February 22, 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 50-255/01-17(DRP)

Dear Mr. Cooper:

On February 9, 2002, the NRC completed an inspection at your Palisades Nuclear Generating Plant. The enclosed report documents the inspection findings which were discussed on February 8, 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 self-revealed 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.

In addition, in assessing the inspection findings documented in NRC Inspection Reports over the past 12 months, we have identified two cross-cutting issues pertaining to corrective actions and human performance.

Immediately following the terrorist attacks on the World Trade Center and the Pentagon, the NRC issued an advisory recommending that nuclear power plant licensees go to the highest level of security, and all promptly did so. With continued uncertainty about the possibility of additional terrorist activities, the Nation's nuclear power plants remain at the highest level of security and the NRC continues to monitor the situation. This advisory was followed by additional advisories and although the specific actions are not releasable to the public, they generally include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with law enforcement and military authorities, and more limited access of personnel and vehicles to the sites. The NRC has conducted various audits of your response to these advisories and your ability to respond to terrorist attacks with the capabilities of the current design basis threat (DBT). From these audits, the NRC has concluded that your security program is adequate at this time.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Sincerely,

/RA by David Passehl Acting for/

Anton Vegel, Chief
Branch 6
Division of Reactor Projects

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

Enclosure: Inspection Report 50-255/01-17(DRP)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-255
License No:	DPR-20
Report No:	50-255/01-17(DRP)
Licensee:	Nuclear Management Company, LLC
Facility:	Palisades Nuclear Generating Plant
Location:	27780 Blue Star Memorial Highway Covert, MI 49043-9530
Dates:	December 30, 2001, through February 9, 2002
Inspectors:	J. Lennartz, Senior Resident Inspector R. Krsek, Resident Inspector D. Nelson, Radiation Specialist K. Coyne, Resident Inspector, D.C. Cook R. Quirk, U.S. NRC, Contractor T. Madeda, Physical Security Inspector R. Jickling, Emergency Preparedness Analyst
Approved by:	Anton Vegel, Chief Branch 6 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000255/01-17 on 12/30/2001 - 2/9/2002, Nuclear Management Company, LLC, Palisades Nuclear Generating Plant. Non-routine evolutions, post maintenance testing, human performance, and corrective actions.

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

A. Inspector Identified Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified one Green finding that is being treated as a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to follow approved work instructions and procedures during corrective maintenance on a primary coolant pump oil cooler associated with the component cooling water system. The failure to accomplish the activities affecting quality in accordance with approved work instructions resulted in a self-revealed event in which approximately 300 gallons of component cooling water was lost when the component cooling water system was restored to containment.

  This self-revealed issue was determined to be of very low significance (Green) by the significance determination process because (1) the issue did not increase the likelihood of a loss of primary coolant system inventory; (2) the issue did not degrade the licensee's ability to terminate a leak path or add Reactor Coolant System (RCS) inventory when needed; and (3) the issue did not degrade the licensee's ability to recover decay heat removal once lost. Although the component cooling water system was required to maintain shutdown cooling, operator action mitigated the inventory loss from the component cooling water system. Consequently, the Shutdown Cooling System was not adversely affected as evidenced by constant primary coolant system temperatures. (Section 1R14.1)

- Green. The inspectors identified one Green finding that is being treated as a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to follow approved work instructions and procedures during corrective maintenance on the safety-related breaker for electric-driven Fire Pump P-9A. The failure to accomplish the activities affecting quality in accordance with approved work instructions resulted in a self-revealed event in which the fire pump was inappropriately returned to service and declared operable with the long-time overcurrent breaker trip setpoints incorrectly set. Consequently, seven days after the pump was declared operable, the pump was started and tripped after running for only three minutes.

This self-revealed issue was determined to be of very low significance (Green) by the significance determination process because (1) the issue did not increase the likelihood of a loss of primary coolant system inventory; (2) the issue did not degrade the licensee's ability to terminate a leak path or add RCS inventory when needed; and (3) the issue did not degrade the licensee's ability to recover decay heat removal once lost. In addition, at least one fire pump was always operable and available to perform the designed safety function during the time that Pump P-9A was inoperable. (Section 1R19.1)

Cornerstone: Barriers

- Green. The inspectors identified one Green finding that is being treated as a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to follow approved work instructions and procedures during corrective maintenance on the safety-related Motor EMB-2524 for control room heating, ventilation, and air conditioning (HVAC) Condensing Unit VC-11.

  This self-revealed issue was determined to be of very low significance (Green) by the significance determination process because (1) the issue did not increase the likelihood of a loss of primary coolant system inventory; (2) the issue did not degrade the licensee's ability to terminate a leak path or add RCS inventory when needed; and (3) the issue did not degrade the licensee's ability to recover decay heat removal once lost. Although the Control Room Heating Ventilation and Air Conditioning (HVAC) system is part of the control room barrier, the motor failure did not represent a degradation of the radiological barrier function for the control room and did not represent degradation of the barrier function of the control room against smoke or a toxic atmosphere. In addition, the six days that the "A" Train of Control Room HVAC was out of service to correct this problem, the "B" Train of Control Room HVAC was in service and available. (Section 1R14.2)

Cross-cutting Issues: Human Performance

- No Color. Several human performance errors were identified in the initiating event, mitigating system and barrier cornerstone areas. The inspectors determined that six findings in the past twelve months indicated an adverse performance trend regarding maintenance on safety related equipment. The trend indicated common causal factors for the issues with respect to the implementation of work performed, the control of work performed through work instructions or procedures, and the review and oversight of maintenance work performed.

  While the risk of the individual findings was very low (Green), the number of maintenance-related incidents indicated an adverse human performance trend pertaining to the implementation, control, review and oversight of maintenance activities on safety-related equipment. (Section 4OA4.1)

Cross-cutting Issues: Corrective Actions

- No Color. Issues with the implementation of the corrective action program were identified in the initiating event and mitigating system cornerstone areas. The inspectors determined that six findings in the past six months indicated an adverse performance trend regarding the implementation of corrective actions. The causal relationships regarding the findings were: (1) conditions adverse to quality were not promptly identified or corrected; and (2) corrective actions failed to preclude repetition of significant conditions adverse to quality.

  While the risk of the individual findings was very low (Green), the number of corrective action findings indicated an adverse performance trend pertaining to the implementation of the corrective action program. (Section 4OA4.2)

B. Licensee Identified Violations

- A violation of very low significance was identified by the licensee and has been reviewed by the inspector. Corrective actions taken or planned by the licensee appear reasonable. This violation is listed in Section 4OA7 of this report.

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 was in Cold Shutdown (Mode 5) for a corrective maintenance outage at the beginning of the inspection period. The plant had entered Mode 5 on June 21, 2001, because of a small primary coolant leak from an axial crack on the Control Rod Drive Mechanism 21 pressure housing. Licensee personnel completed root cause evaluations and subsequently replaced all 45 control rod drive mechanism pressure housings to correct the problem. Several other required preventative and corrective maintenance activities were also completed during the outage. On January 21, 2002, the plant was synchronized to the grid and plant power was subsequently escalated to full power on January 24, 2002, where it remained for the duration of the inspection period.

