

October 27, 2006

Mr. Paul A. Harden  
Site Vice President  
Nuclear Management Company, LLC  
Palisades Nuclear Plant  
27780 Blue Star Memorial Highway  
Covert, MI 49043-9530

SUBJECT: PALISADES NUCLEAR PLANT NRC INTEGRATED INSPECTION  
REPORT 05000255/2006006 and 05000255/2006012

Dear Mr. Harden:

On September 30, 2006, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your Palisades Nuclear Plant. The enclosed report documents the inspection findings which were discussed on September 26, 2006, with you and other 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 inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, two NRC-identified findings of very low safety significance (Green) were identified. Both of these findings were determined to involve a violation of NRC requirements. However, because the violations were of very low safety significance and because the issues have been entered into your corrective action program, the NRC is treating these findings as a non-cited violations (NCVs) consistent with Section VI.A.1 of the Enforcement Policy. If you contest the subject or severity of a NCV, you should provide a response with a basis for your denial, within 30 days of the date of this inspection report, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Palisades facility.

In accordance with 10 CFR 2.390 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/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Christine A. Lipa, Chief  
Branch 4  
Division of Reactor Projects

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

Enclosure:  
Inspection Report 05000255/2006006 and  
0500025/2006012  
w/Attachment: Supplemental Information

cc w/encl: J. Cowan, Executive Vice President  
and Chief Nuclear Officer  
R. Fenech, Senior Vice President, Nuclear  
Fossil and Hydro Operations  
D. Cooper, Senior Vice President - Group Operations  
L. Lahti, Manager, Regulatory Affairs  
J. Rogoff, Vice President, Counsel and Secretary  
A. Udrys, Esquire, Consumers Energy Company  
S. Wawro, Director of Nuclear Assets, Consumers Energy Company  
Supervisor, Covert Township  
Office of the Governor  
State Liaison Office, State of Michigan  
L. Brandon, Michigan Department of Environmental Quality -  
Waste and Hazardous Materials Division

P. Harden

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-255

License No: DPR-20

Report No: 05000255/2006006 and 05000255/2006012

Licensee: Nuclear Management Company, LLC

Facility: Palisades Nuclear Plant

Location: Covert, MI

Dates: July 1, 2006, through September 30, 2006

Inspectors: J. Ellegood, Senior Resident Inspector  
J. Giessner, Resident Inspector  
F. Ramírez, Acting Resident Inspector  
A. Garmoe, Reactor Engineer  
J. Cassidy, Radiation Specialist  
R. Lerch, Project Engineer  
A. Klett, Reactor Inspector  
D. Szwarc, Reactor Inspector

Approved by: C. Lipa, Chief  
Branch 4  
Division of Reactor Projects

Enclosure

## SUMMARY OF FINDINGS

IR 05000255/2006006 and 05000255/2006012; 07/01/2006 - 09/30/2006; Palisades Nuclear Plant; Operator Performance During Non-routine Evolutions and Event Follow-up.

This report covers a 3-month period of baseline inspections. The inspections were conducted by Region III inspectors and resident inspectors. This report includes two green findings, both of which were NCVs. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process (SDP)." Findings for which the SDP does not apply may be "Green" or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

### A. NRC-Identified and Self-Revealed Findings

#### **Cornerstone: Mitigating Systems**

- Green. The inspectors identified a finding of very low safety significance (Green) and an associated Non-Cited Violation (NCV) of 10 CFR 50.65 "Requirements for monitoring effectiveness of maintenance at nuclear power plants." Specifically, contrary to 50.65(a)(2), the licensee failed to demonstrate that the performance of condition of the HPSI System had been effectively controlled through performance of appropriate maintenance, and did not place the system in 50.65(a)(1) status when system performance deteriorated. The licensee subsequently placed the HPSI system in 50.65(a)(1) status and entered the finding into their corrective action program.

The inspectors determined that not placing the system in (a)(1) status when performance deteriorated is more than minor because it matched an example in IMC 0612, Appendix E, "Examples of Minor Violations," as being more than minor. The finding is of very low safety significance because the finding did not result in loss of a safety function. (Section 1R12)

- Green. A Green NCV was self-revealed on March 29, 2006, when control valve CV-3070, left train HPSI sub-cooling valve for HPSI pump P-66B, failed to open during preventive maintenance. Subsequent investigation by the licensee identified that a design change had removed a support for the valve. The removal of this support caused the valve to bind. The finding is a violation of 10 CFR 50, Appendix B, Criterion III. The licensee entered the finding into the corrective action program, repaired the valve and added additional support to prevent recurrence.

The inspectors concluded that the issue is more than minor because it affected the operability, reliability, and availability of a mitigating system. The inspectors concluded a phase 3 assessment was required based on the results of phase 1 and 2 assessments. Following a phase 3 assessment, the Senior Reactor Analyst concluded that the finding is of very low safety significance. (Section 4OA5.2)

**B. Licensee-Identified Violations**

A violation of very low safety significance, which was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and corrective actions are listed in Section 4OA7 of this report.

## REPORT DETAILS

### Summary of Plant Status

The plant operated at or near full Rated Thermal Power during the inspection period.

#### 1. REACTOR SAFETY

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

#### 1R04 Equipment Alignment

##### .1 Partial Walkdowns (71111.04Q)

###### a. Inspection Scope

The inspectors completed five equipment alignment inspection samples by performing partial walkdowns of the following risk-significant plant equipment:

- Right train diesel 1-2 alignments including service water (SW) and fuel support system while left train emergency diesel generator (EDG) was out for testing
- EDG 1-2 during elevated risk due to adverse weather;
- EDG 1-1 immediately following inoperability of the 1-2 EDG;
- Steam driven auxiliary feedwater pump (AFWP) during inoperability of motor driven AFWP; and
- "B" train high pressure injection system while "A" train was out of service for maintenance.

During the walkdowns, the inspectors verified that power was available, that accessible equipment and components were appropriately aligned, and that no open work orders for known equipment deficiencies existed which would impact system availability.

