January 11, 2002

Mr. Douglas E. Cooper
Site Vice President
Palisades Nuclear Plant
Nuclear Management Company, LLC
27780 Blue Star Memorial Highway
Covert, MI 49043-9530

SUBJECT: PALISADES NUCLEAR GENERATING PLANT
NRC INSPECTION REPORT 50-255/01-16(DRP)

Dear Mr. Cooper:

On December 29, 2001 the NRC completed an inspection at your Palisades Nuclear Generating Plant. The enclosed report documents the inspection findings which were discussed on January 3, 2002, with members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspector reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, the inspectors identified three issues of very low safety significance (Green) that were determined to involve violations of NRC requirements. However, because of the very low safety significance and because the issues were entered into your corrective action program, the NRC is treating these issues as Non-Cited Violations in accordance with Section VI.A.1 of the NRC' s Enforcement Policy. If you deny these Non-Cited Violations, you should provide a response with a basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector Office at the Palisades facility.

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Sincerely,

/RA/

Anton Vegel, Chief
Branch 6
Division of Reactor Projects

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

Enclosure: Inspection Report 50-255/01-16(DRP)

cc w/encl: R. Fenech, Senior Vice President, Nuclear
Fossil and Hydro Operations
L. Lahti, Manager, Licensing
R. Anderson, Chief Nuclear Officer, NMC
A. Udrys, Esquire, Consumers Energy Company
S. Wawro, Nuclear Asset Director, Consumers Energy Company
W. Rendell, Supervisor, Covert Township
Office of the Governor
Michigan Department of Environmental Quality
Department of Attorney General (MI)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-255
License No:	DPR-20
Report No:	50-255/01-16(DRP)
Licensee:	Nuclear Management Company, LLC
Facility:	Palisades Nuclear Generating Plant
Location:	27780 Blue Star Memorial Highway Covert, MI 49043-9530
Dates:	November 20 through December 29, 2001
Inspectors:	J. Lennartz, Senior Resident Inspector R. Krsek, Resident Inspector D. Nelson, Radiation Specialist, RIII J. Gavula, Reactor Inspector, RIII K. Coyne, Resident Inspector, D.C. Cook J. Maynen, Resident Inspector, D.C. Cook T. Madeda, Physical Security Inspector
Approved by:	Anton Vegel, Chief Branch 6 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000255/01-16 on 11/20 - 12/29/2001, Nuclear Management Company, LLC, Palisades Nuclear Generating Plant. Adverse weather protection and heat sink performance.

This report covers a 6-week routine inspection, a baseline physical security inspection, a baseline occupational radiation safety inspection, and a baseline biennial heat sink inspection. The inspections were conducted by resident and specialist inspectors.

A. Inspector Identified Findings

Cornerstone: Mitigating Systems

- Green. A Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the failure to promptly identify and correct conditions adverse to quality associated with the cold weather protection of the Condensate Storage Tank level instrumentation. The deficiencies associated with the insulation of the level instruments was identified during the previous cold weather inspection conducted by the inspectors in December 2000 and the condition adverse to quality was not corrected.

  The finding was considered to be more then minor because this condition was initially identified in December 2000, and the licensee failed to promptly identify and correct the condition adverse to quality. In addition, the failure of the Condensate Storage Tank level instrumentation could have a credible impact on safety. The issue was determined to be of very low significance (Green) by the significance determination process because there was no actual failure of safety-related components associated with the mitigating systems cornerstone. (Section 1R01).

Cornerstone: Initiating Events

- Green. A Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for failure to follow a preventative maintenance procedure step to inspect the head sprockets and sprocket tooth-inserts on the traveling screens for wear. Failure to follow this step contributed to the failure of the F-4B traveling screen.

  The issue was determined to be of very low significance (Green) by the significance determination process because, although the issue is a transient initiator contributor, the issue does not contribute to the likelihood of a primary or secondary system loss of coolant accident initiator, or the increase in likelihood of a fire or flood. (Section 1R07)

- Green. A Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the failure to promptly identify and correct deficiencies (wear) observed on the F-4B traveling screen boot-plate. Failure to

promptly identify and correct these deficiencies contributed to the failure of the F-4B traveling screen.

The issue was determined to be of very low significance (Green) by the significance determination process because, although the issue is a transient initiator contributor, the issue does not contribute to the likelihood of a primary or secondary system loss of coolant accident initiator, or the increase in likelihood of a fire or flood. (Section 1R07)

Report Details

A list of documents reviewed within each inspection area is included at the end of the report.

Summary of Plant Status

The plant remained in Cold Shutdown (Mode 5) for a corrective maintenance outage during the entire inspection period. The plant entered Mode 5 on June 21, 2001, because of a small leak from an axial crack on the Control Rod Drive Mechanism 21 pressure housing. The licensee completed root cause evaluations and replaced all 45 control rod drive mechanism pressure housings to correct the problem. Additional scheduled preventative and other required corrective maintenance activities were in progress when the inspection period ended.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity and Emergency Preparedness

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

The inspectors reviewed the implementation of the licensee's program for the onset of cold weather conditions. The inspectors walked down portions of the service water, auxiliary feedwater and emergency core cooling systems which were susceptible to the effects of cold weather conditions, and verified that the appropriate protection features were in place and operable for these systems. The inspectors also verified that the implementation of the licensee's cold weather protection procedures ensured that components were initially protected from cold weather effects and periodically monitored during the entire cold weather season.

The inspection incorporated discussions with the system engineers and operations personnel, and reviews of the applicable portions of Updated Final Safety Analysis Report.

b. Findings

The inspectors identified a Green finding that is being treated as a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to promptly identify and correct a condition adverse to quality associated with cold weather protection of the Condensate Storage Tank level instrumentation.