1. REACTOR SAFETY

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

1R04 Equipment Alignment (71111.04)

.1 Quarterly Equipment Alignment Walkdowns

a. Inspection Scope

The inspectors performed partial walkdowns of the protected equipment train for shutdown conditions 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 high pressure safety injection system after the equipment was aligned for service during plant startup activities. The inspectors utilized

system operating procedures and safety injection system lineup 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 equipment's safety function equipment was not adversely impacted.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q)

a. Inspection Scope

The inspectors toured the following areas in which a fire could affect safety related equipment:

- Emergency Diesel Generator Fuel Oil Day Tank Room (Fire Area 8);
- Intake Structure (Fire Area 9); and
- Component Cooling Water Pump Room (Fire Area 16).

The inspectors assessed the material condition of the passive fire protection features and verified that transient combustibles and ignition sources were appropriately controlled. Also, the inspectors reviewed documentation for randomly selected completed surveillances to verify the availability of the sprinkler fire suppression system, smoke detection system, and manual fire fighting equipment for these areas. The inspectors also verified that the fire protection equipment that was installed and available in the fire areas corresponded with the equipment which was referenced in the applicable portions of the Final Safety Analysis Report, Section 9.6, "Fire Protection."

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:

- Containment Spray System; and
- Containment Isolation System.

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 the following planned and emergent maintenance activities:

- emergent failure of Component Cooling Water Pump P-52C Motor; and
- required surveillance testing while in hot standby (Mode 3).

The inspectors discussed the shutdown operation equipment checklists and plant configuration control for the maintenance activities with operations, maintenance and work control center staff 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.

1R14 Nonroutine Evolutions (71111.14)

.1 Partial Loss of Component Cooling Water

a. Inspection Scope

The inspectors assessed operator performance in response to a lowering level in the component cooling water surge tank, during restoration of component cooling water (CCW) to containment. The inspectors verified that the operators' responded appropriately in accordance with Off Normal Operating Procedure 6.2, "Loss of Component Cooling Water," and various annunciator response procedures.

Further, the inspectors reviewed the resultant condition reports that were initiated to verify that this issue was entered into the corrective action program with the appropriate characterization and significance.

b. Findings

The inspectors identified one Green finding that is being treated as a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to follow approved work instructions and procedures during corrective maintenance on Primary Coolant Pump P-50B oil cooler associated with the component cooling water system.

On January 7, 2002, with the plant in Mode 5 and shutdown cooling in service, operations staff restored CCW to the Containment Building following corrective maintenance on the "B" Primary Coolant Pump oil coolers. Prior to the evolution, operations staff discussed that restoration of CCW would result in a 2 to 4 percent decrease in CCW Surge Tank level indication. After the Auxiliary Operators restored component cooling water to containment, the CCW Surge Tank low-level alarm sounded and the Nuclear Control Operator noted the level continuing to lower. The control room operators then entered Off-Normal Procedure 6.2, "Loss of Component Cooling Water," and approximately 4 minutes after the restoration was started CCW was isolated to containment. During this evolution the CCW Surge Tank level changed from 48 percent to 19 percent, which corresponded to a loss of approximately 300 gallons of water.

The initial investigation by the licensee revealed that an end bell on the "B" Primary Coolant Pump oil cooler was not tightened during the corrective maintenance. Work Order No. 24210042, Steps 6 and 11 required, in part, that the CCW end bell bolts on both oil coolers be installed and tightened, and that all connections be secured tight. The inspectors also noted additional causal factors which contributed to this event, including the ineffective format of the work order steps, ineffective internal and external communications within operations and maintenance department personnel, and ineffective maintenance crew and supervisor turnovers.

Licensee management took immediate actions following the event which included stopping all work onsite for departmental stand-down meetings to discuss the event. Also, an Incident Response Team was formed which collected facts surrounding the event and recommended immediate corrective actions.

The failure to perform the work in accordance with the documented work instructions and procedures was more than minor because the issue had a credible impact on safety due to the loss of CCW inventory and potential loss of CCW which was required for shutdown cooling. In addition, the failure to accomplish work instructions for safety-related equipment could be reasonably viewed as a precursor to a significant event.

The inspectors utilized the event information in conjunction with Appendix G, "Shutdown Operations Significance Determination Process," of Manual Chapter 0609, Table T-1, "Pressurized Water Reactor (PWR) Refueling Operation Reactor Coolant System (RCS) Level > 23' OR PWR Shutdown Operation with Time to Boil > 2 hours AND Inventory in the Pressurizer." This self-revealed issue was determined to be of very low significance

(Green) by the significance determination process because (1) the issue did not increase the likelihood of a loss of primary coolant system inventory; (2) the issue did not degrade the licensee's ability to terminate a leak path or add RCS inventory when needed; and (3) the issue did not degrade the licensee's ability to recover decay heat removal once lost. Although the component cooling water system was required to maintain shutdown cooling, operator action mitigated the inventory loss from the CCW system. Consequently, the Shutdown Cooling System was not adversely affected as evidenced by constant primary coolant system temperatures.

10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed and accomplished in accordance with documented instructions or procedures. Contrary to this, maintenance staff failed to accomplish the instructions in Work Order 24013763 on January 7, 2002, which resulted in the loss of approximately 300 gallons of component cooling water inventory. This violation is associated with an 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 50-255/01-17-01).

This finding is in the licensee's corrective action program as Condition Report CPAL02000101.

.2 Loss of One Train Control Room Ventilation Cooling

a. Inspection Scope

The inspectors assessed the response by operations staff to unusual rumbling noises and the smell of smoke in the Control Room that resulted from the failure of Control Room Heating, Ventilation and Air Conditioning (HVAC) condensing Unit VC-11 motor. In addition, the inspectors assessed the circumstances and apparent cause of the VC-11 motor failure.

Further, the inspectors reviewed the resultant condition reports that were initiated to verify that this issue was entered into the corrective action program with the appropriate characterization and significance.

b. Findings

The inspectors identified one Green finding that is being treated as a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to follow approved work instructions and procedures for corrective maintenance on the safety-related Motor EMB-2524 for HVAC Condensing Unit VC-11.

On December 29, 2001, operations staff noticed unusual rumbling noises inside the Control Room and Technical Support Center followed by the smell of smoke in the Control Room. The auxiliary operators noted the noise and smoke emanated from the "A" Train Control Room HVAC Room (VC-11) and control room operators immediately secured the "A" Train and placed the "B" Train of Control Room HVAC into service. The

safety function of the HVAC Condensing Unit, VC-11, is to maintain the temperature at 90 degrees Fahrenheit or below as required for safety related equipment in the control room.

On December 5, 2001, maintenance staff completed corrective maintenance on Motor EMB-2524, by replacing both the inboard and outboard motor bearings in accordance with Work Order 24013763. Step 10, of the work order required, in part, to disassemble, clean and inspect all parts, pack new bearings with grease, install new bearings, pack housing full of grease and reassemble motor. Troubleshooting by licensee staff after Motor EMB-2524 failed determined that the new bearings had not been packed with grease when installed on December 5, 2001. Consequently, both the inboard and outboard motor bearings had failed due to a lack of lubrication. A contributing factor to the failure to accomplish the work in accordance with the prescribed work instructions was that multiple actions were included in the same work order step.

The failure to perform the work in accordance with the documented work instructions and procedures was more than minor because the issue had a credible impact on safety. Specifically, the loss of control room cooling could adversely affect operation of safety related equipment if the control room environment exceeded design temperatures. In addition, the failure to accomplish prescribed work instructions for safety-related equipment could be reasonably viewed as a precursor to a significant event.

