

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-255/85018(DRP)

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: July 9 through August 12, 1985

Inspectors: E. R. Swanson

C. D. Anderson

B. L. Jorgensen

Approved By: J. F. Suermann, Acting Chief
Reactor Projects Section 2A

9/13/85
Date

Inspection Summary

Inspection on July 9 through August 12, 1985 (No. 50-255/85018(DRP))

Areas Inspected: Routine, unannounced inspection by resident inspectors of previous inspection findings; operational safety; maintenance; surveillance; licensee event reports; unusual events; and confirmatory action. The inspection involved a total of 151 inspector-hours onsite by three NRC inspectors including 25 inspector-hours onsite during off-shifts.

Results: Two violations were identified in the area of design change controls which were carried as an unresolved item from the last inspection report (Paragraph 2). These violations are considered indicative of potentially serious program implementation problems. A failure to review and control the removal of equipment hatches from the safeguards pump room was identified (Paragraph 3c). Fire watch requirements were also found to have been violated during grinding in the turbine building (Paragraph 3d). An unresolved issue exists concerning the actions taken in response to licensee identification of a missed surveillance test. Two open items were identified, one to track completion of the inspection of General Electric (GE) hand switches similar to one that failed preventing a safety system valve from opening and one to track completion of actions specified by Confirmatory Action Letter to retrain certain licensed operators who failed a requalification exam. Six Unusual Events, a plant trip and an inadvertent ESF actuation were reported to the NRC duty officer during this period.

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DETAILS

1. Persons Contacted

J. F. Firlit, General Manager
*J. G. Lewis, Plant Technical Director
*R. D. Orosz, Engineering and Maintenance Manager
*R. J. Frigo, Supervising Shift Engineer
*K. M. Haas, Reactor Engineering Superintendent
*R. P. Margol, Quality Assurance Administrator
*W. M. Hodge, Property Protection Supervisor
*D. L. Fitzgibbon, Licensing Engineer
*D. G. Malone, Licensing Engineer
*R. A. Vincent, Plant Safety Engineering
T. J. Palmisano, Plant Projects Superintendent

*Denotes those present at the Management Interview on August 13, 1985.

Numerous other members of the plant Operations, Maintenance, Technical, Chemistry and Health Physics staffs, and several members of the contract Security forces, were also contacted briefly.

2. Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (255/85015-05): Design change controls were not adequately implemented. It was found that the Commission granted approval for Facility Change (FC) 452-1 which utilized a different solution logic for component cooling water. This change was cancelled and FC-452-2 was implemented. This second change was reviewed, but was not determined to constitute an unreviewed safety question although it increased the probability of a malfunction by adding another non-redundant pressure switch and relay in series. The violation is set forth in Appendix Item 2 and 3 as previously discussed in Report 255/85015 (255/85018-01 and 255/85018-07).

One violation with several examples was identified.

3. Operational Safety

- a. The inspectors observed control room activities, discussed these activities with plant operators, and reviewed various logs and other operations records throughout the inspection. Control room indicators, alarms, log sheets, turnover sheets, and equipment status boards were routinely checked against operating requirements. Pump and valve controls were verified proper for applicable plant conditions. On several occasions, the inspector observed shift turnover activities and shift briefing meetings.

Tours were conducted in the turbine and auxiliary buildings, and the central alarm station to observe work activities and testing in progress and to observe plant equipment condition, cleanliness, fire safety, health physics and security measures, and adherence to procedural and regulatory requirements.

The inspectors made observations concerning radiological safety practices in the radiation controlled areas including: verification of proper posting; accuracy and currentness of area status sheets; verification of selected Radiation Work Permit (RWP) compliance; and implementation of proper personnel survey (frisking) and contamination control (step-off-pad) practices. Health Physics logs and dose records were routinely reviewed.

The inspectors observed physical security activities at various access control points, including proper personnel identification and search; and toured security barriers to verify maintenance of integrity. Access control activities for vehicles and packages were occasionally observed. Activities in the Central Alarm Station were observed.