In December 2000, the inspectors identified to licensee staff that the insulation for the Condensate Storage Tank level instrumentation was in a degraded condition and may not be adequately protected for cold weather. Licensee staff initiated work requests to correct this condition adverse to quality. The level instrumentation provided a safety function to plant operators for routine Technical Specification surveillances and for the performance of operator actions during certain Emergency Operating Procedures, to

ensure an adequate volume of water was available for the auxiliary feedwater system during normal and accident conditions.

While performing a walkdown of the Condensate Storage Tank level instrumentation in November 2001, the inspectors again identified to licensee staff that the same degraded condition existed for the level instrumentation insulation. Licensee staff determined that while work requests had been written in December 2000 for this condition adverse to quality, the work requests had been canceled without repairing the degraded insulation for the level instrumentation. Licensee Staff initiated a new work request and the degraded insulation was repaired in December 2001.

The failure to promptly identify and correct deficiencies regarding cold weather protection of the Condensate Storage Tank level instrumentation was more than minor, in that, the issue could have a credible impact on safety. Specifically, the degraded insulation could increase the probability that the level transmitters would freeze during the upcoming cold weather season. Consequently, an inaccurate level indication for the safety related condensate storage tank could be used during plant operation including the conduct of Technical Specification surveillances. In addition, the level indications would be used by operators during the performance actions prescribed by certain Emergency Operating Procedures to verify adequate water supply to the auxiliary feedwater system.

The issue was determined to be of very low significance (Green) by the Phase 1 Screening Worksheet for the Mitigating Systems Cornerstone in the significance determination process because no actual loss of a safety function occurred.

10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” requires, in part, that measures be established to assure that conditions adverse to quality are promptly identified and corrected. Contrary to this, the licensee failed to promptly identify and correct deficiencies associated with the degraded insulation on the condensate storage tank level instrumentation when the issue was initially raised by the inspectors in December 2000. This violation is associated with a NRC identified inspection finding that is characterized by the significance determination process as having very low risk significance (Green) and is being treated as a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 50-255/01-16-01). This finding is in the licensee’s corrective action program as Condition Report CPAL0103934.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Equipment Alignment Walkdowns

a. Inspection Scope

The inspectors performed partial walkdowns of 125 volt vital DC power and the service water system utilizing plant procedure system checklists to verify proper system lineup while the redundant plant equipment was out of service. The inspectors verified that power was available, that accessible equipment and components were appropriately aligned, and that no discrepancies existed which would impact the safety function of the systems.

The inspectors also reviewed selected condition reports that had been entered into the licensee's corrective action program to verify that the corrective actions were reasonable and had been implemented as scheduled.

b. Findings

No findings of significance were identified.

.2 Semiannual Equipment Alignment Walkdown

a. Inspection Scope

The inspectors walked down the safety related mitigating plant equipment that was in service to minimize shutdown plant risk. The inspectors utilized the shutdown cooling equipment availability sheets and shutdown operation protected train equipment checklists to verify that the appropriate equipment was in service, and that accessible equipment components were correctly aligned. The inspectors also reviewed active maintenance work requests, active design and engineering issues, including known operator workarounds and temporary modifications, to verify that the safety function of the equipment was not impacted.

b. Findings

No findings of significance were identified.

1R06 Flood Protection

a. Inspection Scope

The inspectors reviewed and assessed flood protection measures for internal and external flooding events. The inspectors performed walkdowns of the following risk significant flood areas in the plant:

- Auxiliary Feedwater;
- Station Batteries;
- Charging Pumps;
- Containment Spray Pumps;
- Emergency Diesel Generators;
- 480 V Load Centers;
- Component Cooling Water Pumps;
- 480 V Motor Control Centers;
- Safety Injection Pumps;
- Service Water Pumps; and
- 2400 V Switchgear.

In addition, the inspectors reviewed applicable sections of the Updated Final Safety Analysis Report, design basis documentation, relevant plant and maintenance procedures, and completed work requests. Further, the inspectors reviewed condition

reports to verify that identified problems associated with flood protection activities were appropriately characterized and entered into the licensee's corrective action program.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

Regional specialist inspectors reviewed documents associated with maintenance, inspection and thermal performance testing of the component cooling water heat exchangers, and the emergency diesel generator jacket water and lube oil coolers. These heat exchangers and coolers were chosen based on having high risk achievement worths in the station's probabilistic safety assessment. While on site, the inspectors reviewed completed surveillances, associated calculations, instrument calibration records, and maintenance work orders and performed independent calculations to verify that these activities adequately ensured proper heat transfer. The inspector reviewed the documentation to confirm that the test methodology was consistent with accepted industry practices, that test acceptance criteria were consistent with design basis values, and that the test results appropriately considered differences between test and design conditions. The inspector also reviewed documentation to confirm that methods used to inspect the heat exchangers were consistent with expected degradation and that the established acceptance criteria were consistent with accepted industry standards. In addition, the inspectors reviewed condition reports concerning heat exchanger or heat sink performance issues to verify that the licensee had an appropriate threshold for identifying issues and to evaluate the effectiveness of the corrective actions to the identified issues.

b. Findings

The inspectors identified two Green findings that are being treated as Non-Cited Violations of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to follow a preventative maintenance procedure, and of 10 CFR Part 50, Appendix B, Criterion XVI, " Corrective Action," for the failure to promptly identify and correct a condition adverse to quality.