The inspectors utilized the event information in conjunction with Appendix G, “Shutdown Operations Significance Determination Process,” of Manual Chapter 0609, Table T-1, “PWR Refueling Operation RCS level > 23' OR PWR Shutdown Operation with Time to Boil > 2 hours AND Inventory in the Pressurizer.” This self-revealed issue was determined to be of very low significance (Green) by the significance determination process because (1) the issue did not increase the likelihood of a loss of primary coolant system inventory; (2) the issue did not degrade the licensee’s ability to terminate a leak path or add RCS inventory when needed; and (3) the issue did not degrade the licensee’s ability to recover decay heat removal once lost.

Although the Control Room HVAC system is part of the control room barrier, the motor failure did not represent a degradation of the radiological barrier function for the control room and did not represent degradation of the barrier function of the control room against smoke or a toxic atmosphere. In addition, the 6 days that the “A” Train of Control Room HVAC was out of service to correct this problem, the “B” Train of Control Room HVAC was in service and available.

10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” requires, in part, that activities affecting quality shall be prescribed and accomplished in accordance with documented instructions. Contrary to this, maintenance staff failed to accomplish the instructions in Work Order 24013763 on December 5, 2001, which resulted in the failure of Control Room HVAC Condensing Unit, VC-11 Motor EMB-2524 on December 29, 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 V, consistent with Section VI.A.1 of the NRC Enforcement Policy. (NCV 50-255/01-17-02)

This finding is in the licensee's corrective action program as Condition Reports CPAL0104212 and CPAL0104242.

1R15 Operability Evaluations (71111.15Q)

a. Inspection Scope

The inspectors reviewed the operability assessments as documented in the associated condition reports for the following risk significant components:

- Primary Coolant Pumps P-50B and P-50C Pump Bowl Studs;
- Containment Air Cooler VHX-3 Outlet Service Water Control Valve CV-0873; and
- High Pressure Safety Injection Pump P-66B Closing Coil.

The inspectors interviewed the cognizant engineers, and reviewed the supporting documents to assess the adequacy of the operability assessments for the current plant mode. The inspectors also reviewed the applicable sections of the Technical Specifications, Final Safety Analysis Report, and Design Basis Documents to verify that the operability assessments were technically adequate and that the components remained available, such that no unrecognized increase in plant risk had occurred.

Further, the inspectors reviewed select condition reports to verify that identified problems associated with the operability evaluations were appropriately characterized and entered into the licensee's corrective action program.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

The inspectors reviewed the engineering analyses, modification documents and design change information associated with the following permanent modifications to the Emergency Core Cooling System:

- EA-EAR-2000-0302-01, "Installation of Permissives and Interlocks on Emergency Core Cooling System (ECCS) valves CV-3001, CV-3002, CV-3070, and CV-3071," Revision 0

The inspectors verified the design adequacy of the modifications and focused the inspection activities on the following parameters associated with the design changes: heat removal, control signals, proper translation of system logic into schematics, equipment protection, electrical power reliability, operations (including operator procedure consistency), flowpaths, process media, licensing basis, and equipment failure modes. The inspectors discussed the modifications with the responsible engineers, licensing and operations staff. In addition, the inspectors reviewed the applicable

sections of the Technical Specifications and Updated Final Safety Analysis Report to verify that the modifications would not adversely impact the system's safety functions.

Further, the inspectors reviewed condition reports to verify that identified problems associated with the modifications were appropriately characterized and entered into the licensee's corrective action program

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111.19Q)

.1 Fire Pump P-9A Trip

a. Inspection Scope

The inspectors reviewed the post maintenance testing for the breaker replacement of Fire Pump P-9A to assess the circumstances that resulted in Fire Pump P-9A tripping after running for only 3 minutes following a manual start. The inspectors also reviewed the resultant condition reports that were initiated to ensure that identified problems were appropriately characterized and entered into the licensee's corrective action program

b. Findings

The inspectors identified one Green finding that is being treated as a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to follow approved work instructions and procedures during corrective maintenance on the safety-related breaker for electric-driven Fire Pump P-9A.

On December 28, 2001, lab services maintenance personnel completed actions prescribed in Work Order 24114415 to set overcurrent trip settings on a safety-related spare breaker that was to be placed in service for electric-driven Fire Pump P-9A. Following the maintenance, operations personnel satisfactorily completed a functional test of Fire Pump P-9A and declared the pump operable on December 28, 2001.

On January 4, 2002, Fire Pump P-9A tripped after running for only 3 minutes and the pump was declared inoperable. Licensee personnel investigated the cause and concluded that the long-time overcurrent trip settings were not disabled as required during the maintenance that was completed on December 28, 2001. Consequently, the pump was unknowingly inoperable and unavailable from December 28, 2001, following the original corrective maintenance, until January 4, 2002. The pump was subsequently returned to an operable status on January 8, 2002, after the long-time overcurrent trip settings were set correctly and the pump and breaker were tested satisfactorily.

Licensee personnel's apparent cause evaluation noted that the "retest record" instructions regarding the long-time overcurrent trips simply stated "long-time (disabled/NFPA 20)," which was intended to mean that post maintenance tests should be conducted to verify that the long-time trips were disabled as required. However, the

maintenance technician assumed that the statement meant that the long-time overcurrent trips had already been disabled. Consequently, the required post maintenance testing to verify that the long-time overcurrent trips were disabled was not accomplished which contributed to the Fire Pump being returned to service in an inoperable status on December 28, 2001.

The failure to perform the work in accordance with the documented work instructions and procedures was more than minor because the issue had a credible impact on safety in that the fire pump was unknowingly returned to service in an inoperable status and consequently unavailable for several days following the corrective maintenance on December 28, 2001. In addition, the failure to correctly accomplish prescribed work instructions for safety-related equipment could be reasonably viewed as a precursor to a significant event.

The inspectors utilized the event information in conjunction with Appendix G, "Shutdown Operations Significance Determination Process," of Manual Chapter 0609, Table T-1, "PWR Refueling Operation RCS level > 23' OR PWR Shutdown Operation with Time to Boil > 2 hours AND Inventory in the Pressurizer." This self-revealed issue was determined to be of very low significance (Green) by the significance determination process because (1) the issue did not increase the likelihood of a loss of primary coolant system inventory; (2) the issue did not degrade the licensee's ability to terminate a leak path or add RCS inventory when needed; and (3) the issue did not degrade the licensee's ability to recover decay heat removal once lost. In addition, at least one fire pump was always operable and available to perform the designed safety function during the time that Pump P-9A was inoperable.

10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed and accomplished in accordance with documented instructions. Contrary to this, maintenance staff failed to accomplish the instructions in Work Order 24114415 on December 28, 2001, which resulted in the Fire Pump P-9A being unknowingly inoperable from December 28, 2001, until January 4, 2002. 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 50-255/01-17-03)

This finding is in the licensee's corrective action program as Condition Report CPAL0200059.

.2 Post Maintenance Tests

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 staff. Post maintenance test activities were reviewed for the following:

- Testing of new control rod drive upper pressure housings;
- Component Cooling Water Pump P-52C testing after motor replacement; and
- Recirculation Actuation Signal logic testing.

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.

1R20 Refueling and Outage Activities (71111.20, 71152)

.1 Licensee Control of Outage Activities

a. Inspection Scope

The inspectors randomly assessed the following aspects of the licensee's outage activities:

- Equipment Configuration Management: The inspectors verified that the licensee maintained defense-in-depth commensurate with the outage risk evaluations;
- Electrical Power Availability: The inspectors verified that the configuration of the electrical system was maintained to ensure equipment necessary to minimize plant risk remained operable; and
- Containment Cleanliness: The inspectors conducted cleanliness tours of containment after the licensee's major work activities were completed.

b. Findings

No findings of significance were identified.