The inspectors also reviewed selected condition reports (CRs) related to equipment alignment problems and verified that identified problems were entered into the corrective action program. The documents reviewed during this inspection are listed in the attachment.

###### b. Findings

No findings of significance were identified.

##### .2 Complete Walkdown (71111.04S)

The inspectors completed one semi-annual equipment alignment inspection sample by performing a complete walkdown of the SW system. Utilizing piping and instrumentation diagrams and system checklists, the inspectors verified that accessible system components were correctly aligned. The inspectors also

reviewed open maintenance work orders to verify that the equipment's safety function was not adversely impacted by pending work.

The inspectors reviewed selected CRs associated with the SW system to verify that identified problems were entered into the corrective action program with the appropriate significance characterization. The inspectors also verified that planned and completed corrective actions were appropriate.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Fire Area Walkdowns (71111.05Q)

a. Inspection Scope

The inspectors completed six fire protection inspection samples by touring the following areas in which a fire could affect safety-related equipment:

- AFWP room (Fire Area 24)
- Screenhouse - intake structure (Fire Area 9)
- Outside areas and post indicating valve positions
- 1-C switchgear room (Fire Area 4)
- Control room (Fire Area 1)
- Turbine building 625' elevation (Fire Area 23D)

The inspectors verified that transient combustibles and ignition sources were appropriately controlled, and that the installed fire protection equipment in the fire areas corresponded with the equipment which was referenced in the Updated Final Safety Analysis Report (UFSAR), Section 9.6, "Fire Protection." The inspectors also assessed the material condition of fire suppression systems, manual fire fighting equipment, smoke detection systems, fire barriers and emergency lighting units. For selected areas, the inspectors reviewed documentation for completed surveillances to verify that fire protection equipment and fire barriers were tested as required to ensure availability.

The inspectors reviewed selected CRs associated with fire protection to verify that identified problems were entered into the corrective action program with the appropriate significance characterization. The inspectors also verified that planned and completed corrective actions were appropriate. The documents reviewed during this inspection are listed in the attachment.

b. Findings

No findings of significance were identified.

1R06 Flood Protection (71111.06)

a. Inspection Scope

The inspectors completed one inspection sample pertaining to flood protection measures for internal flooding events. The inspectors performed a walkdown of the component cooling water (CCW) room and its flood barriers to verify the flood barriers were in acceptable condition. The inspectors reviewed the licensee's flood analysis for the CCW room and determined the analysis was consistent with configuration of the room.

Further, the inspectors reviewed CRs to verify that corrective actions for previously identified flood protection problems were appropriate and had been properly implemented.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07A)

a. Inspection Scope

The inspectors reviewed heat exchanger performance for the component cooling water system. The inspectors checked the licensee's data for heat exchanger flow to verify no evidence of fouling existed. The inspectors also reviewed the licensee's program for monitoring and ensuring the operability of the plant's heat exchangers. In addition, the inspectors verified that the heat exchangers were correctly categorized under the Maintenance Rule and verified that they were receiving the required maintenance. This represents one sample.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11Q)

a. Inspection Scope

The inspectors completed one inspection sample of licensed operator requalification training by observing a crew of licensed operators during simulator training on August 30, 2006. The inspectors assessed the operators' response to the simulated events which included a loss of pressurizer control and a loss of containment integrity.

The inspectors verified that the operators were able to effectively mitigate the events through accurate and timely implementation of applicable alarm response procedures; Off-Normal Procedure 4.2, "Loss of Containment Integrity," Off-Normal Procedure 18, "Pressurizer Pressure Control Malfunctions," and Emergency Operating Procedure 2.0, "Reactor Trip Recovery." The inspectors also observed the post-training critique to

assess the licensee evaluators' and the crew's ability to self-identify performance deficiencies.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q)

a. Inspection Scope

The inspectors completed two inspection samples pertaining to maintenance effectiveness by reviewing maintenance rule implementation activities for the following system and components:

- High Pressure Safety Injection System
- 125 Volt Vital DC Power

The inspectors reviewed the licensee's implementation of the maintenance rule requirements to verify that component and equipment failures were evaluated and appropriately dispositioned. The inspectors also verified that the selected systems and components were scoped into the maintenance rule and properly categorized as (a)(1) or (a)(2) in accordance with 10 CFR 50.65.

b. Findings

Introduction

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50.65 "Requirements for monitoring effectiveness of maintenance at nuclear power plants." Specifically, contrary to 50.65(a)(2), the licensee failed to demonstrate effective control of performance of the HPSI System and did not place the system in (a)(1) status, establish goals and commence monitoring performance or condition when system performance deteriorated.

Description

While performing a Maintenance Effectiveness inspection of the HPSI system in accordance with Inspection Procedure (IP) 71111.12, the inspectors noted that from May 10, 2005, to March 29, 2006, the system had experienced four Maintenance Preventable Functional Failures (MPFFs). As specified by the licensee's Maintenance Rule Scoping Document, the licensee established performance criterion as less than two failures in a 24 month period. In addition, during the review of the HPSI system Maintenance Rule documents, the inspectors noted that the Mitigating Systems Performance Index (MSPI) evaluation resulted in White.

Following the fourth MPFF on March 29, 2006, the licensee wrote an Action Request (AR) to evaluate the HPSI system for placement in 10 CFR 50.65(a)(1). The licensee concluded that because the failures were not related to each other and corrective

actions had been taken for failures, the HPSI system did not warrant placement in 10 CFR 50.65(a)(1). The inspectors questioned the licensee's conclusion that the system should remain in 10 CFR 50.65(a)(2) given the number of failures and the licensee reiterated their conclusion. On August 24, 2006, the Maintenance Rule expert panel met and recommended to the engineering systems manager that the system be placed in 10 CFR 50.65(a)(1). Subsequently, the engineering systems manager approved the decision and placed the system in 10 CFR 50.65(a)(1) status on August 31, 2006 and commenced monitoring performance against licensee-established goals.