As part of a licensee initiative, in September 2000, it was identified that a preventative maintenance procedure to perform vendor-recommended inspections on the traveling screens had been canceled in 1990. The corrective actions for this problem included re-initiation of PPAC SWS026, "Traveling Screen Preventive Maintenance," which was completed under Work Order 24014799, on April 20, 2001. However, on December 3, 2001, traveling screen F-4B failed when a broken sprocket tooth-insert jammed between the basket carrying chain and the head sprocket.

Step 2 of the preventative maintenance procedure specified that the head sprockets and sprocket tooth-inserts be inspected for wear. After the traveling screen failed, the licensee's service water system engineer inspected the components and noted that the

head sprocket had broken through one of the sprocket tooth-insert bolt holes, which allowed the insert to be mispositioned. The condition of the break surface and remaining bolt indicated that this failure occurred several years ago. The NRC inspectors also observed the damaged components and agreed with the system engineer's determination. Based on this, the preventative maintenance activities were not accomplished in accordance with the PPAC SWS026 because existing damage had not been identified.

This failure to accomplish activities affecting quality in accordance with documented instructions was more than minor, because the inspectors considered it a contributing factor in the failure of the F-4B traveling screen. This issue could be reasonably viewed as a precursor to a significant event and, if left uncorrected, the same issue under the same conditions could become a more significant safety concern. The inspectors also determined that the failure of the traveling screens could cause or increase the frequency of a loss of service water initiating event.

The issue was determined to be of very low significance (Green) by the significance determination process because, although the issue is a transient initiator contributor, the issue does not contribute to the likelihood of a primary or secondary system loss of coolant accident initiator, or the increase in likelihood of a fire or flood.

10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality be accomplished in accordance with the documented instructions. Contrary to this, the licensee's inspection of the F-4B traveling screen sprockets and sprocket inserts completed on April 20, 2001, did not identify damaged components indicative of wear as specified in PPAC SWS026, Step 2. This violation is associated with a NRC identified inspection finding that is characterized by the significance determination process as having very low risk significance (Green) and is being treated as a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 50-255/01-16-02). This finding is in the licensee's corrective action program as Condition Report CPAL0103970.

Step No. 3 of this preventative maintenance procedure specified the inspection of the traveling screen's "boot plate" for wear. The work order summary noted that wear was observed on the "boot plate," and that the long term actions would include its repair or replacement. However, no additional corrective actions were taken to correct the problem and a condition report was not initiated to document this condition adverse to quality.

The failure to promptly identify and correct deficiencies (boot plate wear) on the traveling screens was more than minor in that the inspectors considered it a contributing factor in the failure of the F-4B traveling screen. This issue could be reasonably viewed as a precursor to a significant event and if left uncorrected, the same issue under the same conditions could become a more significant safety concern. The inspectors also determined that the failure of the traveling screens could cause or increase the frequency of a loss of service water initiating event.

The issue was determined to be of very low significance (Green) by the significance determination process because, although the issue is a transient initiator contributor, the issue does not contribute to the likelihood of a primary or secondary system loss of coolant accident initiator, or the increase in likelihood of a fire or flood.

10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures be established to assure that conditions adverse to quality are promptly identified and corrected. Contrary to this, the licensee failed to promptly identify and correct deficiencies (wear) observed on the F-4B traveling screen boot-plate during maintenance activities performed on April 20, 2001. This violation is associated with a NRC identified inspection finding that is characterized by the significance determination process as having very low risk significance (Green) and is being treated as a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 50-255/01-16-03). This finding is in the licensee's corrective action program as Condition Report CPAL0103865.

1R11 Licensed Operator Requalification Program (71111.11Q)

a. Inspection Scope

The inspectors observed plant simulator training sessions to assess the effectiveness of the licensed operators' training. The first training session reviewed recent changes to the Off Normal Procedures for the loss of preferred Alternating Current Buses Y10, Y20, Y30 and Y40. The inspectors verified that the objectives identified in the simulator exercise guides were satisfied during the training session.

The inspectors also observed licensed operator training in the plant simulator that was conducted to familiarize the operators with a plant modification that was completed on the emergency core cooling recirculation actuation system. The training session required the operators to implement revised emergency operating procedures and off normal operating procedures, and to operate new control panel switches that were installed during the modification. The inspectors verified that the training sessions were effective, and assessed the operator's ability to implement the revised procedures and ability to operate the new control panel switches in a timely manner to mitigate various simulated accident scenarios.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12Q)

a. Inspection Scope

The inspectors reviewed the licensee's Maintenance Rule Scoping Document for the following plant equipment designated as having high safety significance:

- Emergency Diesel Generator 1-2;
- Shutdown Cooling;

- 125 Volt Vital DC Power; and
- Service Water Traveling Screens

The inspectors reviewed the licensee's maintenance rule performance indicators associated with the system's maintenance rule category a(2) status. In addition, the inspectors discussed various technical issues with the applicable system engineer.

Further, the inspectors reviewed selected condition reports to verify that the identified issues were appropriately characterized and were dispositioned in accordance with the licensee's Maintenance Rule program. The inspectors reviewed selected condition reports to verify that designated corrective actions were reasonable and had been implemented as scheduled.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation (71111.13Q)

a. Inspection Scope

The inspectors reviewed shutdown safety risk assessments, Shift Supervisor logs and maintenance activity schedules to verify that the plant equipment necessary to minimize shutdown plant risk was operable and/or available as required. The inspectors randomly conducted plant tours to verify that the appropriate equipment was available for use during planned and emergent maintenance which included the following activities:

- scheduled testing of safety-related 125 volt battery ED-02 during a scheduled outage on the switchyard 345 KV rear bus;

- scheduled motor replacement for Service Water Pump P-7C concurrent with emergent corrective maintenance to the service water traveling screens;

- scheduled modifications to safety-related containment sump check valves concurrent with a scheduled outage on the switchyard 345 KV rear bus and emergent corrective maintenance to the service water traveling screens; and

- scheduled surveillance testing of Emergency Diesel Generator 1-2, concurrent with scheduled modifications to emergency core cooling recirculation actuation circuitry and emergent corrective maintenance to the service water traveling screens.