.2 Monitoring of Heatup and Startup Activities

a. Inspection Scope

The inspectors verified that administrative procedure prerequisites were satisfied to ensure that required plant equipment was operable prior to conducting plant mode changes during heatup. The inspectors also verified that Technical Specification requirements pertaining to plant heatup limits and primary coolant system leakage were adhered to. In addition, the inspectors verified that containment integrity was established as required.

Further, the inspectors observed portions of the primary coolant system heatup, reactor startup, initial criticality, turbine generator synchronization to the electrical grid, and power ascension activities to verify that control room operators conducted plant startup activities in accordance with plant procedures and Technical Specifications.

b. Findings

No findings of significance were identified.

.3 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed a sample of condition reports regarding significant problems that were documented during the extended outage in the licensee's corrective action program to verify that corrective actions had been implemented. In addition, the inspectors reviewed condition reports to verify that licensee staff identified problems regarding outage activities at an appropriate threshold and that the identified problems were appropriately characterized with respect to the licensee's corrective action program.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed portions of the following surveillance testing activities conducted on risk-significant plant equipment to verify that testing was conducted in accordance with prescribed procedures:

- Control Rod Drop Testing;
- Auxiliary Feedwater Automatic Initiation; and
- Operations Pre-Startup Testing.

The inspectors also reviewed the documented test data for the Technical Specification Surveillance Test procedures and the associated basis documents to verify that testing acceptance criteria were satisfied.

In addition, the inspectors reviewed applicable portions of Technical Specifications, the Final Safety Analysis Report and Design Basis Documents to verify that the surveillance tests adequately demonstrated that system components could perform designated safety functions.

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

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

a. Inspection Scope

The inspector reviewed Revision 1, Revision 3 (pages 41 and 42), Revision 4, and Revision 5 of the Palisades Nuclear Plant Site Emergency Plan to determine whether changes identified in Revisions 3, 4, and 5 reduced the effectiveness of the licensee's emergency planning, pending onsite inspection of the implementation of these changes.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 Plant Walkdowns

a. Inspection Scope

The inspector reviewed the radiological conditions of work areas within radiation areas and high radiation areas (HRAs) in the radiologically restricted area to verify the adequacy of radiological boundaries and postings. This included walkdowns of high and locked high radiation area boundaries in the Auxiliary and East Radwaste Buildings as well as the Spent Fuel Pool. The inspector performed independent measurements of area radiation levels and reviewed associated licensee controls to determine if the controls (i.e., surveys, postings, and barricades) were adequate to meet the requirements of 10 CFR Part 20 and the licensee's Technical Specifications.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety

2PS2 Radioactive Material Processing and Transportation (71122.02)

.1 Walkdown of Radioactive Waste Systems

a. Inspection Scope

The inspector reviewed the liquid and solid radioactive waste system description in the Final Safety Analysis Report and the most recent information regarding the types and amounts of radioactive waste generated and disposed. The inspector performed walkdowns of the liquid and solid radwaste processing systems to verify that the systems agreed with the descriptions in the Final Safety Analysis Report and the Process Control Program, and to assess the material condition and operability of the systems. The inspector reviewed the current processes for transferring filters and waste resins into shipping containers to determine if appropriate waste stream mixing and/or sampling procedures were utilized. The inspector also reviewed the methodologies for waste concentration averaging to determine if representative samples of the waste product were provided for the purposes of waste classification in 10 CFR 61.55. During this inspection, the licensee was not conducting waste processing.

b. Findings

No findings of significance were identified.

.2 Waste Characterization and Classification

a. Inspection Scope

The inspector reviewed the licensee's radiochemical sample analysis results for each of the licensee's waste streams, including dry active waste, resins, and filters. The inspector also reviewed the licensee's use of scaling factors to quantify difficult-to-measure radionuclides (e.g., pure alpha or beta emitting radionuclides). The reviews were conducted to verify that the licensee's program assured compliance with 10 CFR 61.55 and 10 CFR 61.56, as required by Appendix G of 10 CFR Part 20. The inspector also reviewed the licensee's waste characterization and classification program to ensure that the waste stream composition data accounted for changing operational parameters and thus remained valid between the annual sample analysis updates.

b. Findings

No findings of significance were identified.

.3 Shipment Preparation

a. Inspection Scope

The inspector observed the transfer of clean waste filters (F57) from a transfer cask into a high integrity container for later shipment to a waste facility. The inspector observed the radiation worker practices of the workers transferring the filters to verify that the workers had adequate skills to accomplish the task. The inspector also reviewed the records of training provided to staff responsible for the conduct of radioactive waste processing and radioactive shipment preparation activities. The review was conducted to verify that the licensee's training program provided training consistent with NRC and Department of Transportation requirements.

b. Findings

No findings of significance were identified.

.4 Shipping Records

a. Inspection Scope

The inspector reviewed five non-excepted package shipment manifests completed in year 2001, to verify compliance with NRC and Department of Transportation requirements (i.e., 10 CFR Parts 20 and 71 and 49 CFR Parts 172 and 173).

b. Findings

No findings of significance were identified.

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspector reviewed reports of a Nuclear Oversight observation and a Chemical and Radiological Services focused self-assessment of the Radioactive Waste and Shipping Program to evaluate the effectiveness of the self-assessment process to identify, characterize, and prioritize problems. The inspector also reviewed corrective action documentation to verify that previous radioactive waste and radioactive materials shipping related issues were adequately addressed.

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 46 to the Palisades Nuclear Plant Security Plan and Revision 19 to the Palisades Nuclear Plant Suitability, Training, and Qualification Plan to verify that the changes did not decrease the effectiveness of the submitted documents. The referenced revisions were submitted in accordance with 10 CFR 50.54(p)(2) requirements by licensee letter dated December 18, 2001.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors verified that the data submitted by the licensee was accurate and complete for the emergency diesel generator unavailability performance indicator. The inspectors reviewed control room logs, licensee monthly operating reports, licensee's Incident Analysis System logs, completed Technical Specification Surveillance Tests, and the licensee's maintenance work order database for January through December 2001, to verify that the licensee had accurately reported the performance indicator for these quarters.

In addition, the inspectors discussed the data with the licensee staff responsible for gathering and reporting the information related to this performance indicator. Further, the inspectors reviewed condition reports regarding performance indicator data to verify that identified problems were appropriately characterized.

b. Findings

No findings of significance were identified.

