

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-255/85010(DRSS)

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 23-26 and May 1-2, 1985

P. C. Lovendale
Inspector: P. C. Lovendale

5/21/85
Date

L. R. Greger
Approved By: L. R. Greger, Chief
Facilities Radiation Protection
Section

5/21/85
Date

Inspection Summary

Inspection on April 23-26 and May 1-2, 1985 (Report No. 50-255/85010(DRSS))

Areas Inspected: Routine, unannounced inspection of the radiation protection program including: organization and management controls, internal and external exposure controls, control of radioactive materials and contamination, facilities and equipment, IE Information Notice No. 85-06, and open items.

The inspection involved 50 inspector-hours onsite by one NRC inspector.

Results: Of the seven areas inspected, no violations or deviations were identified in five areas. Two violations were identified in two areas (failure to follow radiation protection procedures - Sections 6 and 7).

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DETAILS

1. Persons Contacted

*D. Andersen, Quality Assurance
*C. Axtell, Health Physics Superintendent
*W. Beckman, Radiological Services Manager
*E. Bogue, Radiation Safety Supervisor
*N. Campbell, Senior Health Physicist
*A. Clark, Radiation Safety Supervisor
*J. Firlit, Plant Manager
*D. Fitzgibbons, Licensing Engineer
*L. Kenaga, Staff Health Physicist
*D. Malone, ALARA Coordinator
*R. McCaleb, QA Director
*T. Neal, RMC Supervisor
*D. Rogers, Plant Licensing Administrator
J. Wilson, Radiation Protection Supervisor

*E. Swanson, NRC Senior Resident Inspector

The inspectors also contacted other licensee employees including radiation protection technicians and members of the engineering and maintenance staffs.

*Denotes those present at the exit meeting.

2. General

This inspection, which began at 7:00 a.m. on April 23, 1985, was conducted to review the operational radiation protection program, including organization and management controls, internal and external exposure controls, facilities and equipment, control of radioactive material and contamination, open items, and IE Information Notice No. 85-06: Contamination of Breathing Air Systems. The inspectors conducted radiation and contamination surveys of selected plant areas using NRC and licensee survey instruments (Xetex 304-B and Eberline RM-14); except as noted in Section 7, readings were in general agreement with posted licensee data. During two of the surveys, unlabeled pieces of contaminated equipment were found outside the controlled area. Area postings were good. Access controls and procedure adherence problems were noted and are discussed in Sections 6 and 7. Housekeeping appears to be improving but auxiliary building cubicles need additional attention. Numerous minor leaks throughout the plant have resulted in a large number of contaminated areas. Efforts to reduce the backlog of work requests for leak repairs are ongoing.

3. Licensee Actions on Previous Inspection Findings

(Closed) Violation (255/84001-01): Plant organization not in accordance with Technical Specification 6.2.2. In a letter to NRR dated January 11, 1985, the licensee submitted a technical specification change request which superseded their previous submittal dated December 20, 1982. The January 11, 1985 submittal is in general agreement with the licensee's original technical specifications regarding the health physics reporting chain to the plant manager. The health physics group no longer reports through the operations and maintenance superintendent. The proposed change has been implemented. Problems noted in the January 11, 1985 submittal are discussed in Section 4.

(Closed) Open Item (255/84022-01): Improve the use of the radiation incident report (RIR) system. The inspector observed appropriate use of the system. A revised procedure will be implemented in the near future.

(Open) Violations (255/84006-04 and 255/84022-02): Failure to follow radiation protection procedures. Radiation protection personnel have been receiving special training on radiation protection procedures in an effort to improve performance in this area. However, radiation protection procedural compliance by other plant groups needs significant improvement with strong management backing. This matter was discussed during the exit meeting.

(Closed) Open Item (255/84022-03): Review alpha surveillance program. The licensee has reviewed and revised the alpha surveillance program. The revised program concentrates on those areas of the plant most likely to contain alpha contamination problems. No problems were noted.