The inspectors discussed the shutdown operation equipment checklists and plant configuration control for the maintenance activities with operations, maintenance and work control center personnel to verify that necessary steps were taken to control the work activities.

In addition, the inspectors reviewed select condition reports to verify that identified problems regarding maintenance risk assessments and control of emergent work

activities were appropriately characterized and entered into the licensee's corrective action program.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

The inspectors reviewed the operator workarounds to identify any potential effect on the functionality of mitigating systems. The inspectors assessed the accumulative effect of identified operator workarounds on the following:

- the reliability, availability and potential for misoperation of a system;
- the ability of the operators to respond in a correct and timely manner to plant transients and accidents;
- the potential to increase an initiating event frequency; and
- the potential to effect multiple mitigating systems.

The inspectors also verified that plant equipment was accessible, adequate procedural guidance existed and that tools needed to complete a task were readily available for the operator workarounds that would be required during implementation of the emergency operating procedures.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

The inspectors reviewed the following risk significant permanent plant modification:

Mitigating Systems Cornerstone

- Engineering Action Request EAR 2001-0021, "Modify packing in CK-ES3166 & CK-3181 with lower friction design"

The inspectors reviewed the permanent plant modification, associated 10 CFR 50.59 screening, and associated work orders to verify consistency with the system design bases as described in the Updated Final Safety Analysis Report and the Technical Specifications. The inspectors verified that plant changes did not result in an adverse impact on equipment availability, reliability, or functional capability. The inspectors verified that component procurement documentation and installation instructions were consistent with the modification description. Additionally, the inspectors reviewed post

modification testing requirements to ensure that testing was consistent with equipment functional requirements.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111.19Q)

a. Inspection Scope

The inspectors observed portions of post maintenance testing and reviewed documented testing activities following scheduled maintenance to determine whether the tests were performed as written. The inspectors also verified that applicable testing prerequisites were met prior to the start of the tests and that the effect of testing on plant conditions was adequately addressed by control room personnel. Post maintenance test activities were reviewed for the following:

- Containment Sump Outlet Check Valve CK-ES3166; and
- Recirculation Actuation Signal.

The inspectors reviewed post maintenance testing criteria specified in the applicable preventive and corrective work orders to verify that the test criteria was appropriate with respect to the scope of work performed and that the acceptance criteria were clear.

In addition, the inspectors reviewed the completed tests and procedures to verify that the tests adequately verified system operability. Documented test data was reviewed to verify that the data was complete, and that the equipment met the procedure acceptance criteria which demonstrated that the equipment was able to perform the intended safety functions.

Further, the inspectors reviewed condition reports regarding post maintenance testing activities to verify that identified problems were appropriately characterized.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the temporary modification package and associated 10 CFR 50.59 evaluation for the following temporary modification:

- TM 2001-014, "Due to damaged detectors, change locations of cabling at the reactor head for the incore detectors to provide the required 16 totally qualified detector installations. Also make corresponding changes to the addresses to provide proper signals to the PPC."

The licensee installed this temporary modification to relocate environmentally qualified cables to undamaged connections on the reactor vessel head.

In addition, the inspectors reviewed condition reports concerning this temporary modification to verify that identified problems were appropriately characterized and evaluated.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS3 Radiation Monitoring Instrumentation (71121.03)

.1 Identification of Radiological Monitors Associated With High/Very High Radiation Areas

a. Inspection Scope

The inspector completed walkdowns and reviewed calibration records to verify the accuracy and operability of radiation monitoring instruments used for the protection of occupational workers. Instrumentation included area radiation monitors (ARMs), continuous air monitors (CAMs), portable survey meters, the whole body counter, portal monitors, and electronic dosimeters.

The Final Safety Analysis Report (FSAR) was reviewed to identify those ARMs and CAMs that were associated with transient high and very high radiation areas. These monitors included, but were not limited to, the following:

- Fuel Pool Area Monitor
- High Range Containment Monitor
- Containment Atmosphere Gas Monitor

The inspector performed a walkdown of selected ARMs and CAMs in order to verify that locations were as described in the FSAR.

b. Findings

No findings of significance were identified.

.2 Calibration and Operability of Radiological Instrumentation

a. Inspection Scope

The inspector reviewed the most recent calibrations and alarm set points for selected ARMs and CAMs. A representative sample of current calibration records were reviewed

for the whole body counter, personnel contamination monitors, portable radiation survey instruments, electronic dosimeters, and whole body frisking monitors. The inspector observed the calibration process for portable survey instruments and electronic dosimeters, reviewed instrument logs, and observed source checks in order to verify compliance with procedures.

b. Findings

No findings of significance were identified.

.3 Respiratory Protection - Self-Contained Breathing Apparatus

a. Inspection Scope

The inspector reviewed the status and surveillance records for self-contained breathing apparatus that was located in various areas onsite, including those units reserved for fire brigade and control room personnel. In addition, the inspector reviewed the licensee's training, mask fit, and medical qualification records to verify that applicable emergency response and control room personnel were currently trained and qualified in the use of self-contained breathing apparatus.

b. Findings

No findings of significance were identified.

.4 Problem Identification and Resolution

a. Inspection Scope

The inspector reviewed a self-assessment of the radiation monitoring instrumentation program and the licensee's year 2001 condition reports covering radiological incidents involving personnel internal contamination events and radiological instrumentation, to verify that the licensee could identify, track, and correct radiological problems in these areas.

b. Findings

No findings of significance were identified.

