US NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-255/84-04(DPRP)

Docket No. 50-255 License No. DPR-20

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

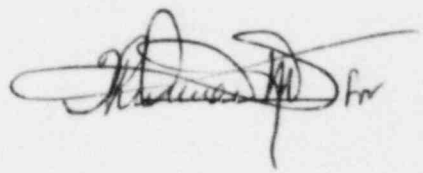
Facility Name: Palisades Nuclear Generating Plant

Inspection At: Palisades Site,
Covert, MI

Inspection Conducted: April 16 through May 29, 1984

Inspector: B. L. Jorgensen

Approved By: G. Wright, Chief
Reactor Projects, Section 2A



Inspection Summary

Inspection on April 16 through May 29, 1984 (Report No. 50-255/84-04(DPRP))
Areas Inspected: Routine, unannounced inspection by resident inspector of licensee actions on previously identified items; plant safety; work activities; testing activities; reportable events; and independent inspection areas. The inspection involved a total of 154 inspector-hours onsite by one NRC inspector including 35 inspector-hours onsite during off-shifts.
Results: No items of noncompliance or deviations were identified in any of the six areas inspected.

DETAILS

1. Persons Contacted

*R. W. Montross, General Manager
*J. S. Rang, Operations and Maintenance Superintendent
*D. W. Rogers, Technical Engineer
*D. G. Malone, General Engineer
C. H. Gilmor, Technical Superintendent
T. C. Saarela, Senior Engineer
D. L. Beach, Senior Plant Technical Analyst
*C. S. Kozup, Operations Superintendent
B. L. Schaner, Operations Supervisor
K. E. Osborne, Maintenance Superintendent
E. Polk, Mechanical Maintenance Supervisor
J. R. Bradshaw, Property Protection Operations Supervisor
T. G. Ruszala, Assistant Instrument and Control Supervisor
*W. P. Mullins, Chemistry/Health Physics Superintendent
D. H. Andrews, Laboratory Supervisor
B. N. Young, Nuclear Activities Plant Organization

*Denotes those present at the Management Interview

Numerous other members of the plant Operations/Maintenance, Technical, and Chemistry/Health Physics staff were also contacted briefly.

2. Licensee Action on Previously Identified Items

The inspector reviewed documentation and discussed related activities with licensee personnel concerning actions taken for previously identified items as described below.

a. (Closed) Open Inspection Item 255/83-16-05: Surveillance procedure MO-16, "Inservice Test Procedure - Service Water Pumps", contained a different acceptance criteria graph from that contained in the supporting Basis Document. The licensee determined the criteria contained in the procedure were correct, and revised the Basis Document criteria to correspond.

b. (Closed) Open Inspection Item 255/83-19-01: Biennial reviews of numerous fixed maintenance and clearance procedures (used for removal from and return to service of important systems/components) were approaching their due-dates with no system developed nor personnel assigned to complete the reviews. The licensee implemented pre-existing plans to incorporate these procedures into the appropriate System Operating Procedures and performed the biennial reviews as part of this procedure reorganization program.

c. (Closed) Systematic Evaluation Program Item 255/S4-20-04: Containment penetration No. 19 designed with an inboard threaded fitting on a three-inch line. The licensee cut off the threaded portion of

the piping and installed a welded flanged joint with a double O-ring seal. The original outboard three-inch valve was replaced by a 3/4-inch connection and valve. These modifications were performed under Specification Changes SC-83-013 and SC-83-162, respectively, which were reviewed by the inspector. Appropriate revision of the local leak-rate test procedure was also completed.

No items of noncompliance or deviations were identified.

3. Plant Safety

The plant remained in a refueling, maintenance and modification outage throughout the inspection period. Major system reassembly and restoration activities were underway throughout numerous plant systems. The primary coolant system was closed up and filled; the turbine-generator was statically balanced and closed up preparatory to oil flushing and placing on the turning gear; and steam generator primary side work was completed, with tube-plugging and manway restoration activities closed out. The steam generator secondary side activities remained central to return of the unit to service, with resolution of auxiliary feedwater system modification requirements remaining. This is discussed further in Paragraph 7.b below.