(Closed) Open Item (255/85004-02): Improve the quality and timeliness of neutron assessments. The licensee sent one of their portable neutron survey instruments to the University of Michigan for calibration with a Cf-252 source which the licensee believed would more closely represent the expected average neutron energy seen in containment than the Pu-Be source used previously. Neutron doses calculated based on surveys with this instrument have agreed closely with the general office TLD results. The general office's TLD program has received NVLAP accreditation for neutron dose assessment. No further problems were noted.

(Closed) Violation (255/85004-01): Required 10 CFR 50.59 review not completed before filter elements were removed. The inspector verified that the corrective actions described in the licensee's responses dated March 27 and May 2, 1985, had been taken. No further problems were noted.

4. Radiation Protection Organization, Management Controls, and Staff Stability

The inspector reviewed the licensee's radiation protection organization and management controls, including: a proposed technical specification change, radiation protection staff stability, morale within the radiation protection group, and management support for the radiation protection program.

The inspector reviewed the radiation protection aspects of the licensee's technical specification change request dated January 11, 1985. The proposed plant organization shown on Figure 6.2-2 has the Radiological Services Manager reporting to the Plant General Manager and the Health Physics Superintendent reporting to the Radiological Services Manager. Footnote (b) states that the Radiation Protection Manager (RPM), as defined in Regulatory Guide 1.8, will be either the Radiological Services Manager, the Health Physics Superintendent, or a Radiation Safety Supervisor. The inspector informed the licensee that the appointment of a radiation safety supervisor as the RPM could result in that individual's reluctance to circumvent his managers in order to exercise his technical specification option to discuss radiation protection matters with the plant manager. In addition, the inspector noted that the plant Health Physicist title in Technical Specification 6.3.2 had not been changed to reflect new titles used under the new technical specifications. These matters were discussed with NRR by telephone and with the licensee during the exit meeting. They will be reviewed further during a future inspection. (255/85010-01).

The inspector discussed the organizational reporting chain of the Radiation Protection Manager (RPM) with the Plant Manager. The Plant Manager agreed to try scheduling routine meetings with the RPM to allow the RPM an opportunity to relay his concerns regarding radiological controls problems that exist at the plant.

There are currently 24 radiation protection technician positions authorized, compared to a high of 28 four years ago. Twenty-one of the authorized positions are filled, but one is a technician trainee and two are on extended sick leave. This leaves 18 qualified plant technicians and six contracted technicians. This number of technicians should be adequate to run a radiation protection program at a single unit PWR. However, Palisades has a poor operating record and the material condition of the plant (number of leaks and contaminated areas) has been worse than average. This means a greater than average work load on the radiation protection staff which necessitates an increased staff size. Further reduction in staff size, until the material condition and operating record of the plant have improved, appears undesirable. This matter was discussed during the exit meeting and will be reviewed further during a future inspection. (255/85010-02)

Radiation protection staff stability appears poor. This appears to be due primarily to replacement of personnel and loss of positions as a result of the closing of the Midland plant, uncertainty over the licensee's future financial condition, and the perception that management

support of the radiation protection program has deteriorated over the last several months. Since the beginning of 1984, nine radiation safety technicians and eight of the professional health physics and chemistry staff have terminated employment. In addition, one of the senior technicians is leaving in July 1985 and six other technicians are considering other employment options. Currently, the technician staff averages about three years of experience at the plant, but this average could easily slip to below two years experience if the more senior technicians continue to leave. Six contracted technicians averaging about three years of experience at the plant were also terminated when the contract HP vendor was changed recently. Six replacement technicians from another vendor were hired, but are due to be terminated soon as a cost saving move. Losses from the professional staff appear to have stabilized following some planned reductions from this work group. The radiation protection organization has had three Chemistry and Radiation Protection Superintendents (or the equivalent) and five Plant Health Physicists (or the equivalent) in the last five years. This matter was discussed with the plant manager, who appears aware of the detrimental consequences of excessive turnover. This matter was discussed at the exit meeting and will be reviewed further during a future inspection. (255/85010-03)

No violations or deviations were identified.