3. SAFEGUARDS

Cornerstone: Physical Protection

3PP4 Security Plan Changes (71130.04)

a. Inspection Scope

The inspector reviewed Revision 9 to the Palisades Nuclear Plant Safeguards Contingency Plan to verify that the changes did not decrease the effectiveness of the submitted document. The referenced revision was submitted in accordance with 10 CFR 50.54(p)(2) requirements by licensee letter dated August 30, 2001.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors verified the licensee's assessment of its performance indicators for the previous four calendar quarters for the occupational and public radiation safety cornerstones as well as the reactor coolant system (RCS) specific activity. No reportable elements were identified by the licensee for the 4th quarter of 2000 and the 1st, 2nd, and 3rd quarters of 2001. The inspector reviewed the 4th quarter 2000 and 1st, 2nd, and 3rd quarter condition reports, public dose records, and RCS specific activity records to verify that there were no occurrences during those quarters concerning the occupational and public radiation safety cornerstones and the RCS specific activity.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up (71153)

a. Inspection Scope

The inspectors reviewed and verified the accuracy of Event Notification No. 38535 that licensee personnel reported to the NRC on December 4, 2001, regarding the failure of the emergency response data system during quarterly testing.

b. Findings

No findings of significance were identified.

4OA6 Meeting

Exit Meetings

The inspectors presented the inspection results to Mr. Cooper and other members of licensee management on January 3, 2002, after the inspection period ended. Licensee personnel acknowledged the findings presented. No proprietary information was identified at the exit meeting. The following interim exit meetings were also conducted during the inspection period:

Interim Exit Meeting

Senior Official at Exit:	D. J. Malone, Plant General Manager
Date:	November 29, 2001
Proprietary:	No
Subject:	Radiation Monitoring Instrumentation

Interim Exit Meeting

Senior Official at Exit:	J. Fletcher, Security Manager
Date:	December 3, 2001
Proprietary:	No
Subject:	Safeguards Contingency Plan Review

Interim Exit Meeting

Senior Official at Exit:	D. Cooper, Site Vice President
Date:	December 14, 2001
Proprietary:	No
Subject:	Biennial Heat Sink

KEY POINTS OF CONTACT

Licensee

B. Benson, Unit Supervisor
T. Brown, Manager, Chemical and Radiological Services
M. Carlson, Programs Engineering Manager
D. Cooper, Site Vice President
D. Crabtree, Systems Engineering Manager
B. Dotson, Licensing Analyst
J. J. Fletcher, Security Manager
P. Harden, Director, Engineering
J. Hager, Heat Exchanger Coordinator
L. Lahti, Licensing Manager
D. G. Malone, Supervisor, Regulatory Assurance
D. J. Malone, General Plant Manager
G. Packard, Operations Superintendent
K. Smith, Operations Manager
N. Stacks, Service Water System Engineer
E. Tiffany, Maintenance Rule Engineer
R. Westerhof, Reliability Section Leader
J. Wong, Design Engineer

NRC

D. Hood, Project Manager, NRR

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-255/01-16-01	NCV	Failure to promptly identify and correct deficiencies associated with the cold weather protection of Level Instrumentation on the Condensate Storage Tank.
50-255/01-16-02	NCV	Failure to follow a preventative maintenance procedure step to inspect the head sprockets and sprocket tooth-inserts on the traveling screens for wear.
50-255/01-16-03	NCV	Failure to promptly identify and correct deficiencies observed on the F-4B traveling screen boot-plate.

Closed

50-255/01-16-01	NCV	Failure to promptly identify and correct deficiencies associated with the cold weather protection of Level Instrumentation on the Condensate Storage Tank.
50-255/01-16-02	NCV	Failure to follow a preventative maintenance procedure step to inspect the head sprockets and sprocket tooth-inserts on the traveling screens for wear.
50-255/01-16-03	NCV	Failure to promptly identify and correct deficiencies observed on the F-4B traveling screen boot-plate.

LIST OF ACRONYMS USED

ARM	Area Radiation Monitor
CAM	Continuous Air Monitor
CFR	Code of Federal Regulations
CR	Condition Report
CRD	Control Rod Drive
FSAR	Final Safety Analysis Report
NCV	Non-Cited Violation
PPAC	Predetermined and Periodic Activity Control
PPC	Plant Process Computer
RCS	Reactor Coolant System
SCBA	Self-Control Breathing Apparatus

LIST OF DOCUMENTS REVIEWED

1R01 Adverse Weather Protection

SOP-23	System Operating Procedure -23, Plant Heating System	Revision 15
Checklist CL-CWCL-1	Cold Weather Checklist	Revision 15
Checklist CL-CWCL-2	Cold Weather Checklist - Electrical	Revision 15
SOP-23, CWCL-2	Completed System Operating Procedure 23 - Plant Heating Systems - Checklist CL-CWCL-2, "Cold Weather Checklist - Electrical," dated 11/6/01	Revision 15
SOP-23, CWCL-1	Completed System Operating Procedure 23 - Plant Heating Systems - Checklist CL-CWCL-1, "Cold Weather Checklist"	Revision 15
WR 277431	Flexible Conduit for heat trace cables is unsupported and does not meet standards - equipment deficiencies noted during NRC walkdown of Safety Injection Refueling Water Tank	
WR 277467	Insulation on Condensate Storage Tank Level Instrument Sensing Lines is Degraded - Repair or Replace	