The inspector observed control room activities, discussed these activities with plant operators, and reviewed selected logs at various times during the inspection. On April 19, 1984, the inspector noted an apparently mispositioned valve (MOV-3036) in the redundant HPSI injection line. Given existing plant conditions, valve position was immaterial, but the operators on shift were unaware of when and why the valve was opened on some previous shift. This was discussed at the Management Interview from the perspective of shift turnover communications.

Tours were conducted in the turbine, auxiliary and containment buildings for observation of various work activities (discussed elsewhere in this report) and to observe plant equipment conditions, radiological controls, safety, security, and adherence to procedural and regulatory requirements. Several problems with the compressed air system air dryers were experienced. The inspector discussed the need for increased system blowdown by equipment operators to prevent excessive moisture accumulation in the lines with the Operations Supervisor.

Restoration of the primary coolant system included installation of incore detector strings. The inspector observed activities relating to attempts to insert incore M-13, which ultimately proved unsuccessful.

Observations covering radiological safety practices in the auxiliary and containment buildings included verification of proper posting; checking that area status sheets were both accurate and up to date, verifying selected Radiation Work Permit (RWP) compliance; and observing personnel contamination survey (frisking) and contamination control (step-off-pad) practices. On one occasion, the inspector identified an access to a posted contaminated area for which no step-off-pad was provided. This

was referred to the Duty Health Physicist who initiated corrective action. The inspector routinely reviewed the licensee's Health Physics logs and dose summary records to support evaluation of any developing trends or unusual events. No problems were identified in these reviews. The inspector also observed a routine area survey conducted for the purpose of updating status information.

The inspector observed security activities at various access control points, including proper personnel identification and search, and toured security barriers to verify maintenance of integrity. Alarm response was observed and verified timely on one occasion. No problems were noted.

General plant housekeeping and fire detection/prevention activities were routinely reviewed during area tours and observation of activities. The licensee continued to assign specific responsibilities for proper cleanup on completion of activies in specific plant areas.

No items of noncompliance or deviations were identified.

4. Work Activities

The inspector reviewed and/or observed selected work activities and verified appropriate procedures were in effect controlling equipment removal from and return to service, hold points, verification testing, fire prevention/protection, and cleanliness. Proper personnel qualifications for persons performing selected activities were verified.

The following were observed/reviewed:

a. control room panel terminal board installation and subsequent terminations activities for the plant siren/public address system expansion.

b. repair of a shaft seal leak on a small Worthington pump from the demineralized water system. The inspector noted the licensee had no specific procedure for this non-safety related maintenance activity, which forced reliance on a generic vendor manual having little guidance concerning specifications and tolerances (MO 84-DMW-0013). This was discussed at the Management Interview.

c. installation of new level transmitters on the sodium hydroxide and hydrazine tanks T-102 and T-103 (MOs 83-ESS-0165 and 83-ESS-0166).

d. removal of broken "B" steam generator manway studs by a contractor.

e. troubleshooting problems in the Recirculation Actuation System (RAS) left channel following test failure.

No items of noncompliance or deviations were identified.

5. Testing Activities

The inspector reviewed and/or observed selected testing activities to verify appropriate notification and receipt of authorization and to ascertain proper return-to-service following test. The following were inspected:

a. surveillance check of backup vent stack and main steam high radiation monitors.

b. stroke-testing shutdown cooling suction isolation valves MOV-3015 and MOV-3016 after completion of motor wiring modification under the EEQ program. The licensee's QC organization also had a representative present in accordance with a "hold point" established for this test.

c. surveillance procedure RI-62 "Power Range Safety Channel Calibration".

No items of noncompliance or deviations were identified.

6. Reportable Events

Through direct observations, discussions with licensee personnel, and review of records, the following event reports were examined to determine that reportability requirements were met, immediate correction action was accomplished as appropriate, and corrective action to prevent recurrence has been accomplished in accordance with Technical Specifications.

a. (Closed) LER 82-25, "Postulated Failure of DBA Sequencer Under LOCA Conditions". A scenario was identified wherein the DBA sequencers would not cycle to automatically energize accident loads if an SIS signal occurred after a loss of offsite power and completion of normal shutdown sequencer cycling. Immediate action included procedure revisions and instructions to operators to provide for manual cycling of the DBA sequencers, if necessary, by simply holding two pushbuttons for 60 seconds. During the current outage, Facility Change FC-561 "LOP and SIS Sequencer Loading Circuitry Modification" was installed and tested to correct the original design logic.

