U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-255/87029(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, Michigan

Inspection Conducted: November 3 through December 1, 1987

Inspectors: E. R. Swanson

R. C. Kazmar

N. R. Williamsen

Approved By: B. L. Burgess, Chief
Reactor Projects Section 2A

12/16/87
Date

Inspection Summary

Inspection on November 3 through December 1, 1987 (Report No. 50-255/87029(DRP))
Areas Inspected: Routine, unannounced inspection by resident inspectors and Region III staff of followup of previous inspection findings; operational safety; maintenance; surveillance; physical security; radiological protection; reportable events; and Regional requests.
Results: Of the areas inspected one violation and one unresolved item were identified. The violation involved the operating practices which permitted an incorrect valve lineup-check procedure to be used seven times without being discovered. The unresolved item concerned the diesel fuel oil storage tank level instrument which, by being in error, allowed the plant to operate in violation of the Technical Specification requirements for about nine days.

DETAILS

1. Persons Contacted

Consumers Power Company (CPCo)

D. P. Hoffman, Plant General Manager
*J. G. Lewis, Technical Director
*W. L. Beckman, Radiological Services Manager
*R. D. Orosz, Engineering and Maintenance Manager
*R. M. Rice, Operations Manager
*D. W. Joos, Administrative and Planning Manager
*C. S. Kozup, Licensing Engineer
*D. J. Malone, Licensing Analyst
*R. E. McCaleb, Quality Assurance Director
*R. A. Fenech, Operations Superintendent
*R. A. Vincent, Director, Plant Safety Engineering
T. J. Palmisano, Plant Engineering Supervisor
K. E. Osborne, Plant Projects Superintendent
*R. W. Phillips, Jr., Property Protection Operations Supervisor

*Denotes those present at the Management Interview on December 1, 1987.

Other members of the Plant staff, and several members of the Contract Security Force, were also contacted briefly.

2. Followup on Previous Inspection Findings

(Closed) Open Item 255/86035-01(DRP): Following the repeated tripping of the variable speed coolant charging pump P-55A due to low oil pressure upon starting, the licensee increased the time delay, rebuilt the fluid drive unit, and committed to initiating periodic preventive maintenance on the fluid drive. Preventive maintenance has been initiated with an interval of twelve months.

(Closed) Open Item 255/86035-02(DRP): Coolant charging pump P-55B failed to start on two sequential attempts, due to low lube oil pressure trips. The licensee has completed a modification to pumps P-55B and P-55C which included new time delay relays with the time delay circuit for the low pressure trip set for 50 seconds, rather than the original ten second delay. The manufacturer was consulted on this change.

(Closed) Open Item 255/86035-04(DRP): Initiate a preventive maintenance program of condenser hotwell cleaning during each refueling outage. When condensate recirculation valve CV-0730 showed erratic behavior, the licensee refurbished the valve and initiated a program of preventive maintenance on the valve. The licensee also committed to a program of cleaning the condenser hotwell each refueling outage. This has been done, and the hotwell cleaning Periodic Activity Control Sheet was initiated (CDS-014).

(Closed) Open Item 255/86035-05(DRP): The erratic behavior of the condensate recirculation valve CV-0730 (see Open Item No. 255/86035-04(DRP), above) caused the licensee to commit to a preventive maintenance program on the feedwater recirculation valve. This has been done and the Periodic Activity Control Sheet identification is CDS-008. This valve will be rebuilt every other outage.

(Closed) Open Item 255/86035-06(DRP): Revise the guidance for the preparation of Preventive Maintenance instructions (PM's) so as to require consideration of limited service life. The corrective actions for a failure of the diaphragm on an atmospheric steam dump valve revealed this broader issue. That is, there was no specific consideration given to the periodic replacement of diaphragms and other such components, except as would be determined from equipment performance history. The licensee agreed to factor in vendor information as appropriate. The guidance for the preparation of PM's has now been revised, per Maintenance Technical Memorandum No. 87-02 dated February 2, 1987. This memorandum requires that as PM's are being developed, O-rings and rubber diaphragms, etc., shall be replaced on a periodic basis and vendors or System Engineers should be contacted to determine the service life.

(Closed) Open Item 255/86035-24(DRP): Rebuild and install spare condensate pump P-2A. Installation of a spare condensate pump, which was rebuilt with redesigned stiffners, originally scheduled for the 1988 refueling outage, was completed during the Fall 1987 maintenance outage.

