August 14, 2002

Mr. Douglas E. Cooper
Site Vice President
Palisades Nuclear Plant
Nuclear Management Company, LLC
27780 Blue Star Memorial Highway
Covert, MI 49043-9530

SUBJECT: PALISADES NUCLEAR GENERATING PLANT - NRC SUPPLEMENTAL INSPECTION REPORT 50-255/02-08(DRS)

Dear Mr. Cooper:

On July 25, 2002, the NRC completed a supplemental inspection at your Palisades Nuclear Generating Plant regarding a White inspection finding. This White finding involved smoke detectors in the northwest portion of the cable spreading room which were not located and installed in accordance with the applicable National Fire Protection Association code. The enclosed report presents the results of that inspection which were discussed on July 25, 2002, with members of your staff.

This supplemental inspection was an examination of 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. Within these areas, the inspection consisted of a selected examination of procedures and representative records, and interviews with personnel. Specifically, this inspection focused on your assessment of the root causes and corrective actions associated with the White inspection finding.

Based upon the results of this inspection, no findings of significance were identified.

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

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

Sincerely,

/RA/

Zelig Falevits, Acting Chief
Electrical Engineering Branch
Division of Reactor Safety

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

Enclosure: Palisades Supplemental Inspection
Report 50-255/02-08(DRS)

cc w/encl: R. Fenech, Senior Vice President, Nuclear
Fossil and Hydro Operations
L. Lahti, Manager, Licensing
R. Anderson, Chief Nuclear Officer, NMC
A. Udrys, Esquire, Consumers Energy Company
S. Wawro, Nuclear Asset Director, Consumers Energy Company
W. Rendell, Supervisor, Covert Township
Office of the Governor
Michigan Department of Environmental Quality
Department of Attorney General (MI)

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

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

Enclosure: Palisades Supplemental Inspection
Report 50-255/02-08(DRS)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-255
License No:	DPR-20
Report No:	50-255/02-08(DRS)
Licensee:	Nuclear Management Company, LLC
Facility:	Palisades Nuclear Plant
Location:	27780 Blue Star Memorial Highway Covert, MI 49043-9530
Dates:	July 22 through 25, 2002
Inspectors:	R. Daley, Reactor Engineer Electrical Engineering Branch
Approved By:	Zelig Falevits, Acting Chief Electrical Engineering Branch Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000255-02-08(DRS); Nuclear Management Company, LLC, on 07/22 through 07/25/2002; Palisades Nuclear Plant; Supplemental Inspection - Mitigating Systems Cornerstone.

This supplemental inspection was performed by a regional inspector. No findings of significance were identified. 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.

Inspector Identified Findings

Cornerstone: Mitigating Systems

The U. S. Nuclear Regulatory Commission (NRC) performed this supplemental inspection to assess the licensee's root cause evaluation, extent of condition determination, and corrective actions for the smoke detectors in the northwest portion of the cable spreading room that were not located and installed in accordance with the applicable National Fire Protection Association (NFPA) code. This performance issue was previously characterized as having low to moderate safety significance (i.e., White) in an NRC letter dated October 26, 2001, which comunicated the preliminary assessment of the finding documented in NRC Inspection Report 50-255/01-08(DRS). During this supplemental inspection, performed in accordance with Inspection Procedure 95001, the inspector concluded that the licensee had developed a comprehensive corrective action plan that addressed this issue as well as any other historical NFPA code conformance issues. Additionally, measures were in place that should adequately prevent similar problems from occurring in the future. However, the inspector also concluded that the licensee's apparent cause evaluation for this issue was less rigorous than would be expected for an issue of this significance. Because of the extensive corrective actions for this issue; however, the inspector determined that the issue was being appropriately addressed and resolved by the licensee.

Given the licensee's acceptable performance in addressing the smoke detectors, the white finding associated with this issue will only be considered in assessing plant performance for a total of four quarters in accordance with the guidance in NRC Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program."

