March 14, 2005

Mr. Daniel J. Malone
Site Vice President
Palisades Nuclear Plant
Nuclear Management Company, LLC
27780 Blue Star Memorial Highway
Covert, MI 49043-9530

SUBJECT: PALISADES NUCLEAR PLANT
FIRE PROTECTION TRIENNIAL BASELINE INSPECTION
NRC INSPECTION REPORT 05000255/2005003(DRS)

Dear Mr. Malone:

On January 28, 2005, 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 January 28, 2005, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and to 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, no findings of significance were identified. Additionally, a licensee identified violation is listed in Section 4OA7 of this report.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made 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/

Julio F. Lara, Chief
Electrical Engineering Branch
Division of Reactor Safety

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

Enclosure: Inspection Report 05000255/2005003(DRS)
w/Attachment: Supplemental Information

See Attached Distribution

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See Attached Distribution

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DATE	03/11/05		03/11/05		03/14/05			

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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
Manager, Regulatory Affairs
J. Rogoff, Vice President, Counsel and Secretary
A. Udrys, Esquire, Consumers Energy Company
Director of Nuclear Assets, Consumers Energy Company
Supervisor, Covert Township
Office of the Governor
Michigan Department of Environmental Quality -
Waste and Hazardous Materials Division
Michigan Department of Attorney General

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-255
License No:	DPR-20
Report No:	05000255/2005003(DRS)
Licensee:	Nuclear Management Company, LLC
Facility:	Palisades Nuclear Plant
Location:	2770 Blue Star Memorial Highway Covert, MI 49043-9530
Dates:	January 1 through January 28, 2005
Inspectors:	G. Hausman, Senior Reactor Inspector, Lead A. Klett, Reactor Inspector D. Schrum, Reactor Inspector
Approved by:	J. Lara, Chief Electrical Engineering Branch Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000255/2005003(DRS); 01/10/2005 - 01/28/2005; Palisades Nuclear Plant; Fire Protection Triennial Baseline Inspection.

This report covers an announced triennial fire protection baseline inspection. The inspection was conducted by Region III inspectors. Based on the results of this inspection, no findings of significance were identified. 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. Inspector-Identified and Self-Revealed Findings

Cornerstone: Initiating Events

No findings of significance were identified.

Cornerstone: Mitigating Systems

No findings of significance were identified.

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

At the start of the inspection the plant was shutdown. On January 14, 2005, the reactor was taken critical and the main generator was synchronized to the electrical grid on January 19, 2005. The plant was returned to full power on January 21, 2005.

1. REACTOR SAFETY

Cornerstones: Initiating Events and Mitigating Systems

1R05 Fire Protection (71111.05)

The purpose of this inspection was to review the Palisades Nuclear Plant's (PNPs) Fire Protection Program (FPP) for selected risk-significant fire areas. Emphasis was placed on determining that the post-fire safe shutdown capability and the fire protection features were maintained free of fire damage to ensure that at least one post-fire safe shutdown success path was available. The inspection was performed in accordance with the Nuclear Regulatory Commission's (NRC's) regulatory oversight process using a risk-informed approach for selecting the fire areas and attributes to be inspected. The inspectors used the PNP's Individual Plant Examination of External Events (IPEEE) to choose several risk-significant areas for detailed inspection and review. The fire zones chosen for review during this inspection were:

Selected Fire Areas and Zones

Fire Area	Fire Zones	Description
13	A thru G	Auxiliary Building (590' - 0" Elevation)

For each of these fire zones, the inspection focused on the fire protection features, the systems and equipment necessary to achieve and maintain safe shutdown conditions, determination of licensee commitments, and changes to the FPP.

