

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-255/84-20(DRS)

Docket No. 50-255

License No. DPR-20

Licensee: Consumers Power Company
212 West Michigan Avenue
Jackson, MI 49201

Facility Name: Palisades Nuclear Generating Plant

Inspection At: Covert, MI

Inspection Conducted: October 1-19, 1984

Inspector(s): P. L. Eng *P.L. Eng*

11/9/84
Date

P. R. Wohld *P.R. Wohld*

Nov. 9, 1984
Date

Approved By: L. A. Reyes, Acting Chief
Operational Programs Section
P.R. Wohld For

Nov. 9, 1984
Date

Inspection Summary

Inspection on October 1-19, 1984 (Report No. 50-255/84-20(DRS))

Areas Inspected: Routine, announced inspection of previous inspection findings; inservice testing of pumps and valves; inservice testing test data evaluation; surveillance test scheduling and determination of equipment operability; calibration of measuring and test equipment; inservice testing of plant valves; and primary coolant system pressure isolation check valve testing. The inspection involved a total of 187 inspector-hours including 20 inspector-hours offsite by two NRC inspectors and 28 inspector-hours onsite during offshifts.

Results: Of the seven areas inspected, no items of noncompliance or deviations were identified in five areas; two items of noncompliance were identified in the remaining two areas (use of noncalibrated equipment - Paragraph 6; inadequate implementation of Code requirements, two examples - Paragraphs 7a and 7b).

DETAILS

1. Persons Contacted

- *D. L. Beach, Senior Plant Technical Analyst
- J. H. Dearth, Instrument and Controls Supervisor
- *C. S. Kozup, Operations Superintendent (Acting Plant Manager)
- *C. D. Leddon, General Engineer
- *D. G. Malone, Licensing Engineer
- *R. E. McCaleb, QA Superintendent
- B. B. McKercher, General Engineer
- *R. M. Rice, Technical Superintendent
- *D. W. Rogers, Technical Engineer
- *D. VanDenBerg, Reactor Engineer
- *R. A. Vincent, NAPO Administrator

*Denotes those attending the exit interview on October 19, 1984.

Additional plant technical and administrative personnel were contacted by the inspectors during the course of the inspection.

2. Action on Previous Inspection Findings

- a. (Closed) Unresolved Item (255/82-07-02): Application of the 1977 Edition of the ASME Boiler and Pressure Vessel Code through Summer 1979 Addenda to the inservice testing program for pumps and valves. Discussions with the NRR Project Manager on October 19, 1984 indicated that use of the addenda up through and including the Summer 1979 Addenda was allowed as stated in Federal Register Notice 46 FR 20153. The inspector has no further questions on this item.
- b. (Open) Unresolved Item (255/82-07-03): Implementation of the inservice testing program for pumps and valves, with associated relief requests, prior to NRC approval. Discussions with NRR indicate that a generic letter addressing this concern is in the course of preparation. This item will remain open pending the licensee's receipt of the generic letter or NRR approval of the licensee's relief requests.

3. Inservice Testing of Pumps and Valves

The inspector inspected implementation of the licensee's pump and valve inservice test program for compliance with Appendix B of 10 CFR 50, 10 CFR 50.55a(g), and Subsections IWP and IWV of Section XI of the ASME Boiler and Pressure Vessel Code (1977 Edition through Summer 1979 Addenda). The inspection included reviewing administrative and surveillance procedures for inservice testing, reviewing test results and documentation, and discussing the program with on site personnel administering the program. Inservice testing was not witnessed as no tests were performed during the inspection period.

The inspectors reviewed the implementation of the licensee's inservice testing program with relief requests as submitted to the Commission for approval in Procedures No. EM-09-04, Revision 6, "Inservice Testing of Selected Safety-Related Pumps" and No. EM-09-02, Revision 9, "Inservice Testing of Plant Valves." As yet, the licensee has not received Commission approval for specific relief requests from Code testing as allowed by 10 CFR 50.55a(g).

The inspectors found that the licensee has a program in place and is conducting pump and valve inservice tests according to appropriate schedules, using approved test procedures. The pump program appeared generally well defined with the appropriate evaluation of collected data being performed by the licensee's staff. Evaluations were done for operability determinations after each test and data plotted to determine trends indicative of degradation. The valve program appeared to be deficient in several areas including the method of recording and evaluation of test data to identify repetitive failures or trends (discussed in paragraph 4).

Throughout the inspection, the licensee's staff was helpful and cooperative. Efforts were made to provide timely and accurate responses to the inspector's queries. The document control department efficiently retrieved and made available appropriate documentation as requested.

During the course of the inspection, the inspectors had specific concerns and comments which are discussed in the following paragraphs.