The inspectors concluded that effective control of the HPSI system performance had not been demonstrated as evidenced by the four MPFFs in less than 12 months, compounded with a white MSPI. In addition, the inspectors concluded that the licensee had ample time and opportunities prior to the start of the inspection to appropriately evaluate the effectiveness of the maintenance of the system. Regardless of the causes for the four failures, the licensee should have established goals and commenced monitoring the performance or condition of the system under 10 CFR 50.65(a)(1) when the multiple MPFFs indicated that system performance was not being effectively controlled through appropriate maintenance, to ensure that the system remained capable of performing its intended safety function. The licensee's failure to place the system in 10 CFR 50.65(a)(1) status when performance deteriorated resulted in the system not being monitored against licensee-established goals.

#### Analysis

The inspectors determined that the failure to place the HPSI System into 10 CFR 50.65(a)(1) when performance was not being effectively controlled through preventive maintenance was a licensee performance deficiency that warranted review in accordance with the Significant Determination Process. Using the IMC 0612, Appendix E, "Examples of Minor Violations," the inspectors determined that the finding was more than minor. Specifically the finding matches example 7.b., in that violations of 10 CFR 50.65(a)(2), are not minor because they necessarily involve degraded system performance.

To assess the significance of the finding, the inspectors used Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations" of IMC 0609, "Significance Determination Process," dated November 22, 2005. The inspectors determined that the finding was of very low safety significance, in accordance with the Phase 1 screening worksheet, because: (1) it did not represent an actual loss of safety function of a system; (2) it did not represent an actual loss of safety function of a single train for greater than its Technical Specification (TS) allowed outage time; (3) it did not represent an actual loss of safety function of one or more non-TS trains of equipment designated as risk-significant per 10 CFR 50.65 for greater than 24 hours; and (4) it did not screen as potentially risk significant due to a seismic, fire, flooding, or severe weather initiating event.

## Enforcement

10 CFR 50.65(a)(1), requires, in part, that the holders of an operating licensee shall monitor the performance or condition of structures, systems, or components (SSC's) within the scope of the rule as defined by 10 CFR 50.65(b), against licensee-established goals, in a manner sufficient to provide reasonable assurance that such structures, systems and components, are capable of fulfilling their intended functions. 10 CFR 50.65(a)(2) states, in part, that monitoring as specified in 10 CFR 50.65(a)(1) is not required where it has been demonstrated that the performance or condition of an SSC is being effectively controlled through the performance of appropriate preventive maintenance, such that the SSC remains capable of performing its intended function.

Contrary to the above, the licensee failed to demonstrate that the performance or condition of HPSI System had been effectively controlled through performance of appropriate maintenance, yet, did not monitor against licensee-established goals. Specifically, from May 10, 2005, to March 29, 2006, the HPSI system experienced four MPFFs, which showed that performance was not being effectively controlled since the performance criterion specified for the system was less than two MPFFs in a 24 month period. Subsequently, on August 31, 2006, the licensee placed the system in 10 CFR 50.65(a)(1). However, because of the very low safety significance and because the issue has been entered into the licensee's corrective action program (AR 01052257), the issue is being treated as a Non-Cited Violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy. (NCV 05000255/2006006-01)

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

#### a. Inspection Scope

The inspectors completed four inspection samples. The inspectors reviewed the following four activities to verify that the appropriate risk assessments were performed prior to removing equipment for work. The inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4), and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors verified the appropriate use of the licensee's risk assessment tool and risk categories in accordance with Administrative Procedure 4.02, Control of Equipment, Revision 29, and Fleet Procedure FP-OP-RSK-01, Risk Monitoring and Risk Management, Revision 0. Documents reviewed are listed in the attachment.

- Yellow risk path due to emergent adverse weather and EDG maintenance activities
- Yellow risk due to scheduled EDG maintenance activities
- Emergent work on load center 13
- Yellow risk due to EDG testing and main transformer work

The inspectors also verified that CRs related to emergent equipment problems were entered into the corrective action program with the appropriate significance characterization. The inspectors reviewed selected CRs related to risk management

during maintenance activities to verify that planned corrective actions were appropriate and had been implemented as scheduled.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

For the four operability evaluations described in the Operability Recommendations (OPRs) listed below, the inspectors evaluated the technical adequacy of the evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors reviewed the UFSAR to verify that the system or component remained available to perform its intended function. In addition, the inspectors reviewed compensatory measures implemented to verify that the compensatory measures worked as stated and the measures were adequately controlled. In addition, the inspectors verified that the CRs generated for equipment operability issues were entered into the licensee's corrective action program with the appropriate significance characterization. Documents reviewed are listed in the attachment.

- Operability of EDG 1-2 from October 28 to November 20, 2005
- Operability of SW System with pin hole leak
- Operability of AFWP with questionable oil sample results
- Operability of EDG 1-2 with erratic fuel oil pressure profile

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17A)

a. Inspection Scope

The inspectors reviewed one permanent plant modification package that involved isolating instrument air to two SW supply valves. The inspectors reviewed the design change information, related design basis documents and the 10 CFR 50.59 screening evaluation to verify that the design bases, licensing bases and performance capability of the involved diesel generator system were not degraded by this modification. In addition, the inspectors reviewed applicable plant documents to verify that any appropriate changes were made. Documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors completed one inspection sample pertaining to post maintenance testing by assessing testing activities that were conducted for the following maintenance activities:

- Testing of EDG 1-2 after replacement of a temperature switch

The inspectors observed portions of the post maintenance testing and reviewed documentation to verify that the tests were performed as prescribed by the work orders and test procedures; that applicable testing prerequisites were met prior to the start of the tests; and the effect of testing on plant conditions was adequately addressed by the control room operators. The inspectors reviewed documentation to verify the test criteria and acceptance criteria were appropriate for the scope of work performed; reviewed test procedures to verify the tests adequately verified system operability; and reviewed documented test data to verify the data was complete, and that the equipment met the prescribed acceptance criteria. Further, the inspectors reviewed CRs to verify that post maintenance testing problems were entered into the corrective action program with the appropriate significance characterization. For select CRs, the inspectors verified that the corrective actions were appropriate and implemented as scheduled.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors witnessed four surveillance tests and/or reviewed test data of selected risk-significant SSCs, listed below, to assess, as appropriate, whether the SSCs met the requirements of the TS; the USAR; Palisades Administrative Procedure 9.20, TS Surveillance and Special Testing Program; Engineering Manual EM-09-02 and EM-09-04, Inservice Testing of Plant Valves and Inservice Testing of selected safety-related pumps. One of the samples was an inservice test and one was an isolation valve. The inspectors also determined whether the testing effectively demonstrated that the SSCs were operationally ready and capable of performing their intended safety functions. Further, the inspectors reviewed selected CRs regarding surveillance testing activities. The inspectors verified that the identified problems were entered into the licensee's corrective action program with the appropriate significance characterization and that the planned and completed corrective actions were appropriate. Additional documents reviewed are listed in the attachment.

