

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-305/82-19(DPRP)

Docket No. 50-305

License No. DPR-43

Licensee: Wisconsin Public Service Corporation
P. O. Box 1200
Green Bay, WI 54305

Facility Name: Kewaunee Nuclear Power Plant

Inspection At: Kewaunee Site, Kewaunee, WI
Enforcement Conference At: Region III Offices, Glen Ellyn, IL

Inspection Conducted: October 4-12, 1982, January 26, and February 3, 4, 6,
8, 11, 1983

Enforcement Conference Conducted: October 22, 1982

R. L. Nelson for
Inspector: R. L. Nelson
Senior Resident Inspector

4/5/83

C. E. Norelius
Approved By: C. E. Norelius, Director
Division of Projects and
Resident Programs

4/8/83

Inspection and Enforcement Conference Summary

Inspection on October 4-8, 11-12, 1982, January 26, February 3, 4, 6, 8, 11, 1983, and Enforcement Conference on October 22, 1982

Area Inspected: Special, announced inspection by resident inspector of circumstances which resulted in all safety-related containment pressure instruments being isolated during power operation. An enforcement conference was also conducted to discuss potential escalated enforcement action by NRC. The inspection and conference involved a total of 78 inspector-hours by seven NRC personnel including 11 inspector-hours onsite during off-shifts.

Results: One item of noncompliance was identified (inoperable engineered safety features instrumentation - Paragraph 2.e)

8304280244 830411
PDR ADDCK 05000305
G PDR

DETAILS

1. Persons Contacted

- + E. R. Mathews, Senior Vice President
- + C. W. Giesler, Vice President-Nuclear Power
- +*D. C. Hintz, Plant Manager
- + C. A. Shrock, Licensing and Systems Supervisor
- + C. R. Steinhardt, Superintendent, Operations
- +*M. C. Marchi, Technical Supervisor
 - D. W. McSwain, Assistant Superintendent, Instrument and Control
 - D. T. Braun, Shift Supervisor
 - D. M. Mielke, Reactor Operator
 - K. D. Bancroft, Auxiliary Operator

The inspector also talked with and interviewed members of the Operations, Health Physics, and Instrument and Control Groups.

*Denotes those attending one or more exit interviews.

+Denotes those attending the enforcement conference on October 22, 1982.

2. Capped Containment Pressure Sensing Lines

a. Licensee Discovery and NRC Notification

On October 4, 1982, at about 3:40 p.m. the licensee determined that all of the safety-related containment pressure instruments were inoperable due to the sensing lines being capped inside containment. The licensee removed the caps by 4:05 p.m. The Senior Resident Inspector and NRC Operations Center were notified of this matter by the licensee at 4:20 p.m. and 4:30 p.m., respectively, on October 4, 1982. The licensee subsequently submitted Licensee Event Report 82-030/01T-0 concerning this matter. The licensee satisfied NRC reporting requirements.

b. Method of Discovery and Immediate Corrective Action

On October 4, 1982, an Instrument and Control (I&C) Technician notified the control room that he was about to make a containment entry. A Control Operator who was on duty, requested the I&C Technician check the sensing lines for the containment pressure transmitters and ensure the lines were open and not plugged. Following containment entry, the I&C Technician observed that the sensing lines appeared to be mechanically plugged with a Swage-Loc plug and coupling nut. The Technician immediately notified the Shift Supervisor of his findings. The Shift Supervisor determined the location and number of sensing lines which should be open to containment atmosphere and implemented corrective action (i.e., checking for and removal of plugs) which restored all safety-related containment pressure transmitters to an operable condition at 4:05 p.m., on October 4, 1982.

c. Instruments Affected

Instruments found to be inoperable were as follows:

Instrument No.	Function
P 21117	Containment Spray Actuation at 23 psig Steam Line Isolation at 17 psig Control Room Indication 0-60 psig
P 21118	Same as P 21117
P 21119	Same as P 21117
P 21100	Containment Spray Actuation at 23 psig Safety Injection Actuation at 4 psig Control Room Indication 0-30 psig
P 21101	Same as P 21100
P 21102	Same as P 21100
P 21105	Control Room Indication -0.5 to 2.5 psig
P 16427	Containment Vacuum Breaker Control Open at 0.3 psid - Shut at 0.2 psid
P 16428	Same as P 16427
P 21122	Containment - Shield Building Annulus Differential Pressure Indication

With the above instruments inoperable, the remaining automatic initiating signals for safety injection were low steam line pressure or pressurizer low pressure; and for steam line isolation, hi-hi steam flow with safety injection or hi steam flow and 2 of 4 low Tavg with safety injection. Manual initiation of safety injection, containment spray, and steam line isolation were available during the period that containment pressure instrumentation was unavailable.

d. Cause

The licensee is required by 10 CFR Part 50, Appendix J, to perform type B & C local leak rate tests during each refueling outage. During the 1982 refueling outage, the required testing was performed as delineated in Surveillance Procedure, SP 56-090, "Containment Local Leak Rate Type B&C Test".

The procedure involves approximately 75 penetrations and approximately 150 individual tests. In general, a test consists of removing a Swage-Lok cap or plug from an installed 3/8 inch vent.

or drain line on the penetration to be tested, connecting the leak detection instrument to the line, closing the valve to be tested, opening a vent path to atmosphere downstream of the valve, pressurizing the isolated section of piping, and, when conditions have stabilized, recording the leak rate as indicated by the leak detector. Following testing, all caps or plugs removed for the test are required, by procedure, to be replaced. For the testing of valves and instruments associated with the ten penetrations for sensing containment atmospheric pressure, the leak detector is connected to the open-ended lines in containment, each of which have a permanently installed Swage-Lok fitting to facilitate the connecting of the leak detector.

