

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9711130131 DOC. DATE: 97/11/06 NOTARIZED: NO DOCKET #
FACIL: 50-305 Kewaunee Nuclear Power Plant, Wisconsin Public Service 05000305
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HARRINGTON, G.I. Wisconsin Public Service Corp.
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RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 97-009-00: on 971008, portion of ESF actuation circuit for trains of containment fancoil units emergency discharge dampers identified as not being tested, per Tech Specs. Cause indeterminate. Procedures implemented. W/971106 ltr.

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November 6, 1997

10 CFR 50.73

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Ladies/Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Reportable Occurrence 97-009-00

In accordance with the requirements of 10 CFR 50.73, "Licensee Event Report System," the attached Licensee Event Report (LER) for reportable occurrence 97-009-00 is being submitted.

Sincerely,

M. L. Marchi
Manager - Nuclear Business Group

GIH

Attach.

cc - INPO Records Center
US NRC Senior Resident Inspector
US NRC, Region III

IE22/1

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9711130131 971106
PDR ADOCK 05000305
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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-8 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.

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Kewaunee Nuclear Power Plant

DOCKET NUMBER (2)

05000305

PAGE (3)

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TITLE (4)

Portion of ESF Actuation Circuit Not Tested per Technical Specifications

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
10	08	97	97	009	00	11	06	97	N/A	05000
									FACILITY NAME	DOCKET NUMBER
										05000

OPERATING MODE (9)

N

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

POWER LEVEL (10)

097

	20.2201(b)	20.2203(a)(2)(v)	<input checked="" type="checkbox"/>	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

Gary I Harrington - Plant Licensing

TELEPHONE NUMBER (Include Area Code)

(920) 388-8559

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 NPROS

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 15 single-spaced typewritten lines) (16)

On October 8, 1997, while the plant was operating at full power, a portion of the actuation circuitry for both trains of the containment fancoil units' emergency discharge dampers was identified as not being tested in accordance with Technical Specifications (TS) surveillance requirements. An evaluation of this condition found that a functional test of a slave relay in the circuit was not being performed periodically. The last functional test was performed when the relay was replaced in 1992. This condition was found during Kewaunee's efforts in response to Generic Letter (GL) 96-01, "Testing of Safety Related Logic Circuitry."

Subsequent to identifying the testing deficiency, functional tests of the affected portions of the actuation circuitry were performed. Testing was completed on October 12, 1997. These tests confirmed that the actuation circuitry not previously tested performs its safety related function.

Revisions to existing test procedures will be implemented to conduct periodic tests which will ensure future TS compliance.

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

Description of Event

On October 8, 1997, while the plant was operating at full power, a portion of the actuation circuitry in each of two trains of the containment [NH] fancoil units' [FCU] emergency discharge dampers [DMP] was identified as not being tested in accordance with Technical Specifications (TS) surveillance requirements. Specifically, two slave relays [RLY], one per engineered safeguards feature (ESF) [JE] train, were not being functionally tested on a periodic basis. The last functional test was performed when the relays (CP10X and CP20X) were replaced in 1992. The condition was found during Kewaunee's efforts in response to Generic Letter (GL) 96-01, "Testing of Safety Related Logic Circuitry."

The containment fancoil unit emergency discharge dampers, designated RBV-150A, B, C, and D, are designed to open during a design basis event when containment pressure reaches 4 psig. The function of the dampers is to assure containment cooling is maintained by the containment fancoil units [BK] in the unlikely event of the ventilation duct [DUCT] collapsing due to differential pressure.

The dampers operate in two ways: automatically on high containment pressure at 4 psig or manually from the control room control switch [HS]. The portion of the actuation system that has not been periodically tested is part of the automatic actuation circuitry. Manual operation of the dampers is performed at a frequency as stated in TS.

Automatic operation of the dampers occurs when high containment pressure is sensed and transmitted to a master actuation relay. The master relay contacts energize a slave relay which energizes the solenoid valves to vent air from the dampers' air operated actuator. Each slave relay actuates two dampers.

Manual operation of the dampers is accomplished by energizing the same solenoid valves as the automatic circuit. Previous periodic testing consisted of: calibration of the pressure transmitters [PT], functional testing and continuity checks of the circuitry up to the slave relays and manual actuation of the dampers.

