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 AUTH. NAME AUTHOR AFFILIATION
 WEBB, T.J. Wisconsin Public Service Corp.
 STEINHARDT, C.R. Wisconsin Public Service Corp.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 89-008-00: on 890328, procedural error results in isolation actuation.

W/8 ltr.

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LICENSEE EVENT REPORT (LER)

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TITLE (4) Procedural Error Results in Containment Ventilation Isolation Actuation																																																							
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)															
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POWER LEVEL (10) 0 0 1 0									20.402(b)									20.406(c)									X 50.73(a)(2)(iv)									73.71(b)																			
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									20.406(a)(1)(ii)									50.38(c)(2)									50.73(a)(2)(vi)									OTHER (Specify in Abstract below and in Text, NRC Form 366A)																			
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LICENSEE CONTACT FOR THIS LER (12)																																																							
NAME Thomas J. Webb - Plant Nuclear Engineer																				TELEPHONE NUMBER AREA CODE 4 1 4 3 8 8 1 - 2 5 6 1 0																																			
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16)

At 0950 on March 28, 1989, with the plant in refueling shutdown, a containment ventilation isolation signal was generated. The signal closed containment ventilation isolation valves RBV-1, RBV-2, RBV-3, and RBV-4 as designed. The signal was generated during the performance of procedure WR 55-44252 "Engineered Safeguard Relay SIA-B2 Reset Retest". Relay SIA-B2 is a master relay in the safety injection (SI) actuation circuitry.

Procedure WR 55-44252 was written and performed to retest the reset function of relay SIA-B2. The reset function had failed on March 26 during the performance of a scheduled surveillance procedure. The containment ventilation isolation signal was generated when the operators were securing from procedure WR 55-44252 and returning the safety injection system to normal refueling alignment.

This event occurred because procedure WR 55-44242 did not direct the operators to reset containment ventilation isolation signal prior to removing the SI actuation circuitry from the test condition.

Since procedure WR 55-44252 was a one time procedure written specifically to retest relay SIA-B2 it will not be revised. To prevent similar types of events this LER will be made required reading for the instrument and control personnel. Instrument and control personnel will also receive additional training on the interaction between the safety injection logic and the containment ventilation isolation logic with specific emphasis on this event.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104

EXPIRES 8/31/85

FACILITY NAME (1) Kewaunee Nuclear Power Plant	DOCKET NUMBER (2) 05000305	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		89	008	00	02	OF	07

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

Description of Event

At 0950 on March 28, 1989, with the plant in refueling shutdown, a containment ventilation isolation [JM] signal was generated. The signal closed the containment ventilation isolation valves [ISV] (RBV-1, RBV-2, RBV-3, and RBV-4), stopped the containment purge and exhaust fans [FAN], and closed the respective inlet dampers [DMP] to these fans as designed. The signal was generated during the performance of procedure WR 55-44252 "Engineered Safeguards Relay [RLY] SIA-B2 Reset Retest."

Procedure 55-44252 was performed to retest and troubleshoot the reset function of relay SIA-B2. Relays SIA-B2 and SIA-B1, refer to Figure 1, are the master relays for train B of the safety injection (SI) [BQ] actuation logic. These relays energize when an SI automatic setpoint is reached (pressurizer [PZR] pressure \leq 1815 psig, steam line pressure \leq 500 psig, or containment pressure \geq 4 psig) or when the manual SI initiation push buttons are depressed. Relay SIA-B2 was being retested because it failed to reset the first time the reset push buttons were depressed during the performance of surveillance procedure 33-110 (SP33-110) on March 26, 1989.

SP 33-110 is performed each refueling to verify the operability of the diesel generator's [DG] automatic start, load shed, and load restoration on a blackout signal concurrent with a SI signal. On March 26, the operators successfully tested diesel generator 1B in accordance with SP 33-110. To restore the system to normal refueling alignment, the SI initiation logic is reset.

However on March 26, the reset button had to be depressed several times before relay SIA-B2 would reset. As a result, procedure WR 55-44252 was written to retest and troubleshoot the reset function of relay SIA-B2. Prior to testing the SI actuation logic, the SI testing relays must be energized to prevent the actuation of SI equipment. During the performance of procedure WR 55-44252, this was accomplished by placing a jumper between the positive lead and the test relays. This allowed for numerous actuations and resets of relay SIA-B2 without having to re-energize the test relays each time relay SIA-B2 was reset. After the jumper was installed, relay SIA-B2 was energized and reset numerous times without a failure. Since the failure of the previous day could not be repeated, it was determined that the relay was operable.

To secure from the procedure, the operators reset containment isolation and reset SI. This prevented the actuation of containment isolation valves and SI equipment. The temporary jumper was then removed. This initiated a containment ventilation isolation signal.