The inspector interviewed the individual who had been assigned the responsibility for performing the leak tests. The individual indicated that following completion of SP 56-090 he had a concern that all caps and plugs which were required to be removed to perform the tests may not have been replaced. To ensure that all caps and plugs were installed he instructed the Control Operator Trainees who were assisting him to make a survey of the containment and install any missing plugs or caps, as applicable, on lines which had been tested. It is assumed by the licensee that during this survey plugs were installed on the Swage-Lok fittings provided for connection of the leak detector to the containment pressure sensing lines. This rendered all safety-related containment pressure instruments inoperable. Thus, the instruments were inoperable throughout the continuous power operation interval of May 24 to October 4, 1982.

The inspector determined that the underlying causal factor that resulted in the lines being capped was inadequate training of the individual coordinating the local leak rate tests of the lines and those individuals performing system restoration activities following testing. The training deficiency manifested itself in the test coordinator giving inadequate restoration instructions to trainees who were inadequately trained on the systems on which they were performing restoration actions.

e. Applicable Technical Specification

Technical Specification 3.5.c sets forth the operability requirements of engineered safety features instrumentation by reference to TS Tables 3.5-3 and 3.5-4 as well as other tables. These tables specify the minimum number of operable channels and delineate hot and cold shutdown actions to be taken if the minimum operability requirements cannot be met. The inoperability of the containment pressure instrumentation during continuous power operations between May 24 and October 4, 1982, violated the requirements of TS 3.5.c (305/82-19-01).

f. Event Evaluations

During the enforcement conference held on October 22, 1982, the licensee submitted to Region III an analysis that dealt with the effects of the inoperable containment pressure instrumentation. The licensee's conclusion was "...that the results of the FSAR were not affected by the incident...". The licensee's submittal was reviewed by the NRC Office of Nuclear Reactor Regulation (NRR) and NRR concluded that the absence of containment pressure signals during an accident (1) would have eliminated redundant signals but would not have prevented automatic response to a loss of coolant accident in the primary or secondary systems; (2) would have eliminated automatic initiation of containment spray but would not have resulted in overpressurization of containment by a design-basis LOCA (assuming the initial containment pressure did not exceed 2.15 psig) even if there were a simultaneous loss of offsite power with only one diesel operating; and (3) would not have resulted in an offsite dose larger than that considered in the FSAR for a design-basis LOCA.

Although NRR found the licensee's evaluation correct, NRR also concluded that the licensee's submittal did not address certain operational aspects of the loss of the containment pressure signals during normal and accident conditions. The operational aspects not considered in the licensee's submittal were (1) basis for assuming maximum containment pressure during the incident was 2.15 psig, (2) unavailability of the automatic actuation feature of the shield building-to-containment vacuum breaker system while the lines were capped, and (3) possible misleading effects of the lack of positive containment pressure indication on reactor operator actions.

The licensee was requested by Region III to address the safety significance of these three operational aspects of concern. The licensee's evaluation of maximum containment pressure attained was that the Technical Specification limit of 2 psig was not exceeded during the period May 24 to October 4, 1982. The licensee's evaluation of shield building-to-containment vacuum breaker system unavailability was that the inoperability of the vacuum breaker system did not have any safety significance. The licensee's evaluation of the potential effects on operator action of the absence of positive containment pressure indications was that the potential erroneous actions were not of safety concern. The Resident Inspector independently evaluated these operational aspects and his conclusions are in general agreement with the licensee's conclusions.

g. Containment Pressure Data

The inspector reviewed data from logs and records pertaining to containment pressure for the plant operation periods June 1 - September 30, 1981, October 18 - December 18, 1981, and June 1 -

September 30, 1982. The periods were selected to provide a perspective on the magnitude and rate of rise of containment pressure under different service water conditions. Maintenance supervisory personnel indicated that there were no repair activities during the 1982 refueling outage which would have reduced instrument air leakage into the containment. The data indicated that:

- . There was a perceptible increase of containment pressure under all reviewed service water temperature conditions.
- . Containment pressure was logged each shift and each daily log was reviewed by three experienced supervisory personnel.

The inspector concluded from his review that the licensee's experience with increasing containment pressure during the previous operating cycle in conjunction with the logged containment pressure indications during the period June - September 1982 should have alerted the licensee of two possible operational problems - either containment integrity was not established or there was a problem with all of the containment pressure instruments. The inspector concluded that the licensee's experience and logged information should have alerted the licensee as early as late June 1982 and no later than early August 1982 that a violation of Technical Specification 3.5.c existed.

3. Enforcement Conference

An enforcement conference was conducted in the Region III office on October 22, 1982, to discuss the operation of the plant with the capped containment pressure sensing lines. Licensee representatives in attendance are denoted in Paragraph 1. The licensee presented an evaluation of the incident and described corrective actions taken and planned to prevent recurrence. Mr. A. B. Davis, Deputy Regional Administrator, and others of the Region III staff described the enforcement options that would be considered by the NRC.

4. Exit Interviews

The inspector met with licensee representatives (denoted in Paragraph 1) during the period of October 4-12, 1982, and on January 26 and February 11, 1983, and summarized the scope and findings of the inspection activities. The licensee acknowledged the statement by the inspector with respect to the item of noncompliance.