November 20, 2000

Mr. Thomas J. Palmisano
Site Vice President and General Manager
Palisades Nuclear Generating Plant
Consumers Energy Company
27780 Blue Star Memorial Highway
Covert, MI 49043-9530

SUBJECT: PALISADES NUCLEAR GENERATING PLANT - NRC INSPECTION REPORT 50-255/00-16(DRP)

Dear Mr. Palmisano:

On November 12, 2000, the NRC completed an inspection at your Palisades Nuclear Generating Plant. The enclosed report presents the results of that inspection which were discussed on November 13, 2000, with members of your staff.

The inspection was an examination of activities conducted under your license as they relate to reactor safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, one issue of very low safety significance (Green) was identified. The issue was determined to involve a violation of NRC requirements. However, the violation was not cited due to its very low safety significance and because it has been entered into your corrective action program, the NRC is treating this issue as a Non-Cited Violation, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny the Non-Cited Violation, you should provide a response with the 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 at the Palisades facility.

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/

Anton Vegel, Chief
Reactor Projects Branch 6

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

Enclosure: Inspection Report 50-255/00-16(DRP)

cc w/encl: R. Fenech, Senior Vice President, Nuclear
Fossil and Hydro Operations
N. Haskell, Director, Licensing and Performance Assessment
R. Whale, Michigan Public Service Commission
Michigan Department of Environmental Quality
Department of Attorney General (MI)
Emergency Management Division, MI Department
of State Police

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-255
License No:	DPR-20
Report No:	50-255/00-16(DRP)
Licensee:	Consumers Energy Company
Facility:	Palisades Nuclear Generating Plant
Location:	27780 Blue Star Memorial Highway Covert, MI 49043-9530
Dates:	October 1 through November 12, 2000
Inspectors:	J. Lennartz, Senior Resident Inspector R. Krsek, Resident Inspector J. Hopkins, Senior Operator License Examiner R. Walton, Reactor Engineer
Approved by:	Anton Vegel, Chief Reactor Projects Branch 6 Division of Reactor Projects

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
● Initiating Events	● Occupational	● Physical Protection
● Mitigating Systems	● Public	
● Barrier Integrity		
● Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: http://www.nrc.gov/NRR/OVERSIGHT/index.html.

SUMMARY OF FINDINGS

IR 05000255-00-16 on 10/01 - 11/12/00, Consumers Energy Company, Palisades Nuclear Generating Plant. Event follow-up.

The baseline inspection was conducted by resident and region based inspectors. The inspection identified one Green finding which was a non-cited violation. The significance of the finding is indicated by its color (Green) using Inspection Manual Chapter 0609, "Significance Determination Process."

Cornerstone: Mitigating Systems

- Green. The licensee discovered that a check valve in a minimum flow recirculation line in the Train "A" Emergency Core Cooling System was inoperable for a period which exceeded the Technical Specification allowed outage time, a condition prohibited by Technical Specifications. The causes for the check valve condition were attributed to a failure to properly assemble the check valve during original plant construction and non-intrusive testing which did not identify the actual condition of the check valve. One Non-Cited Violation was identified.

  The safety significance of this finding was very low because all mitigation systems remained operable and the licensee entered the finding into the corrective action program. (Section 4OA3).

Report Details

Summary of Plant Status

The plant was at full power at the start of the inspection period. Plant power was reduced to approximately 50 percent on October 27, 2000, to repair main condenser tube leaks. Necessary repairs were completed and the plant was returned to full power on October 30, 2000, where it remained for the duration of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment

.1 Semiannual Complete System Walkdown

a. Inspection Scope

The inspectors walked down accessible portions of Emergency Diesel Generators 1-1 and 1-2 air start systems and fuel oil systems to verify that the systems were appropriately aligned for operation. In addition, the inspectors observed an Auxiliary Operator, simulate the use of the standard operating procedure attachment to ensure that the specified actions to align an alternate method of supplying the Emergency Diesel Generators with fuel oil could be accomplished. The inspectors reviewed the following documents:

- Standard Operating Procedure - 22, "Emergency Diesel Generators," Revision 29 and the following associated attachments:
  Attachment 5, "Alternate Diesel Generator Fuel Oil Supply";
  Attachment 8, "Checklist 22.1, Diesel Generators System Checklist"; and
  Attachment 9, "Checklist 22.2, Fuel Oil System Checklist."