- b. Improvement has been noted in cleanliness of the plant and the major cleanup and painting effort has greatly enhanced operator accessibility to certain areas of the plant by reducing the contamination hazards.
- c. During a tour of the auxiliary building on July 18, 1985, the inspector noted that two large concrete access hatch covers had been removed from the roof of the East Engineered Safeguards Pump Room with a hose running into the room. On the 19th after it was noted that the condition still existed, the licensee was asked: (1) Whether the Fire Protection barrier for the room was violated and if so, what compensatory measures were taken; and (2) Whether the opening compromised the ventilation isolation capability of the room. On the 19th of July the licensee satisfied themselves that fire tours were covering the opening. On July 22, 1985, at 1610 hours, the licensee preliminarily determined that the removal of the hatches constituted an Unusual Event by defeating the ventilation isolation capability of the East Engineered Safeguards Pump Room as described in the FSAR Section 7.4.5.2 and the Technical Specification 3.16.f basis. The hatches were replaced at 1730 hours on July 22, 1985. They had been removed since 1523 hours on July 17, 1985, to facilitate decontamination work in the room. No approved work procedures or Work Order controlled the activity although a work plan had been developed, routed to the Operations Department for comment, and attached to the applicable Radiological Work Permits. No review had been conducted to evaluate the safety significance of the removal of the hatches. This is contrary to 10 CFR 50.59 which requires that changes to the facility as described in the FSAR be evaluated to determine whether the change constitutes an unreviewed safety question. This is a violation as set forth in Appendix Item 1 (255/85018-02). A somewhat analogous situation is described in Licensee Event Report 80-009 when the ventilation isolation damper was found not installed.

- d. During a tour of the turbine building on July 16, 1985, a worker from Consumers Power traveling work crew was observed to be grinding out a weld to replace a leaking pipe union (Work Order MGS 24500802). A hot work permit had been obtained but his helper/firewatch had gone to obtain materials for the job and no fire extinguisher was at the work site. The Shift Supervisor was notified and action was taken to stop the work and retrain the workers. This incident is closely related to Open Item 255/83018-06 where the concern for adequacy of contractor firewatch training was raised. Fire Protection Implementing Procedure No. 7, Section 9.2 requires that an individual be trained in their fire watch responsibilities prior to being authorized plant access. Based on this instance and the content and scope of the General Employee Training it does not appear that fire watches receive adequate training in their duties and responsibilities. The training program also lacks adequate familiarization with fire extinguisher operation as related in the aforementioned open item. The conduct of hot work without following the provisions of Palisades Fire Implementing Procedures constitutes a violation of Technical Specification 6.8.1.f as set forth in Appendix Item 4 (255/85018-03).
- e. On July 31, 1985 at 0958 hours the 'A' cooling tower bypass valves failed to open and the fans tripped. The licensee commenced an emergency power reduction. From about 1003 to 1008 hours the cooling tower basin overflowed. At 1028 hours the cooling tower bypass valves were manually closed and the fans restored. Power had been reduced to 64%. The water overflow undermined a 30 foot section of fence to about a six foot depth. Appropriate compensatory measures were taken and the soil was restored by the end of the shift. Return to power was uneventful.
- f. On August 11, 1985, at 0834 hours the unit tripped from 98% power on loss of load. Generator field was lost during adjustment of the generator excitation. The Westinghouse Magastat apparently failed during adjustment. All systems functioned as expected after the trip. A post trip review has been initiated but is not yet complete. The reactor had been critical since November 1984 and is expected to be shutdown until August 20 to repair seals on one primary coolant pump and seals on nine control rod drive mechanisms.
- g. At 1003 hours on August 12, 1985, an unplanned Safety Injection Signal (SIS) was generated during repair of a relay. The reactor was shut down at 500 psi and 320 degrees when a right channel SIS was generated causing valves to align, a Low Pressure Safety Injection (LPSI) pump and a Boric Acid pump to start. System pressure was greater than the discharge head of the LPSI pump (150 psi) and so no water was injected. High Pressure Safety Injection pumps were disabled for over pressure protection. Due to a recently installed modification to protect the plant from overload on the Startup transformers, several loads were shed

including a bus which supplies on site phones. Security systems power and off site phones were verified operational. Power was restored in about 15 minutes and there were no lasting complications from the event.

Electricians were replacing a SI block relay used during testing (see Daily Report R-III September 9, 1985) when the partial SI occurred. Post event review determined that the power to the SIS block (for low pressure) was fed through the contact block for the relay being replaced so that when the power lead was removed the right channel blocking signal was removed allowing the SIS actuation. The defective relay was replaced later the same day without incident.

One violation was identified in this area. As discussed in Paragraph c a safety evaluation was not performed when required.

4. Maintenance

The inspector reviewed and/or observed the following selected work activities and verified appropriate procedures were in effect controlling removal from and return to service, hold points, verification testing, fire prevention/protection, and cleanliness.

