June 7, 1999

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

SUBJECT: PALISADES INSPECTION REPORT 50-255/99007(DRS)

Dear Mr. Palmisano:

From May 17 through May 21, 1999, the NRC conducted an inspection at your Palisades Nuclear Generating Plant to review the actions taken to address engineering related items, which had been identified in previous NRC inspections. The inspection results were discussed with members of your staff at the end of the inspection. The enclosed report presents the results of the inspection.

The inspection covered a one week period with emphasis on the review of engineering open items and consisted of a selective examination of representative records and discussion of items with cognizant personnel. The purpose of the inspection was to determine if adequate actions had been taken or planned to correct the identified problems and concerns.

No violations or deviations of NRC requirements were identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules and Practices," a copy of this letter and the enclosures will be placed in the NRC Public Document Room (PDR).

We will gladly discuss any questions you have concerning the inspection.

Sincerely,

Original /s/ J. M. Jacobson

John M. Jacobson, Chief
Mechanical Engineering Branch

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

Enclosure: Inspection Report 50-255/99007(DRS)

See Attached Distribution

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-255
License No:	NPR-20
Report No:	50-255/99007(DRS)
Licensee:	Consumers Energy Company 212 West Michigan Avenue Jackson, MI 49201
Facility:	Palisades Nuclear Generating Station
Location:	27780 Blue Star Memorial Highway Covert , MI 49043-9530
Inspection Dates:	May 17 - 21, 1999
Inspector:	H. A. Walker, Reactor Engineer
Approved by:	John M. Jacobson, Chief, Mechanical Engineering Branch Division of Reactor Safety

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

Report Details

III. Engineering

E8 Miscellaneous Engineering Issues (92903)

This section describes the review, action and status of selected items which had been identified in previous NRC inspections.

E8.1 (Closed) Inspection Followup Item 50-255/97201-01: Complete component cooling water (CCW) flow model calculation for pump minimum flow. The flow model calculation was completed on May 18, 1999, and the report was in the approval process. The inspector reviewed a copy of the report and noted that licensee personnel had determined that, based on the analysis, the acceptance criteria for in-service test procedure QO-15 would need to be changed. Two procedure change requests had been issued for the required changes to the procedure. The issue was appropriately addressed.

E8.2 (Closed) Unresolved Item 50-255/97201-02: CCW design temperatures exceeded during a loss of coolant accident (LOCA). During preparation for the architect-engineer inspection, the license recognized that the previous two revisions of the post-LOCA containment analyses of record had predicted CCW temperatures in excess of the CCW design temperature and that the CCW system had not been analyzed for these higher temperatures. Following identification, the licensee reanalyzed the system piping and components and demonstrated that the system was capable of meeting its design function. The inspector had no concerns regarding the licensee's corrective actions to resolve the issue.

The failure to ensure that the CCW system was analyzed for the maximum temperatures which would occur following a LOCA constitutes a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." Criterion III requires, in part, that measures be established to assure that the design basis for structures, systems, and components important to safety is correctly translated into specifications, procedures, and instructions. Contrary to the above, from 1994 through March 1998, the design basis for the CCW system, a system important to safety, was not correctly translated into the system specifications in that the containment analyses of record indicated a higher CCW temperature than that for which the system was analyzed and designed. This licensee identified and corrected Severity Level IV violation is being treated as a Non-Cited Violation, consistent with Appendix C of the NRC Enforcement Policy. No further licensee actions are necessary regarding this issue.

E8.3 (Closed) Inspection Followup Item 50-255/97201-28: Battery testing discrepancies. This item included minor inadequacies of the battery surveillance procedures and errors in the functional description of the battery system in the Final Safety Analysis Report (FSAR). Plant records indicated that design requirements for battery testing were reviewed and battery surveillance procedures were reviewed and were corrected as needed. FSAR change requests were issued to correct the FSAR discrepancies. Actions on this issue were appropriate and had been completed.