(Closed) Open Item 255/86035-25(DRP): Test condensate pumps' sumps for ground water leaks and repair as required. In the 1985-86 refueling outage, when condensate pump P-2A was started, the initial water chemistry was poor, indicating that there might have been ground water leakage in the pump's sump or "well." The top of the well is at elevation 570. Lake Michigan water level is about 582 feet. The well goes down approximately 30 feet more, from the 570 level. During the 1987 fall maintenance outage, when condensate pump P-2A was removed, the well was pumped down to about one inch of free-standing water, in preparation for anticipated repairs which would include sand-blasting and sealing/painting.

However, there was enough fixed contamination on the sides of the well (approximately 500 cpm above background) that the decision to sand-blast was called into question, since that would have made the contamination airborne. The sandblasting and repairing was cancelled based on the following: (1) visual inspection revealed no major problems, (2) the one inch of water in the bottom was carefully monitored during the three or four day inspection period and the water level never increased, (3) the sides of the well remained perfectly dry, and (4) in the re-start in April 1987, there had been no problems with secondary chemistry. Following restart from the 1987 maintenance outage, the water chemistry, again, showed no indications of ground water inleakage.

(Closed) Open Item 255/86035-28(DRP): Establish yearly preventive maintenance (PM) to overhaul the hotwell sample pumps and the radwaste caustic injection pumps. All four pumps involved (P-64A, P-64B, P-100A and P-100B) have been scheduled on a 12 month interval for preventive maintenance. Maintenance on P-64A, P-64B and P-100A was completed during or just prior to the 1987 maintenance outage. Preventive maintenance on the remaining pump is scheduled for the near future.

(Closed) Open Item 255/86035-31(DRP): Evaluate the need to upgrade or replace the positioner and controller, and implement shutdown preventive maintenance (PM) on the Moisture Separator Drain Tank Valves CV-608 and 609. New positioners have been installed and calibrated and valves have been cycled to verify correct operation. A new blowdown valve has been added to the CV-608 and CV-609 air supply line and air leakage checks were performed. The Executive Review Board approved excluding these valves from a quarterly PM after having decided that PM on these valves while at power posed an unacceptable risk of a main feedwater transient occurring. Justification for continued operation was based on the installation of a new instrument air dryer, the aforementioned blowdown valve, and the scheduled calibrations which are completed each refueling outage.

(Closed) Open Item 255/86035-35(DRP): Replace autoclave gaskets on 19 control rod drives (CRDs) by the end of the 1988 refueling outage. This item was completed by the end of the Fall 1987 maintenance outage. A review of Work Orders shows that the remaining 19 CRD utoclave gaskets are now the improved type.

(Closed) Open Item 255/86035-39(DRP): Because of problems and failures with the Secondary Position Indicators (SPI) for the control rods, the licensee committed to replacing the SPIs during the 1988 refueling outage. All of the SPIs were removed and an improved replacement was installed during the Fall 1987, maintenance outage. The inspector reviewed control room indications of the SPIs and of the Primary Indication Position (PIP) system, and reviewed completed Work Orders, test procedures, and piping and instrumentation drawings. All 45 of the SPIs satisfied the calibration test (RO-22) requirement of being within plus/minus two inches of the position indicated by the PIPs. However, on 16 of the SPIs, the switches which trigger the red lights for "Upper Electrical Limit" in the control rod position light matrix in the Control Room are not operating. (Note that the control rod drive motor upper limit electrical protection comes from micro-switches on a mechanical drive, not from the SPIs.) The licensee stated that the problem was presumably caused by a three-eighths inch spacer which was needed by the previous model of SPI, but which was apparently unnecessary for the improved model. Work Requests have been written to correct this facet of SPI operation during the next refueling outage.

(Closed) Open Item 255/86035-45(DRP): Remove or replace boronometer and associated instruments. The boronometer is currently not in use and the alarm has been blocked from the main control room in order to avoid operator distraction. Due to expense and exposure of removal, the licensee decided to abandon the boronometer in place.

(Closed) Open Item 255/86035-46(DRP): Refurbish Cooling Tower Pumps P-39A and P-39B. Originally scheduled to be completed by the end of the 1988 refueling outage, all cooling tower pumps were completely overhauled during the Fall 1987 maintenance outage.