In addition, the inspectors reviewed the following condition reports to verify that identified problems regarding equipment alignment were being entered into the corrective action program with the appropriate characterization and significance:

- CPAL0003342, "Procedure Does Not Meet Current Standards"; and
- CPAL0003320, "Problems Found With Valve Labeling On Differential Pressure Indicators On the Diesel Generators."

b. Issues and Findings

No findings of significance were identified.

.2 Partial System Walkdown

a. Inspection Scope

The inspectors performed a routine partial walkdown of Containment Spray Pump P-54A to verify proper system lineup. The inspection verified that power was available to the pump, that accessible equipment associated with the system was appropriately aligned, and that no discrepancies existed which would impact the function of the system.

The inspection incorporated reviews of the applicable portions of Technical Specification Requirements and the following documents:

- System Operating Procedure - 3, Checklist - 3.9, "Engineered Safeguards Administrative Control Verification," Revision 44;
- System Operating Procedure - 4, "Containment Spray System," Revision 20;
- Final Safety Analysis Report Section 6.2, "Containment Spray System"; and
- Piping and Instrument Diagrams M-203, M-204 and M-209.

In addition, the inspectors reviewed the following condition report to verify that identified problems regarding equipment alignment were being entered into the corrective action program with the appropriate characterization and significance:

- CPAL0003358, "Checklist 3.9 Does Not Contain Adequate Administrative Control of Eight Emergency Core Cooling System Valves."

b. Issues and Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors performed fire tours of the following areas:

- Electrical Equipment room (Fire Area 21);
- Refueling and Spent Fuel Pool room (Fire Area 17);
- Diesel Generator 1-2 Fuel Oil Day Tank room (Fire Area 8); and
- Switchgear 1C room (Fire Area 4).

In the areas listed above, the inspectors observed the control of transient combustibles and ignition sources, and assessed the material condition of the passive fire protection features. The inspectors also verified the availability of the sprinkler fire suppression system, smoke detection system and manual fire fighting equipment for these areas.

The inspectors reviewed the applicable portions of the following documents during this inspection:

- Documented data for Fire Protection Surveillance Procedure SI-1, “Data Sheet For Alarm Bells and Ionization Smoke Detectors,” Revision 2, completed on July 27, 2000 for Fire Areas 4, 17, and 21;
- Fire Protection Surveillance Procedure SI-1, Attachment 15, “Zone 3, Refueling and Spent Fuel Pool Area Detector Locations,” Revision 2;
- Palisades Nuclear Plant Fire Hazards Analysis, Revision 4, Fire Area 8, “Diesel Generator 1-2 Fuel Oil Day Tank Room”;
- Engineering Analysis EA-APR-98-004, “Door Analysis,” and EA-98-008, “Penetration Evaluation for Fire Area 8";
- Post Fire Safe Shutdown Analysis, EA-PSSA-00-001, Revision 0, for Fire Areas 8 and 17;
- Fire Protection Implementing Procedure - 4, “Fire Protection Systems and Fire Protection Equipment,” Revision 15;
- Off Normal Procedure - 25.1, “Fire which Threatens Safety-Related Equipment,” Revision 10, Attachments 8 and 17, “Fire Area 8 - Diesel Generator 1-2 Fuel Oil Day Tank,” and “Fire Area 17- Refueling and Spent Fuel Pool Room,” Revision 10;
- Final Safety Analysis Report, Section 9.6, “Fire Protection,” Revision 22, and Table 9-10, “Fire Detection System Instrumentation,” Revision 21;
- Fire Protection Implementing Procedure - 4, Attachment 2, “Sprinkler Systems/Deluge Systems Information,” Revision 15 and Attachment 5, “Fire Detection Systems,” Revision 15;
- Fire Protection System Procedure - RO-7, Attachment 2, “Inside Fire Hose Hydrostatic Pressure Test Data Sheet,” Revision 2, completed on July 1, 1999; and
- documented results of completed surveillances on fire extinguishers and sprinkler heads in the Switchgear 1C room.

b. Issues and Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors evaluated the effectiveness of the licensee’s implementation of the Maintenance Rule, 10 CFR Part 50.65, for system components in two systems ranked in the high safety significant category. The inspectors reviewed recent maintenance rule evaluations to verify the appropriate maintenance rule categorization of specific issues for the following components.