.1 Systems Required to Achieve and Maintain Post-Fire Safe Shutdown

Title 10 of the Code of Federal Regulations (CFR), Part 50, Appendix R, Section III.G.1, required the licensee to provide fire protection features that were capable of limiting fire damage to structures, systems, and components (SSCs) important to safe shutdown. The SSCs that were necessary to achieve and maintain post-fire safe shutdown were required to be protected by fire protection features that were capable of limiting fire damage to the SSCs so that:

- One train of systems necessary to achieve and maintain hot shutdown conditions from either the control room or emergency control station(s) was free of fire damage; and

- Systems necessary to achieve and maintain cold shutdown from either the control room or emergency control station(s) can be repaired within 72-hours.

Specific design features for ensuring this capability were specified by 10 CFR Part 50, Appendix R, Section III.G.2.

a. Inspection Scope

The inspectors reviewed the plant systems required to achieve and maintain post-fire safe shutdown to determine if the licensee had properly identified the components and systems necessary to achieve and maintain safe shutdown conditions for each fire area selected for review in accordance with the criteria discussed above. Specifically, the review was performed to determine the adequacy of the systems selected for reactivity control, reactor coolant makeup, reactor heat removal, process monitoring, and support system functions. This review included the fire protection safe shutdown analysis.

The inspectors also reviewed the operators' ability to perform the necessary manual actions for achieving safe shutdown by reviewing procedures, the accessibility of safe shutdown equipment, and the available time for performing the actions.

The inspectors reviewed the PNPs Updated Safety Analysis Report and the licensee's engineering and/or licensing justifications (e.g., NRC guidance documents, license amendments, technical specifications, safety evaluation reports, exemptions, and deviations) to determine the licensing basis.

b. Findings

No findings of significance were identified.

.2 Fire Protection of Safe Shutdown Capability

Title 10 CFR Part 50, Appendix R, Section III.G.2, required separation of cables and equipment and associated circuits of redundant trains by a fire barrier having a 3-hour rating. Title 10 CFR Part 50, Appendix R, Section III.G.3, required that, if the guidelines cannot be met, then alternative or dedicated shutdown capability and its associated circuits, independent of cables, systems or components in the area, room, or zone under consideration should be provided.

a. Inspection Scope

For each of the selected fire zones, the inspectors reviewed the licensee's Safe Shutdown Analysis (SSA) to ensure that at least one post-fire safe shutdown success path was available in the event of a fire in accordance with the criteria discussed above. This included a review of manual actions required to achieve and maintain hot shutdown conditions and to make the necessary repairs to reach cold shutdown within 72-hours. The inspectors also reviewed procedures to determine whether or not adequate direction was provided to operators to perform these manual actions. Factors such as timing, access to the equipment, and the availability of procedures, were considered in the review.

The inspectors also evaluated the adequacy of fire suppression and detection systems, fire area barriers, penetration seals, and fire doors to ensure that at least one train of safe shutdown equipment was free of fire damage. To accomplish this, the inspectors observed the material condition and configuration of the installed fire detection and suppression systems, fire barriers, construction details, and supporting fire tests for the installed fire barriers. In addition, the inspectors reviewed licensee documentation, such as deviations, detector placement drawings, fire hose station drawings, carbon dioxide pre-operational test reports, smoke removal plans, Fire Hazard Analysis (FHA) reports, SSA, and National Fire Protection Association (NFPA) codes to verify that the fire barrier installations met license commitments.

b. Findings

No findings of significance were identified.

.3 Post-Fire Safe Shutdown Circuit Analysis

Title 10 CFR Part 50, Appendix R, Section III.G.1, required that SSCs important to safe shutdown be provided with fire protection features capable of limiting fire damage to ensure that one train of systems necessary to achieve and maintain hot shutdown conditions remained free of fire damage. Options for providing this level of fire protection were delineated in 10 CFR Part 50, Appendix R, Section III.G.2. Where the protection of systems whose function was required for hot shutdown did not satisfy 10 CFR Part 50, Appendix R, Section III.G.2, an alternative or dedicated shutdown capability and its associated circuits, were required to be provided that was independent of the cables, systems, and components in the area. For such areas, 10 CFR Part 50, Appendix R, Section III.L.3, specifically required the alternative or dedicated shutdown capability to be physically and electrically independent of the specific fire areas and capable of accommodating post-fire conditions where offsite power was available and where offsite power was not available for 72-hours.

a. Inspection Scope

The inspectors performed a review of the licensee’s SSA and Safe Shutdown Equipment List (SSEL) to determine whether the licensee had appropriately identified and analyzed the safety related and non-safety related cables associated with safe shutdown equipment located in the selected plant fire zones in accordance with the criteria discussed above. The inspectors’ review included the assessment of the licensee's electrical systems and electrical circuit analyses.