(Closed) Open Item 255/86035-54(DRP): Replace Appendix R emergency lighting units. Corrective actions reviewed by the inspector includes the replacement of 12-watt bulbs with 7-watt halogen bulbs to increase battery life and ensure the required light-hour capacity. In addition, 25 batteries were replaced and a preventive maintenance program was implemented to include replacement of batteries five years or older, visual inspection, periodic charging, and load/voltage readings and testing to verify lamp illumination.

(Closed) Open Item 255/86035-63(DRP): Permanently shield the shutdown heat exchanger and remove existing hot spots. The review of licensee's survey by the inspector determined that the hot spot has been removed and the licensee's planned action to shield the heat exchanger will not be required.

(Closed) Open Item 255/86035-71(DRP): Repair or replace containment spray (isolation) valves CV-3001 and 3002. Work orders for both valves were reviewed by the inspector which indicated that each valve has been repaired and tested for acceptable leakage rates.

(Closed) Open Item 255/86035-74(DRP): Replace diesel fire pump flywheels. Flywheels on fire pump P-9B and P-41 have been replaced and dye penetrant testing of the crankshaft and of the old flywheel did not indicate any cracking.

(Closed) Open Item 255/86035-86(DRP): Review, re-determine, and document the stroke-time requirements of the steam supply valves CV-0522-A and CV-0522-B for the turbine-driven auxiliary feedwater pump. The inspector reviewed completed Work Orders and completed inspection Procedure RO-97. There was no change required for valve CV-0522A, which is a manually actuated valve for backup steam supply to the auxiliary feedwater turbine. Valve CV-0522B opens automatically when there is initiation of the auxiliary feedwater system automatic start, under the condition that motor-driven pumps P-8A and P-8C fail to start or fail to provide the required auxiliary feed flow within 31 and 60 seconds, respectively. The timing sequence for valve CV-0522B has been modified so that after the above-mentioned delay of 60 seconds, the valve is given a signal to open and the stroke time is 90 seconds plus/minus 20.

When the valve has come off its seat about one-fourths inch, a signal from valve CV-0522B activates the condensate-side flow control valve. The required stroke times have been documented and the performance of test Procedure RO-97 has shown that the results are within the acceptance criteria. Specifically, the test which was run March 24, 1987, showed an overall time to reach 100 gpm from pump P-8B of 105 seconds which is within the acceptance criteria of 120 seconds.

(Closed) Open Item 255/86035-89(DRP): Establish a preventive maintenance program for adjusting the packing on pressurizer spray valves (V-1057 and V-1059). Inspection, repair, and repacking of the above valves is scheduled to be done each refueling outage, under activity identification PCS-042.

(Closed) Open Item 255/86035-92(DRP): Before the end of the 1988 refueling outage, disassemble and perform preventive maintenance (PM) on either the P-50A or P-50C primary coolant pump motor; repair the motor bearing temperature indicators; and determine whether the other primary coolant pump should be similarly maintained in the 1989 refueling outage. Preventive maintenance, but without disassembly, was done on the motors for pumps P50-A, P50-B and P50-C during the 1987 fall maintenance outage. This PM included bearing inspection, inspection and replacement of five bearing temperature indicators, and filtering the oil. In a letter to the NRC dated October 30, 1987, which contained an update on action items from the 1986-1987 maintenance outage, the licensee stated that the plans are to purchase a spare motor and then swap one motor out for repairs, each refueling. This plan will take effect after a spare can be purchased, tentatively scheduled for 1989.

(Closed) Open Item 255/86035-119(DRP): Place Service Water System (SWS) pumps on a periodic inspection program. Review of the Advanced Maintenance Management System indicates that one service water pump should be re-built each refueling outage, subject to a determination by the system engineer. Choice of the pump will be based on pump trending and length of time since the previous re-build. If maintenance history indicates that the criteria of all three pumps being rebuilt within three fuel cycles (per D-PAL-85-2028) has been met, the rebuild may be delayed in the absence of any contraindications.

(Closed) Open Item 255/86035-130(DRP): Install an audible alarm in the control room for turbine panel trouble. Review of work order No. 24606455 by the inspector verified that Facility Change request FC-692 "Alarm for Turbine Control Panel Problems" was completed in September of 1987 along with applicable testing.