- Fire Protection System Pumps; and
- Emergency Diesel Generator Ventilation System.

The inspectors also reviewed and evaluated the applicable performance criteria, risk rankings and scoping criteria for appropriateness. In addition, the inspectors interviewed the licensee's maintenance rule coordinator and evaluated the licensee's monitoring and trending of performance data with the responsible system engineer when applicable.

In determining the appropriateness of the performance criteria, risk rankings and scoping criteria, the inspectors reviewed the applicable portions of the Final Safety Analysis Report and Design Basis Documents, in addition to the following maintenance rule program documentation:

- Engineering Procedure EM-25, "Maintenance Rule Program," Revision 2;
- Engineering Procedure EGAD-EP-10, "Maintenance Rule Scoping Document," Revision 1;
- NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 2; and
- System Operating Procedure 21, "Fire Protection System," Revision 16.

In addition, the inspectors reviewed the following condition reports to verify that identified problems were appropriately characterized and evaluated with respect to the maintenance rule:

- CPAL0000742, "Diesel Fire Pump P-9B Failed to meet Maintenance Rule Availability Performance Criteria";
- CPAL0000888, "Diesel Fire Pump P-9A Failed to meet Maintenance Rule Availability Performance Criteria";
- CPAL0002509, "Failure of "B" Start Solenoid on Fire Pump P-9B";
- CPAL0000151, "Diesel Generator Room Temperature Below SOP Requirement";
- CPAL0000169, "Missing Spring On Damper D-22";
- CPAL0001121, "Generator Room Ventilation Temperature Setpoints In Question"; and
- CPAL0000201, "Unnamed Valve Associated With Diesel Generator Room Ventilation Found Cracked Open Instead Of Full Open."

b. Issues and Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Control

a. Inspection Scope

The inspectors reviewed equipment out of service risk assessments for planned and emergent maintenance activities and reviewed Administrative Procedure - 4.02, "Control of Equipment," Revision 17. The inspectors discussed the risk evaluations and plant configuration control for the maintenance activities with operations, maintenance and work control center personnel to evaluate whether the necessary steps were taken to control the work activities. The inspectors reviewed the following documents:

- Operator's Risk Report for October 2 through 5, 2000, regarding Emergency Diesel Generator 1-1 scheduled maintenance outage;
- Operator's Risk Report for October 10, 2000, specifically pertaining to scheduled maintenance for Component Cooling Water Heat Exchanger E-54A Temperature Control Valve CV-0821 under Work Order 24013347, "Temperature Control Valve CV-0821 Stuck Open / Repair / Replace";
- Operator's Risk Reports and Shift Supervisor log entries for October 30 through November 3, 2000, regarding Emergency Diesel Generator 1-2 scheduled maintenance outage; and
- Operators Risk Reports and Shift Supervisor log entries for November 5 through 8, 2000, regarding Emergency Diesel Generator 1-1 emergent maintenance outage to repair a leak on cylinder 9L.

Further, the inspectors reviewed the following condition reports to verify that identified problems regarding maintenance risk assessment and emergent work control activities were being entered into the corrective action program with the appropriate characterization and significance:

- CPAL0002977, "Metallic Shavings Found in Lube Oil Sump Under Cylinders 1 Left through 3 Left and 1 Right through 3 Right";
- CPAL0003043, " Guidance for Removal from Service of Component Cooling Water Heat Exchanger E-54A above 300 Degrees (Mode 3) is Inconsistent between Current Technical Specifications, Improved Technical Specifications, Standing Order 62 and System Operating Procedure - 16";
- CPAL0003076, "Cavitation / Corrosion on Flange Face Between Manual Valve MV-SW135 and Control Valve CV-821";
- CPAL0002987, "More Debris Found (Metal Shavings) In 1-1 Diesel Crank Case After Initial Independent Cleanliness Inspection";
- CPAL0003240, "Person In Charge Missed Signing One Electrical Tag On Diesel Generator 1-2 Tagout";
- CPAL0003220, "Personnel Error In Preparing EOOS For Work Week 2044 Delays Start Of Electrical Maintenance On Breaker For MO-3083";
- CPAL0003281, "During Performance Of Cylinder Leak Check Portion Of MO-7A-1, the 9L Cylinder Leaked 4 ounces of Oil/Water Mixture"; and
- CPAL0003316, "Insufficient Spare Parts Stocked For Diesel Generator 1-1."