The inspectors evaluated a sample of safety and non-safety related cables for equipment in the selected fire zones to determine if the design requirements of Section III.G of Appendix R to 10 CFR Part 50 were being met. This included determining that hot shorts, open circuits, or shorts to ground would not prevent implementation of safe shutdown.

b. Findings

No findings of significance were identified.

.4 Alternative Shutdown Capability

Title 10, Part 50, Appendix R, Section III.G.1, required the licensee to provide fire protection features that were capable of limiting fire damage so that one train of systems necessary to achieve and maintain hot shutdown conditions remained free of fire damage. Specific design features for ensuring this capability were provided in 10 CFR Part 50, Appendix R, Section III.G.2. Where compliance with the separation criteria of 10 CFR Part 50, Appendix R, Section III.G.2, could not be met, an alternative or dedicated shutdown capability be provided that was independent of the specific fire area under consideration. Additionally, alternative or dedicated shutdown capability must be able to achieve and maintain hot standby conditions and achieve cold shutdown conditions within 72-hours and maintain cold shutdown conditions thereafter. During the post-fire safe shutdown, the reactor coolant process variables must remain within those predicted for a loss of normal alternating current power, and the fission product boundary integrity must not be affected (i.e., no fuel clad damage, rupture of any primary coolant boundary, or rupture of the containment boundary).

a. Inspection Scope

The inspectors reviewed the licensee's systems required to achieve safe shutdown to determine if the licensee had properly identified the components and systems necessary to achieve and maintain safe shutdown conditions in accordance with the criteria discussed above. The inspectors also focused on the adequacy of the systems to perform reactor pressure control, reactivity control, reactor coolant makeup, decay heat removal, process monitoring, and support system functions.

b. Findings

No findings of significance were identified.

.5 Operational Implementation of Alternate Shutdown Capability

The PNPs FPP described the means by which safe shutdown could be achieved to meet the requirements of 10 CFR Part 50, Appendix R, Sections III.G.3 and III.L. The PNPs safe shutdown analysis identified the minimum number of components and plant systems necessary for achieving Appendix R safe shutdown performance goals.

a. Inspection Scope

The inspectors performed a review of the licensee's operating procedures, which augmented the post-fire safe shutdown procedures to determine if the licensee complied with the criteria discussed above. The review focused on ensuring that all required functions for post-fire safe shutdown and the corresponding equipment necessary to perform those functions were included in the procedures. The review also looked at

operator training, as well as consistency between the operations shutdown procedures and any associated administrative controls.

b. Findings

Introduction: The inspectors identified an unresolved item associated with licensee procedures ONP-25.1, "Fire Which Threatens Safety-Related Equipment," Revision 15 and ONP-25.2, "Alternate Safe Shutdown Procedure," Revision 20. The inspectors were concerned that not all operators utilizing these procedures could perform the necessary operator actions required to meet the time requirements of 10 CFR Part 50, Appendix R, Section III.G.3, for a potential Appendix R fire in any fire area and/or fire zone. The inspectors could not conclude that the licensee's operator training adequately accounted for meeting the requirements of a potential Appendix R fire in all fire areas and/or fire zones.