(Closed) Violation 255/87014-01(DRP): The eight containment isolation valves for the Hydrogen Monitoring System had not been fully tested per ASME Boiler and Pressure Vessel Code Section XI, Articles IWV-3400 and -3300, for active Category A valves as defined in IWV-2000, as required by 10 CFR 50.55a(g)(4)(ii). Article IWV-3400 requires valve exercising tests including the measuring of valve stroke times, once every quarter. In connection with a daily surveillance of containment hydrogen concentration, the valves had been exercised daily but the valve stroke had never been timed subsequent to system installation in 1984; now, the eight valves have been added to surveillance Procedure No. QO-05 so that they will be tested quarterly and the testing will include valve stroke timing. The test was performed August 10, 1987, and the valves in question were found to be satisfactory. Article IWV-3300 requires valve position indicator verification. Although the licensee takes credit for verification of valve-open indication during the daily surveillance of

containment hydrogen concentration, the definitive test of valve-open indication occurs during refueling outages when the system is tested per. Proc. No. RI-81, "Containment Hydrogen Monitoring System Test." Valve-closed indication is verified during the the performance of RO-32, performed once every two years. During the review of the vendor manual it was noted that a monthly check, or calibration, of the valve controller zero and span is recommended; currently this check is done on a refueling frequency.

(Open) Unresolved Item 255/87022-04(DRP): As committed in the licensee's November 6, 1987 letter concerning the Low Temperature Overpressure Protection (LTOP) system, a followup letter was submitted on November 19, 1987 outlining the licensee's intermediate and long-term plans. Commitments made include the submittal of appropriate Technical Specifications by January 5, 1988. The licensee plans to determine the appropriate method of assuring long-term 10 CFR 50, Appendix G compliance before April 1, 1988.

No violations or deviations were identified.

3. Operational Safety

a. Routine Inspections

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 and alarms, log sheets, turnover sheets, and equipment status boards were routinely checked against operating requirements. Pump and valve controls were verified to be proper for applicable plant conditions. On several occasions, the inspectors observed shift turnover activities and shift briefing meetings.

Tours were conducted in the turbine, containment, 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. A portion of the inspection activities were conducted at times other than the normal work week.

An ongoing review of all licensee corrective action program items at the Event Report level was performed.

b. Fire-Main Leak

At 10:55 a.m. on November 6, 1987, a break in an underground ten-inch pipe on the fire protection system resulted in the securing of all three fire system pumps, which had automatically started at 11:00 a.m., until the break could be isolated at about 11:15 a.m. At 11:40 a.m., the fire system was repressurized and returned to normal operating status with the exception of the isolated section.

At that time, it was thought that all fire protection equipment was operable based on review of fire system piping diagrams. Following shift turnover at 4:00 p.m., the on-coming shift proceeded to verify the lineup and condition of the fire system and found one additional valve closed. This valve isolated a yard hydrant, but had no safety significance. At 5:20 p.m. on the same day, it was discovered that a fire header was depressurized, rendering 12 fire hose stations and three sprinkler systems inoperable due to the isolation of the break. Fire tours were commenced at 5:45 p.m. and the supplying of backup fire suppression equipment was completed at 11:20 p.m. Also, within an hour and a half of the discovery of the depressurized fire header, the above fire hose stations and sprinklers had pressure restored by inter-connecting the header with a yard hydrant, using several fire hoses. The analysis to show that this inter-connection restored operability was completed by the licensee on December 3, 1987.

The delay in establishing compensatory measures for the inoperable portion of the fire protection system was a result of two factors. First, the operators who read the piping drawing to establish isolation of the break believed that the drawing showed pipe connections where, in fact, there were none. The inspector later viewed this same drawing; the drawing was incorrect in that it implied a pipe connection where physically there was none. Furthermore, when fire system pressure was restored, the operators assumed that the system was fully operable and did not verify by testing that all portions of the system were, in fact, restored. It was not until about 5:20 p.m. when an auxiliary operator discovered that portions of the system were still isolated. The second delay in establishing the compensatory measures required by Technical Specification 3.22 was due to inadequate drawings and/or preplans; therefore, beginning at 5:20 p.m. walkdowns of the system were required to determine how best to supply backup suppression to the inoperable stations.