Condition Reports Reviewed To Assess Problem Identification Characterization

CPAL0103844	NRC Noted Weaknesses in the Cold Weather Checklist (SOP-23 Attachment 8, 9, and 14)
CPAL0103859	Heat Tracing Deteriorated
CPAL0103860	Insulated Cover for Domestic Water Tank not Properly Installed
CPAL0103903	Potential Inadequacies In Plant Cold Weather Preparation Activities
CPAL0103934	Insulation on Condensate Storage Tank Level Sensing Lines Not Installed in a Timely Manner

1R04 Equipment Alignment

Plant Procedures

GOP-14, Attachment 3	Shutdown Cooling Equipment Availability	Revision 14
GOP-14, Attachment 6	Maintenance of Vital Auxiliaries - Electric Plant DC	Revision 14
GOP-14, Attachment 9	Primary Coolant System Heat Removal	Revision 14
GOP-14, Attachment 11	Maintenance of Vital Auxiliaries - Miscellaneous	Revision 14
GOP-14, Attachment 15	Shutdown Operation Protected Train Equipment List	Revision 14
GOP-14, Attachment 16	Shutdown Operation Equipment Sheets	Revision 14
SOP-15, Attachment 2	Service Water System Checklist - Critical	Revision 21
SOP-30, Attachment 6	Station Power System Checklist	Revision 31

Condition Reports Reviewed To Assess Corrective Actions

CPAL0103067	Bus 1C and 1D Voltages Were at Minimum Allowed Values Prior To Power Control Adjustment
CPAL0103282	Space Heaters For EMA-1207, Motor For High Pressure Safety Injection Pump P-66A, Not Energized
CPAL0103281	Space Heaters For EMA-1209, Motor For Auxiliary Feedwater Pump P-8C, Not Energized

1R06 Flood Protection

Plant Operating Procedures

SOP-3, Checklist 3.4	Plant Flood Door System Checklist	Revision 46
ONP-12	Acts Of Nature	Revision 16
AP-6.02	Control Of Equipment	Revision 17

ARP-1	Turbine Condenser and Feedwater Scheme EK-01 (C-1)	Revision 51
ARP-8	Safeguards Safety Injection and Isolation Scheme EK-13 (C-13)	Revision 61

Permanent Maintenance Procedures

MSM-M-16	Inspection of Watertight Barriers	Revision 9

Predetermined and Periodic Activity Control Procedures

RWS-215	Test Operation of Turbine Building Sump Level Switches	
RWS-218	Preventative Maintenance of Diesel Generator Room Floor Drain Check Valves	
RWS-217	Clean and Inspect Auxiliary Feedwater Pump Room Floor Drain Check Valve	
MSM-071	Annual Inspection of Watertight Barriers	
MSM-091	5-Year Inspection of Watertight Barriers	

Miscellaneous Documents

FSAR, Section 2.2	Hydrology	Revision 22
FSAR, Section 5.4	Water Level Design	Revision 22
DBD 7.08	Plant Protection Against Flooding	Revision 3

Condition Reports Reviewed To Assess Problem Identification Characterization

CPAL0102857	Reactor Cavity Flooding System Floor Drains Not Protected From Loose Material
CPAL0103710	Possible Common Causal Factors Associated With Control of Flood Doors
CPAL0103747	Flood Door #141 (Diesel Generator 1-2 Room) Not Fully Dogged
CPAL0102595	Unexpected Alarm EK-0171 “Condensate Pump Room Flooding”
CPAL0102701	Corrosion Found on Connections For Condensate Pump Room Flooding Level Switch LS-5217

CPAL0101745	Flood Door 142 (Bus 1C Switchgear Room) Found Undogged Upon Entry
CPAL0101343	Tygon Tube Routed Through Flood Door 196A in Violation AP 4.02 Requirements
CPAL0101025	Communication Error Results in Turbine Building Sump Flooding
CPAL0100506	Flood Door 59 East/West ESGR Not Fully Dogged
CPAL0103408	Rain Water in North Storage RCA
CPAL0103172	Failure to Adequately Address the Extent of Problem Aspects of CR CPAL0100142
CPAL0104063	Noted a Configuration Control Problem While Preparing To Perform MSM-M-16, “Inspection of Watertight Barriers”

1R07 Heat Sink Performance

Calculations

EA-GAK-98-002	Verification for 10 CFR Part 50 Appendix R Shutdown Capability with a Single Component Cooling Water Pump in Operation	Revision 2
EA-T300-98-03	Methodology for Analyzing Single Tube Test Data on the CCW Heat Exchangers	Revision 1
EA-T300-98-05	Analysis of Pre-Cleaning Single Tube Test Data for Determination of Overall (Total) Fouling Factor for CCW Heat Exchanger E-54A	Revision 1
EA-T300-98-06	Analysis of Post-Cleaning Single Tube Test Data for Determination of Overall (Total) Fouling Factor for CCW Heat Exchanger E-54A	Revision 0
EA-SST-2001-01	Analysis of Pre-Cleaning Single Tube Test Data for Determination of Overall (Total) Fouling Factor for CCW Heat Exchanger E-54A	Revision 0
EA-SST-2001-02	Analysis of Post-Cleaning Single Tube Test Data for Determination of Overall (Total) Fouling Factor for CCW Heat Exchanger E-54A	Revision 0
EA-TWK-95-01	Increase CCW Hx Tube Wall Loss Plugging Criteria to 70%	Revision 0

Work Orders

24912514	K-6B, Perform Selected Portions of EPS-M-15 Refer to Step 5 for Steps to Be Performed	September 20, 1999
24014799	F-4B, Traveling Screen PM	April 20, 2001
24112075	F-4B, Insp/Lube Coupling & Shear Pin	November 5, 2001