ESS 24502623	Calibration of containment spray flow
EPS 24503044	Repair of closing circuit for 1-1 Diesel Generator output breaker
MGS 24500802	Replacement of union on MVMGS-162
CCS 24500801	Replace seals on the "C" component cooling water pump
EPS 24502517	Diesel Generator 1-2 collector ring preventive maintenance

During observation of the containment spray flow transmitter calibration it was observed that the licensee permitted both flow channels to be out-of-service at the same time. Although this is permitted by Technical Specifications, the simultaneous removal of redundant instruments from service was pointed out as a poor practice. The licensee agreed to revise their practice in this area to remove only one instrument at a time. The inspector also observed the completion of the calibration and noted that the technicians had not reviewed and signed the procedures (MSI-I-6 and 7) as required. Through discussion the inspector ascertained that they did not intend to refill the drained transmitters as directed by the procedure. This incident reveals poor procedure utilization and assumed discretionary permission at the Instrument and Control (I&C) Technician level. This has been addressed by the licensee in their I&C group morning meetings and will be reviewed during future inspections in this area.

Further review will be conducted in this area to evaluate the effectiveness of licensee actions.

No violations or deviations were identified.

5. Surveillance

The inspector reviewed surveillance activities to ascertain compliance with scheduling requirements and to verify compliance with requirements relating to procedures, removal from and return to service, personnel qualifications, and documentation. The following test activities were observed and inspected:

- a. During the performance of Q0-1 "Safety Injection System" on August 9, 1985, at 0534 hours a blocking relay did not release after reset in the "Right Channel without Standby Power" portion of the test. This relay blocks the actuation of a valve in the boric acid flow path and trips the pressurizer heaters. The relay has hung up twice before as discussed in LER 85-001 and plans had been made to replace the relay during the next outage. The block signal was reset at 0800 hours by tapping on the relay. On August 12, 1985, with the plant shutdown, the relay was replaced as discussed in Paragraph 3g of this report.
- b. On August 7, 1985, at 1400 hours the licensee identified that the quarterly test Q0-11 "Containment Isolation Check Valve Test" had not been performed at the required frequency since 1983. For an as yet unknown reason the surveillance issue requirement was changed from quarterly during power operation to during cold shutdown. By about 1800 hours on August 8, 1985, one automatic valve in each flowpath had been closed and deactivated. The valves were tested and found operable by 0630 hours on August 9, 1985. The basis document for the test procedure states "Q0-11 was written to test only those check valves which practically can be exercised during plant operation." The timely completion of surveillance requirements has been an ongoing problem at Palisades for which violations were issued in Inspection Reports No. 255/84027(DRP) and No. 255/85005(DRP). LERs 84-18, 84-20 and 85-03 also describe situations where surveillance tests were not done. A concern raised by the inspector during review of the licensee actions was whether the actions taken were correct. The licensee was aware that the test should have been performed for over 24 hours before it was started while conducting additional reviews to find out why the procedure had been changed. Corrective actions taken in response to this event are being reviewed further by the NRC as to whether license requirements were fulfilled. This item will be tracked as an unresolved item pending resolution of the corrective action issue (255/85018-04).

An additional concern was identified during review of the procedure. The acceptance criteria for valve leakage is so generous that an acceptable test can be in violation of the Type B leakage limits for containment. At the exit meeting the licensee agreed to clarify the use of guideline leakages.

This program area requires further review due to the unresolved issue identified above.

No violations or deviations were identified.

6. Licensee Event Reports

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

(Closed) LER 255/85-007: At 1718 hours on June 21, 1985, both a Safety Injection Tank (SIT) and a High Pressure Safety Injection (HPSI) automatic valve were concurrently inoperable. The SIT was inoperable during adjustment of the boron concentration while the level was below the low limit. The HPSI valve failed during the evolution due to a failed control switch. The licensee plans to inspect and initiate preventive maintenance on similar switches since a similar failure occurred on February 11, 1985. The licensee intends to complete the inspection and preventive maintenance on these switches during the upcoming refueling outage. Completion of these actions will be tracked as an open item (255/85018-05).

An additional concern resulting from this event was that the switch apparently failed because a screw backed out due to lack of lubrication. The switch vendor (GE) was aware of this occurring, but had apparently not notified all of its customers. The Palisades plant also found that the Big Rock plant had received a GE Service Information Letter relating to new cams for the switches which they had not received. As outlined in their response to Generic Letter 83-28, the licensee is not making an effort to verify completeness of vendor information with the vendors but will only consolidate the information on hand within the company. This concern was communicated to the licensee at the exit meeting.

No violations or deviations were identified.