Repairs to the pipe break were completed on November 10, 1987. At the request of the NRC a hydrostatic test of the repaired system was completed on November 11, 1987. An evaluation of the cause of the break determined that it was due to a pipe support which was probably installed temporarily during construction of the pump house. This support prevented the pipe from settling with the surrounding soil as the heavy loads were transported over the roadway, resulting in stress fracture of the pipe. Other corrective actions planned include the addition of at least one fire department connection aud three system interconnection valves and piping to facilitate future fire main restoration. The erroneous drawing has also been corrected.

Although the licensee violated the one-hour window for establishing compensatory measures when fire hose stations and sprinklers are inoperable (Technical Specification 3.22), a Notice of Violation was not issued because the licensee satisfied the requirements of 10 CFR 2, Appendix C. Specifically, the licensee identified the

drawing error and the fire-main isolation problem, corrective actions were taken within an hour and one-half to restore the system, the violation was not a result of prior ineffective corrective actions, and the event was properly reported.

c. Personnel Injury

Shortly after 5:00 p.m. on November 11, 1987, while the reactor was in hot shutdown near the end of a maintenance outage, a high pressure air system automatic oiler for a feedwater block valve operator disintegrated. Metal shrapnel from the exploding oiler struck two workers who had been standing nearby observing the operation of the feedwater block valve. One worker was hospitalized overnight for surgical removal of a piece of shrapnel from his cheek, and the other worker did not require medical treatment.

This event ended a record of over three and one-half million man hours without a lost time injury at Palisades. As a temporary corrective measure, oilers similar to the one that failed were either removed and replaced with straight pipes or else covered with temporary shields. Cause of the failure is still unknown since the oiler was rated at 250 psi and the typical pressure for the high pressure air system was 180 psi. The licensee's investigation of the root cause is still in progress. The inspector followed the licensee's corrective actions and based on the adequacy of these actions had not identified any regulatory concerns.

d. Return To Service

The scheduled 45-day maintenance outage was completed in 43 days, two days ahead of schedule. The reactor went critical at 7:48 p.m., November 12, 1987. Power operation was resumed shortly thereafter and at 5:58 a.m., November 13, 1987 they synchronized and tied on to the grid. Power escalation proceeded, with hold points for chemistry and valve adjustments, reaching full power on November 17, 1987.

This outage, which began October 1, 1987, was the first specific maintenance outage for Consumer Power's Palisades Plant. The outage reflects Consumer Power's decision to accelerate their improvement program for plant material condition. The outage included the completion of such tasks as: valve work including limitorque valve operator overhaul/testing (MOVATS); containment local leak rate testing and tendon testing; atmospheric dump valve replacement; and turbine electro-hydraulic fluid system upgrade. Among the indicators of the success of the outage are: the completion of about 1000 work orders on schedule, a further reduction in rework required, and the setting of new daily generation records on November 26 and 27, 1987, as well as a weekly generation record.

e. Containment Valve Lineup Discrepancy

On November 16, 1987, operators identified a discrepancy/ typographical error in the existing lineup procedure MO-29, "Engineered Safeguards Lineup", which specified a containment isolation valve in the "O" (for open) position when the correct specification should have been "LC" (for locked closed). This procedure had been performed nine times on a monthly basis while operating since the typographical error had been introduced in 1986.

The error in the procedure had been identified during the second performance of MO-29 in 1986 by operators who then initiated a temporary change notice (TCN) to the procedure. When the TCN was reviewed by the Plant Review Committee (PRC) it appeared to be an improper change to the acceptance criteria and was disapproved. As a result of mis-communication between the PRC chairman and the Operations Superintendent, the correction was not re-initiated and the procedure reverted to its incorrect state. A further opportunity to correct the situation was missed when the disapproved TCN was routed back to the originator. It is not clear why the originator did not followup on the procedure correction.

The licensee believes, and the inspector agrees, that the one-inch test-line valve which was found locked closed and capped was most likely being verified as locked closed, and the checklist was being initialed erroneously. Reasons for this belief include: other similar containment isolation valves in the vicinity were indicated correctly on the checklist as "LC" and positioned as such; the valve is manipulated only during outages to perform local leak rate tests and then positioned and verified locked closed; two other lineup checklists were also performed prior to startup from lengthy outages; the format of the MO-29 checklist had the symbols for specified valve position on the far left of the sheet and the sign-off column on the far right side of the sheet; there was no reason for an operator to suspect that the procedure had been changed; and the valve checks were done in a high radiation and contamination area, thereby requiring protective clothing and expeditious work.