4OA4 Cross-Cutting Issues

.1 Human Performance Cross-Cutting Issue in the Maintenance Organization

a. Inspection Scope

The inspectors reviewed NRC inspection reports over the past 12 months to determine if an adverse pattern or trend was emerging in a cross-cutting area which may not be captured in individual issues.

b. Findings

The inspectors determined that an adverse performance trend had developed in multiple cornerstone areas with a common element of human performance errors in the control and implementation of maintenance on safety related equipment. The following issues listed below are indicative of this adverse performance trend:

Initiating Events

- In November 2001, a Green finding and associated Non-Cited Violation was identified for the failure of maintenance staff to follow a preventative maintenance procedure step to inspect the head sprockets and sprocket tooth-inserts on the traveling screens for wear. Failure to inspect the head sprockets and sprocket-tooth inserts contributed to the failure of the F-4B traveling screen. (Green NCV 50-255/01-16-02);

Mitigating Systems

- In February 2001, a Green finding and associated Non-Cited Violation was identified for the failure of maintenance staff to perform and independently verify the required torque on an Emergency Diesel Generator fuel oil line connection during maintenance. Consequently, the connection leaked which unnecessarily delayed returning the emergency diesel generator to service which affected the availability of a train in a mitigating system. (Green NCV 50-255/01-02-02);

- In March 2001, a Green finding and associated Non-Cited Violation was identified for the failure of maintenance staff to construct seismically qualified scaffolds and storage racks near safety-related equipment in accordance with approved procedures. The non-seismically qualified scaffold and storage racks could have credibly affected the operability, availability or function of components in mitigating systems during a seismic event. (Green NCV 50-255/01-06-02);

- A Green finding and associated Non-Cited Violation was identified this inspection period for the failure of maintenance staff to accomplish an approved work instruction step to tighten component cooling water end bell bolting on a primary coolant pump oil cooler during corrective maintenance. Failure to accomplish the work instruction resulted in the loss of Component Cooling Water inventory while the plant was on shutdown cooling. (Section 1R14.1, Green NCV 50-255/01-17-01);

- A Green finding and associated Non-Cited Violation was identified this inspection period for the failure of maintenance staff to accomplish an approved work instruction step to disable long-time overcurrent trips on the breaker for electric driven Fire Pump P-9A. Failure to accomplish the work instruction resulted in the pump being unknowingly inoperable and unavailable for several days following corrective maintenance on the breaker. (Section 1R19.1, Green NCV 50-255/01-17-03);

Barrier Integrity

- A Green finding and associated Non-Cited Violation was identified this inspection period for the failure of maintenance staff to accomplish an approved work instruction step to grease motor bearings on the Control Room HVAC Condensing Unit, VC-11 Motor during corrective maintenance. Failure to accomplish the work instruction resulted in the failure of the VC-11 motor. (Section 1R14.2, Green NCV 50-255/01-17-02);

The causal relationships of these errors was that human errors were made during the performance of maintenance on safety related equipment related to the implementation of work performed, the control of work performed through work instructions or procedures, and the review and oversight of work performed. The individual findings highlighted were of very low significance; however, the findings could have had a credible impact on safety by increasing the frequency of initiating events, affecting the reliability, operability or functionality of mitigating equipment, or challenging the control room barrier.

This adverse human performance trend regarding maintenance of safety-related equipment is not suitable for a Significance Determination Process evaluation. However, this trend has been reviewed by NRC management and is determined to be a substantive cross-cutting issue not captured in individual issues indicating an adverse performance trend, and is a Finding characterized as “No Color.” (FIN 50-255/01-17-04)

.2 Corrective Action Cross-Cutting Issue

a. Inspection Scope

The inspectors reviewed NRC inspection reports over the past six months to determine if an adverse pattern or trend was emerging in a cross-cutting area which may not be captured in individual issues.

b. Findings

The inspectors determined that a performance trend had developed in multiple cornerstone areas with a common element of corrective actions. The following issues listed below are indicative of this performance trend:

Initiating Events

- The inspectors identified a corrective action Green finding and associated Non-Cited Violation for the licensee's failure to assure that the cause of the condition was determined and that corrective action was taken to preclude repetitive freezing of the traveling screen sensing lines during cold weather conditions. Corrective actions taken in response to a 1997 event, where the sensing lines had froze causing a decrease in service water bay level, were not effective to prevent recurrence as evidenced by the recurring freezing of the sensing lines during cold weather in 2000 and 2001. (Green NCV 50-255/01-13-04)

- The inspectors identified a corrective action Green finding and associated Non-Cited Violation for the failure to promptly correct long-standing conditions adverse to quality involving the instrument air system. (Green NCV 50-255/01-13-03)

- In November 2001, a corrective action Green finding and associated Non-Cited Violation was identified for the failure to promptly identify and correct deficiencies (wear) observed on the F-4B traveling screen boot-plate during an April 2001 inspection. The failure to promptly identify and correct these deficiencies contributed to the failure of the F-4B traveling screen. (Green NCV 50-255/01-16-03)

Mitigating Systems

- The inspectors identified a corrective action Green finding and associated Non-Cited Violation for the failure to promptly identify and correct a continuing adverse trend of equipment configuration control deficiencies from January through September 2001. (Green NCV 50-255/01-13-01)

- The inspectors identified a corrective action Green finding and associated Non-Cited Violation for the failure to identify and correct the human performance aspect of conditions adverse to quality. The inspectors identified several examples where human performance deficiencies contributed to mitigating system unavailability; however, the licensee failed to identify through their problem identification and resolution process these human performance problems. (Green NCV 50-255/01-13-02)

- The inspectors identified a corrective action Green finding and associated Non-Cited Violation in December 2001, 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 same deficiencies

associated with the insulation of the level instruments were previously identified by the inspectors during the cold weather inspection conducted in December 2000. However, the condition adverse to quality had not been corrected. (Green NCV 50-255/01-16-01)

The causal relationships of these issues was that conditions adverse to quality were not promptly identified or corrected, and in some instances corrective actions failed to preclude repetitive significant conditions adverse to quality. The individual findings highlighted were of very low significance; however, the findings could have had a credible impact on safety by increasing the frequency of initiating events, or by affecting the availability, reliability, operability or functionality of mitigating equipment.

This adverse corrective actions trend is not suitable for a Significance Determination Process evaluation. However, this trend has been reviewed by NRC management and is determined to be a substantive cross-cutting issue not captured in individual issues indicating an adverse performance trend, and is a Finding characterized as "No Color." (FIN 50-255/01-17-05)

4OA6 Meeting

Exit Meetings

The inspectors presented the inspection results to Mr. Cooper and other members of licensee management on February 8, 2002. Licensee staff 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:	January 11, 2002
Proprietary:	No
Subject:	Access Control to Radiologically Significant Areas and Radioactive Material Processing and Transportation
Change to Inspection Findings:	No

Interim Exit Meeting

Senior Official at Exit:	J. Fletcher, Security Manager
Date:	January 17, 2002
Proprietary:	No
Subject:	Safeguards Security Plan and Training and Qualification Plan Review
Change to Inspection Findings:	No

4OA7 Licensee Identified Violations

The following findings of very low safety significance were identified by licensee staff and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600 for being dispositioned as Non-Cited Violations.

NCV Tracking Number	Requirement Licensee Failed To Meet
(1) NCV 50-255/01-17-06	10 CFR 50, Appendix B, Criterion XVI, requires, in part, that conditions adverse to quality are promptly identified and corrected. In December 2001, waste handling staff identified boric acid on the Primary Coolant Pump P-50C carbon steel studs and the licensee performed the required engineering evaluations which revealed two studs were degraded. However, licensee personnel also identified that in September 2000 and May 2001 boric acid was identified on the same studs, and that engineering evaluations of stud wastage were not performed and submitted to the NRC in accordance with ASME Section XI, Code Case N-566-1, as required. In addition, licensee personnel identified during the evaluation that the corrective actions for a similar issue that was identified by the NRC in 1998 on Primary Coolant Pump P-50A failed to prevent recurrence on Pump P-50C. This licensee identified issue is of very low significance and is documented in the corrective action program as Condition Reports CPAL0104122 and CPAL0104213.