5. Internal Exposure Control and Assessment

The inspectors reviewed the licensee's internal exposure control and assessment programs, including: changes in facilities, equipment, personnel, respiratory protection training, and procedures affecting internal exposure control and assessment; determination whether engineering controls, respiratory equipment, and assessment of individual intakes meet regulatory requirements; planning and preparation for maintenance and refueling tasks including ALARA considerations; required records, reports, and notifications, and effectiveness of management techniques used to implement these programs and experience concerning self-identification and correction of program implementation weaknesses.

Whole body counting data, respiratory protection records, MPC-hour determinations, and air activity surveys for January 1985 to date were selectively reviewed; no problems were noted.

The inspector discussed the posting requirements for airborne radioactivity areas with radiation safety representatives. The licensee posts airborne areas in accordance with 10 CFR 20.203 and when high levels of removable contamination are present. Areas containing only noble gases are not posted as airborne areas since noble gases present an external instead of an internal exposure concern. No problems were noted.

No violations or deviations were identified.

6. External Exposure Control and Personal Dosimetry

The inspectors reviewed the licensee's external exposure control and personal dosimetry programs, including: change in facilities, equipment, personnel, and procedures; adequacy of the dosimetry program to meet routine and emergency needs; planning and preparation for maintenance and refueling tasks including ALARA considerations; required records, reports, and notifications; effectiveness of management techniques used to implement these programs and experience concerning self-identification and correction of program weaknesses.

Exposure records of plant and contractor personnel for January 1985 to date were selectively reviewed. No exposures greater than 10 CFR 20.101 or administrative limits were noted. Total exposure for 1984 was about 530 person-rem. Total exposure for 1985 through May 1, 1985, was about 40 person-rem.

The licensee recently received NVLAP accreditation for their TLD dosimetry program. The dosimetry categories accredited include accident, mixed photon, and neutron.

Normal access to the radiologically controlled area (auxiliary building) is through Door 105A on the 611-foot elevation. Other access points to the auxiliary building include Door 117 in the track alley on the 625-foot elevation, Door 168 on the 590-foot elevation, and Doors 162A and 195 on the 625-foot elevation. Procedure 7.04 requires that all normal ingress and egress from the controlled area be through Door 105A. Door 117 is to be used only after making prior arrangements with a radiation safety supervisor, and doors 162A, 195, and 168 are to be used only in an emergency or for nonroutine access after making prior arrangements with radiation safety. These controls are imposed to help prevent the removal of material and equipment from the radiologically controlled area without receiving the proper release surveys (see Section 7) and to monitor worker access for exposure control purposes.

Through discussions with licensee employees and monitoring of Door 168 key card reader usage, the inspector determined that Door 168 is routinely used for auxiliary building ingress and egress under nonemergency conditions without receiving prior approval from the radiation safety office. According to licensee representatives, Doors 162A and 195 have also been used for unauthorized auxiliary building access. Although the unauthorized use of these doors was common knowledge among the workers and all levels of plant management, no substantive corrective action has been taken. According to radiation safety staff members, there was reluctance to enforce the procedural requirements because of the perception that doing so would be viewed as an unnecessary barrier to performance of work by other plant groups. Even though plant management had apparently accepted routine use of these doors for auxiliary building access, the plant procedure had not been changed or additional access controls imposed to allow this practice. Routine use of Door 168 for auxiliary building access is a violation of Technical Specification 6.11, which requires adherence to radiation protection procedures. (255/85010-04)