Report Details

01 INSPECTION SCOPE

The U. S. Nuclear Regulatory Commission (NRC) performed this supplemental inspection to assess the licensee's evaluation associated with the smoke detectors in the northwest portion of the cable spreading room which were not located and installed in accordance with the applicable National Fire Protection Association code. This performance issue was previously characterized as "White" in NRC Inspection Report 50-255/01-08(DRS) and is related to the mitigating system cornerstone in the reactor safety strategic performance.

02 EVALUATION OF INSPECTION REQUIREMENTS

02.01 Problem Identification

a. Determination of who (i.e., licensee, self-revealing, or NRC), identified the issue and under what conditions the issue was identified

The issue was identified by the NRC during the triennial Fire Protection Inspection. Based upon the conditions at the time that the condition was discovered, the inadequacy of the smoke detectors in the northwest portion of the cable spreading room could have caused a delay in the detection of a fire in that area.

The inspector determined that the licensee appropriately identified who and under what conditions the issue was identified.

b. Determination of how long the issue existed, and prior opportunities for identification

The licensee determined during the apparent cause evaluation that insufficient application of engineering judgement had been incorporated into the placement of the smoke detector in the northwest area of the cable spreading. Because of this, the condition had existed since installation of the smoke detector. The modifications that installed the detection systems were performed in response to the NRC Fire Protection Safety Evaluation Report, dated September 1, 1978, for the Palisades Nuclear Plant.

The licensee stated that at the time that the fire protection modifications were made in response to the NRC Fire Protection Safety Evaluation Report, the NFPA Codes were very basic and subject to a wide range of interpretations. These interpretations, as was the case for the fire detection in the cable spreading room, were sometimes made non-conservatively and incorrectly by the fire protection engineer(s) designing the system. Until more recently, many of these code interpretations were never really questioned. However, presently, the industry as a whole has a more complete understanding of the codes and the intent behind the codes.

The licensee did not document in its apparent cause analysis if any prior opportunities for identification of this issue existed; however, during the inspection, the licensee provided a copy of a self-assessment that was performed just prior to the triennial Fire Protection Inspection. The self-assessment identified that because of code conformance issues at other plants, Palisades had initiated a code documentation effort. However, it is unknown whether the smoke detector issue would have been identified by this effort.

c. Determination of the plant-specific risk consequences (as applicable) and compliance concerns associated with the issue

The licensee documented in the evaluation of this issue that this condition was classified as a "White" finding (i.e., a finding of low to moderate safety significance). The issue was classified as a "White" finding because detection of a fire in the northwest portion of the cable spreading room may have been delayed. As a result, sufficient damage to cabling could have occurred before the fire would be extinguished. The affiliated damage could have required a shutdown of the plant from outside the control room, significantly increasing the complexity of manual actions required to achieve safe shutdown. The licensee acknowledged the finding and its safety and risk significance.

Because of the risk associated with this issue, the licensee initiated hourly fire tours in the cable spreading room. Additionally, because of the overall concern regarding smoke detectors, immediately after this issue was discovered, hourly fire watches were initiated for all other alternate shutdown areas except for the control room, since it is continuously manned. These areas were chosen for fire watches, because they represented the fire areas with the highest potential risk. Based upon the licensee's actions, the inspector concluded that the licensee appropriately addressed the risk consequences and compliance concerns associated with the issue.

02.02 Root Cause and Extent of Condition Evaluation

a. Evaluation of method(s) to identify root cause(s) and contributing cause(s)

As per the licensee's procedure, 3.03, "Corrective Action Process," Revision 27, this issue was classified as a Significance Level 3 condition. A Level 3 condition is defined as "A Condition Adverse to Quality (CAQ) for which an apparent cause evaluation is determined to be warranted." The "apparent cause evaluation" is not as detailed and structured as the "root cause evaluation." As defined in Procedure 3.03, an Apparent Cause is "the most likely cause of the failure, given the way the failure manifests itself."