KEY POINTS OF CONTACT

Licensee

B. Benson, Unit Supervisor
T. Brown, Manager, Chemical and Radiological Services
D. Cooper, Site Vice President
D. Crabtree, Systems Engineering Manager
B. Dotson, Licensing Analyst
J. J. Fletcher, Security Manager
P. Harden, Director, Engineering
G.W. Hettel, Manager, Maintenance and Construction
L. Lahti, Licensing Manager
D. G. Malone, Supervisor, Regulatory Assurance
D. J. Malone, General Plant Manager
G. Packard, Operations Superintendent
K. Smith, Operations Manager

NRC

D. Hood, Project Manager, NRR

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-255/01-17-01	NCV	10 CFR Part 50, Appendix B, Criterion V, self-revealed violation for the failure to follow approved work instructions and procedures during corrective maintenance on a primary coolant pump oil cooler associated with the component cooling water system.
50-255/01-17-02	NCV	10 CFR Part 50, Appendix B, Criterion V, self-revealed violation for the failure to follow approved work instructions and procedures during corrective maintenance on the safety-related Motor EMB-2524 for HVAC Condensing Unit VC-11.
50-255/01-17-03	NCV	10 CFR Part 50, Appendix B, Criterion V, self-revealed violation for the failure to follow approved work instructions and procedures during corrective maintenance on the safety-related breaker for electric-driven Fire Pump P-9A.
50-255/01-17-04	FIN	Human Performance Cross-Cutting Finding for maintenance work performed on safety-related equipment, six previous findings impacting the initiating events, mitigating systems and barriers cornerstones.
50-255/01-17-05	FIN	Corrective Action Cross-Cutting Finding for six previous findings impacting the initiating events and mitigating systems cornerstones.
50-255/01-17-06	NCV	Licensee identified Criterion XVI violation for failure to promptly identify and correct issues related to boric acid on primary coolant pump carbon steel bolting.

Closed

50-255/01-17-01	NCV	10 CFR Part 50, Appendix B, Criterion V, self-revealed violation for the failure to follow approved work instructions and procedures during corrective maintenance on an primary coolant pump oil cooler associated with the component cooling water system.
50-255/01-17-02	NCV	10 CFR Part 50, Appendix B, Criterion V, self-revealed violation for the failure to follow approved work instructions and procedures during corrective maintenance on the safety-related Motor EMB-2524 for HVAC Condensing Unit VC-11.
50-255/01-17-03	NCV	10 CFR Part 50, Appendix B, Criterion V, self-revealed violation for the failure to follow approved work instructions and procedures during corrective maintenance on the safety-related breaker for electric-driven Fire Pump P-9A.

50-255/01-17-04	FIN	Human Performance Cross-Cutting Finding for maintenance work performed on safety-related equipment, six previous findings impacting the initiating events, mitigating systems and barriers cornerstones.
50-255/01-17-05	FIN	Corrective Action Cross-Cutting Finding for six previous findings impacting the initiating events and mitigating systems cornerstones.
50-255/01-17-06	NCV	Licensee identified Criterion XVI violation for failure to promptly identify and correct issues related to boric acid on primary coolant pump carbon steel bolting.

LIST OF ACRONYMS USED

CCW	Component Cooling Water
CFR	Code of Federal Regulations
CR	Condition Report
CRD	Control Rod Drive
DBT	Design Basis Threat
FSAR	Final Safety Analysis Report
HRA	High Radiation Area
HVAC	Heating Ventilation and Air Conditioning
NCV	Non-Cited Violation
PPAC	Predetermined and Periodic Activity Control
PWR	Pressurized Water Reactor
RCS	Reactor Coolant System

LIST OF DOCUMENTS REVIEWED

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-30, Attachment 6	Station Power System Checklist	Revision 31
SOP-3	System Operating Procedure - Safety Injection and Shutdown Cooling System	Revision 46
SOP-3	Attachment 13, Checklist 3.4 - Plant Flood Door System Checklist	Revision 46
SOP-3	Attachment 14, Checklist 3.5 - Engineered Safeguards System Checklist (Shutdown/Cooldown)	Revision 46
SOP-3	Attachment 17, Checklist 3.8 - Engineered Safeguards System Checklist (Heatup)	Revision 46
SOP-3	Attachment 18, Checklist 3.9 - Engineered Safeguards Administrative Control Verification	Revision 46
EOP Supplement - 4	Emergency Operating Procedure - High Pressure Safety Injection and Low Pressure Safety Injection Flow Curves	Revision 5

Miscellaneous Documents

DBD-2.02	Design Basis Document - High Pressure Safety Injection System	Revision 6
DBD-5.03	Emergency Diesel Generator Performance Criteria	Revision 5

	Final Safety Analysis Report, Section 6.1-Safety Injection System	Revision 22

1R05 Fire Protection

Plant 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
ONP-25.1, Attachment 8	Fire Area 8 - Fuel Oil Day Tank Rooms	Revision 11
ONP-25.1, Attachment 9	Fire Area 9 - Intake Structure	Revision 11
ONP-25.1, Attachment 16	Fire Area 16 - Component Cooling Water Rooms	Revision 11
FPIP-4, Attachment 2	Sprinkler Systems/Deluge Systems Information	Revision 16
FPIP-4, Attachment 5	Fire Detection Systems	Revision 16

Miscellaneous Documents

EA-PSSA-00-001	Palisades Plant Post Fire Safe Shutdown Summary Report, for Fire Areas 8, 9, and 16	Revision 1
Palisades Plant Fire Hazards Analysis	Analysis for Fire Areas 8, 9, and 16	Revision 4

Completed Surveillance Tests

FPSP-RO-9, Attachment 8	Intake Structure Rooms #136 and #136A Sprinkler Head Locations, dated December 9, 2000	Revision 0
FPSP-SI-1, Attachment 6	Data Sheet For Ultraviolet Flame Detectors, dated January 29, 2002	Revision 2

1R12 Maintenance Rule Implementation

	Containment Spray System Maintenance Rule Scoping Document and associated Maintenance Rule Performance Indicators	Revision 2

	Containment Spray System Health Assessments - 1st/2nd Quarter 2001	
EM - 25	Maintenance Rule Program	Revision 3
	Containment Isolation and Penetrations System Maintenance Rule Scoping Document and associated Maintenance Rule Performance Indicators	Revision 2
	Maintenance Rule Evaluations for Containment Isolation and Penetrations System for the period of January 1, 2001 through January 13, 2002	
	System Health Assessment 1st and 2nd quarter 2001, Containment Isolation System and Containment Building	

Condition Reports Reviewed To Assess Maintenance Rule Evaluations

CPAL0100457	Less Than Required CCW Cooling Flow For Containment Spray Pump P-54B
CPAL0101111	Improper RayChem/Incorrect Taping/Bolting
CPAL0100579	Predetermined and Periodic Activity Control for Lubrication of Containment Spray Pump Manual Isolation Valves Appears to be Inconsistent

Condition Reports Reviewed To Assess Corrective Actions

CPAL0100777	Containment Isolation Valve, CV-1910 (Primary Sample Isolation Valve), Remote Position Indication Did not Match Actual Valve Position Following Stroke
CPAL0200182	Incorrect Maintenance Rule Evaluation For POS-1104, Position Indication Failure
CPAL0101483	Deficiency In Procedural Control of Containment Closure

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, and January 16, through January 17, 2002	