A SI signal initiates a containment ventilation isolation signal by:

1. Energizing relay SIA-B1 (refer to figure 1).

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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APPROVED OMB NO. 3150-0104
EXPIRES 8/31/85

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2. This in turn, closes contact 4/8 which energizes relay SI-25X (refer to figure 2).
3. When relay SI-25X is energized, contact 20/24 closes and energizes relay VB (refer to figure 3).
4. When relay VB energizes, contact 4/8 closes and under normal, i.e., non test conditions, relay V20X would energize and initiate a containment ventilation isolation signal.

During the performance of procedure 55-44252 contact 8/4 of relay TRB-2 was maintained open by the jumper preventing the initiation of a containment ventilation isolation signal. When the SI signal was reset, contact 20/24 to relay SI-25X opened and removed power from relay VB. However, relay VB is a self latching relay and remained latched as designed leaving contact 4/8 in the closed position. Therefore when the jumper was removed, contact 8/4 to relay TRB-2 closed and relay V20X energized and initiated a containment ventilation isolation signal. The operators identified the actuation immediately and took steps to re-open the valves and re-establish containment vent.

Cause of Event

This event occurred because procedure WR 55-44252 did not direct the operators to reset containment ventilation isolation prior to removing the jumper. Had the reset push buttons been depressed, relay VB would have de-energized and contact 4/8 of relay would have opened. This would have prevented relay V20X from energizing when relay TRB-2 was de-energized.

Analysis of Event

This report is being submitted in accordance with 10 CFR 50.73(a)(2)(iv) as an event that resulted in the actuation of the containment ventilation isolation valves (RBV-1, 2, 3, and 4), which are engineered safety features. This event was also reported in accordance with 10 CFR 50.72(b)(2)(ii) on March 28, 1989 at 1315.

Since the containment ventilation isolation actuation system functioned as designed and the containment vent valves closed as designed, there are no safety implications associated with this event.

Corrective Actions

Procedure WR 55-44252 was written specifically to retest and troubleshoot relay SIA-B2. Future usage of the procedure is not anticipated. However a memo, describing this event will be filed with this procedure. This will provide assurance that if procedure WR 55-44252 is used as a reference for future procedures, information to prevent a similar event will be available to the author.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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In addition, this LER will be made required reading for instrument and control personnel. Instrument and control personnel will also receive additional training on the interaction between the SI actuation logic and the containment ventilation isolation logic with specific emphasis on this event.

Additional Information

Equipment Failures: None

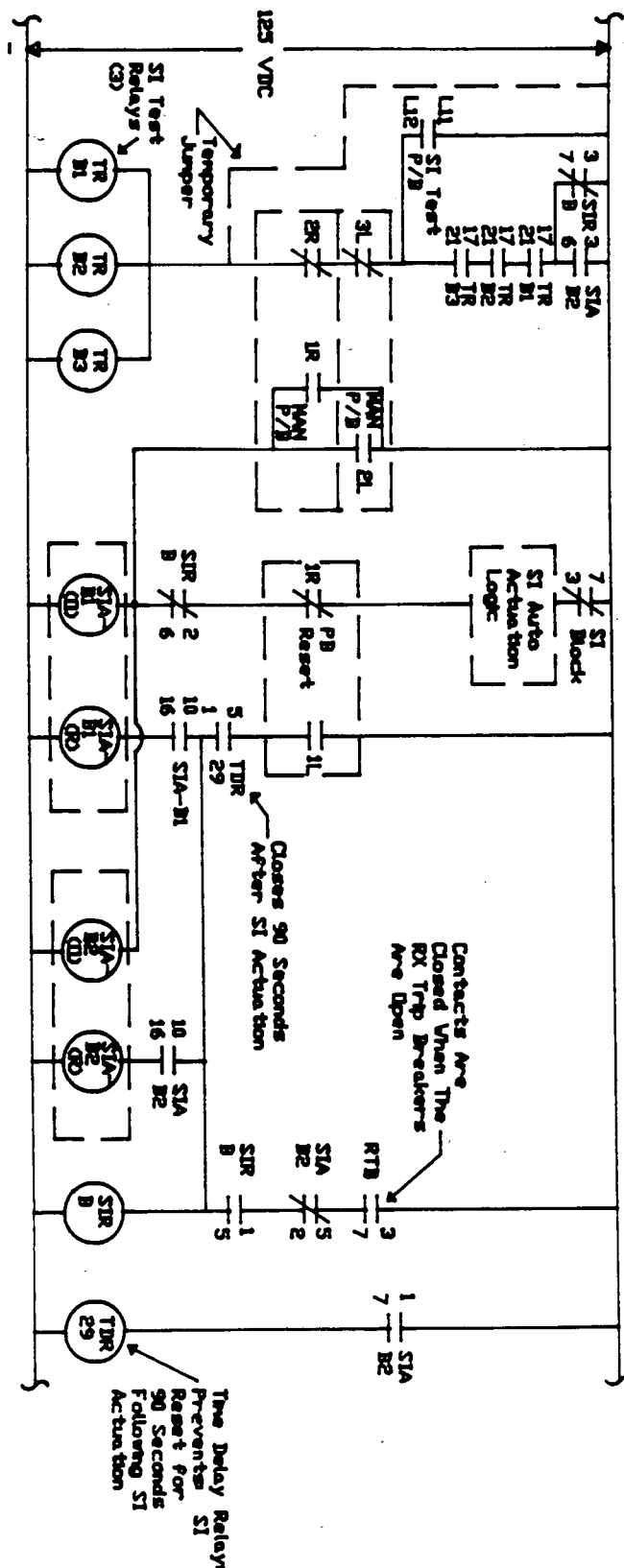
Similar Events: LER 89-003 "Procedural Inadequacy Results in Auxiliary Building Special Ventilation Actuation"