b. Issues and Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

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

- 480 Volt Safety-Related Breakers for components in the High Pressure Safety Injection, Control Room Heating, Ventilation and Air Conditioning, and Charging Systems; and
- Motor Driven Auxiliary Feedwater Pump P-8A.

The inspectors also reviewed the applicable sections of the Technical Specification Requirements, Final Safety Analysis Report and Design Basis Documents associated with the components. The following condition reports and related documents were reviewed:

- CPAL0003196, "Increased Vibration Levels on P-8A Auxiliary Feedwater Motor and Pump";
- CPAL0002880, "Malfunction of Phenix Breaker Test Set Resulted in Incorrect Settings Being Applied on 480 Volt Safety Related Breakers"; and
- Engineering Analysis, EA-BWH-99-001, "Vibration Reference Values, Acceptance Limits, and Action Limits For Pump Inservice Testing Using CSi Analyzers," Revision 0.

The review verified that operability was appropriately justified for each component assessed and that the components remained available, such that no unrecognized increase in risk had occurred.

b. Issues and Findings

No findings of significance were identified.

1R16 Operator Workarounds

a. Inspection Scope

The inspectors evaluated the cumulative effect of identified operator workarounds to determine if mitigating system functions were affected. Also, the inspectors walked down a random sample of identified actions in abnormal and emergency operating procedures to assess whether the operators could implement the procedures in a timely manner to respond to plant transients. The inspectors reviewed the following documents:

- Operations Equipment Status List and Control Room Deficiencies List;
- Annunciator Response Procedure - 1, Window 71, "Condensate Pump Room Flooding," Revision 50;
- Emergency Operating Procedure Supplement 7, "Battery Number 1 Load Stripping," Revision 5;
- Emergency Operating Procedure - 4.0, "Loss Of Coolant Accident Recovery," Revision 12, and associated basis document; and
- Emergency Operating Procedure Supplement 42, "Jumpering Containment High Pressure For One Containment Spray Valve," Revision 0.

Also, the inspectors verified that appropriate corrective actions were implemented regarding identified operator workarounds in the following condition reports:

- CPAL0002160, “Warn and Alarm Functions Are Always In Alarm On Plant Computer and Critical Function Monitoring System Shows Equipment Invalid Giving A False Sense That Something Is Broken When It Is Not”;
- CPAL0001907, “Containment Air Coolers Service Water Leak Alarm EK-1347 Inoperable When Service Water Flow To Containment Greater Than 7500 Gallons Per Minute”;
- CPAL0002376, “No Administrative Controls For Operator Workaround To Prime Emergency Diesel Generator Fuel Oil Pumps”;
- CPAL0001122, “Turbine Stop Valve Bypass Valves 3 and 4 Failed To Close During Plant Start Up.”

Further, the inspectors reviewed the following condition report to verify that identified problems regarding operator workarounds were being entered into the corrective action program with the appropriate characterization and significance:

- CPAL0002959, “Current Programming Of Feed Water Control System Requires Continuous Operator Attention and Frequent Training”;
- CPAL0003292, “Cooling Fan V-24C For Diesel Generator 1-2 Has a Discharge Damper (D-28) That Will Not Fully Close”; and
- CPAL0003306, “Cooling Fan V-24B for K-6A Has a Discharge Damper (D-27) That Will Not Fully Close When Fan Cycles Off.”

b. Issues and Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

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 and whether applicable testing prerequisites were met prior to the start of the test. Post maintenance tests were observed for the following components:

- Emergency Diesel Generator 1-1;
- Emergency Diesel Generator 1-2; and
- Motor Operated Valves MO-3011 and MO-3013, “High Pressure Safety Injection To Reactor Coolant Loop 2A / 2B.”

