

EXPIRES 04/30/98

LICENSEE EVENT REPORT (LER)

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

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.

FACILITY NAME (1)

Millstone Nuclear Power Station Unit 2

DOCKET NUMBER (2)

05000336

PAGE (3)

1 OF 3

TITLE (4)

Insufficient Testing of RPS Logic Circuitry (Generic Letter 96-01 Review)

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
03	10	97	97	-- 008 --	00	04	08	97	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)		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
			20.2203(a)(2)(iv)		50.36(c)(2)			50.73(a)(2)(vii)		of NRC Form 366A

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
R. G. Joshi, MP2 Nuclear Licensing	(860) 440-2080

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

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 March 10, 1997 at 1030 hours, the first of two reports which review the facility's compliance with Generic Letter 96-01 for the Reactor Protective System (RPS) was received. This report determined that all of the circuits within the Reactor Protective System (RPS) were not being properly verified during surveillance activities. Three "K" relays which control the ladder network for the 2 out of 4 logic to trip the reactor and provide status indication (red lamp on the bistable) were not being properly verified. The fourth "K" relay, which controls an annunciator window, was being properly verified to ensure it drops-out when voltage is removed. At the time of discovery of this event, the reactor was defueled.

The cause of the event was an inadequate program to ensure surveillance procedures fully implement Technical Specification requirements.

To correct the deficiency, the procedures for the bistables will be enhanced to check the red status lamps on the bistables and a review of the facility surveillance procedures will be performed to ensure they comply with the Technical Specification surveillance requirements.

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

I. Description of Event

On March 10, 1997 at 1030 hours, the first of two reports which review the facility's compliance with Generic Letter 96-01 for the Reactor Protective System (RPS) [JC] was received. This report determined that all of the circuits within the RPS were not being properly verified during surveillance activities. Three "K" relays [RLY] which control the ladder network for the 2 out of 4 logic to trip the reactor [RCT] and provide status indication (red lamp on the bistable) were not being properly verified. The fourth "K" relay, which controls an annunciator window, was being properly verified to ensure it drops-out when voltage is removed. At the time of discovery of this event, the reactor was defueled.

The report identified that two tests are performed which involve the "K" relays coils [CL] and contacts. The first test, a bistable trip test, verifies that the bistables trip at the pre-trip and trip setpoints. Verification of the pre-trip and trip setpoints is done using annunciator windows on the main control board. The pre-trip alarm is controlled by a different circuit than the trip alarm. The trip alarm circuitry controls four "K" relays. Three of the four "K" relays provide logic for the matrix which forms the 2 out of 4 logic to trip the reactor. The relay contacts also provide a red status light [IL] indication of the trip condition on the front of the bistable. The fourth "K" relay provides the annunciator alarm on the main control board. This test did not verify that the red status lights were lit when the annunciator window alarmed at the bistable trip setpoint.

The second test, a logic matrix test, verifies that all the matrix combinations are working properly. During this test each of the "K" relays contacts, except for "K4" which activates the annunciator alarm, is tested to ensure they work properly. Each of the three "K" relays (K1, K2 and K3) are tested separately. To accomplish the test a "bucking coil" which is energized in the reverse direction of the "K" relay is used. This action removes the field from the "K" relay and its contacts change state. The matrix contact combination and the red status light are verified. However, since the "K" relay remains energized, the test does not verify that the contacts change state when the "K" relay is de-energized.

This event is being reported in accordance with 10CFR50.73(a)(2)(i)(B), any operation or condition prohibited by the plant's Technical Specification.

II. Cause of Event

The cause of the event was an inadequate program to ensure surveillance procedures fully implement Technical Specification requirements.

The monthly functional test failed to verify that the red status lights on the bistable trip unit were on when the bistable was in the trip condition. This is the only method which would have provided positive assurance that the three "K" relays (K1, K2 and K3) were de-energized.

III. Analysis of Event

The RPS monitors the Nuclear Steam Supply System to effect a reactor shutdown if conditions deviate from a preset operating range. The "K" relays form the matrix which provides a 2 out of 4 logic to trip the reactor. The red status light indication on the front of a bistable is an indication that the bistable has tripped. A tripped bistable means that the "K" relays have de-energized, and the contacts have changed state. Although the red status lights were not verified during the functional test of the bistables, the red lights are normally used by the Instrument and Control Technician and the Reactor Operator to verify that the bistable has tripped. All four "K" relays are controlled by the same device. The fourth "K" relay is indicated by a control board annunciator. The

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

remaining three relays are indicated by three separate red status lamps. Once the annunciator is acknowledged the operator verifies that the bistable has tripped by viewing the three red status lights on the front of the bistable.

Based on the above, this event is not considered to be safety significant.

IV. Corrective Action

As a result of this event, the following actions have been, or will be, performed.

1. The surveillance procedures for testing the bistables will be revised prior to entry into Mode 4 from the current outage to verify the red status lamps on the bistables.
2. The facility Generic Letter 96-01 review, which will verify that all circuits are tested properly from the detector to the Reactor Trip circuit breakers, shall be completed prior to entry into Mode 4 from the current outage.
3. In the response to NOV 336/96-08-07 (NNECO Commitment No. B16076-2), Millstone Unit No. 2 committed to perform a review of Technical Specification surveillance procedures to ensure compliance with Technical Specification surveillance requirements as part of the Operational Readiness Plan.

V. Additional InformationSimilar Events

Previous similar events involving the facility review of Generic Letter 96-01:

LER 96-035 - Identified that both bistables (one for each facility) were not verified for a Main Steam Isolation (MSI) signal for the Engineered Safety Actuation Feature System. An MSI signal is sent to both facility bistables to ensure a single failure will not cause an actuation and the functional test did not verify both bistables, only the bistable for the facility under test.

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