Description: The inspectors reviewed the licensee's procedures ONP-25.1, and ONP-25.2. The inspectors evaluated the two procedures for consistency, adequacy and whether the operators could perform the procedures within the applicable shutdown requirements. Although the procedures were prescriptive for each individual fire area, the procedures were extremely complex (i.e., procedures daisy chained to many other procedures). Based upon this review, the inspectors could not conclude that all operators utilizing these procedures could perform the necessary operator actions (i.e., access the availability of and select the appropriate free of fire damaged equipment within the shutdown time requirements) required to meet the requirements of 10 CFR Part 50, Appendix R, Section III.G.3, for a potential fire in any fire area and/or fire zone. As a result, the inspectors concluded that additional review was necessary to evaluate the operator training with respect to Appendix R fire scenarios. Therefore, pending a review of the licensee's operator training program this issue is an Unresolved Item (URI 05000255/2005003-01(DRS)).

.6 Communications

Title 10, Part 50, Appendix R, Section III.H, required that a portable communications system be provided for use by the fire brigade and other operations personnel required to achieve safe plant shutdown. This system should not interfere with the communications capabilities of other plant personnel. Fixed repeaters installed to permit use of portable radio communication units should be protected from exposure to fire damage.

a. Inspection Scope

The inspectors reviewed the adequacy of the communication systems to support plant personnel in the performance of alternative safe shutdown functions and fire brigade duties to determine compliance. The inspectors conducted a review to determine that adequate communications were available to support safe shutdown implementation.

b. Findings

No findings of significance were identified.

.7 Emergency Lighting

Title 10, Part 50, Appendix R, Section III.J., required that fixed self-contained lighting consisting of fluorescent or sealed-beam units with individual eight-hour minimum battery power supplies should be provided in areas that must be manned for safe shutdown and for access and egress routes to and from all fire zones.

a. Inspection Scope

The inspectors performed a walkdown of the fire zones and the access/egress routes to determine that adequate emergency lighting existed in accordance with the criteria discussed above.

b. Findings

No findings of significance were identified.

.8 Cold Shutdown Repairs

Title 10, Part 50, Appendix R, Section III.L.5, required that equipment and systems comprising the means to achieve and maintain cold shutdown conditions should not be damaged by fire; or the fire damage to such equipment and systems should be limited so that the systems can be made operable and cold shutdown achieved within 72-hours. Materials for such repairs shall be readily available onsite, and procedures shall be in effect to implement such repairs.

a. Inspection Scope

The inspectors reviewed the licensee's procedures to determine if any repairs were required to achieve cold shutdown. The inspectors determined that the licensee did require repair of some equipment to reach cold shutdown based on the safe shutdown methods used. The inspectors reviewed the procedures for adequacy.

b. Findings

No findings of significance were identified.

.9 Fire Barriers and Fire Zone/Room Penetration Seals

Title 10, Part 50, Appendix R, Section III.M, required that penetration seal designs be qualified by tests that are comparable to tests used to rate fire barriers.

a. Inspection Scope

The inspectors reviewed the test reports for three-hour rated barriers installed in the plant and performed visual inspections of selected barriers to ensure that the barrier installations were consistent with tested configuration in accordance with the criteria discussed above. In addition, the inspectors reviewed the fire loading for selected areas to ensure that existing barriers would not be challenged by a potential fire.

b. Findings

No findings of significance were identified.

.10 Fire Protection Systems, Features and Equipment

a. Inspection Scope

The inspectors reviewed the material condition, operations lineup, operational effectiveness, and design of fire detection systems, fire suppression systems, manual fire fighting equipment, fire brigade capability, and passive fire protection features. The inspectors reviewed deviations, detector placement drawings, fire hose station drawings, and fire hazard analysis reports to ensure that selected fire detection systems, sprinkler systems, portable fire extinguishers, and hose stations were installed in accordance with their design, and that their design was adequate given the current equipment layout and plant configuration.

b. Findings

No findings of significance were identified.