Miscellaneous Documents

Component Cooling Water E-54A EC Inspection Report RF015	April 2001
System Health Assessment - 1st/2nd Quarter 2001, Service Water and Ultimate Heat Sink	

Condition Reports Reviewed To Assess Problem Identification Characterization

CPAL9800595	Traveling Screen F-4B Screen Failure
CPAL0002830	Inadequate PPAC Inspection of Traveling Screens F-4B and F-4C
CPAL0100545	Intake Bay Ice Results in Traveling Screen F-4C Failure and Entering of ONP 6.1 “Loss of Service Water”
CPAL0100650	Endbell Degradation on Emergency Diesel Generator EDG 1-2
CPAL0103803	F-4B Screen Drive Motor Found Running During Rounds but Screen Was Not Moving
CPAL0104101	Damage Found To Traveling Screen F-4C Upper Shaft and Sprocket
CPAL0103865	Recommended Inspection/Repair of Traveling Screens in Summer 2001 Not Performed

Condition Reports/Action Items Generated as a Result of this Inspection

CPAL0103938	Discrepancies Noted in CCW Heat Exchanger E-54A Fouling Factor Analysis
CPAL0103970	Failure to Follow an Inspection PPAC’s Written Instructions
APAL0100368	EPRI Heat Exchanger Condition Assessment Calculator

1R11 Licensed Operator Requalification

Plant Procedures

EOP Supplement 42	Pre and Post RAS Actions	Revision 1A
EOP-4.0	Loss Of Coolant Accident Recovery	Revision 13
ONP-23.1	Primary Coolant Leak	Revision 20
ONP 24.1	Off-Normal Procedure - Loss of Preferred AC Bus Y10	Revision 21
ONP 24.2	Off-Normal Procedure - Loss of Preferred AC Bus Y20	Revision 21
ONP 24.3	Off-Normal Procedure - Loss of Preferred AC Bus Y30	Revision 20
ONP 24.4	Off-Normal Procedure - Loss of Preferred AC Bus Y40	Revision 19

Miscellaneous Documents

LOR-SU.SEG	Simulator Exercise Guide, Startup Training	Revision 0
LOR-SU	Classroom/Laboratory Lesson Plan, Startup Training	Revision 0

1R12 Maintenance Rule Implementation

	125 Volt Vital DC Power Maintenance Rule Scoping Document and associated maintenance rule performance indicators	Revision 2
	Emergency Diesel Generator Maintenance Rule Scoping Document	Revision 2
	Emergency Diesel Generator System Health Assessments - 1st/2nd/3rd Quarter 2001	
	Shutdown Cooling System Maintenance Rule Scoping Document	Revision 2
	Shutdown Cooling System Health Assessment - 1st/2nd/3rd Quarter 2001	
EM - 25	Maintenance Rule Program	Revision 3

Condition Reports Reviewed To Assess Corrective Actions

CPAL002830	Inadequate PPAC Inspection Of Traveling Screens
CPAL980488	Potential For Debris Intrusion Into Service Water Bay
CPAL970316	SWS Exceeds Maintenance Rule Performance Criteria
CPAL961245	Screen Wash Trash Baskets Filled With Debris
CPAL970210	Service Water Pump Bay Level Decrease Without Alarm
CPAL0003343	Diesel Generator 1-2 Voltage Meter Responding Erratically (K-6B)
CPAL0100156	Emergency Diesel Generator Fuel Pump Support Wear
CPAL0103293	Emergency Diesel Generator 1-2 Fuel Pump Inlet Tube Fastener Elongated
CPAL0100840	Control Valve CV-3055 Shutdown Cooling Inlet Failed Acceptance Criteria of IST QO-42
CPAL0101324	Shutdown Cooling Inlet to Shutdown Heat Exchanger Control Valve CV-3055 Failed to Actuate
CPAL0101379	Boric Acid Inspection Discovers Condition Which May Affect Valve Set-Point Performance

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

Plant Procedures

GOP-14, Attachment 3	Shutdown Cooling Equipment Availability, November 26 through December 27, 2001	Revisions 53, 54, 58 60, 61, 63, 64 and 70
GOP-14, Attachment 16	Shutdown Safety Risk Assessments, November 26 through December 27, 2001	Revisions 53, 54, 58 60, 61, 63, 64 and 70
GOP-14, Attachment 17	Equipment Waiver Sheets, November 26 through December 28, 2001	

Other Documents

Shift Supervisor Log entries, November 26 through December 27, 2001

Condition Reports Reviewed To Assess Problem Identification Characterization

CPAL0103839	GOP-14 Waive Not In Place When Required

1R16 Operator Workarounds

Plant Procedures

AP-4.12	Operator Work Around Program	Revision 0
SOP-16	Component Cooling Water System	Revision 22
EOP Supplement 42	Jumpering CHP For One Containment Spray Valve	Revision 0
ONP-6.2	Loss of Component Cooling Water	Revision 8

Miscellaneous Documents

Palisades Operator Workarounds

Palisades Nuclear Plant Control Room Deficiencies

Palisades Operator Challenges

1R17 Permanent Plant Modifications

Engineering Assistance Request EAR-2001-0021	Modify packing in CK-ES3166 & CK-3181 with a lower friction design	November 21, 2001
Work Request #286687	Modify CK-ES3166 packing gland per EAR 2001-0021. Replace existing packing gland/packing with new packing gland O-ring cartridge assembly.	December 3, 2001
Technical Specification 5.5.2	Primary Coolant Sources Outside Containment	
Technical Specification Surveillance Procedure No. QO-38	Containment Sump Check Valves Inservice Test	Revision 4