The slave relay testing only consisted of a continuity check of the relay coil at reduced voltage. This type

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of test is performed monthly during ESF equipment testing in accordance with Table TS 4.1-1 Item 26. The system design is such that a reduced voltage is applied to the relay to confirm relay coil integrity without causing actuation of the circuit. Actuating the dampers while the plant is at power would have a negative impact on plant operation.

The containment fancoil unit emergency discharge dampers were installed in 1984. At that time a full functional test of the automatic and manual circuit was completed. In 1992 the relays were replaced. The replacement was conducted due to industry problems with the relay design. Subsequent to the relay replacement another complete functional test of the circuit was performed.

Cause of Event

The exact cause of why periodic full functional testing was not implemented is indeterminate. Thirteen years have elapsed since the equipment was installed and the test procedures were established. The basis for the extent of testing required at the time was not well documented.

The likely cause of the condition is that an assumption was made that the testing performed to satisfy other ESF testing requirements would also satisfy testing the dampers. In general, a combination of tests performed by different work groups usually ensures testing to the extent possible in accordance with Kewaunee plant design. Normally the I&C group tests between the pressure sensors up to and through the actuation circuit and the Operations group performs operational testing. Due to the plant's vintage, Kewaunee's electronic circuit design does not permit testing every feature of every circuit under all plant conditions.

There is also a possibility that the staff may have misunderstood the overall circuit design. In addition to actuation of the dampers at 4 psig, Safety Injection (SI) actuation occurs at 4 psig. It is possible that the personnel involved in developing test procedures believed full circuit testing was completed as part of the

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SI functional test and failed to recognize that the damper actuation circuit is independent of the SI circuitry.

Analysis of Event

This condition is being reported under 10 CFR 50.73(a)(2)(i)(b), "any event or condition prohibited by the plant's Technical Specifications." Kewaunee TS Section 4.5.a.3, "Containment Fancoil Units," states, "Each fan coil unit shall be tested once every operating cycle or once every eighteen months, whichever occurs first, to verify proper operation of the motor-operated service water outlet valves and the fancoil emergency discharge and associated backdraft dampers." Although the extent of testing required to satisfy the TS requirement is not specified, we have concluded that the intent of TS is to ensure testing to the extent practicable. Although on-line functional testing is not practicable, Kewaunee can perform a functional test of the automatic actuation circuit while in a cold shutdown condition or lower which will not negatively impact plant operation. Therefore, full testing of the automatic actuation circuit is applicable in this case.

Kewaunee's assessment of the condition revealed that there were no safety consequences associated with the condition found. The slave relay design and application have a history of excellent and reliable performance at Kewaunee. Subsequent testing of the relays confirmed this assessment.

Corrective Actions

After identifying the condition, an immediate operability determination of the emergency discharge dampers was performed. Subsequently, a procedure was developed and performed to verify functionality of the affected circuitry. Testing was conducted in accordance with the requirements of section 4 of the TS.

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Kewaunee TS section 4.0.c states, in part, that failure to perform the surveillance requirement within the allowed surveillance interval, defined by TS 4.0.b, shall constitute noncompliance with the operability requirements for a limiting condition for operability (LCO). The TS further states that the time limits of the action requirements are applicable at the time it is identified that the surveillance requirement has not been performed. The LCOs for the containment fancoil units are: one train may be inoperable for 7 days, and two trains may be inoperable for 72 hours. The B train dampers were tested on 10/10/97. The A train dampers were tested on 10/12/97. Both tests were completed within the limiting conditions for operation (LCO) time constraints allowed by section 4.0.c of the Kewaunee TS. These tests confirmed that the portions of the actuation circuitry not previously tested could perform their safety-related function.

Revisions to existing test procedures will be implemented to conduct periodic tests which will ensure future TS compliance. Kewaunee's continued efforts in response to Generic Letter 96-06 will determine if any similar testing deficiencies exist. If additional test deficiencies are identified, appropriate corrective actions will be taken to ensure TS requirements are satisfied.

Additional Information

The subject relays are Westinghouse model Nbfd65nr. Kewaunee's application of these relays is normally deenergized with the contacts used to operate the dampers in a normally open state with a non-interruptible power supply.