.11 Compensatory Measures

a. Inspection Scope

The inspectors conducted a review to determine that adequate compensatory measures were put in place by the licensee for out-of-service, degraded or inoperable fire protection and post-fire safe shutdown equipment, systems, or features. The inspectors also reviewed the adequacy of short term compensatory measures to compensate for a degraded function or feature until appropriate corrective actions were taken.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA2 Identification and Resolution of Problems (71152)

a. Inspection Scope

The inspectors reviewed the corrective action program procedures and samples of corrective action documents to assess whether or not the licensee was identifying issues related to fire protection at an appropriate threshold and entering them in the corrective action program. The inspectors reviewed selected samples of condition reports, work orders, design packages, and fire protection system non-conformance documents.

b. Findings

No findings of significance were identified.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. Malone and other members of licensee management at the conclusion of the inspection on January 28, 2005. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Interim Exit Meetings

No interim exits were conducted.

4OA7 Licensee-Identified Violations

The following violation of very low significance was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Manual, NUREG-1600, for being dispositioned as an NCV.

Cornerstone: Mitigating System

Palisades Operating License (i.e., Amendment 171, Section 2.C.(3)) stated that the licensee shall implement and maintain in effect all provisions of the approved fire protection program as described in the FSAR and as approved in the facility's safety evaluation reports (SERs). In the SER dated September 1, 1978, the NRC provided guidance on the implementation of General Design Criterion 3, "Fire Protection," as identified in Appendix A of the Auxiliary Power Conversion and System Branch (APCSB) issuance of Branch Technical Position (BTP) APCSB 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants."

In response to the NRC's regulatory position identified in Appendix A, Section D.5, "Lighting and Communication," paragraph (d), the licensee stated, in part, that portable radio transmitter receivers are provided and that the radios provide communication throughout the plant. However, as stated in Operator Work Around 03-03OWA, "Auxiliary Building Radio Coverage During Transient Response," dated July 2, 2003, "radio coverage in the auxiliary building is inadequate and provides an obstacle to safe operation by requiring operators to take compensatory actions during a auxiliary building fire." The licensee initiated CAP034533 and Modification MOD-2005-2, "Auxiliary Building Radio Upgrade Existing Operations and Security Radio Systems," to resolve this finding.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee
M. Acker, Reliability & Analysis Programs
G. Arent, Performance Improvement Manager
G. Baustian, Training Manager
J. Broschak, Design Engineering Manager
T. Brown, Nuclear Oversight Manager
M. Carlson, Engineering Director
E. Dorbeck, Consumers Energy/Fire Protection Engineer
B. Dotson, Regulatory Compliance
T. Fouty, Palisades Program Engineering Manager
P. Harden, Site Director
R. Harvill, PSA Support
B. Heimsath, Operations Procedures Supervisor
G. Hettel, Plant General Manager
G. Higgs, Maintenance Manager
K. Housh, Fire Protection Engineer
M. Hutting, Acting Vice President Engineering
D. Malone, Site Vice President
D. Malone, Regulatory Compliance Supervisor
B. Rarrick, Nuclear Oversight
G. Shaffer, Operations
G. Sleeper, Senior Reactor Operator
K. Smith, Operations Manager
T. Swiecicki, Appendix R Engineer
D. VandeWalle, Operations Support Manager
B. VanWagner, Reliability & Analysis Programs Supervisor
R. Womack, Prairie Island Programs Engineering Manager
K. Yeager, Operations Supervisor
S. Wawro, Consumers Energy/Asset Manager
P. Zwissler, Maintenance Technical Support

Nuclear Regulatory Commission
C. Pederson, DRS Director
J. Lennartz, Senior Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000255/2005003-01	URI	Evaluate Adequacy of Operator Training for Meeting Appendix R Requirements for a Potential Fire in All Fire Areas And/Or Fire Zones (Section 1R05.5b)

Closed

None.

Discussed

None.

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 of portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document 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.