4. Inservice Testing Test Data Evaluation

The inspectors reviewed the test data books for both pump and valve inservice testing evaluation. The inspectors noted that the dates of the tests were not recorded, nor were corrective actions explicitly identified. In general, test data was recorded in a manner which did not readily provide the licensee with a means to identify failure rates, repetitive failures, failure trends, etc. Therefore, the requirements under Criterion XVI of 10 CFR 50, Appendix B, for the identification of "conditions adverse to quality," could not be readily addressed. The licensee stated that the method of maintaining test records and data logging is being improved to facilitate the evaluation of collected test data for trends, etc., and that these improvements would be complete and in use by spring of 1985. Completion of improvements regarding test records for inservice testing of pumps and valves is considered an open item (255/84-20-01(DRS)).

No items of noncompliance or deviations were identified.

5. Surveillance Test Scheduling and Determination of Equipment Operability

- a. Several statements in the Code relative to test scheduling, time allowed for test data review, and time allowed for declaring equipment inoperable conflict with normal practice under Technical Specifications. The licensee stated that they meet the Technical Specification requirements and that references to less stringent scheduling and timing requirements will be removed from administrative and surveillance test procedures where appropriate.

- b. The inspector informed the licensee of scheduling considerations for testing, data evaluation, and corrective action for valves which can only be tested during plant shutdown or refueling. Subsection IWV-3413(c) of Section XI requires monthly testing until corrective action is taken for specified valve stroke time increases. For testing which is only possible at plant shutdown or refueling, the only reasonable alternative is to address corrective action prior to startup if a stroke time increase so indicates. The licensee stated that they would revise the Administrative Procedure 9.22, "Technical Specifications Surveillance Procedure Scheduling and Issue," to assure that surveillances are conducted such that corrective action, if required, may be performed without impacting or delaying plant startup.
- c. Appropriate component operability criteria are included in the pump test procedures; however, additional reviews of the data are required to determine trends, increased test frequency requirements, etc. The Code, in Subsection IWP-3220 of Section XI, requires that test data be reviewed within 96 hours. The licensee stated that test procedure EM-09-04, Revision 6, would be revised to specify inservice test data reviews within the 96 hour limit.

Licensee actions on items a. through c. are considered an open item (255/84-20-02(DRS)).

No items of noncompliance or deviations were identified.

6. Calibration of Measuring and Test Equipment

Criterion XII of 10 CFR 50, Appendix B, states that "Measures shall be established to assure that...measuring and testing devices used in activities affecting quality are properly controlled, calibrated and adjusted at specified periods to maintain accuracy, within necessary limits." During the review of several inservice testing surveillance test procedures, the inspector noted that Palisades procedures MO-24, SO-9 and QO-6 called for the use of noncalibrated stopwatches in the Special Tools/Equipment portion of the test prerequisites. In addition, none of the test procedures reviewed by the inspector explicitly required the use of calibrated stopwatches. The licensee agreed that the procedures should be revised to require calibrated stopwatches for surveillance testing. Use of noncalibrated equipment for surveillance testing is considered to be an item of noncompliance with regard to Criterion XII of Appendix B, 10 CFR 50, (255/84-20-03 (DRS); item 2 in the Notice of Violation).

7. Inservice Testing of Plant Valves

The inspectors reviewed the implementation of licensee procedures EM-09-02, Revision 6, "Inservice Testing of Plant Valves," for compliance with the 1977 Edition of Section XI of the ASME Code through the Summer 1979 Addenda. The following concerns were identified:

- a. Valve Operational Verification

As discussed in Paragraph 2.a. above, the licensee applied the 1977 Edition of Section XI of the ASME Code, through the Summer 1979 Addenda. One of the significant changes delineated in the Summer 1979 Addenda is to clarify the surveillance requirements for valves with remote position indicators. Subsection IWV-3300 was amended to read, "Valves with remote position indicators shall be observed at least once every 2 years to verify that valve operation is accurately indicated." In addition, Code interpretation XI-1-79-18 for earlier versions of the Code states, "It is the intent of Section XI, Division 1 to require that all valves, accessible and inaccessible, that have remote valve indicators be visually checked at least once every 2 years to verify that remote valve indications accurately reflect valve operation." Contrary to this, the licensee stated that they do not observe valve operation locally for those valves which are accessible. The inspector reviewed the scheduled preventive maintenance program and determined that no periodic maintenance is performed to otherwise determine satisfactory valve operation. It appears that such valves are only looked at after a failure occurs. This appears to have been the practice since plant licensing over twelve years ago. Since stroke timing of valves to determine valve operability is done by observing position indicating lights in the control room, failure to verify that the lights indicate the true condition of the valve places the validity of the valve exercise tests in doubt. The licensee agreed to review the valve stroke test procedures and revise them as necessary to provide for local valve stroke observations as required by the Code. Failure to perform the surveillances required by IWV-3300 is an example of an item of noncompliance (255/84-20-04(DRS); item 1.a. in the Notice of Violation).

b. Limiting Value of Valve Stroke Time

The inspector reviewed the limiting value of valve stroke times set by the licensee for power operated valves tested in the inservice testing program. The inspector noted that the times chosen were, in fact, system response times.