b. (Closed) LER 82-26, "Inoperable Fire Doors". The status of four bullet resistant fire doors was indeterminate in that documented testing and approval regarding fire rating, performed by a nationally recognized laboratory, was not available. The licensee declared the doors inoperable and complied with Technical Specification requirements for personnel surveillance in affected areas as the immediate corrective action. In late 1983, appropriate type testing (identical doors provided to another facility) was successfully completed by a nationally recognized laboratory. The only deficiency noted in the testing involved a need to provide full-length hinges on the double-door design tested. The installation at Palisades has full-length hinges on the double doors.

c. (Closed) LER 83-39, "Hydrogen Recombiners Tested Simultaneously". A previous LER (82-44) identified a "potential" overload condition on the motor control centers (MCCs) associated with the two hydrogen recombiners, should an accident signal actuate numerous other MCC loads with the recombiners in service. The recombiners are not normally in service nor do they automatically start and load. They are normally operated only for testing purposes. The licensee decided to consider the MCC associated with an operating recombiner to be "inoperable". Since only one of the two subject MCCs is permitted inoperable at any one time, a Standing Order (for operators) and a temporary procedure change to the testing procedure were issued to test the recombiners separately. The change was apparently not made permanent because the licensee expected to rewire the MCCs to eliminate the potential for overload, prior to the next testing cycle. The Standing Order remained in effect, but the Temporary Change expired and the modification was not completed prior to the event of LER 83-39. The Supervisor authorizing performance of the test did not recall the Standing Order, and may not have specifically reviewed it, in that his normal assignment was as a Shift Engineer (SRO) rather than as a Shift Supervisor (SRO). The licensee made a permanent revision to the subject test procedure to prohibit simultaneous operation of both recombiners, and revised review requirements for Standing Orders to include all those personnel (SROs) qualified to serve as Shift Supervisors; whatever their normal duty assignments. The design weakness has also been eliminated during the current outage. The subject simultaneous operation of the recombiners for the test encompassed a period of less than three hours.

d. (Closed) LER 83-46, "Low Concentration in NaOH Tank T-103". When routine sampling showed slightly low sodium hydroxide concentration in tank T-103, the licensee added concentrated solution to return the tank within specification in compliance with time limits established by Technical Specifications. Subsequent evaluations did not identify sodium in any connected systems, so some interaction inside the tank is suspected as the cause of the small concentration change noted. The tank was drained and refilled with properly adjusted solution during the current outage.

e. (Closed) LER 83-60, "Lack of Containment Integrity During Refueling Operations". While refueling was in progress, a one-half inch penetration pipe cap was removed by construction personnel working on a plant modification, creating an open path to the outside of containment. The licensee stopped refueling operations immediately on notification, and resumed only after restoration and testing of the penetration and a management review of the occurrence. The licensee's review subsequently determined the nature of this work was not clearly communicated among construction and plant personnel; so the cognizant engineer and the Shift Supervisor approving the work did not recognize containment integrity was involved. A number of other jobs involving containment penetrations were found to have been properly controlled, so this event was considered an isolated case. Operations and Technical Department personnel were briefed on the details of

the event and on the requirements of Administrative Procedures covering review of construction activities; as were Construction personnel. Given the size of this penetration compared to the equipment hatch, which is permitted open during refueling to provide a filtered ventilation path, the safety significance of this particular event was minimal.

f. (Closed) LER 83-66, "Containment Penetration Leakage". Routine local containment penetration leak rate testing identified four "boundaries" which contributed heavily to the combined total leak rate exceeding the limit of 62,500 cc/min. Three of these (the airlock and the secondary manways on both steam generators) employ gasketed closures. The gasketed closures were adjusted or replaced and successfully retested. The remaining problem involved an electrical penetration assembly leak - which had not previously caused difficulties. Inspection of the leaking canister identified a small crack in the yoke-to-stud braze of one insulated bushing. The licensee has decided to leave the leaking connister as is.