Procedure 7.04 allows workers to log in prior to the first entry of a work shift and log out after the last entry if authorized on the radiation work permit (RWP). During this inspection, none of the current RWPs authorized this log in/out option. However, nearly all workers were using this optional log in/out method. In addition, Procedure 7.04 states that workers will normally log in and out of the controlled area at the auxiliary building dose control point. The cognizant Radiation Safety Supervisor may authorize workers to be logged in and out at other locations as necessary and the Staff Health Physicist may authorize, in writing, specific groups of persons to log themselves in and out. The auxiliary operators keep their dose control cards in the turbine building and are allowed to log themselves in and out of the controlled area. However, no written authorization that would allow this practice could be located. When questioned about this matter, a radiation safety representative stated that the operators were allowed to keep their cards in the alternate location to minimize complaints about the access control system. The apparent reason for the operators desire to locate their dose control cards away from the auxiliary building control point was to allow them easier access to the radiologically controlled area through unauthorized access points. Failure to follow the access control procedure is a violation of Technical Specification 6.11, which requires adherence to radiation safety procedures. (255/85010-04)

On April 29, 1985, two workers entered the radiological controlled area near the SRW tank to perform instrument surveillance. This area is posted as a radiation area (posted area) and recent surveys indicate dose rates of up to 100 mrem/hr on contact with the tank. The workers were wearing their TLDs, but were not wearing self-reading dosimeters. The Senior Resident Inspector, who was present to observe the surveillance, asked the workers which RWP they were working under. The workers replied that it had been decided within their department that an RWP was not needed. Procedure 7.04 requires that persons entering posted areas be listed on an RWP and wear a low range self-reading dosimeter. The radiation safety office did not agree that an RWP was not needed for this work. Failure to follow the access procedures is a violation of Technical Specification 6.11, which requires adherence to radiation safety procedures. (255/85010-04)

One violation with three examples was identified.

7. Control of Radioactive Materials and Contamination, Surveys, and Monitoring

The inspectors reviewed the licensee's program for control of radioactive materials and contamination, including: changes in instrumentation, equipment, and procedures; effectiveness of survey methods, practices, equipment, and procedures; adequacy of review and dissemination of survey data; effectiveness of methods of control of radioactive and contaminated materials; and management techniques used to implement the program and experience concerning self-identification and correction of program weaknesses.

The licensee recently reinstituted a program for tracking plant contaminated areas. A program for tracking contaminated areas was implemented for a short period in 1983 by the plant's first ALARA Coordinator. When this individual left, the contaminated area tracking stopped. Currently, about 50 percent of the auxiliary building is contaminated. This should improve if current efforts to repair plant leaks continues. No trends have been established due to a lack of data.

During facility tours, the inspector noted numerous minor leaks from pipe fittings and valves in radioactive systems. Most of these leaks have been identified as needing repair and the necessary work orders have been written. An extensive backlog of these work orders exists. Some progress in reducing this backlog has been made through the use of contracted maintenance workers, but many leaks, which are contributing to the overall poor radiological condition of the plant, remain unrepaired. During discussions with licensee representatives, the inspector stated that these leaks will continue to contaminate the plant resulting in increased worker exposures, increased radiation protection manpower to support work in the resulting contaminated areas, and increased radwaste volume. This matter was discussed during the exit meeting and will be reviewed further during a future inspection. (255/85010-05)

The inspector conducted a survey of several areas outside the radiologically controlled areas of the plant to determine the effectiveness of the licensee's program for controlling the release of contaminated material from the radiological controlled areas. Areas surveyed included sections of the turbine building, machine shop, tool crib, and outdoor areas. Contaminated material found included a 20-foot ladder found outside the loading dock area of the machine shop which measured about 8,000 dpm/100cm² removable contamination and about 150,000 dpm/100cm² fixed contamination, two pieces of staging located in the condenser pit area which measured about 140,000 dpm/100cm² fixed contamination, and a respirator in a contractor work shop which measured about 2,000 dpm/100cm² fixed contamination. In response to the results of these surveys, licensee technicians surveyed other areas outside the radiological controlled areas. Several contaminated items, including hand tools, a rigging strap, and a drop light, were found. Procedure HP 6.33 requires that contaminated materials be labeled "Caution - Radioactive Material." None of the contaminated items found by the inspector or the technicians were so labeled. This is a violation of Technical Specification 6.11 which requires adherence to radiation protection procedures. (255/85010-06)