Subsection IWV-2300 of Section XI defines exercising as "the demonstration based on direct or indirect visual or other positive indication that moving parts of a valve function satisfactorily;" IWV-3413 provides for the "limiting value of full stroke time" as one of the criteria for test acceptance. Consequently, stroke time limits for valves must be chosen such that operation within the limits will indicate satisfactory valve physical condition. System response times used by the licensee are not adequate for this purpose. Licensee test records show that many valves which routinely exhibit stroke times of less than 2 seconds are assigned maximum stroke times of 25 seconds. These stroke times are well beyond those representative of satisfactory component conditions and, hence, fail to meet the Code requirements stated above. This also compromises the basic intent for inservice testing of valves as stated in Subsection IWV-1100, . . . , "to verify valve operational readiness." Failure to meet the requirements and intent of Subsections IWV-1100, IWV-2300 and IWV-3413 of Section XI of the ASME Code is considered to be an example of an item of noncompliance (255/84-20-04(DRS); item 1.b. in the Notice of Violation).

c. Visual Observation of Valve Stroke

The inspector reviewed valve test procedures for suitability when specifying the visual observation of valve stroking. Procedures do not require timing the valve stroke at the valve, measuring stroke distance, verifying proper limit switch setting, relating actual stroke time to timing of lights in control room, etc. The inspector found that preventive maintenance is not scheduled for most power operated valves. Consequently, visual observation required by IWV-3300 appears to be the only physical inspection of valve operation. The licensee agreed to review the adequacy of procedural requirements in this area. Completion of the licensee's actions and subsequent evaluation by the inspector is considered to be an open item (255/84-20-05(DRS)).

d. Safety Valve Testing

The licensee's safety valve testing program limits testing to the three primary coolant safety valves and twenty four main steam safety valves. Other Code class safety valves are not included in the inservice testing program, nor are they scheduled in the routine periodic maintenance program. Testing of these other safety valves is considered an open item (255/84-20-06(DRS)) pending final NRC review and approval of the licensee's valve test program submittal.

e. Valve Testing Relief Requests

The inspectors identified several areas in which the licensee's inservice testing does not meet the requirements of the Code or its own written program. These are:

- (1) Normally closed check valves are not being tested as described in procedure EM-09-02, Revision 9, "Inservice Testing of Plant Valves," item 5.2.2.2.3, which requires positive verification of disc position.
- (2) The licensee stated that they do not intend to determine or trend leak rates for individual containment isolation valves. In addition, the licensee does not intend to initiate corrective action according to Code requirements as stated in IWV-3426 and IWV-3427. However, the licensee has not requested relief from this requirement.
- (3) Acceptance criteria and associated corrective action for valves which normally stroke in less than 5 seconds are less conservative than Code requirements, as stated in IWV-3413. No relief request has been submitted even though the testing intent and requirements are clearly stated in the Code.

These items were discussed with the licensee and will be reevaluated pending review of the licensee's program and approval of Code testing relief requests submitted to the Commission. This is considered to be an unresolved item (255/84-20-07(DRS)).

No other noncompliances or deviations were identified.

8. Primary Coolant System Pressure Isolation Check Valve Closure Testing

By order dated April 20, 1981, the Commission amended the Palisades Technical Specifications to require the individual leak rate testing of twelve check valves as listed in Technical Specification Table 4.3.1. Licensee surveillance procedure SO-9, "Primary Coolant System Pressure Isolation Check Valves," provides for the explicit leak testing of eight of the twelve required valves. The licensee takes credit for the testing of the remaining four check valves during determination of the daily reactor coolant system leakage. It is not clear how the valve leak rate and the associated change in margin as specified in the footnote to the Technical Specification Table 4.3.1 is calculated from the reactor coolant system data. The licensee has agreed to furnish additional information used for such a determination to the inspector. This is considered to be an unresolved item (255/84-20-08(DRS)) pending the receipt and review of the leak rate determination for the four valves from the reactor coolant system leakage data.

No items of noncompliance or deviations were identified.

9. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which involve some action on the part of the NRC or licensee or both. Open items disclosed during the inspection are discussed in Paragraphs 4, 5.c, 7c and 7.d.

10. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items disclosed during the inspection are discussed in Paragraphs 7.e and 8.

11. Exit Interview

The inspectors met with licensee representatives (denoted in Paragraph 1) on October 19, 1984, to discuss the scope and findings of the inspection. The licensee acknowledged the statements made by the inspectors with respect to items discussed in the report.