CALCULATIONS

Number	Description or Title	Date or Revision
EA-APR-95-001	App R SSD Equipment List and Logic Diagrams	3
EA-APR-95-007	10 CFR Part 50 Appendix R Fire SSD Analysis	2
EA-APR-95-008	SSD MA Feasibility Evaluation: Appendix F	1
EA-APR-95-023	Rm Heat-Up After Loss of Ventilation Under Appendix R Scenario in CR (325), CSR (224), 1C SWGR Rm (116A), 1D SWGR Rm (223), Battery Rms (225, 225A), Containment Area, and DG Rms (116, 116B)	1
EA-PSSA-00-001	Palisades Plant Post Fire SSD Summary Report	2

CORRECTIVE ACTION PROGRAM DOCUMENTS ISSUED DURING INSPECTION

Number	Description or Title	Date or Revision
CAP046079	Incomplete Guidance Provided for Appendix R Repair of Safeguards Rm Fan	January 12, 2005
CAP046174	Overly Conservative MAs in the Appendix R Analysis	January 17, 2005
CAP046230	Error in EA-APR-95-007, Appendix R SSD Analysis	January 19, 2005
CAP046251	Appendix R Analysis Time for Restoring PCS Inventory Makeup in Question	January 20, 2005
CAP046311	Appendix R Analyses Need More Detail for VCT Isolation Valve Closure Compliance	January 24, 2005
CAP046315	Appendix R MAs Feasibility Analysis Has GAPS Compared to Pending Rule	January 24, 2005
CAP046337	Appendix R MA Feasibility Analysis Needs Improvement for Turbine Trip	January 25, 2005
CAP046355	Additional Compensatory Fire Tours Applicable to CAP045779	January 26, 2005
CAP046370	Appendix R Analysis Time for Restoring PCS Makeup in Question with Respect to Letdown	January 26, 2005

CORRECTIVE ACTION PROGRAM DOCUMENTS ISSUED PRIOR TO INSPECTION

Number	Description or Title	Date or Revision
CA023941	Evaluate Time Constraints to Isolate Aire to COMT and Revise EA-APR-95-008	April 27, 2004

CORRECTIVE ACTION PROGRAM DOCUMENTS ISSUED PRIOR TO INSPECTION

Number	Description or Title	Date or Revision
CA026337	Conflicting Appendix R Calculations for Containment Temperature Profile	January 7, 2005
CE012189	Conflicting Appendix R Calculations for Containment Temperature Profile	December 10, 2004
CAP016276	Appendix R Analysis Restrictions Not Clearly Reflected in off Normal	March 27, 2002
CAP029371	The FD System in Eleven (11) Plant Areas Were Identified as Not Meeting the FD Code of Record (NFPA-72, 1974 Edition)	December 24, 2001
CAP030096	Inadequate Calculation Control	May 3, 2002
CAP030219	Inadequate Calculation Control	May 7, 2002
CAP031260	Inadequate Installation of Connector on Appendix R Spare Cables	September 13, 2002
CAP032015	The High/Low Pressure Interface Analysis Did Not Consider Cable-to-Cable Proper	November 7, 2002
CAP036555	Fleet Modification Process Does Not Address the PCP Oil Collection System	July 9, 2003
CAP037925	Discrepancies Were Noticed Between PFM-E-1, Emergency Post-Fire Repair for App R Equipment and PPAC X-NECO/FP009, Inventory of Emergency Spare Parts Equipment for Appendix R	October 3, 2003
CAP038994	FHA and Assumed RX and MFW Pump Trip	December 10, 2003
CAP039111	Dilution Water Pumps Motor Replacement Modification Was Not Incorporated into EA-APR-95-005	December 17, 2003
CAP039136	10 CFR Part 50 Appendix R Turbine Trip Assumption	December 18, 2003
CAP039137	10 CFR Part 50 Appendix R Analysis Takes Credit for MA Beyond RX Trip	December 18, 2003
CAP039138	FW Purity Air Supply Not Considered in FHA	December 18, 2003
CAP039148	10 CFR Part 50 Appendix R EA for Fire Area 32 Affected by Undocumented Modification	December 19, 2003
CAP039151	10 CFR Part 50 Appendix R Evaluation of FP Water Supply Capabilities	December 19, 2003
CAP039353	Inaccurate Information in EA-P*PCS*861218 Should Be Incorporated into a Revision	January 7, 2004
CAP039379	OE16523 - (DC Cook) Test Report for Epoxy Floor Coatings	January 9, 2004
CAP039380	OE16330 - (Waterford) Minimum NFPA Code Requirements	January 9, 2004
CAP039774	Potential Misinterpretation of App R SSD Equipment List	February 2, 2004
CAP039979	App R Review Didn't Consider That SW Is Not Required for the Air Compressor	February 12, 2004