Condition Reports Reviewed To Assess Problem Identification Characterization

CPAL0103839	GOP-14 Waive Not In Place When Required	

1R14 Nonroutine Evolutions

CPAL02000101	Incident Response Team Report - Entered Off-Normal Procedure 6.2, “Loss of Component Cooling Water,” While Restoring Pump P-50B Lube Oil Coolers	
WO 24210042	completed Work Order - Installed Oil Cooler is Leaking (E-67B)/Ensure Fittings Tight/Refill Oil System	January 4, 2002
ONP 6.2	Off-Normal Procedure 6.2, “Loss of Component Cooling Water”	Revision 8
WO 24013763	completed Work Order - During Predetermined and Periodic Activity Control to Grease Motor Bearings Discovered a Small Noise Within Bearing of Motor for Control Room HVAC Compressor VC-11	December 5, 2001
CPAL0104212	Condition Report Evaluation - Unusual Noise and Smoke Coming From VC-11, Control Room HVAC Condensing Unit	January 29, 2002
FSAR 9.8	Final Safety Analysis Report, Section 9.8, Heating, Ventilation, and Air-Conditioning System	Revision 23
B 3.7.11	Technical Specification Bases, Section 3.7.11, Control Room Ventilation (CRV) Cooling System	Amendment No. 189

Condition Reports Reviewed To Assess Problem Identification Characterization

CPAL0200101	Entered Off-Normal Procedure 6.2, “Loss of Component Cooling Water,” While Restoring Pump P-50B Lube Oil Coolers
CPAL0200115	Approximately One Gallon of Component Cooling Water Found Inside Primary Coolant Pump P-50B Motor EMA-2203
CPAL0200112	Potential for Wet Insulation on Primary Coolant Pump P-50B Casing Base
CPAL0200113	Potential for Oil in Containment Sump
CPAL0200114	Oil and Water on 607 Foot Elevation in Containment
CPAL0200116	Water in Primary Coolant Pump P-50B Oil Collection Tank T-108B
CPAL0200119	Potential Adverse Effects from Water and Oil Leakage
CPAL0200208	Additional Personnel Dose Due to Component Cooling Water Leak on P-50B Oil Cooler
CPAL0104212	Unusual Noise and Smoke Coming From VC-11, Control Room HVAC Condensing Unit
CPAL0104242	Apparent Failure to Follow Work Order Step in Job Plan
CPAL0200016	VC-11 (Control Room HVAC) Safety Related Motor Was Shipped Out for Repair to a Non-Qualified Vendor
CPAL0200022	Conditional Release of EMB-2524 (VC-11) Motor for Installation

1R15 Operability Evaluations

CPAL0200094	Operability Evaluation for Condition Report - Control Valve Failed to Open When Handswitch Taken to Open
CPAL0104154	Operability Evaluation for Condition Report - Evidence of Gasket Leakage at Primary Coolant Pump P-50B Cover Joint
CPAL010412	Operability Evaluation for Condition Report - Boric Acid Accumulation on Primary Coolant Pump P-50C Cover CCW Flange
CPAL0104082	Operability Evaluation For Condition Report - HPSI P-66B Closing Coil Fuse FUZ/A113-2 Blew During Work Order Steps

Miscellaneous Documents

	U.S. NRC Correspondence to Consumers Energy, Subject: Approval for Third 10-Year Interval Inservice Inspection Program Request for Relief for the Palisades Plant (TAC No. MA5548)	August 26, 1999
WR 287482	Work Request - Boric Acid Leaking from Flange Suspect on Active Leak	April 8, 2001

Condition Reports Reviewed To Assess Problem Identification Characterization

CPAL0104214	Insufficient Followup to Signs of Leakage from Primary Coolant Pump P-50C
CPAL0104213	Corrective Action From P-50A Casing Leak Inadequate to Prevent Recurrence on P-50C

1R17 Permanent Plant Modifications

EA-C-PAL 01-03563-01	Engineered Safeguards System Recirculation Mode NPSH & Flow Rates with Modified CTMT Sump Check Valves Using Pipe Flo	Revision 0
EA-C-PAL-01-00764-01	Determination of the Flow Characteristics of Containment Sump Check Valves CK-ES3166 and CK-ES3181	Revision 0
EA-SDW-97-003	Minimum Post-LOCA Containment Water Level Determination	Revision 0
01-1422	Screening Review and Safety Evaluation to Install Containment High Pressure Bypass for Containment Valves CV-3001 and CV-3002 and RAS Actuation of High Pressure Safety Injection Subcooling Valves CV-3070 and CV-3071	1-11-02
Engineering Analysis EA-EAR-2000-0302-01	Installation of Permissives and Interlocks on Emergency Core Cooling System (ECCS) valves CV-3001, CV-3002, CV-3070, and CV-3071	Revision 0
Emergency Operating Procedure 1.0	Standard Post-Trip Actions	Revision 12
Emergency Operating Procedure 4.0	Loss of Coolant Accident Recovery	Revision 13

Emergency Operating Procedure 9.0, MVAE-DC-1	Maintenance of Vital DC Power	14
Emergency Operating Procedure Supplement 5	Checklist for Safeguards Equipment Following Safety Injection Actuation Signal	6
Emergency Operating Procedure Supplement 42	Pre and Post RAS Actions	Revisions 1 and 2
Off-Normal Procedure 25.2	Alternate Safe Shutdown Procedure	17
FSAR Chapter 6.2	Containment Spray System	
FSAR Chapter 6.1	Safety Injection System	
FSAR Chapter 14.17	Loss of Coolant Accident	
Palisades Procedure change Request 18538	NRC identified surveillance test QO-38 must include acceptance criteria for shaft frictional torque measurement to correlate performance to hydraulic analysis assumptions	
Logic Diagram E-8 Sheet 1	125Vdc, 120V Instrument, and Preferred AC Single Line Meter and Relay Diagram	53
Logic Diagram E-8 Sheet 2K	125Vdc Distribution Panel No. 1 ED11-1 Breaker Schematic Diagram	1
Logic Diagram E-17 Sheet 6	Containment High Pressure Logic Diagram	11
Logic Diagram E-237 Sheet 1	Containment Spray Valves Schematic Diagram	12
Logic Diagram E-237 Sheet 1A	Containment Spray Valves Schematic Diagram	2
Logic Diagram E-245 Sheet 1	Safety Injection and Shutdown Cooling Valves Schematic	15
Logic Diagram E-245 Sheet 1A	Safety Injection and Shutdown Cooling Valves Schematic Diagram	11
Logic Diagram E-246 Sheet 1	Safety Injection Refueling Water Tank & Containment Sump Valves Schematic Diagram	19
Logic Diagram E-246 Sheet 2	Safety Injection Refueling Water Tank & Containment Sump Valves Schematic Diagram	19

Logic Diagram E-249	High Pressure Safety Injection Pumps P-66A and P-66B Schematic Diagram	15
Piping & Instrument Diagram M203	Safety Injection, Containment Spray & shutdown Cooling System	Revision 20
Piping & Instrument Diagram M204	Safety Injection, Containment Spray & shutdown Cooling System	Revision 6
Piping & Instrument Diagram M222	Miscellaneous Gas Supply Systems	Revision 26
TS 3.6.6 Basis	Containment Cooling Systems	8/1/2001

1R19 Post Maintenance Testing

QO-2	Completed Technical Specification Surveillance and Special Test Procedure - Recirculation Actuation System - January 12, 2001	Revision 32
QO-2	Basis Document - Technical Specification Surveillance and Special Test Procedure - Recirculation Actuation System	Revision 15
EDC-EAR-00-0302-01 Testing Plan	Work Order Attachment Tango for Testing Recirculation Actuation Signal Modification Installed per Work Order 24210012 and Engineering Assistance Request 2001-0302	January 12, 2002
EDC-EAR-00-0302-01 Installation Plan	Installation Plan for Recirculation Actuation Signal Modification Installed per Work Order 24210012 and Engineering Assistance Request 2001-0302	
	Restart Plant Review Committee Presentation for Containment Sump Check Valves and Net Positive Suction Head Issues	December 27, 2001
24114415	Work Order - Motor Drive Fire Pump P-9A Breaker	
24210061	Work Order - Motor Driven Fire Pump P-9A	
SPS-E-17	Permanent Maintenance Procedure - Temporary Installation and Removal Of Spare Circuit Breakers	Revision 1
SPS-E-6	Permanent Maintenance Procedure - ITE 480 Volt Breaker Inspection and Repair	Revision 10
Oma-1998	Part 6, Section 4.4, “Effects of Pump Replacement, Repair and Maintenance on Reference Values”	1998