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SI Actuation Logic
Figure 1

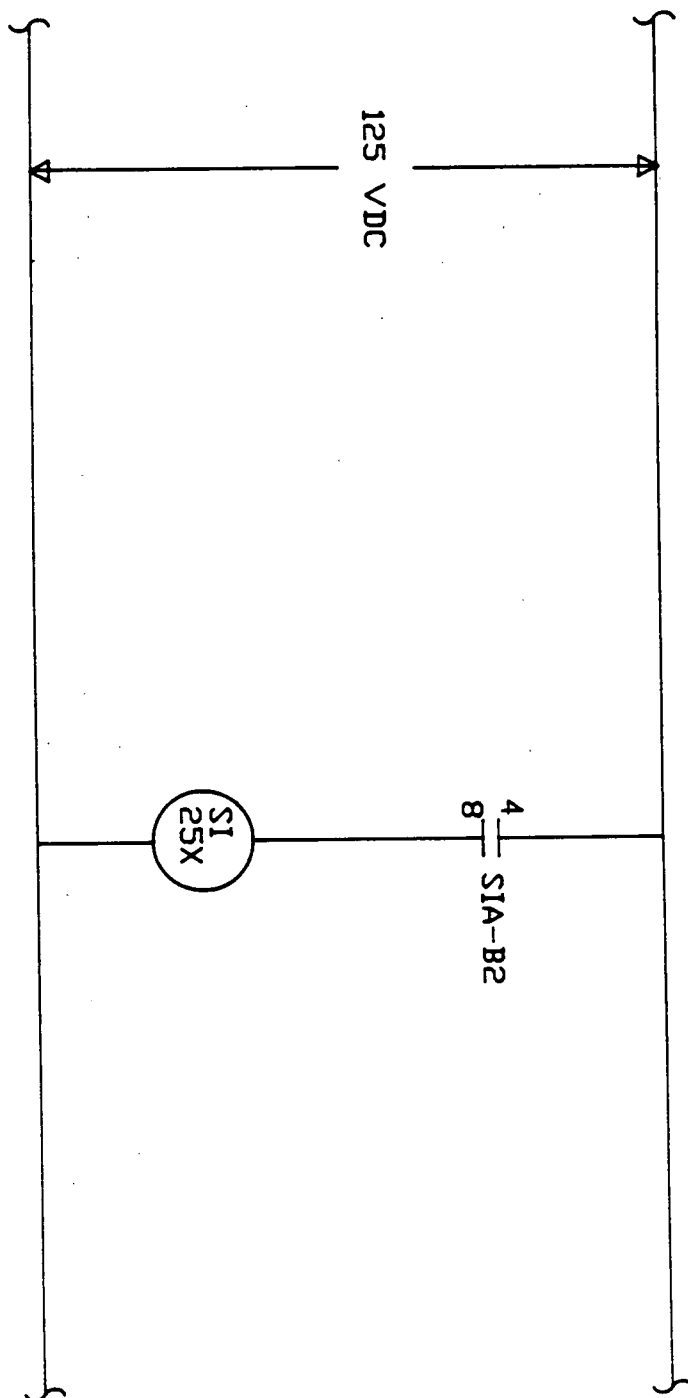


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SI Slave Relay
Figure 2





WISCONSIN PUBLIC SERVICE CORPORATION

600 North Adams • P.O. Box 19002 • Green Bay, WI 54307-9002

April 27, 1989

10 CFR 50.73

U. S. Nuclear Regulatory Commission
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Washington, D.C. 20555

Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Reportable Occurrence 89-008-00

The attached Licensee Event Report for reportable occurrence 89-008-00 is being submitted in accordance with the requirements of 10 CFR 50.73, "Licensee Event Report System."

Sincerely,

C. R. Steinhardt
Manager - Nuclear Power

PMF/jms

Attach.

cc - INPO Records Center
Mr. Robert Nelson
US NRC, Region III

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