- COP-22A, Diesel Fuel Oil Testing Program
- QO-5, Valve Test Procedure - Includes Containment Isolation Valves (isolation valve)

- QO-21, Inservice Test for AFWPs (IST)
- RT-202, Control Room HVAC Heat Removal Capability

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors completed one baseline inspection sample by reviewing the following temporary modification:

- Installation of new non safety-related Diesel Generator 1-3

The inspectors reviewed the design documents and 10 CFR 50.59 safety screening to verify that the temporary modification did not affect the operability of the related systems and other interfacing systems. The inspectors reviewed documentation to verify that the modification was implemented as designed. Post modification testing results were reviewed to verify that the system functioned as intended after the modification was implemented.

b. Findings

No findings of significance were identified.

1EP6 Emergency Preparedness Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed emergency response personnel in the Technical Support Center during an emergency planning drill on August 15, 2006. Emergency Preparedness personnel had pre-designated that the opportunities to classify the event and make protective action recommendations would be evaluated and included in the performance indicator data regarding drill and exercise performance.

The inspectors verified the emergency classifications, notifications to offsite agencies, and the development of protective action recommendations were completed in an accurate and timely manner as required by the emergency plan implementing procedures. The inspectors also verified that the drill was conducted in accordance with the prescribed sequence of events and that the drill objectives were met.

The inspectors observed the post-drill critique in the Technical Support Center to verify that emergency response personnel and drill evaluators adequately self-identified performance problems. The inspectors reviewed the post-drill critique report to verify that the data regarding the indicator for drill and exercise performance was accurate. Condition reports generated for identified drill performance problems were reviewed to

verify that the problems were entered into the corrective action program with the appropriate significance characterization. This represents one sample.

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/Boundary Verifications and Radiation Work Permit Reviews

a. Inspection Scope

The inspectors reviewed the licensee's physical and programmatic controls for highly activated and/or contaminated materials (non-fuel) that could be stored within the spent fuel pool. Specifically, applicable radiation protection (RP) procedures were reviewed, RP staff were interviewed, and a walkdown of the refuel floor was conducted. Although highly activated/contaminated materials are not stored in the spent fuel pool in a manner that readily allowed their inadvertent movement, the radiological controls for the storage of such materials was discussed with RP staff to ensure adequate barriers would be established should the licensee change its practices. This review represented one sample.

b. Findings

No findings of significance were identified.

.2 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed the licensee's documentation for all potential Performance Indicator (PI) events occurring since the last radiological access control inspection in March 2004 to determine if any of these events involved dose rates greater than 25 Rem/hour at 30 centimeters or greater than 500 Rem/hour at 1 meter or involved unintended exposures greater than 100 millirem total effective dose equivalent (or greater than 5 Rem shallow dose equivalent or greater than 1.5 Rem lens dose equivalent). None were identified. This review represented one sample.

b. Findings

No findings of significance were identified.

.3 High Risk Significant, LHRA and Very High Radiation Area (VHRA) Access Controls

a. Inspection Scope

The inspectors discussed with RP staff the controls that were in place for areas that had the potential to become high or locked high radiation areas during certain plant operations to determine if these plant operations required communication before hand with the RP group, so as to allow corresponding timely actions to properly post and control the radiation hazards. In particular, reactor operations procedures and RP procedures/job files developed to identify vulnerable areas subject to changing radiological conditions were reviewed and their implementation was discussed with RP supervisory staff. This review represented one sample.

b. Findings

No findings of significance were identified.

4. **OTHER ACTIVITIES (OA)**

4OA1 Performance Indicator Verification (71151)

**Cornerstones: Occupational and Public Radiation Safety**

.1 Radiation Safety Strategic Area

a. Inspection Scope

The inspectors sampled the licensee's PI submittals for the periods listed below. The inspectors used PI definitions and guidance contained in Revision 3 of Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," to verify the accuracy of the PI data. The following PIs were reviewed:

- Occupational Exposure Control Effectiveness:

The inspectors reviewed the licensee's assessment of the PI for occupational radiation safety, to determine if indicator related data was adequately assessed and reported during the previous four quarters. The inspectors compared the licensee's PI data with the CR database, reviewed radiological restricted area exit electronic dosimetry transaction records, and conducted walkdowns of accessible locked high radiation area entrances to verify the adequacy of controls in place for these areas. Data collection and analysis methods for PIs were discussed with licensee representatives to determine if there were any unaccounted for occurrences in the Occupational Radiation Safety PI as defined in Revision 3 of Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline." This review represented one sample.

- Radiological Environmental TS/Off-site Dose Calculation Manual (ODCM)  
Radiological Effluent Occurrences:

The inspectors reviewed data associated with the RETS/ODCM PI to determine if the indicator was accurately assessed and reported. This review included the licensee's CR database for the previous four quarters, to identify any potential occurrences such as unmonitored, uncontrolled or improperly calculated effluent releases that may have impacted offsite dose. The inspectors also selectively reviewed gaseous and liquid effluent release data and the results of associated offsite dose calculations and quarterly PI verification records generated over the previous four quarters. Data collection and analyses methods for PIs were discussed with licensee representatives to determine if the process was implemented consistent with industry guidance in Revision 3 of Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline." This review represented one sample.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that CRs were being generated and entered into the corrective action program with the appropriate significance characterization. For select CRs, the inspectors also verified that identified corrective actions were appropriate and had been implemented or were scheduled to be implemented in a timely manner commensurate with the significance of the identified problem.

b. Findings

No findings of significance were identified.