Test T-213	completed special tests - CCW Flow Test of the CCW Pumps and CCW Heat Exchangers, dated October 9, 2001, and January 10, 2002	Revision 8
WO 24210015	Work Order - P-52C/EMA-1116, Motor Smoked, Repair Motor	
FSAR, Section 9.3	Final Safety Analysis Report, Section 9.3, "Component Cooling System"	Revision 23

Condition Reports Reviewed To Assess Problem Identification Characterization

CPAL0104192	A Single Failure of Control Valve CV-3030 to Open at Recirculation Actuation Signal May Necessitate Additional Procedural Guidance
CPAL0200059	Fire Pump P-9A Tripped After Running For Approximately Three Minutes
CPAL0104164	Breaker 52-1305 (Electric Fire Pump P-9A) Failed To Close
CPAL0200014	Component Cooling Water P-52C Breaker Tripped Open on Time Overcurrent
CPAL0200207	Discolored Oil Found During Maintenance Activities on Component Cooling Water Pump P-52C Inboard Motor Bearing
CPAL0200622	Inadequate Post Maintenance Testing Specified in Work Order 24114415 (Breaker 52-1305)

1R20 Refueling and Outage

	Correspondence from Reactor Engineering to Shift Supervisors, Subject Critical Approach / Power Escalation Recommendations, Revision 1	December 28, 2001

Plant Procedures

GOP-2	Mode 5 to Mode 3 Greater than or Equal to 525 Degrees Fahrenheit	Revision 23
GOP-3	Mode 3 Greater than or Equal to 525 Degrees Fahrenheit to Mode 2	Revision 17
GOP-4	Mode 2 to Mode 1	Revision 15
GOP-5	Power Escalation in Mode 1	Revision 27
GOP-14	Shutdown Cooling Operations	Revision 14
SOP-8	Main Turbine and Generator Systems	Revision 52

SOP-12	Feedwater System	Revision 41
SOP-30	Station Power	Revision 31

Condition Reports Reviewed To Assess Problem Identification Characterization

CPAL020259	Tools Stored in Containment Not Identified on System Operating Procedure 1, Attachment 14 and associated Operability Determination
CPAL0200027	(Mode 5L) Deficiencies Identified By NRC During Containment Walkdown
CPAL0200052	NRC Identified Reactor Head Stud Tensioner Trolley Chains Not Secured After Head Reassembly
CPAL0200138	Computer Code Input Error - Containment Hydrogen Concentration Analysis
CPAL0200319	Received Alarm EK-1325, Safety Injection Tank T-82C HI/LO Level Unexpectedly
CPAL0200215	Nitrogen Station 1A Pressure Low
CPAL0200213	Nitrogen Station 3A Pressure Below System Operating Procedure 19 Minimum
CPAL0200210	Primary Coolant Pump “B” Backstop Oil Low Flow Alarm
CPAL0200205	Difficulty Priming P-50B Motor EMA-2203 DC Lift Pump P-81B

1R22 Surveillance Testing

RO-22	completed Technical Specification Surveillance Procedure Acceptance Criteria and Operability Sheet - Control Rod Drop Times, dated December 10, 1999	Revision 16
RO-22	completed Technical Specification Surveillance Procedure Acceptance Criteria and Operability Sheet - Control Rod Drop Times, dated May 7, 2001	Revision 17
RO-22	completed Technical Specification Surveillance Procedure Acceptance Criteria and Operability Sheet - Control Rod Drop Times, dated January 10, 2002	Revision 17
RO-97	completed Technical Specification Surveillance - Auxiliary Feedwater System Automatic Initiation, dated January 16, 2002	Revision 11

	Comprehensive Commitment Report, Auxiliary Feedwater System	
PO-1	Completed Technical Specification Surveillance - Operations Pre-Startup Tests, dated January 14, 2002	Revision 1

Condition Reports Reviewed To Assess Problem Identification Characterization

CPAL0103816	RO-97 Aux Feed System Auto Initiation On-Line Tech Spec Test Expired Without Ability To Perform Test Prior To Mode 3 Operability Requirements

2PS2 Radioactive Material Processing and Transportation

HP 6.20	Radioactive Material Shipments	Revision 19
HP 6.35	Low Level Radioactive Waste Scaling Factor Methodology	Revision 1
HP 10.13	Radioactive Waste Package Activity Calculation	Revision 2
HP 10.14	Classification of Low-Level Radioactive Wastes	Revision 2
CPAL-0104024	Minor Errors Found in Rad Material Shipping Paperwork	December 18, 2001
CPAL-0104032	Surface Contaminated Object (SCO-II) Shipments Prepared Using an Incorrect Assumption	December 18, 2001
Proc No 3.07	10 CFR Part 50.59 Safety Review	Revision 8
	C&RS Focused Self-Assessment Report, Radwaste Shipping Program	January 4, 2002
2001-004-8-036	Nuclear Oversight Observation Report, Radwaste Shipment 01-093, Spent Fuel Rack	December 26, 2001
Course 166140	HM126F Training (Complete Course)	January 8, 2002
Course N00702	DOT-RAD MTRL Transportation-Nuclear	January 8, 2002
	Process Control Program (PCP)	Revision 8
EA-WWD-01-002	Evaluation of 10 CFR Part 61 Scaling Factors for Palisades	August 17, 2001

EA-WWD-01-001	Review of Storage of Radioactive Material in the VRS Boiler Room, the Old Asphalt Room, Track Alley		February 10, 2001
Shipment No. 00-026	SCO-II	PCP Motor	April 13, 2001
Shipment No. 00-033	Rad Mat	Y-III	April 22, 2001
Shipment No. 00-055	LSA -II	Evaporator Bottoms	June 1, 2001
Shipment No. 00-080	SCO-I	PCP Coupling Parts	September 26, 2001
Shipment No. 00-093	SCO-II	Contaminated Fuel Rack	December 11, 2001

3PP4 Security Plan Changes

Revision 46	Palisades Nuclear Plant Security Plan	December 17, 2001
Revision 9	Palisades Nuclear Plant Suitability, Training, and Qualification Plan	December 17, 2001

4OA7 Licensee Identified Violations

	U.S. NRC Correspondence to Consumers Energy, Subject: Approval for Third 10-Year Interval Inservice Inspection Program Request for Relief for the Palisades Plant (TAC No. MA5548)	August 26, 1999
WR 287482	Work Request - Boric Acid Leaking from Flange Suspect on Active Leak	April 8, 2001
CPAL0104212	Operability Evaluation for Condition Report - Boric Acid Accumulation on Primary Coolant Pump P-50C Cover CCW Flange	

Condition Reports Reviewed To Assess Problem Identification Characterization

CPAL0104214	Insufficient Followup to Signs of Leakage from Primary Coolant Pump P-50C
CPAL0104213	Corrective Action From P-50A Casing Leak Inadequate to Prevent Recurrence on P-50C