The inspectors reviewed post maintenance testing criteria specified in the following Work Orders regarding Emergency Diesel Generator 1-1:

- 24912397, K-6A Air Start Motor A Starting Air Instrumentation;
- 24913285, Replace Meters EVI-1107 and SPI-1107;
- 24913284, Replace Meters EVI-1107l and SPI-1107L;
- 24010377, Drain, Clean and Re-fill Lube Oil System;
- 24010663, Replace Temperature Switch TS-1478; and
- 24013869, Remove, Test and Install Starting Air Check Valve CK-DE409.

The inspectors reviewed post maintenance testing criteria specified in the following Work Orders regarding Motor Operated Valves MO-3011 and MO-3013:

- 24011049, VOP-3011 High Pressure Safety Injection To Loop 2A;
- 24913393, MO-3013 High Pressure Safety Injection To Loop 2B;
- 24011050, VOP-3013 High Pressure Safety Injection To Loop 2B; and
- 24014114, Pull Injector On Cylinder 3L For Boroscope Inspection.

The inspectors reviewed post maintenance testing criteria specified in the following Work Orders regarding Emergency Diesel Generator 1-2:

- 24913283, Replace Control Room Volt Meter;
- 24010457, Replace Lube Oil Temperature Switch TS-1488;
- 24011099, Lube Oil Pressure Switch and Level Instrumentation Calibration;
- 24011746, Calibrate Jacket Water and Lube Oil Temperature Switches, Indicators and Controls;
- 24011962, K-6B Starting Air Pressure Control Valve PCV-1489;
- 24014022, Minor Hot Spot On Incoming Breaker Cutout Switch; and
- 24011705, Jacket Water Pressure Timer Relay.

In addition, the inspectors reviewed the completed test procedures to verify the tests were adequate for the scope of work performed and to ensure that acceptance criteria were clear and demonstrated equipment operability. Documented test data was reviewed to verify that the data was complete and that the equipment met the procedure acceptance criteria. The following documents regarding test acceptance criteria and documented test data were reviewed:

- Monthly Operating Technical Specification Surveillance Procedure, MO-7A-1, “Emergency Diesel Generator 1-1,” Revision 16;
- Engineering Manual Procedure EM-09-02, “Inservice Testing Of Plant Valves,” Revision 20;
- Quarterly Operating Technical Specification Surveillance Procedure, QO-5, “Valve Test Procedure,” Revision 56; and
- Monthly Operating Technical Specification Surveillance Procedure, MO-7A-2, “Emergency Diesel Generator 1-2,” Revision 52.

The inspectors also reviewed applicable sections of the Technical Specification Requirements and Final Safety Analysis Report to verify that the post maintenance tests demonstrated the overall systems and individual components were capable of performing the intended safety functions.

Further, the inspectors reviewed the following condition reports to verify that identified problems regarding post maintenance testing activities were being entered into the corrective action program with the appropriate characterization and significance:

- CPAL0003016, “Questionable Wilmar Timer Indication During MO-7A-1 Testing”;
- CPAL0003017, “Work Order Post Maintenance Testing Could Not Be Completed On Three Work Orders During Diesel Generator 1-1 Outage”;

- CPAL0002978, “EAR-99-0206 Package For SPI -1107 Emergency Diesel Generator 1-1 Frequency Meter Showed Incorrect Wiring Configuration”;
- CPAL0003129, “Technical Specification Surveillance Test Acceptance Criterion Data Not Included In RO-128-2 Procedure Log Sheets”;
- CPAL0003247, “Failure of New Control Room Diesel Generator Voltmeter”;
- CPAL0003257, “Work Week 2044 Erratic Voltmeter Indication For 1-2 Diesel Generator”;
- CPAL0003261, “1-2 Diesel Generator Frequency Meter Failed During Surveillance Test”;
- CPAL0003234, “K-6B Jacket Water Temperature Switch TS-1471 Failed To Function During Calibration Check”; and
- CPAL0003365, “Observation of Completed Post Maintenance Testing Versus Documentation in Work Order Summaries Not Clear - Work Week 2044.”

b. Issues and Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed portions of surveillance testing activities and reviewed completed surveillance test data for the following risk-significant plant equipment:

- High Pressure Safety Injection Pump P-66A;
- Anticipated Transient Without Scram - Diverse Scram System; and
- Emergency Diesel Generator 1-2.