.2 Semi-Annual Trend Review

a. Inspection Scope

As required by IP 71152, "Identification and Resolution of Problems," the inspectors performed a review of the licensee's corrective action program (CAP) action requests to identify trends that could indicate the existence of a more significant safety issue. The inspectors also reviewed the Operations Department Monthly Performance Report dated March 2006, the Site DRUM Report for the 1<sup>st</sup> Quarter of 2006 and the Corrective Action Program Performance Indicator Summary, dated May 2006. The inspectors' review for potential trends included the results from the daily inspector CAP item screening discussed in Section 4OA2.1. The plant CAP action request screening meetings were observed to review the licensee's level of effort in identifying potential trends, and any associated corrective actions that were planned or implemented. In addition, the

inspectors reviewed issues documented outside the normal CAP that included, maintenance work orders, component status reports, performance indicators and Operations control room logs. The inspectors' review nominally considered the 6 month period of January through June 2006. The inspectors compared and contrasted their results with the results obtained by the licensee during previous internal reviews.

b. Findings

No findings of significance were identified.

.3 Annual Sample for Follow-up Inspection

a. Inspection Scope

The inspectors completed one inspection sample for annual reviews of selected follow-up by reviewing the cumulative effects of operator work-arounds. The inspectors reviewed licensee practices for the identification, review and assessment of operator work-arounds including any cumulative impact. This inspection included review of the licensee's Administrative Procedure 4.12, "Operator Work-around Program" and biweekly "Palisades OPS Burden Status Report," which also addressed other "operator challenges," and discussions with operations supervisors about program implementation.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up (71153)

- .1 The inspectors reviewed Licensees Event Report (LER) 2005-07-00, "Inoperable Emergency Diesel Generator for a Time Longer than Permitted by TSs" and subsequent correspondence that retracted the LER. The LER reported a condition where a failed snubber valve resulted in both diverting fuel from a single cylinder as well as spreading combustible fuel. In order to understand the licensee's rationale for the LER retraction, the inspectors reviewed the basis documents prepared to support the retraction. Based on this review, the inspectors concluded additional information was needed to determine the acceptability of retracting the LER. Unresolved Item (URI) 05000255/2006004-06 addressing assessment of the diesel operability remains open. This LER remains open.

4OA5 Other Activities

- .1 (Closed) URI 05000255/2005202-01, "Verification of contents of two storage tubes which contain rod fragments from assembly 1-024 "

The inspectors reviewed the licensee's response to the subject URI and discussed this issue with the NRC Senior MC&A Physical Scientist who identified the issue originally. The inspectors reviewed records developed in conjunction with the physical inventory of a failed fuel rod. The inspectors compared the results with documentation developed

when the failed fuel was initially loaded into tubes. Based on these records, the inspectors concluded the licensee completed the physical inventories to verify the contents of storage tubes containing fuel pin fragments. These inventories confirmed the location of the fuel pins. This URI is closed.

.2 (Closed) URI 05000255/2006004-07,"Control Valve CV-3070 Fails to Stoke"

a. Inspection Scope

In NRC Inspection Report 05000255/2006004, the inspectors documented URI 05000255/2006004-07 regarding the failure of valve CV-3070, left train HPSI sub-cooling control valve, to stroke during maintenance. The licensee has performed and the NRC has reviewed the analysis of the valve's capability needed to close this URI. The licensee's analysis concluded the valve was not operable. This item is closed.

b. Findings

Introduction

A Green NCV was self-revealed on March 29, 2006 when control valve CV-3070, left train HPSI sub-cooling valve for HPSI pump P-66B, failed to open during preventive maintenance. Subsequent investigation by the licensee identified that a design change had removed a support for the valve. The removal of this support caused the valve to bind.

Description

While performing maintenance to inspect and repair the valve's oiler, the licensee attempted to test stroke the valve. Once the valve failed to stroke, the plant entered the applicable 72-hour limiting condition for operation action 3.5.2B.1, that requires the train to be restored to operable. After troubleshooting the failure, the licensee determined the valve could not be repaired within the Limiting Condition for Operation (LCO) action time and shut down the plant as required.

Troubleshooting of the Control valve revealed the valve could open once it was mechanically agitated. In addition, diagnostic testing of CV-3070 showed the stem movement of the valve was not smooth. These test results indicated internal valve component interference. Subsequent disassembly of the valve indicated the valves' stem was interacting with the back seat surface, increasing the force needed to open the valve.

The licensee's causal analysis identified that in 1994 a support for the valve had been removed. A document search did not locate the design basis for the hanger. In addition, the licensee identified that the valve had also failed to stroke on 2003. The licensee concluded that inadequate support for the valve and its operator caused the internal components to bind and the valve to fail to stroke. Prior to restarting the reactor, the licensee repaired the valve and added additional support to prevent recurrence.

## Analysis

The inspectors determined that the failure to adequately design the valve support was a performance deficiency. The inspectors assessed this finding using the SDP. The inspectors reviewed the samples of minor issues in IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," and determined that there were no examples related to this issue. Consistent with the guidance in IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," the inspectors determined that the finding was of more than minor significance because the failure of the valve to stroke is associated with the operability, reliability and availability of a mitigating system. Specifically, the sub-cooling valve is credited with maintaining subcooling of water to the HPSI pump when the plant is on sump recirculation.

## Phase 1 Assessment

The inspectors performed a Phase 1 SDP review of this finding using the guidance provided in accordance with IMC 0609, Significance Determination Process, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-power Situations," Attachment 1. The inspectors determined that the finding represented an actual loss of safety function of a single train of safety-related equipment for greater than its TS allowed outage time and a Phase 2 SDP evaluation was warranted.