g. (Closed) LERs 83-61, 83-68, 83-75 and 83-76. "Failure to Complete Hourly Fire Tours". These events, which had the same end result (missed or late fire tours) were found to have a variety of causes. Numerous areas were subject to fire tour requirements during this time period (September - November 1983) because many fire barrier penetrations were opened to support plant maintenance and modification activities. LER 83-61 covers several tours which were 3 to 16 minutes late (Technical Specifications provide no variance from "hourly"), but no tours were omitted. The licensee re-established tours on a 1/2 hour basis. LERs 83-68 and 83-76 involved miscommunications between the Security Shift Leader and the personnel to whom actual performance of the tours was to be assigned. Procedural responsibilities were clarified, personnel counseled, and a practice initiated for radio reporting of tour completion to improve activity monitoring. LER 83-75 involved failure of a missile door opening/closing mechanism such that the individual performing a tour could not get into one tour area. The broken mechanism was repaired. Fire tour activity remained very heavy well into 1984 without further apparent problems.

h. (Closed) LER 83-63, "Inoperable Steam Generator Hydraulic Snubber". The subject report concerned the failure of snubber No. 52 to lock-up during testing. This is one of 16 steam generator snubbers. A generic manufacturing deficiency involving insufficient end-cap counter boring which prevented adequate shuttle valve travel caused the identified failure. The licensee issued a report on the generic problem under 10 CFR Part 21 (Item 255/83-01-PP) and removed, inspected and repaired all 16 snubbers, utilizing an offsite contractor. These activities were previously inspected and documented[1] by an NRC Region III specialist in seismic design. During this inspection, proper return receipt and re-installation of the subject snubbers

[1] IE Inspection Report No. 50-255/83-25(DE)

were verified. This closes both the LER and the Part 21 Report followups.

No items of noncompliance or deviations were identified.

7. Independent Inspection Activities

a. The inspector observed activities relating to inspection of the "A" steam generator deflector plate. This inspection was conducted to ascertain if problems similar to those recently reported from other Combustion Engineering plants had developed at Palisades. Inspection of both steam generators revealed no significant problems.

b. A number of activities were ongoing throughout the inspection relating to the auxiliary feedwater system, which the inspector followed. When "cracks" or "pits" were observed in the steam generator auxiliary feedwater nozzles, the inspector examined the indications in the "A" steam generator nozzle and followed their removal by grinding out in accordance with criteria specifically developed for the repair. The inspector also followed progress on resolution of auxiliary feedwater sparger damage and piping deficiencies. This included attendance at a Plant Review Committee (PRC) meeting assembled to evaluate procedures and safety analyses for a proposed redesign of the sparger. At the end of the inspection period, corrective actions for the identified problems remained incomplete. A Licensee Event Report (LER) has been issued on these matters, the items will be examined further in close-out of the LER. Some concerns developed relating to PRC approvals based on preliminary design information. These were resolved by the licensee's own determination not to proceed pending detailed design development and approval. This was discussed at the management interview.

c. The inspector observed activities relating to preparation and shipment of a Chem-Nuclear radwaste (resins) cask.

d. A meeting of the licensee's Corrective Action Review Board (CARB) was attended, at which two rather routine "Deviation Reports" were evaluated. The inspector also independently reviewed each corrective action package developed at the "Event Report" level.

e. Activities relating to "B" steam generator channel-head decontamination were observed/reviewed. The program was conducted pursuant to ALARA considerations in support of tube-plugging in the steam generators, and utilized appropriate written and approved procedures. Tube plugging activities were also reviewed and observations made at the CCTV control station covering appropriate use of approved written procedures for this program.

f. Selected activities relating to modifications supporting improved fire protection capabilities were examined. These included installation of a reflective heat shield for fire pump P-41 and sprinkler system expansion in the charging pump bays.

No items of noncompliance or deviations were identified.

8. Management Interview

A management interview (attended as indicated in Paragraph 1) was conducted at the completion of the inspection. The inspector summarized the scope and findings of the inspection as described in these Details. The following items were individually discussed:

a. The "open items" (Paragraph 2) and Licensee Event Reports (Paragraph 6) to be closed on the basis of this inspection were specifically identified.

b. An apparent shift turnover communications breakdown involving valve positioning was noted by the inspector (Paragraph 3).

c. Problems in use of non-specific vendor manuals to support repairs were described (Paragraph 4).

d. Auxiliary feedwater system deficiencies and plans for resolution were reviewed (Paragraph 7.b).