E8.4 (Closed) Unresolved Item 50-255/97201-30: Miscellaneous FSAR discrepancies. The inspector reviewed records of the actions taken to address these minor discrepancies in

the FSAR and noted that FSAR change requests had been issued to correct the problems. All but one of the changes had been included in the FSAR. Action on this last FSAR change was in the corrective action program and was scheduled to be included in the next FSAR revision.

E8.5 (Closed) Unresolved Item 50-255/97201-31: Miscellaneous design basis document (DBD) and other documentation discrepancies. The inspector reviewed records of the actions taken to address this issue. Records indicated that the DBD changes and the noted discrepancies in other documents had been corrected.

E8.6 (Closed) Inspection Followup Item 50-255/98003-01(DRS): Review of programmatic improvements and 10 CFR 50.54(f) comparison. The inspector verified that both reviews had been completed. The 10 CFR 50.54(f) comparison results were transmitted to the NRC by letter on February 6, 1997. Actions taken on this issue were appropriate.

E8.7 (Closed) Violation 50-255/98003-04(DRS): Failure to follow procedures and update calculations. The inspector reviewed the licensee response to the violation, dated June 24, 1998, as well as records of the actions taken. Items in this violation involved calculation errors or failure to update design calculations. A calculation control improvement program had been initiated in this area. This program included strengthening of controlling procedures for calculations and increased sensitivity of site engineers of the need to evaluate and update calculations. Operability evaluations by licensee personnel indicated that all equipment associated with the cited examples remained operable. Correction of electrical calculation EA-ELEC-VOLT-13 to incorporate electrical load changes was scheduled for completion prior to September 15, 1999. Actions taken were appropriate and the inspector had no further concerns on this issue.

E8.8 (Closed) Violation 50-255/98 003-05(DRS): No engineering acceptability review of scaffolding installed adjacent to the safety related safety injection and refueling water storage tank. The inspector reviewed the licensee response to the violation, dated June 24, 1998, as well as corrective action system records of the actions taken. Immediate actions included correction of the noted scaffolding and a plant walkdown by design engineering to review scaffolding installed in seismically sensitive areas for adequacy. Actions to prevent recurrence included training of appropriate personnel in scaffolding requirements and establishment of additional controls for scaffolding. Actions taken were appropriate and had been completed. The inspector had no further concerns on this issue.

E8.9 (Closed) Violation 50-255/98003-06(DRS): Unsecured operations storage cabinet located near two safety related valves in the west engineering safeguards room. The inspector reviewed the licensee response to the violation, dated June 24, 1998, as well as records of the actions taken. The unsecured cabinet was removed from the West Engineering Safeguards Room and additional walkdowns by licensee personnel were conducted to look for unsecured equipment. Actions taken were appropriate and had been completed. The inspector had no further concerns on this issue.

E8.10 (Closed) Violation 50-255/98003-07(DRS): Instrument tubing and vent screens not installed per design requirements. The inspector reviewed the licensee response to the violation, dated June 24, 1998, as well as records of the actions taken. A modification was developed and installed to appropriately add the vent screens. The other portion of

the violation indicated inadequate slope for the HPSI and LPSI flow transmitter sensing lines. Subsequent information, obtained by the performance of a licensee walkdown during the recent refueling outage, confirmed that the HPSI and LPSI flow transmitter sensing lines were appropriately sloped. This information was not available during the inspection since the plant was at power and portions of the lines were not accessible. Actions taken were appropriate and had been completed. The inspector had no further concerns on this issue.

E8.11 (Open) Unresolved Item 50-255/98012-02(DRS): Quantitative analysis of debris generation transportation, and containment sump screen loading. The inspector reviewed this item and discussed it with licensee personnel. Licensee personnel indicated that this item would require both short term and long term actions with both items tracked in the plant corrective action system.

The short term item, corrective action item # C-PAL-98-1408A, requires a re-calculation of the availability of water from the containment sump assuming 50% clogging of the containment sump filters. ~~This item was scheduled for completion by June~~ 30, 1999, however, licensee personnel indicated that the item was behind schedule.