## Phase 2 Assessment

The inspectors utilized all of the initiating event worksheets except the "Anticipated Transient without Scram" and "Loss of Service Water " worksheets and solved only those sequences that involved the high pressure recirculation function with a duration of 3-30 days. Based on the results of the SDP worksheets, the inspectors determined that the finding was potentially of low to moderate safety significance (White). The regional senior reactor analyst (SRA) reviewed these results and determined that an SDP Phase 3 assessment was necessary to refine the risk characterization.

## Phase 3 Assessment

*Internal Events* - The SRA performed the risk evaluation using the Palisades Standardized Plant Analysis Risk (SPAR) Model, Level 1, Revision 3P, Change 3.21, created October 2005. The SRA ran the SPAR model assuming failure of Valve CV-3070 to open throughout an exposure time of 672 hours (28 days). The SRA obtained a change in core damage frequency ( $\Delta$ CDF) of 4.9E-7 (Green) for internal events. The dominant sequences involved loss of coolant accident scenarios with failure of high pressure recirculation.

*External Events* - The SRA reviewed the "Individual Plant Examination of External Events" report for Palisades dated February 1998 and the Palisades Fire Hazards Analysis Report, Revision 6, for insights on risk contribution from external events. In reviewing these documents, Valve CV-3070 was not shown to be needed or relied upon to support post-fire safe shutdown. The SRA determined that the risk contribution of this finding due to fire is insignificant. Regarding seismic and flooding contributors to risk, none of the dominant contributors involved Valve CV-3070. The SRA determined

that the risk contribution of this finding due to seismic and flooding events was likewise insignificant.

Large Early Release Frequency (LERF) - Using IMC 0609, Appendix H, "Containment Integrity Significance Determination Process," the SRA determined that this was a Type "A" finding for a pressurized water reactor with large dry containment. Using Table 5.1, the SRA concluded that none of the accident sequences were contributors to LERF. The attributes considered in Table 5.1 were inter-system loss of coolant accidents and steam generator tube ruptures. None of these scenarios was impacted by this finding. The SRA concluded that the  $\Delta$ LERF was negligible and did not contribute to the risk associated with this finding.

Significance Determination Conclusion- -The SRA concluded that the total  $\Delta$ CDF for this issue, considering internal events, external events, and LERF was estimated to be 4.9 E-7 (Green).

### Enforcement

10 CFR 50 Appendix B Criterion III, requires, in part, that "Measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in 50.2 and as specified in the licensee application , for those structures systems and components to which this appendix applies are correctly translated into specifications , drawings, procedures, and instructions...." Contrary to these requirements, the licensee failed to include the hanger in design documentation. In addition, analysis to support removal of the hanger failed to recognize the potential for internal valve binding. As a result, the licensee removed the hanger, thus permitting the valve to bind. However, because this violation was of very low safety significance and because the issue was entered into the licensee's corrective action program as CAP01021152, this violation is being treated as an NCV, consistent with Section VI.A.1 of the Enforcement Policy (NCV 05000255/2006006-02). The licensee's initial corrective action included performing a plant shutdown.

### .3 Temporary Instruction (TI) 2515/169 Mitigating System Performance Index Verification

#### a. Inspection Scope

The inspectors reviewed the licensee's implementation of MSPI reporting guidance in accordance with TI 2515/169. The inspectors reviewed a sample of procedures where unavailability was excluded due to either the short duration of the unavailability or where the licensee took credit for operator action to recover. For the MSPI systems, the inspectors verified the baseline planned unavailability hours and confirmed the hours were correctly translated into the basis document. In addition, the inspectors selected a sample of planned and unplanned unavailable hours and confirmed through operating logs, maintenance records or CRs that the data was accurate. Finally, the inspectors confirmed the accuracy of failure data on a sampling basis.

The inspectors determined that the licensee accurately documented baseline planned unavailability data; and accurately documented actual unavailability hours. The inspectors determined that one event related to the 1-2 EDG may result in an additional

failure. If included, the failure would result in the Emergency AC Power MSPI index crossing the Green/White threshold. This issue is already the subject of URI 05000255/2006004-06. No additional errors were identified in submitted data. No significant discrepancies were identified in the basis document.

b. Findings

No findings of significance were identified.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. P. Harden and other members of licensee management on September 26, 2006. Licensee personnel acknowledged the findings presented. The inspectors asked licensee personnel whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Interim Exit Meetings

An interim exit meeting was conducted for:

- Occupational radiation safety program for access control and Performance Indicator verification with Mr. B. Patrick and Ms. B. Dotson on October 3, 2006.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance was identified by the licensee and is a violation of NRC requirements that meets the criteria of Section VI of the NRC Enforcement Policy for being dispositioned as an NCV.

**Cornerstone: Mitigating Systems**

- .1 On June 9, 2006, a Nuclear Control Operator (NCO) identified that LCO 3.0.3 had been inadvertently entered due to two Safety Injection Tank (SIT) bottles being rendered inoperable at the same time for approximately 40 seconds. Specifically, while performing RI-15C, SIT Level Channel Calibration on T-82B, the NCO vented T-82D due to a pressure rise. The Control Room Supervisor was subsequently made aware of the evolution. Technical Specification 5.4, requires procedures to be implemented and maintained for safety related equipment. Contrary to this requirement, the licensee failed to implement procedures to control operability of the SITs and unknowingly entered LCO 3.0.3. The inspectors reviewed the finding in accordance with IMC 0609 and concluded that since the two SITs were inoperable simultaneously for only 40 seconds and it was recognized promptly by the operating crew, the finding was of very low safety significance. The licensee entered this issue into their corrective action program as AR 01034847.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee

P. Harden, Site Vice President  
G. Baustian, Training Manager  
T. Blake, Nuclear Safety Assurance Manager  
M. Carlson, Engineering Director  
B. Dotson, Regulatory Compliance  
G. Baustian, Training Manager  
G. Hettel, Plant Manager  
L. Lahti, Licensing Manager  
D. Malone, Regulatory Affairs  
C. Moeller, Radiation Protection General Supervisor - Ops  
D. Nestle, Radiation Protection General Supervisor - Technical  
B. Patrick, Radiation Protection & Chemistry Manager  
K. Yeager, Assistant Operations Manager

### LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

#### Opened

05000255/2006006-01	NCV	The licensee failed to demonstrate that the performance or condition of High Pressure Injection System had been effectively controlled per 10 CFR 50.65 (Section R12)
05000255/2006006-02	NCV	Control Valve CV-3070 Failed to Stroke (Section 40A5.2)

#### Closed

05000255/2006006-01	NCV	The licensee failed to demonstrate that the performance or condition of High Pressure Injection System had been effectively controlled (Section R12)
05000255/2006006-02	NCV	Control Valve CV-3070 Failed to Stroke (Section 40A5.2)
05000255/2006004-07	URI	Control Valve CV-3070 Fails to Stroke (Section 40A5.2)
05000255/2005202-01	URI	Verification of contents of two storage tubes which contain rod fragments from assembly 1-024 (Section 40A5.1)

#### Discussed

05000255/2006004-06	URI	Failure of Component on 1-2 EDG Causes Surveillance Failure (Section 40A5.3)
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## LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety but rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a documents on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

### 1R04 Equipment Alignment

Palisades Nuclear Administrative Procedure 4.02, Control of Equipment, Revision 29  
SOP-15 Checklist 15.1, Service Water System Checklist - Critical, Revision 38  
SOP-22 Checklist 22.1, Diesel Generators System Checklist, Revision 40  
SOP-22 Checklist 22.2, Fuel Oil System Checklist, Revision 40  
SOP-22, Diesel Generator System, Revision 40  
SOP-12, Checklist 12.5, Auxiliary Feedwater System Checklist, Revision 47  
SOP-12, Checklist 12.6, K-8 Steam Supply Checklist, Revision 47  
SOP-3, Checklist 3.9, Engineered Safeguards Administrative Control Verification, Revision 68  
Piping and Instrument Diagram (P&ID) —216, Lube Oil, Fuel Oil and Diesel Generator Systems, Sheet 1, Revision 69  
DBD-1.02, Service Water System, Revision 7  
MO-29, Engineered Safety System Alignment, Revision 34  
T-190, Service Water Supply to Auxiliary Feedwater, Revision 0

### 1R05 Fire Protection

Palisades Nuclear Plant Fire Hazards Analysis, Revision 5  
FPP-95-49, Engineering Analysis: Evaluation of the Effects of a Fire on the Ceiling of the Auxiliary Feedwater Pump Room  
AR01041901, Questionable Separation of Service Water Pumps and Fire Pump

### 1R06 Flood Protection

DBD 7.08, Plant Protection Against Flooding, Revision 5  
MSM- M - 16, Inspection of Watertight Barriers, Revision 12

### 1R07 Heat Sink

T-390, Single Tube Testing of the CCW Heat Exchangers, Revision 2  
Master Heat Exchanger Testing Plan, Revision 4, July 27, 2006  
Palisades Raw Water Corrosion Program Report - Operational Cycle 18 and 2006 Refueling Outage, Revision 0, June 12, 2006  
Health and Status Report for Component Cooling Water System, August 29, 2006

### 1R11 Licensed Operator Regualification

Simulator Exercise Guide, Revision 0  
EOP-2.0, Reactor Trip Recovery, Revision 12  
ONP-18, Pressurizer Pressure Control Malfunctions, Revision 17  
ONP-4.2, Loss of Containment Integrity, Revision 4

### 1R12 Maintenance Effectiveness

EGAD-EP-10, Maintenance Rule (MR) Scoping Document - HPSI, Revision 4  
System Health and Status Report, HPSI, July 14, 2006 and September 21, 2006  
CAP048210, MO-3064, Redundant HPSI to Reactor Coolant Loop 2A, would not go closed, June 6, 2005  
ACE003585 - CAP048210, MO-3064, Redundant HPSI to Reactor Coolant Loop 2A, would not go closed, June 9, 2005  
MRE000377, MR Evaluation for MO-3064, June 9, 2005  
AR01023338, Unsatisfactory HPSI MR Performance Trend, July 31, 2006  
CAP 049839, Possible Incorrect MR Functional Failure Determinations for MO-3064 Events, September 22, 2005  
CAP047828, Torque Switch Setting on MO-3064 Found Low During Testing, May 10, 2005  
CAP037030, Subcooling CV-3070 Failed to Open During QO-5 Valve Test Procedure, August 8, 2003  
CAP 01050615, High Pressure Injection System in Main Rule (a)(1), September 15, 2006  
CAP 01052257, MR (a)(1) Classification of HPSI Systems Potentially Untimely, Sept. 26, 2006  
EM-25, MR Program, Revision 5  
OPR 000108, Outside Ambient Air Temperature in Excess of 95°F, Revision 0  
EGAD-EP-10, MR Scoping Document, 125 Volt Vital DC Power, Revision 4  
Letter from K. Toner to D. Crutchfield, Palisades Plant- Heating , Ventilating and Air Conditioning- SEP Topic IX-5, Ventilation Systems- Submittal of Switchgear Room, Cable Spreading room and AFWP Room Test Results, November 1, 1982

### 1R13 Maintenance Risk Assessments and Emergent Work Evaluation

Workweek 0627, Scheduled Yellow Path 1-1 EDG Testing, July 2 through July 8, 2006

### 1R15 Operability Evaluations

FP-OP-OL-1, Corporate Office Quality Procedures: Operability Determination, Revision 1  
EC-8337, Evaluation of T-394 Load Test and Ability to Meet DB Load Requirement, June 6, 2006  
MO-7A-2, EDG 1-2, Revision 60  
OPR 01041995, Pin-hole Leak Downstream of CV-0824 on HB-23-16, Service Water Return from Containment, Revision 0  
OPR 01044874, AFWP, P-8B, Revision 0  
CAP01045286, Discrepancy exists between oil change procedures, August 18, 2006  
OPR 01050711, EDG 1-2, Revision 1