During a facility tour, the inspector observed a contractor employee exiting the controlled area through access control carrying a canvas bag containing hand tools. The worker placed the tools on the floor while he used the portal monitor and then proceeded to leave the area with the bag of tools. By questioning the worker, the inspector determined that the tools had not been surveyed for contamination as required by Procedure HP 2.14 and postings at the controlled area exit. The worker then contacted a radiation protection technician who surveyed the tools. No contamination was found. Failure to have the tools surveyed before

removing them from the controlled area is a violation of Technical Specification 6.11 which requires adherence to radiation protection procedures. (255/85010-06)

The inspectors used an NRC beta source set to check the sensitivity of the NNC portal monitors installed at the exit of the gatehouse. Only occasional alarms were received when a $5E+5$ dpm cesium-137 source was passed through the detectors. This is about one-fourth the sensitivity specified in the manufacturer's technical data. One of the two monitors appeared to be significantly more sensitive than the other. Based on these results, it appears that improvements are needed in the portal monitor sensitivities. A procedure revision for this purpose will be implemented. This matter will be reviewed during a future inspection. (255/85010-07)

One violation with two examples was identified.

8. Facilities and Equipment

The inspector toured radiation protection facilities, observed radiation protection equipment in use, and discussed plans for improving access control facilities and equipment with the health physics staff. No problems were noted.

No violations or deviations were identified.

9. IE Information Notice No. 85-06

The inspectors reviewed licensee action taken in response to IE Information Notice No. 85-06, Contamination of Breathing Air Systems. Health physics personnel were aware of the contents of this notice. No action is planned. No problems were noted.

No violations or deviations were identified.

10. Resin Transfer Allegation

Inspection Report No. 50-255/84004(DRSS) documents the inspector's review of this allegation. However, the inspector was unable to contact the alleged in order to resolve the following two questions before issuance of the report:

1. The alleged implied in his letter to RIII that the hose clogging and cone formation problems he described had occurred on at least two separate occasions. The onsite review identified only one such occasion.
2. The alleged implied in his letter to RIII that the resin cask was overfilled on at least one additional occasion. The onsite review did not identify any overfilled cask occurrence.

On February 26, 1985, the inspector contacted the allegor by telephone and discussed these items with him. Although he claimed to have heard rumors of similar clogging and cone formation problems from other workers, he could not provide any specifics and stated that he had only been involved in one such incident. Also, the allegor stated that his reference to an overfilled cask may have been misleading in that he was actually referring to the resin cone formation in the cask rather than a separate occurrence. In addition to discussing these two matters, the inspector briefly reviewed the findings with the allegor. He appeared to be satisfied with the results of the review. This matter is considered closed.

11. Exit Meeting

The inspectors met with licensee representatives (denoted in Section 1) at the conclusion of the inspection on May 2, 1985. The inspector summarized the scope and findings of the inspection. The inspector also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspectors during the inspection. The licensee did not identify any such documents/processes as proprietary. In response to certain matters discussed by the inspectors, the licensee:

- a. Acknowledged the procedure violations. (Sections 6 and 7)
- b. Acknowledged that radiation protection procedure adherence by all plant groups is needed to improve performance in the radiological controls area. (Sections 3, 6 and 7)
- c. Acknowledged the inspector's comments related to the licensee's January 11, 1985 technical specification change request. (Section 4)
- d. Agreed that a personnel turnover problem exists in the radiation safety group, but could offer no solutions to the problem. (Section 4)
- e. Agreed that technician staffing level reductions should parallel reductions in work load as plant's material condition improves. (Section 4)
- f. Stated that efforts to reduce the number of leaks that are contributing to the poor radiological conditions at the plant would continue. (Section 4)