In addition, the inspectors reviewed test procedures, the applicable Technical Specification Requirements and Final Safety Analysis Report, and the Design Basis Documents to verify that the surveillance tests demonstrated that the system components could perform the designated safety functions. The inspection included a review of the following procedures:

- Quarterly Operating Procedure - 19, “Inservice Test Procedure - High Pressure Safety Injection Pumps and Engineered Safeguards System Check Valve Operability Test,” Revision 20, and associated Basis Document, Revision 6;
- Reactor Protection System Procedure RPS-I-7, “Anticipated Transient Without Scram (ATWS) Calibration and Functional Test”;
- Refueling Operating Technical Specification Surveillance Test - RO-128-2, “Diesel Generator 1-2 24-Hour Load Run,” Revision 4 and associated Basis Document, Revision 2;
- Updated Final Safety Analysis Report, Chapter 8, “Electrical Systems,” Section 8.4.1.3, “Design Analysis,” Revision 22; and
- Technical Specifications 3.7.1, “AC Power Sources - Operating,” Amendment 180 and associated basis; 4.7.1, “AC Power Source Checks,” Amendment 180 and 4.7.3, “DG Fuel Oil and Lube Oil,” Amendment 180.

Further, the inspectors reviewed the following condition reports to verify that identified problems regarding surveillance testing activities were being entered into the corrective action program with the appropriate characterization and significance:

- CPAL0002964, “Evidence of Safety Injection Tank Inleakage from the Safety Injection Refueling Water Tank During QO-19B, High Pressure Safety Injection Pump P-66B Testing”;
- CPAL0002965, “High Pressure Safety Injection Pump P-66B Failed to Achieve the Required Differential Pressure During Performance of QO-19B, High Pressure Safety Injection Pump P-66B Testing”;
- CPAL0002972, “Testing Variables Not Adequately Controlled During QO-19"; CPAL0003121, “Off-Site Source Check Not Performed”;
- CPAL0003122, “Incomplete Tech Spec References In RO-128-2"; and
- CPAL0003104, “Discrepancy Between The “As Found” Voltage Reading and The Acceptance Criteria In RO-128-2, Diesel Generator 1-2 24 Hour Load Run.”

b. Issues and Findings

No findings of significance were identified.

1EP6 Emergency Preparedness Drill Evaluation

a. Inspection Scope

The inspectors observed portions of an emergency preparedness training drill on November 8, 2000, in the plant simulator, technical support center and emergency offsite facility. In addition, the inspectors observed the post drill critique in the technical support center. During the inspection, the inspectors verified licensee personnel’s critique of emergency response personnel’s ability to properly classify the event and complete required notifications, and to develop appropriate protective action recommendations. The following documents were reviewed:

- Scope and Objectives for Fourth Quarter Drill, November 8, 2000;
- Fourth Quarter Drill, November 8, 2000, Sequence of Events;
- Emergency Implementing Procedure EI-1, “Emergency Classification and Actions,” Revision 34;
- Emergency Implementing Procedure EI-3, “Communications and Notifications,” Revision 18, and Attachment 1, “Emergency Notification Form,” Revision 18; and
- Emergency Implementing Procedure EI-6, “Offsite Dose Calculation and Recommendations For Protective Actions,” Revision 9.