### 1R17 Permanent Plant Modifications

EAR-2005-0063, Modification to Existing Design of Component Cooling Water Heat Exchanger Service Water Outlet Valves, July 25, 2005  
05-0652, 50.59 Screen for Modification to Existing Design of CCW Heat Exchanger SW Outlet Valve(s) CV-0823/6

### 1R19 Post Maintenance Testing

MO-7A-2, EDG 1-2, Revision 60  
WO 00293000-01, Unexpected Alarm EDG 1-2, troubleshoot and repair, August 22, 2004

### 1R22 Surveillance Testing

COP-22A, Diesel Fuel Oil Testing Program, Revision 6  
DWG 96-7307F1B3, Diesel Fuel Oil Tank, Revision 0  
DWG C-228, Tank T-10A Foundation Section and Details, Revision 0  
QO-21, Inservice Test Procedure - AFWPs , Revision 28  
QO-5, Valve Test Procedure - Includes Containment Isolation Valves, Revision 70  
RT-202, Control Room HVAC Heat Removal Capability, Revision 5

### 1R23 Temporary Modifications

EC 8290, Addition of Supplemental Diesel Generator & Breaker 152-403 at Safeguards Bus A14, Cubicle 4  
Screen 06-129, Install Temporary 2400V Diesel Generator, Revision 1

### 2OS1 Access Control to Radiologically Significant Areas:

ACE003556, Items Suspended in Spent Fuel Pool Not Posted Correctly, August 8, 2005  
CE01007963-01, Locked High Rad Barrier no Secured as Tightly as Possible, Jan. 23, 2006  
ACE1034659-01, Higher than Expected Dose Rates Were Identified While Performing a Non-Routine Survey Around Advanced Liquid Processing System, August 4, 2006  
RCE1024675, Movement of Locked High Radiation Area Swing Gate, April 18, 2006  
ACE001023002, L-30 Crane Controls not Properly Secured and Controlled, April 25, 2006  
HP 2.5, High Radiation Area Entry and Control, Revision 23  
HP 2.6, Containment Entry with the Reactor Critical, Revision 11  
HP 2.20, Radiation Safety Area Posting, Revision 20  
HP 2.33, Dose Investigation and Assessment, Revision 13  
Procedure No. 5.09, Maintenance Cleanliness Standards, Revision 11

### 4OA1 Performance Indicator Verification:

NRC PI Occupational Exposure Control Effectiveness (OR-1), July 2005 through July 2006  
NRC PI RETS / ODCM Radiological Effluent Occurrence (PR-1), July 2005 through July 2006

### 4OA2 Problem Identification and Resolution

Palisades Management Review Meeting, August 2006  
Operations Department Monthly Performance Report, August 2006  
Administrative Procedure 4.12, Operator Work-around Program, Revision 4  
CAP 01014772, Potential to Lose PCS Inventory Makeup Capability in Appendix R Fire Area 13  
CAP 01014535, Design Basis Potentially not Fully Met for T2 and AFW Pumps  
CAP 01009099, CV-1059 Strokes Open to Close ` 54 Seconds  
CAP 01008006, Potential Operator Challenge During Containment Sump Drain T-60 Dirty Waste Drain Tanks  
CAP 01029671, P-50D Primary Coolant Pump Vapor Seal Leak

### 4OA3 Event Follow-up

LER 05-07, Inoperable EDG for a Time Longer Than Permitted by TSs, Revision 0  
Letter from P. Harden to NRC, Cancellation of Licensee Event Report 05-007, July 7, 2006  
EC 8337, Evaluation of T-394 Load test and Ability to Meet DB Load Requirement, June 6, 2006  
EA-Elec-LDTAB-005, EDG 1-1 and 1-2 Steady State Loadings, Revision 7

4OA5 Other

Letter from P. Harden to NRC Bulletin 2005-01, "Material Control and Accounting at Reactors and Wet Spent Fuel Storage Facilities Commitment Closeout", June 30, 2006

Palisades Assembly I-021, Rod S15 Material Accountability Sheet, August 25, 1993

Fuel Rod Fragment Survey, April 17, 2006

Selected Control Room Logs, January 2004 through September 2006

Emergency Diesel Generator System Health Report

EDG NRC Performance Indicators, 2005

EDG Performance Indicators, First and Second Quarters 2006

Critical Service Water System Health Report

MSPI Validation Package for Cooling Water Systems

Engineered Safety Systems Performance Indicators 2005

Engineered Safety Systems Performance Indicators, First and Second Quarters 2006

Palisades Baseline Planned Unavailability for MSPI Implementation database

NMC Palisades Nuclear Plant MSPI Basis, July 25, 2006

MSPI Derivation Report, Data Entry 3.0

Auxiliary Feedwater Performance Indicators, 2005

Auxiliary Feedwater Performance Indicators, First and Second Quarters 2006

## LIST OF ACRONYMS USED

ADAMS	Agency-Wide Document and Management System
AFWP	Auxiliary Feedwater Pump
ALARA	As Low As Is Reasonably Achievable
AR	Action Request
CAP	Corrective Action Program
CCW	Component Cooling Water
CFR	Code of Federal Regulations
CR	Condition Report
DC	Direct Current
DRS	Division of Reactor Safety
EDG	Emergency Diesel Generator
HPSI	High Pressure Safety Injection
IMC	Inspection Manual Chapter
IP	Inspection Procedure
LCO	Limiting Condition of Operation
LERF	Large Early Release Frequency
LER	Licensee Event Report
MPFF	Maintenance Preventable Functional Failures
MR	Maintenance Rule
MSPI	Mitigating Systems Performance Index
NCV	Non-Cited Violation
ODCM	Off-site Dose Calculation Manual
OPR	Operability Recommendations
PARS	Publicly Available Records
PI	Performance Indicator
RI	Resident Inspector
RP	Radiation Protection
SDP	Significance Determination Process
SIT	Safety Injection Tank
SRA	Senior Reactor Analyst
SSC	Structures, Systems, and Components
SW	Service Water
TI	Temporary Instruction
TM	Temporary Modification
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item