LLRT results or the use of excessive sealants.

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].