CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9804100036 DOC.DATE: 98/04/03 NOTARIZED: NO DOCKET #
FACIL:50-305 Kewaunee Nuclear Power Plant, Wisconsin Public Servic 05000305
AUTH.NAME AUTHOR AFFILIATION
SCHOMMER,K. Wisconsin Public Service Corp.
MARCHI,M.L Wisconsin Public Service Corp.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 98-006-00:on 980304,identified that turbine driven AFW pump automatic start logic not tested IAW TS.Cause indeterminate.Implemented revs to existing test procedures to conduct periodic tests to ensure compliance.W/980403 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 6
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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	PD3-3 PD	1	1	LONG,W	1	1
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	NRR/DE/ECGB	1	1	NRR/DE/EELB	1	1
	NRR/DE/EMEB	1	1	NRR/DRCH/HHFB	1	1
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C A T E G O R Y 1 D O C U M E N T

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NRC-98-28

Public Service Corporation
a subsidiary of WPS resources corporation
600 North Adams Street
P.O. Box 19002
Green Bay, WI 54307-9002
1 800 450 7260

April 3, 1998

10 CFR 50.73

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

Ladies/Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Reportable Occurrence 1998-006-00

In accordance with the requirements of 10 CFR 50.73, "Licensee Event Report System," the attached Licensee Event Report (LER) for reportable occurrence 1998-006-00 is being submitted.

Sincerely,

M L Marchi

M. L. Marchi
Manager - Nuclear Business Group

KJS

Attach.

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

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)

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TITLE (4)

Turbine Driven Auxiliary Feedwater Pump Automatic Start Logic Not Tested In Accordance With Technical Specifications - GL 96-01

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	04	1998	1998	-- 006 --	00	04	03	1998	N/A	05000
									FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	N
POWER LEVEL (10)	097

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

	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)
Keith Schommer - Engineering & Technical Support Engineer	(920) 388-8619

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) (15)

On March 4, 1998, while the plant was operating at full power, a portion of the actuation circuitry for the turbine driven auxiliary feedwater pump automatic start on bus undervoltage was identified as not being tested in accordance with Technical Specifications (TS) surveillance requirements. The referenced bus undervoltage is sensed from the non-safeguard buses which supply the feedwater and reactor coolant pumps. An evaluation of this condition found that a functional test of two contacts per train in the circuit was not being performed periodically. The last functional test was performed when the associated relays were replaced in 1994. 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 March 4, 1998. These tests confirmed that the actuation circuitry not previously tested is capable of performing 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 March 4, 1998, while the plant was operating at full power, a portion of the actuation circuitry for the turbine [TRB] driven auxiliary feedwater (TDAFW) [BA] pump [P] automatic start on bus undervoltage was identified as not being tested in accordance with Technical Specifications (TS) surveillance requirements. The referenced bus undervoltage is sensed from the non-safeguard buses [SWGR] which supply the feedwater [J] and reactor coolant pumps. Four relay [RLY] contacts, two 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 (27C/B1 XA, 27C/B1 XB, 27C/B2 XA, 27C/B2 XB) were replaced in 1994. The condition was found during Kewaunee's efforts in response to Generic Letter (GL) 96-01, "Testing of Safety-Related Logic Circuitry."

The TDAFW pump is designed to automatically start during a design basis event when bus voltage decreases or both steam generators [SG] reach low-low level. The function of the TDAFW pump is to remove decay heat during plant startups, plant shutdowns, and an accident. The TDAFW pump starts in a variety of ways: automatically on undervoltage of both busses, low-low level of both SGs, SG ATWS mitigation system actuation circuitry (AMSAC) low-low level, 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 on bus undervoltage.

The bus undervoltage is sensed on phase A and C for each bus. Automatic start of the TDAFW pump occurs when undervoltage of phase A or C on both busses is sensed and de-energizes auxiliary relays. The auxiliary relays initiate a TDAFW pump start as well as a reactor [RCT] trip. Previous periodic testing consisted of testing the entire actuation circuit for phase A undervoltage on both buses. Although phase C contacts are exercised during other matrix combinations, they are not confirmed to initiate a start signal to the TDAFW pump. Therefore, phase C bus undervoltage contacts for both buses were not functionally tested.

It should be noted that other contacts from the undervoltage relays provide a reactor trip signal. Due to this configuration, Kewaunee tests the TDAFW automatic start and reactor trip signals within the same time frame. This type of testing is performed monthly during reactor protection system (RPS) [JC] equipment testing in accordance with Table TS 4.1-1 Item 26.

The actuation circuitry in question was installed during original construction of the Kewaunee plant in the early 1970's at which time the logic matrix testing method was designed for plant operating surveillances. The current day testing method has not deviated from the original surveillances performed. However, in 1994, the associated relays were replaced due to industry problems with the relay design. A retest following the relay replacement performed a complete functional test of the circuits. It should also be noted that during pre-operational testing a complete functional test of the circuits was performed.

Cause of Event

The exact cause of why periodic full functional testing was not implemented is indeterminate. Over twenty 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. Initial surveillance procedures did not perform the functional test of the contacts in question.

Kewaunee's practice regarding contact operability was that demonstration of relay performance provided indication of contact performance. Since the relays associated with the contacts in question are proven to actuate via other testing steps, specific steps verifying the contacts in question would have been considered redundant. This practice was considered sufficient prior to GL 96-01 and is the most probable cause of the event.

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 4.1-1, "Minimum Frequencies for Checks, Calibrations

and Test of Instrument Channels," discusses the requirements of having a protective system logic channel testing performed monthly. Although the extent of testing required to satisfy the other TS associated with the TDAFW pump are not specified, we have concluded that the intent of TS is to ensure testing to the extent practicable.

Kewaunee's assessment of the condition revealed that there were no safety consequences associated with the condition found. The conctacts' performance in this application has been reliable. Subsequent testing of the contacts confirmed this assessment.

Corrective Actions

After identifying the condition, an immediate operability determination of the TDAFW pump 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.

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 auxiliary feedwater system LCOs are: one train may be inoperable for 72 hours, and two trains may be inoperable for 4 hours. The A and B train contacts for the TDAFW pump automatic start were tested on March 04, 1998 within the 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 96-01 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.

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

Additional Information

The subject relays are Westinghouse model NBFD65NR.

Similar Events

LER 97-09	Portion of ESF Actuation Circuit Not Tested per Technical Specifications
LER 1998-003	Reactor Coolant System Low Flow Trip Logic Not Tested In Accordance With Technical Specifications - GL 96-01