7. Unusual Events

- a. On July 22, 1985, at 1610 hours the licensee determined that the removal of the hatches from the roof of the East Safeguards Pump Room constituted an Unusual Event by having defeated the ability of the room to isolate as described in the FSAR and Technical Specifications. The hatches were off from 1523 hours on July 17, 1985 until 1730 hours on July 22, 1985, when they were replaced. This event is discussed in further detail in Paragraph 3c of this report, where it is cited as a violation of review requirements.

- b. On July 23, 1985, at 0950 hours the licensee discovered that work related to a modification had removed the control room toilet duct work resulting in an unisolable path from the outside atmosphere to the control room. Under the licensee's proposed Technical Specifications for the Control Room ventilation system the licensee had exceeded the permitted conditions and commenced a shutdown in accordance with Specification 3.0.3. This condition existed until 1030 hours when a cover on the duct was installed ending the Unusual Event. Load was dropped about 2% and the plant returned to full power at 1440 hours on July 23, 1985. The licensee plans to submit a voluntary LER on this event.
- c. On July 27, 1985, at 0006 hours the licensee declared the High Pressure Safety Injection (HPSI) Flow Indicator (FI-0312) inoperable since it was reading 90 gpm with no flow present. The acceptance criteria for flow during test Q0-8 is about 40 gpm and this would not be satisfied although it did respond to flow during the filling of an SI tank on July 26, 1985, at 2320 hours. Since Technical Specification 3.17.4 does not allow any of the four flow transmitters to be inoperable and specifies a plant shutdown in 12 hours, the licensee declared an Unusual Event and commenced a power reduction at 0006 hours. The Unusual Event was terminated at 0845 hours after the transmitter was repaired (the oscillator amplifier was replaced) and tested. Power was reduced to 76% and the licensee conducted turbine valve testing prior to returning to full power.
- d. At 2130 hours on July 27, 1985, the HPSI flow transmitter was again noted to be reading high and at 2234 hours was declared inoperable to perform an adjustment to the zero setpoint of the transmitter. An Unusual Event was again declared and a power reduction was commenced. The transmitter was declared operable at 2358 hours and subsequent testing demonstrated that although the zero was still drifting, it indicated increases in flow accurately. At this time the drift was attributed to the change in ambient temperatures between the lab where the instrument was shop calibrated and containment. Full power was restored by 0600 hours on July 28, 1985.
- e. On July 28, 1985, after performing a valve alignment to check flow on FI-0312, the 'D' Safety Injection Tank (SIT) was noted not to be full. At 1942 hours a valve in the HPSI flow path, CV-3069, was found inoperable. Since all four fill and drain valves leak, the SI tanks were slowly draining. When the 'D' tank was finally below the Technical Specification Limit, the licensee entered the shutdown requirement of Specification 3.0.3 at 1944 hours. An Unusual Event was declared at 2015 hours. The licensee entered containment and failed CV-3069 open which is its Safety Injection position at 2026 hours. At 2030 hours the 'D' SIT was refilled. No power reduction was required.

- f. On August 1, 1985, at 1353 hours FT-0312 was again declared inoperable to change out the transmitter. As before, an Unusual Event was declared but no power reduction was commenced. During valve alignments in preparation for testing the new transmitter the 'D' SIT drained below the low limit at 1540 hours. The licensee then considered two SI components to be inoperable and commenced a power reduction. The SIT was refilled at 1552 hours and no significant power reduction had occurred. This low level was again blamed on a leaky fill and drain valve. The Unusual Event was terminated at 1816 hours following an operational test of FT-0312.

Item a constitutes a violation of review requirement (see Paragraph 3c), Item b will be further reviewed as a Licensee Event Report, and Items c through f will receive additional review by the NRC Emergency Preparedness group.

8. Confirmatory Action Letter

On July 3, 1985, the NRC administered written requalification examinations to licensed Reactor Operators (RO) and licensed Senior Reactor Operators (SRO). Three ROs and two SROs failed to attain acceptable grades and in accordance with the licensee's training program were removed from licensed duties as of July 16, 1985. It was confirmed by letter on the same date that they will not be returned to duty until they complete an accelerated requalification program and pass a written examination which has had prior NRC review and acceptance. These actions will be tracked as an open item (255/85018-06).

9. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations or deviations. An Unresolved item disclosed during the inspection is discussed in Paragraph 5b.

10. 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 Paragraph 6 and 8.

11. Management Interview

A management interview (attended as indicated in Paragraph 1) was conducted on August 13, 1985, following the inspection. The scope and content of the inspection report were discussed. The inspector also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspector during the inspection. The licensee did not identify any such documents/processes as proprietary.