The long term action, corrective action # A-CMT-98-118, is a PWR plant generic issue and is being worked jointly by the three PWR owners groups. This item is scheduled for completion by December 15, 2001.

This item remains open pending further review.

E8.12 (Closed) Inspection Followup Item 50-255/98012-03(DRS): Inadequate evaluation of Information Notice (IN) 97-33. The inspector reviewed this item and discussed it with licensee personnel. Records of an additional evaluation of IN 97-33 dated September 14, 1998, were reviewed and were acceptable. This evaluation addressed the inspector's concerns.

E8.13 (Closed) Violation 50-255/98022-03(DRP): Failure to submit the results of an analytical evaluation of degraded primary coolant bolts as required by the ASME Boiler and Pressure Vessel Code, Section XI, Article IWB-3134(b). The inspector reviewed the response to the violation, dated March 11, 1999, as well as records of the actions taken. Actions taken included submission of analytical evaluation, EA-C-PAL-98-1067-01, "P-0A Case to Cover Stud Evaluation"," to the NRC as required by the ASME code and a review to verify that other similar type analyses items had not been overlooked. An additional action to perform an internal assessment to identify potential improvements in the application of Section XI of the ASME code to repair and evaluation activities. The requirement for this assessment was entered in the plant corrective action system (item # A-CMT-99-028) and was scheduled to be performed May 24 to 28, 1999. The actions taken on this item were appropriate and the inspector had no further concerns on this issue.

V. Management Meetings

V1 Exit Meeting Summary

The inspector presented the inspection results to members of licensee management in an exit meeting at the conclusion of the inspection on May 21, 1999. The inspector noted that no

documents or information provided during the inspection were identified as proprietary. Licensee personnel were requested to note and identify any proprietary information discussed during the exit. The information presented was acknowledged and no proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

G. Boss, Operations Manager
P. Fitton, System Engineering Manager
R. Gambrill, Engineering Programs Manager
K. Haas, Engineering Director
R. Hawn, Reactor Engineering Supervisor
L. Kluskowski, Licensing Commitment Management Administration
D. Malone, Licensing Manager
D. Malone, Manager Design Engineering
R. Massa, Operations Superintendent
T. Palmisano, Site Vice President and General Manager

U.S. Nuclear Regulatory Commission

J. Lennartz -- Senior Resident Inspector
P. Prescott -- Resident Inspector
A. Vegel -- Branch Chief, Projects Branch 6

INSPECTION PROCEDURES USED

IP 92903: Followup - Engineering

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-255/99007-01	NCV	Failure to analyze component cooling water system for maximum post loss of coolant water accident temperatures

Closed

50-255/97201-01	IFI	Complete component cooling water flow model calculation for pump minimum flow.
50-255/97201-02	URI	Component cooling water design temperature could be exceeded during a loss of coolant accident.
50-255/97201-28	IFI	Battery testing discrepancies.
50-255/97201-30	URI	Miscellaneous Final Safety Analysis Report discrepancies.
50-255/97201-31	URI	Miscellaneous Design Basis Document (DBD) and other documentation discrepancies.
50-255/98003-01	IFI	Results of programmatic improvements and the 10 CFR 50.54(F) comparison.
50-255/98003-04	VIO	Failure to follow procedures and update calculations.
50-255/98003-05	VIO	No engineering acceptability review of scaffolding installed adjacent to the safety related safety equipment.
50-255/98003-06	VIO	Unsecured operations storage cabinet located near two safety related equipment.
50-255/98003-07	VIO	Instrument tubing and vent screens not installed per design requirements.
50-255/98012-03:	IFI	Inadequate evaluation of Information Notice 97-33.
50-255/98022-03	VIO	Failure to submit the results of an analytical evaluation of degraded primary coolant bolts as required by the ASME Boiler and Pressure Vessel Code.
50-255/99007-01	NCV	Failure to analyze component cooling water system for maximum post loss of coolant water accident temperatures.