CORRECTIVE ACTION PROGRAM DOCUMENTS ISSUED PRIOR TO INSPECTION

Number	Description or Title	Date or Revision
CAP040728	SA 04-0023 Identified Enhancement to Associated Circuit Analysis	March 24, 2004
CAP040738	SA 04-0023 Identified Improvement Needed to EA-APR-95-007	March 24, 2004
CAP040743	SA 04-0023 Identified Inconsistency Between Use of CS to Support HPSI in FA13	March 24, 2004
CAP040755	SA 04-0023 Recommends a Verification Be Performed of Depressurization Analysis	March 25, 2004
CAP040760	SA 04-0023 Identified Need to Review Procedure on Emergency Lights	March 25, 2004
CAP040767	SA 04-0023 Identified Enhancement Opportunity to Operations Training on ONP-25.2	March 25, 2004
CAP041501	A-130 Specifies Incorrect Recommended Dry Film Thickness Compared to Test Report	May 13, 2004
CAP043414	All Appendix R Emergency Parts Not Labeled or Located as Specified by PPAC	September 8, 2004
CAP045556	MA Related to DG Auxiliaries (SW and HVAC Are Short)	December 3, 2004
CAP045606	Modification Checklist for Appendix R Doesn't Identify PCP Oil Collection	December 7, 2004
CAP045614	Conflicting Appendix R Calculations for Containment Temperature Profile	December 8, 2004
CAP045958	Drawing Configuration Discrepancy	January 4, 2005

DRAWINGS

Number	Description or Title	Date or Revision
950-E-363, Sht 3	Conduit Layout for the Alternate SSD Mod	0
E-1, Sht A	SLM and Relay Diagram	6
E-1, Sht 1	SLM and Relay Diagram 480V MCC	BS
E-1, Sht 2	Plant Single Line Diagram	25
E-1, Sht 3	Plant Single Line Diagram	3
E-2	SLM and Relay Diagram Generator and 4160V System	AE
E-3, Sht 1	SLM and Relay Diagram 2400V	49
E-3, Sht 2	SLM and Relay Diagram Cooling Tower	6
E-4, Sht 1	SLM and Relay Diagram 480V Load Center	37
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PROCEDURES

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REFERENCES

Number	Description or Title	Date or Revision
----------	Palisades Nuclear Plant Fire Tour Checklist - Outside RCA/Inside RCA	January 5, 2005 thru January 19, 2005
CAW & CR Report	PZR Pressure Indication (PI-0110) to AHSP	December 28, 2004
CAW & CR Report	PZR Level Indication (LI-0102B) to AHSP	December 28, 2004
CAW & CR Report	SIRW Level Indication (LI-0332B) to AHSP	December 28, 2004
CAW & CR Report	S/G A(B) Pressure Indicators PI-0751E/PI-0752E	December 28, 2004
CAW & CR Report	Loop 1(2) Cold Leg PCS Temp Ind at C-150A	December 28, 2004
CAW & CR Report	Source and WR Neutron Mon CH 1/3 Aux (NI-1/3C)	December 28, 2004
CAW & CR Report	Containment Cooler Recirculation Fans V-1B/2B	January 3, 2005
CAW & CR Report	Engineered Safeguards Rm Coolers V-27C/27D	January 3, 2005
CAW & CR Report	SW Header Isolation Valves CV-1318 and -1319	January 3, 2005
CAW & CR Report	DG Rm Vent Fan V-24A	January 3, 2005
CAW & CR Report	CCW Pump P-52A	January 3, 2005
CAW & CR Report	SW Pump P-7B	January 3, 2005