In addition, the inspectors reviewed the following condition reports to verify that identified problems regarding emergency preparedness drill activities were being entered into the corrective action program with the appropriate characterization and significance:

- CPAL0003317, “Incomplete Wiring Reconfiguration In TSC Results in PC Problem During Emergency Drill”;
- CPAL0003325, “Control Room (Simulator) Communications During Emergency Preparedness 4th Quarter Drill”; and

- CPAL0003334, “Faulty Phone Equipment In the EOF During the 11/08/00 Emergency Drill.”

b. Issues and Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator Verification

.1 Emergency AC Power and High Pressure Safety Injection Systems Unavailability Performance Indicator

a. Inspection Scope

The inspectors reviewed shift operating logs and component availability logs maintained by the applicable system engineers from April 2000 through August 2000 to verify the emergency diesel generator and high pressure safety injection systems’ unavailability times. The inspectors also reviewed the component availability logs for the two systems and compared this to the licensee-submitted unavailability data for these systems for the second and third quarters of the year 2000. The inspectors also interviewed the applicable system engineers and reviewed the following procedures:

- Technical Specification Monthly Operating Surveillance, MO-7A-2, “Emergency Diesel Generator 1-2 (K-6B),” Revision 52; and
- Administrative Procedure No. 3.09, “Data Collection, Review, and Reporting for NRC Performance Indicator Program,” Revision 0.

b. Issues and Findings

No findings of significance were identified.

.2 Auxiliary Feedwater Unavailability Performance Indicator

a. Inspection Scope

The inspectors reviewed shift operating logs and component availability logs maintained by the system engineering from April 2000 through August 2000 to verify the auxiliary feedwater system unavailability times. The inspectors reviewed the component availability logs and compared this to the licensee-submitted auxiliary feedwater system availability data for the second and third quarters of 2000. The inspectors also interviewed the system engineer and reviewed the following procedure:

- Technical Specification Quarterly Operating Surveillance, QO-21, “In Service Test Procedure - Auxiliary Feedwater Pumps,” Revision 19.

b. Issues and Findings

The inspectors identified that the licensee did not report 0.93 hours of unavailability for the month of August for the "C" train of auxiliary feedwater. The data discrepancy was considered minor, in that, the performance indicator did not reach a threshold that required increased NRC attention. The licensee documented this discrepancy in Condition Report CPAL0003224, "Unavailability Time Missed Being Included in the August 2000 Auxiliary Feedwater System Performance Indicator Report." There were no other discrepancies identified.

4OA3 Event Follow-up

(Closed) Licensee Event Report 50-255/2000-04: Discovery of Inoperable Check Valve CK-ES3332 Results in Plant Shutdown. On September 5, 2000, the licensee discovered during radiography testing that the disc and arm assemblies of Check Valve CK-ES3332 were detached from the valve hinge pin and positioned on the bottom of the valve body. Check Valve CK-ES3332 was a check valve installed on the Train "A" Emergency Core Cooling System common minimum flow recirculation line to the Safety Injection Refueling Water Tank. Subsequently, licensee personnel declared the check valve inoperable and entered Technical Specification 3.0.3 based upon the potential for loose parts to affect additional components in the Emergency Core Cooling System. Licensee personnel's root cause investigation determined that the cause for the check valve's condition was the failure to properly assemble the check valve during original plant construction in the early 1970s.

Check Valve CK-ES3332 normally had a safety function only in the open direction. Historical operation and routine surveillance data demonstrated that the as found condition of the check valve was not restricting recirculating flow and therefore satisfied the open safety function. On June 21, 2000, after a redundant check valve in the high pressure safety injection system was declared inoperable, a closed safety function previously performed by the failed redundant check valve was transferred to Check Valve CK-ES3332. At that time, non-intrusive testing was performed on Check Valve CK-ES3332 using acoustic monitoring techniques to determine if the valve was operable in both the open and closed directions. However, the nonintrusive testing performed did not identify that the disc and arm assemblies were not attached to the check valve. Consequently, licensee personnel incorrectly concluded that Check Valve CK-ES3332 could perform the closed safety function.

Custom Technical Specification 3.3.2.f, Amendment 172, that was in effect at the time of the event required, in part, that any valve associated with the safety injection and shutdown cooling system which is required to function during accident conditions, may be inoperable for no more than 24 hours. However, Check Valve CK-ES3332 was inoperable from June 21 through July 2, 2000, when it was required to perform a closed safety function. Consequently, the allowed outage time for CK-ES3332 was exceeded which was a condition prohibited by Technical Specifications. In accordance with Section VI.A.1 of the NRC Enforcement Policy, this Technical Specification Violation is being treated as a Non-Cited Violation (NCV 50-255/00-16-01). This issue was entered into the licensee's corrective action program as Condition Report CPAL0002714.