Final corrective actions by the licensee are still being formulated, but at present include establishment of an operator-management working group to improve valve lineup practices and revise the lineup checklists to address human factors concerns. A complete, heavily supervised verification of the valve alignment procedure and valve alignments was conducted with no additional errors identified.

The inspector concluded that a violation of containment integrity did not exist, but that the procedural requirements of Administrative Procedure 4.02 "Control of Equipment Status" were violated as a result of inattention to detail on the part of several auxiliary operators. This procedure requires that a valve verified in a position different from the checklist shall require

notification of the Shift Supervisor (Section 5.3), and that the valve be physically moved in the closed direction to verify that it is in the open condition and then locked to prevent closure. Since the valve was closed, valve checks were clearly not done in accordance with the requirements of MO-29 and A.P. 4.02. For seven of the monthly valve-position verifications, the discrepancy between the specified position in the procedure and the actual valve position did not result in notification of the Shift Supervisor as was done in May of 1986 and November 16, 1987. A violation is set forth in the Appendix (255/87029-01(DRP)).

f. Low Fuel Oil Tank Level

At 2:58 a.m. on November 22, 1987, the licensee declared an Unusual Event and made preparations to shut down the plant as a result of the discovery of the Diesel Generators' fuel oil storage tank (T-10) level being below the Technical Specification (TS) minimum. The applicable TS 3.7.1, does not include any action window for exceeding the Limiting Condition for Operation; hence, a plant shutdown was initiated under TS 3.0.3. The actual low level was identified when a control room operator suspected the accuracy of the level instrument while reviewing logs and requested a dip-stick reading of the tank. It was found to contain 12,000 of the required 16,000 gallons of fuel oil. This quantity, plus the volume stored in each diesel's day tank would provide fuel for both diesels to run fully loaded for about five and one-half days.

The shutdown was initiated, appropriate notifications were made, and fuel oil was ordered. Power reduction was suspended at 5:24 a.m. when the fuel oil trucks arrived onsite. At 7:36 a.m. enough fuel had been added to the storage tank to meet the TS requirements and the Unusual Event was terminated.

The licensee was planning to de-rate to make adjustments and test the main-turbine valves. This activity was then completed and the unit returned to full power.

Corrective Actions to prevent recurrence included a procedure change requiring a daily dip-stick reading of the tank until a more reliable instrument can be installed and calibration of the installed instrument (LIA-1400). Historically, the reliability of the T-10 level instrument has not been good. It appears that repairs made in 1984 were expected to solve the moisture problem experienced by the capacitive level instrument. After trending and comparing the actual dip-stick level to the instrument for an extended period, the requirement to dip-stick the tank was dropped in 1986. Because there was prior experience and corrective action associated with the instrument, this item will be carried as Unresolved Item 255/87029-02(DRP) until it is determined precisely what prior corrective actions had been taken and why they were not effective in preventing recurrence. Also of interest is the criteria used for suspending the dip-stick measurement.

g. Containment Hydrogen Monitoring

During a routine inspection of the Control Room at about 2:30 p.m., November 24, 1987, the inspector observed a surveillance of the containment atmosphere hydrogen concentration using the Containment Hydrogen Monitoring System. The right channel instrument, AI-2401R, showed between 0.3 and 0.4 percent hydrogen and the left channel, AI-2401L, read off-scale low, indicating a possible malfunction. A review of the log for daily containment surveillances, which are routinely done by the A-shift at midnight, showed that this error on the left channel had been first observed by the A-shift during the morning of November 24, but no action had been taken to investigate, nor had a Work Request been initiated. The inspector noted that the daily surveillance procedure acceptance criteria specified a reading "less than the alarm setpoint" which was met, but the intent of demonstrating channel operability was not. The licensee has initiated corrective action to assure the future identification of channel malfunctions.

A Work Request was initiated and the instrument declared inoperable. Since one channel remained operable, no potential Technical Specification problem existed. Although proposed by the licensee and implemented under Standing Orders, Technical Specifications have not been issued for the Hydrogen Monitoring System.

No violations or deviations were identified.

