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AUTH . NAME . SCHOMMER , K .	Kewaunee Nuclear Power Plant, Wisconsin Public Servic AUTHOR AFFILIATION Wisconsin Public Service Corp.	DOCKET # 05000305
MARCHI, M.L RECIP.NAME	Wisconsin Public Service Corp. 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 1tr.

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NRC-98-28

Public Service Corporation

a subsidiary of WPS resources corporation 600 North Adams Street P Ol Box 19002 Green Bay WI 54307-9002 1 500 450 7260

10 CFR 50.73

April 3, 1998

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,

m7 mondes

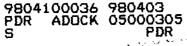
M. L. Marchi Manager - Nuclear Business Group

KJS

Attach.

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

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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 busses. 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 busses were not functionally tested.

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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

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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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