Discussed

50-255/98012-02	URI	Quantitative analysis of debris generation transportation, and containment sump screen loading.

LIST OF DOCUMENTS REVIEWED

The following is a list of licensee documents reviewed during the inspection, including documents prepared by others for the licensee. Inclusion of a document on this list does not imply that NRC inspectors reviewed the entire documents, but, rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. In addition, inclusion of a document on this list does not imply NRC acceptance of the document, unless specifically stated in the body of the inspection report.

Responses to NRC Inspection Reports

Reply to Notice of Violation From Inspection Report 50-255/98003(DRS), licensee letter dated June 24, 1998.
Reply to Notice of Violation From Inspection Report 50-255/98022(DRP), licensee letter dated March 11, 1999.

Action Item Records

A-CMT-97-019	Response to NRC 10 CFR 50.54(F) Letter.
A-CMT-98-041	NRC Inspection Report No. 50-255/97201, "Palisades Plant Design Inspection" - Unresolved Item (URI)97201-02.
A-CMT-98-067	NRC Inspection Report No. 50-255/97201, "Palisades Plant Design Inspection" - Inspection Followup Item (IFI)97201-28.
A-CMT-98-069	NRC Inspection Report No. 50-255/97201, "Palisades Plant Design Inspection" - Unresolved Item (URI)97201-30.
A-CMT-98-119	NRC Inspection Report No. 50-255/98012 and Notice of Violation
A-CMT-99-028	Internal assessment of the application of Section XI of the ASME code to repair and evaluation activities.
A-PAL-98-027	CCW Pump Minimum Flow Model CWPI-NSP-AP-1-12
A-PAL-98-039	Miscellaneous Battery Discrepancies.
A-PAL-98-042	Implement DBD Change.
A-PAL-98-043	Implement DBD Change.
A-PAL-98-044	Implement DBD Changes
A-PAL-98-045	Implement DBD Change.
A-PAL-98-046	Implement DBD Changes.
A-PAL-98-047	Design Control.

Condition Reports

C-PAL-97-1363	Component Cooling Water System not Analyzed for Present LOCA Containment Analysis
C-PAL-97-1460	Procedural Errors with Battery Service Testing..
C-PAL-97-1557	Discrepancies between DBD 708 and C-PAL-95-1526-01.
C-PAL-97-1636	Address trend CR -- Calculation control deficiencies.
C-PAL-98-1153	A/E Inspection Follow-up Report and Notice of Violations/Deviations Discussed in Inspection Report 50-255/98003.
C-PAL-98-1975	Primary Coolant Pump P-50A Bolt Evaluation Not Submitted to the NRC.
C-PAL-99-0182	NRC Inspection report 980022 (DRP) and Notice of Violation regarding the Failure to submit and engineering analysis pertaining to degraded PCP studs C

Plant Procedures

SOP-16 Component Cooling Water System, Revision 22.L1999-01374

FSAR Change Requests

9-299-R-21-1443 Change FSAR Section 9.3.2.3.3 to clarify CCW temperature during accident conditions

Miscellaneous Documents and Records

Industry Experience Traveler # IN 97-033 1 -- Unanticipated Effect of Ventilation System on Tank Level Indications and Engineering Safety Features Actuation System Setpoint.
AE Inspection Actions Matrix, dated 04/21/99

LIST OF ACRONYMS USED

ASME	American Society of Mechanical Engineers
CCW	Component Cooling Water
CFR	Code of Federal Regulations
DBD	Design Basis Document
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
FSAR	Final Safety Analysis Report
HPSI	High Pressure Safety Injection
IFI	Inspection Follow-up Item
IN	Information Notice
LOCA	Loss of Coolant Accident
LPSI	Low Pressure Safety Injection
NRC	Nuclear Regulatory Commission
URI	Unresolved Item
VIO	Violation