A risk significance screening of the finding was performed in accordance with NRC Inspection Manual Chapter 0609, "Significance Determination Process." The inspectors determined that the condition of the check valve could have had a credible impact on safety during the long term operation of the High Pressure Safety Injection Pump, with the potential for the check valve disc to restrict minimum recirculation flow. This could have affected the reliability and function of the emergency core cooling system. However, observation over many years of pump operation and routine surveillances demonstrated that the as-found condition of the check valve was not restricting flow. Also, the licensee personnel's subsequent engineering analysis concluded that there were no credible failure mechanisms for the Emergency Core Cooling System as a result of this condition. Therefore, the finding was determined to be of very low safety significance (Green).

4OA5 Temporary Instruction (TI2515/144)

Performance Indicator Data Collection and Reporting Process Review

a. Inspection Scope

The inspectors reviewed the licensee's performance indicator data collecting and reporting process for the following performance indicators:

- Unplanned Scrams per 7,000 Critical Hours;
- Scrams With a Loss of Normal Heat Removal;
- Unplanned Power Changes per 7,000 Critical Hours;
- Safety System Unavailability - Emergency AC Power Systems;
- Safety System Unavailability - High Pressure Safety Injection Systems;
- Safety System Unavailability - Auxiliary Feedwater Systems;
- Safety System Unavailability - Residual Heat Removal Systems;
- Safety System Functional Failures;
- Reactor Coolant System Specific Activity;
- Reactor Coolant System Leakage;
- Protected Area Security Equipment Performance Index;
- Personnel Screening Program Performance; and
- Fitness-for-Duty/Personnel Reliability Program Performance.

The inspectors reviewed Palisades Nuclear Plant Administrative Procedure No. 3.09, "Data Collection, Review, and Reporting for NRC Performance Indicator Program," Revision 0, July 6, 2000. The review was conducted to verify that the indicator definitions, data reporting elements, calculation methods, definition of terms, and clarifying notes used by the licensee were consistent with industry guidance document Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 0, March 2000.

b. Issues and Findings

No findings of significance were identified.

4OA6 Meetings, including Exit

The inspectors presented the inspection results to Mr. D. E. Cooper, Plant General Manager, and other members of licensee management at the conclusion of the inspection on November 13, 2000. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

G. R. Boss, Acting System Engineering Manager
D. E. Cooper, Plant General Manager
N. L. Haskell, Director, Licensing and Performance Assessment
S. Kupka, System Engineer
H. B. Nixon, Engineering Programs
D. G. Malone, Licensing
D. J. Malone, Engineering Director
G. C. Packard, Operations Superintendent
T. J. Palmisano, Site Vice President
K. Smith, Operations Manager

NRC

D. Hood, Project Manager, NRR
A. Dunlop, Reactor Engineer, RIII
J. Colaccino, Mechanical and Civil Engineering Branch, NRR

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-255/00-16-01	NCV	Check Valve CK-ES3332 inoperable for a period greater than 24 hours was a condition prohibited by Technical Specifications

Closed

50-255/00-004	LER	Discovery of Inoperable Check Valve CK-ES3332 Results in Plant Shutdown
50-255/00-16-01	NCV	Check Valve CK-ES3332 inoperable for a period greater than 24 hours was a condition prohibited by Technical Specifications

Discussed

None

LIST OF INSPECTIONS PERFORMED

The following inspection-area procedures were used to perform inspections during the report period. Documented findings are contained in the body of the report.

Inspection Procedure		Report
Number	Title	Section
71111-04	Equipment Alignments	1R04
71111-05	Fire Protection	1R05
71111-12	Maintenance Rule Implementation	1R12
71111-13	Maintenance Risk Assessment and Emergent Work Control	1R13
71111-15	Operability Evaluations	1R15
71111-16	Operator Workarounds	1R16
71111-19	Post Maintenance Testing	1R19
71111-22	Surveillance Testing	1R22
71114.06	Emergency Preparedness Drill Evaluation	1EP6
71151	Performance Indicator Verification	4OA1
71153	Event Follow-up	4OA3
TI2515/144	Performance Indicator Data Collection and Reporting Process Review	4OA5