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Number	Description or Title	Date or Revision
CAW & CR Report	Non-Critical SW Isolation Valve CV-1359	January 3, 2005
CAW & CR Report	LPSI Pump P-67B	January 4, 2005
CAW & CR Report	Diesel Driven Cooling Tower Fire Water PP P-41	January 4, 2005
CAW & CR Report	Day Tank T-39 Diesel Oil XFR Control SV-5600	January 4, 2005
CAW & CR Report	Charging Loop 1A Stop Valve CV-2113	January 4, 2005
CAW & CR Report	CV-0749 (AFW Flow to SG E-50A from P-8A/8B)	January 6, 2005
CAW & CR Report	CS Pump P-54B and P-54C	January 6, 2005
CAW & CR Report	HPSI Pump P-66B	January 6, 2005
CAW & CR Report	EC-150 AHSP	January 6, 2005
CAW & CR Report	EC-150A AHSP	January 6, 2005
CAW & CR Report	PORV's PRV-1042B and 1043B	January 6, 2005
DBD-1.10	FP System	3
FPPR	FPP Report	January 2004

SURVEILLANCES

Number	Description or Title	Date or Revision
PPAC X-NECO/ FP009	Inventory of Appendix R Emergency Parts	June 19, 2004
PPAC X-NECO/ FP009	Inventory of Appendix R Emergency Parts	September 9, 2004
PPAC X-NECO/ FP009	Inventory of Appendix R Emergency Parts	December 7, 2004

LIST OF ACRONYMS USED

AC or ac	Alternating Current
ADAMS	Agency-Wide Document Access and Management System
AFW	Auxiliary Feedwater
AHSP	Aux Hot Shutdown Panel
App	Appendix
AUX	Auxiliary
Bldg	Building
CAW & CR	Circuit Analysis Worksheet and Cable Routing
CCW	Component Cooling Water
CFR	Code of Federal Regulations
CIS	Chemical Injection Systems
CR	Control Room
CS	Containment Spray
CSR	Cable Spreading Room
CVCS	Chemical and Volume Control System
DG	Diesel Generator
DRS	Division of Reactor Safety
FD	Fire Detection
FP	Fire Protection
FPI	Fire Protection Instruction
FPP	Fire Protection Program or Fire Protection Plan
FSAR	Final Safety Analysis Report
FW	Feedwater
gov	Goverment
FHA	Fire Hazard Analysis
HPSI	High Pressure Safety Injection
html	Hypertext Markup Language
http	Hypertext Transfer Protocol
HVAC	Heating, Ventilation, Air Conditioning
IMC	Inspection Manual Chapter
IPEEE	Individual Plant Examination of External Events
IR	Inspection Report
k	kilo
LPSI	Low Pressure Safety Injection
MA	Manual Action
MFW	Main Feedwater
NFPA	National Fire Protection Association
NI	Nuclear Instrumentation
NRC	Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
NUREG	NRC Technical Report Designation
OA	Other Activities
P&ID	Piping and Instrumentation Drawing
PARS	Publically Available Records System

LIST OF ACRONYMS USED

PCS	Primary Coolant System
PNP	Palisades Nuclear Plant
PORV	Power Operated Relief Valve
PZR	Pressurizer
Rm	Room
RX	Reactor
S/D	Schematic Diagram
S/G	Steam Generator
SA	Service Air
SD	Shutdown
SDP	Significance Determination Process
SER	Safety Evaluation Report
SFP	Spent Fuel Pool
SI	Safety Injection
SLM	Single Line Meter
SSA	Safe Shutdown Analysis
SSD	Safe Shutdown
SSCs	Structures, Systems, and Components
SSEL	Safe Shutdown Equipment List
SW	Service Water
SWGR	Switchgear
V or v	Volt
wpd	WordPerfect Document
WR	Wide Range
www	World Wide Web
XFR	Transfer