Administrative Procedure No. 9.28	Engineering Assistance Request	Revision 4
Procurement Evaluation Checklist PEC 94-015-006C	O-Rings for CK-ES3166 and CK-ES3181	Revision 8
UFSAR Table 5.8-4	Containment Penetrations and Appendix J Test Requirements	
UFSAR Chapter 6.0	Engineered Safeguards Systems	

Condition Reports

CPAL0100764	Performance of containment sump check valves during post-DBA recirculation mode may not be acceptable
CPAL0103563	Containment sump check valve lab testing results are inconsistent with ECCS model
CPAL0103818	As found dimension of body bore is too large for O-ring design

Condition Reports Reviewed to Assess Problem Identification Characterization

CPAL0103825	NRC identified that recirculation sump check valve modification did not delineate review of environmental factors that could impact o-ring seal package performance
CPAL0103832	NRC identified that original post maintenance testing acceptance criteria for recirculation sump check valve modification was non-conservative
CPAL0104020	NRC identified that potential exits to allow modified equipment to be returned to service prior to receiving an appropriate 50.59 screening review

1R19 Post Maintenance Testing

QO-2	Completed Technical Specification Surveillance and Special Test Procedure - Recirculation Actuation System - December24, 2001	Revision 31
QO-2	Completed Technical Specification Surveillance and Special Test Procedure - Recirculation Actuation System - December25, 2001	Revision 31
QO-2	Basis Document - Technical Specification Surveillance and Special Test Procedure - Recirculation Actuation System	Revision 14
WO 24113483	Check Valve CK-ES3166, Modify Packing Gland per EAR2001-021, Replace Existing Packing Gland/Packing with New Packing Gland/O-Ring Cartridge Assembly	
RT-71L	Technical Specification Admin. 5.5.2 Pressure Test of ESS Pump Suction Piping and associated Basis Document	Revisions 9 and 5
QO-38	Completed Technical Specification Surveillance and Special Test Procedure - Containment Sump Check Valves Inservice Test	Revision 4

Condition Reports Reviewed To Assess Problem Identification Characterization

CPAL0101780	Maintenance Repair Workers Failed to Monitor for Contamination at the Nearest Frisker
CPAL0104160	Administrative Procedure 7.15 Requirement Not Followed
CPAL0103883	Questionable Basis for Improved Technical Specification Administrative Section 5.5.2E and Pressure Test Requirements
CPAL0104153	System Conditions Not Optimal to Support Performance of Scheduled Technical Specification Surveillance Test QO-2

1R23 Temporary Plant Modifications

TM-2001-014	Due to damaged detectors, change locations of cabling at the reactor head for the incore detectors to provide the required 16 totally qualified detector installations. Also make corresponding changes to the addresses to provide proper signals to the PPC	
UFSAR Appendix 7C	Regulatory Guide 1.97 Revision 3 Parameter Summary Table	Revision 23
Procedure 9.31	Temporary Modification	Revision 18
EM-04-01	Manually Reading Incore Detectors	Revision 18
EM-04-02	Quadrant Power Tilt	Revision 22
RI-80	Incore Neutron Monitoring System Calibration	Revision 14
MT-10	Core Monitoring	Revision 1

Condition Reports Reviewed To Assess Problem Identification Characterization

CPAL0102300	Three Incores Found Broken During Inspection
CPAL0102304	Two More ICI Connectors Found Broken During ICI Cable Removal
CPAL0102295	ICI Connection at Position 4-1 Discovered Broken
CPAL0102288	Reactor Incore Reported Broken
CPAL0102260	Incore Neutron Detector #35 Flux and CET Indication Failures

2OS3 Radiation Monitoring Instrumentation

Plant Procedures

RI-86B-9	Fuel Pool Area Monitor RIA-5709 Calibration	Revision 4
RI-86G	High Range Containment Monitor Calibration	Revision 8
RR-9M	Containment Atmosphere Gas Monitor RIA-1817 Calibration	Revision 2
HP 7.5	Self-Contained Breathing Apparatus (SCBA) SURVIVAIR Mark-2 Model 9842	Revision 4

HP 9.13	Eberline Model RO-2/RO-2A and Model RO-20 Portable Ion Chambers	Revision 9
HP 9.15	Operation and Calibration of the Eberline Model 6112 Teletector and Xetec Model 330A Telescan	Revision 9
HP 9.21	Ludlum Model 177 Ratemeter	Revision 5
HP 9.67	Operation and Calibration of the MGP Instruments CDM-21 Calibrator and DMC Electronic Dosimeters	Revision 9
RIA-I-9	Area Monitor Functional Check	Revision 2
MI-6	Area Monitor Operational Check	Revision 7

Miscellaneous Documents

	Calibration of the Canberra Fastscan WBC System	February 2, 2001
	Self-Assessment Report, Evaluate Adequacy of the Instrument Program	October 25, 2001
Certificate Of Calibration	Xetec Model 330A Telescan, sn 42124	November 27, 2001
Certificate Of Calibration	Ludlum Model 177 Ratemeter, sn 949	November 27, 2001
Certificate Of Calibration	Eberline Model RO-2, sn 11112	November 27, 2001
	Database Printouts for SCBA location codes as well as training, medical exams, and fit testings records	November 11, 2001

3PP4 Security Plan Changes

Palisades Safeguards Contingency Plan	Revision 9, August 28, 2001

4OA3 Event Follow-up

Event Notification #38535, failure of the emergency response data system during quarterly testing	December 4, 2001

Condition Reports Reviewed To Assess Problem Identification Characterization

CPAL0103826	Failure of Emergency Response Data System to Connect During Quarterly PPAC Performance