4. Maintenance

The inspectors reviewed and/or observed the following selected work activities and verified whether appropriate procedures were in effect controlling removal from and return to service, hold points, verification testing, fire prevention/protection, radiological controls, and cleanliness where applicable:

a. Wiring check of breaker 152-107 (SPS-24706552).

b. Install turbine panel trouble alarm (FC-692, WO-24606455).

c. Permanent mounting of discharge pressure gauge for the High Pressure Safety Injection pumps (FC-735).

No violations or deviations were identified.

5. Surveillance

The inspectors 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 inspected:

a. MO-29 Engineered Safeguards Lineup

b. DWO-1 Daily Control Room Surveillance.

c. SHO-1 Operators Shift Surveillance.

No violations or deviations were identified.

6. Physical Security

The inspectors observed physical security activities at various locations throughout the protected and vital areas including the Central and Secondary Alarm Stations. Periodic observations of access control activities including proper personnel identification, badging and searches of personnel, packages and vehicles were conducted. The inspectors verified appropriate security force staffing and operability of search equipment. Protected and vital area boundaries were toured to verify maintenance of integrity. Illumination was verified to be adequate to support patrol and Closed Circuit Television (CCTV) monitor observations. CCTV monitor clarity and resolution were also observed. The inspectors periodically verified that appropriate compensatory measures were taken for degraded or inoperable equipment and breached boundaries.

At approximately 8:30 a.m. EST on November 20, 1987, a security search officer found a .25 caliber handgun in the cab of a contractor vehicle waiting to enter the protected area to pick up a trailer. The driver had denied having any weapons in the vehicle prior to the search being initiated. The weapon was corroded and no ammunition was found within the vehicle. The driver's access to the site was denied. The driver and weapon were turned over to state and local police.

No violations or deviations were identified.

7. Radiological Protection

The inspectors made observations and had discussions concerning radiological safety practices in the radiation controlled areas including: verification of radiation levels and proper posting; accuracy and currentness of area status sheets; adequacy of and compliance with selected Radiation Work Permits and high radiation procedures; and the ALARA (As Low AS is Reasonably Achievable) program. Implementation of dosimetry requirements, proper personnel survey (frisking) and contamination control (step-off-pad) practices were observed. Health Physics logs and dose records were routinely reviewed.

No violations or deviations were identified.

8. Part 21 Report

(Closed) Part 21 Item 255/84001-PP(DRP): The licensee inspected a Siemens-Allis No. MA-205B, Stored Energy Circuit Breaker, on February 21, 1984, and found an interference in the parts, such that the breaker could not be closed locally or remotely. The interference was due to the mis-orientation of the breaker indication wire hold-down device, which is not specified on the breaker design drawings. The licensee has 11 breakers of this type and further inspection showed that a total of four out of the 11 had interference problems.

The vendor was contacted and a permanent repair for the breakers was agreed upon and effected. Maintenance procedure No. SPS-E-4, "Maintenance for 4160/2400 Volt Switchgear" (Revision 2, March 16, 1984) has the revised instructions which reflect the repairs and the proper orientation of the indication wire hold-down device.

(Closed) A 10 CFR 21 report concerning degraded silicone rubber insulated cables was initiated by Sequoyah on October 10, 1987. Upon review for similar cables, Palisades engineers identified one, non-IE application of this cable for the Pressurizer heaters. The licensee plans to replace the suspect cable (WBS-43078) during the next refueling outage.

9. Compliance Bulletin 87-02

(Open) Bulletin 87-02: "Fastener Testing to Determine Conformance with Applicable Material Specifications" was issued on November 6, 1987 and requires the licensees of nuclear power reactors to provide certain information. The six requested actions include the selection of ten safety-related and ten non safety-related fasteners with their associated nuts for non-destructive and destructive testing. The inspector participated in the selection of 48 items from "off the shelf" stock on November 24 and 25, 1987. Additional review of the licensee programs for receipt inspection and material control will be reviewed in a future inspection.

10. Regional Requests

The inspector was requested to review the Byron Jackson TechAlert Bulletin 8707-80-008 with the licensee for applicability and planned actions. It was determined that the Bulletin was not applicable to Palisades Primary Coolant Pumps because they do not utilize mechanical seal injection. The inspector also determined that weekly radiochemical sampling is being performed which would identify leakage from any unlikely cracking problems in the pump thermal barrier.

11. 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 3.f of this report.

12. Management Interview

A management interview was conducted on December 1, 1987, following the conclusion of the inspection. The scope and findings of the inspection were discussed. The inspector also discussed the likely information 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.