As a result, this evaluation did not require the identification of a root cause and contributing causes. However, procedural guidelines were adhered to in the formulation of the apparent cause.

b. Level of detail of the root cause evaluation

This issue was originally classified by the licensee as a Significance Level 2 issue. Under this original classification, the licensee would have been required to perform a full root cause evaluation. Licensee personnel involved in the response for this Condition Report (CR) obtained permission from the Corrective Action Review Board (CARB) to downgrade the significance of the CR to Significance Level 3 which involved only an apparent cause evaluation. From interviews with the licensee, the rationale for downgrading the issue was that the issue was a historical design problem. The licensee concluded that since the issue was historical and had been a problem for many years, detailed information involving the decision making process for the design would be unobtainable. As a result, the issue was downgraded so that only an apparent cause was required. This rationale appeared to be inadequate, since the downgrading from one Significance Level to a lower one should be based upon the significance of the issue rather than the age of the issue.

Since only an apparent cause evaluation was performed, the amount of documentation in the licensee's evaluation was minimal; however, it appeared that many of the "Why" questions that should have been asked and documented for a full root cause evaluation were discussed verbally by the licensee's staff. The licensee asserted that even though the CR had been downgraded to a lower significance level, it was still treated with a heightened significance by assigning a CARB review. From interviews with the licensee, it was apparent that the staff had discussed the causes and corrective actions for the issue in much more depth than that which was documented in the written evaluation. However, this verbal evaluation was much less disciplined than what would have normally been expected for an issue of this nature. Consequently, since a full root cause evaluation was not performed, the evaluation of this issue was not conducted to a level of detail commensurate with the significance of the problem. However, the corrective actions in place were exhaustive and should correct any existing code conformance problems as well as prevent this type of condition from occurring in the future.

c. Consideration of prior occurrences of the problem and knowledge of prior operating experience

The licensee's evaluation did not include a search of Condition Reports; however, during this inspection, the licensee performed a CR search using the words "fire" and "code," since the issue involved a code compliance issue in the fire protection area. No prior CRs were found; however, the licensee's computer database only contains CRs issued after 1994.

The evaluation did consider operating experience in regard to the corrective actions performed by other plants for similar issues. In the Operating Experience portion of the evaluation, the licensee stated, "Plants that did not perform code compliance reviews, like Palisades, perform code compliance reviews when inadequate code compliance issues are identified." The licensee, in their evaluation, asserted their corrective actions were consistent with other plants. since a plant-wide fire protection code conformance review was conducted as a result of this issue.

d. Consideration of potential common cause(s) and extent of condition of the problem

The licensee determined that the apparent cause for this condition stemmed primarily from an insufficient application of engineering judgment during installation of the fire protection modifications for Appendix R in the early 1980's. Appropriately, the licensee concluded that the extent of condition could exist for all fire protection equipment, since a similar use of engineering judgment was used throughout the plant for installation of fire protection modifications during this time frame.

Consequently, a code conformance evaluation/walkdown of all detection equipment was performed as a corrective action for this CR. Eleven areas were found to need upgrades to their detection as a result of this evaluation. Additionally, the licensee concluded that a code compliance review addressing other NFPA codes should be performed since similar design deficiencies were likely to be found in other fire protection equipment. This evaluation was performed just prior to this inspection. Compensatory measures were put in place as applicable as a result of this comprehensive evaluation.

Future recurrence of this issue should be prevented through the existing Palisades modification process. Checklists are presently in place to flag any Fire Protection/Safe Shutdown related changes so that a qualified review would be performed. This review was required to be performed by two qualified Appendix R engineers.

02.03 Corrective Actions

a. Appropriateness of corrective action(s)

Since only an apparent cause evaluation was performed, the licensee's corrective actions only addressed this one cause. The inspector concluded that the corrective actions for this issue were comprehensive.

As an immediate corrective action, the licensee established one hour roving fire watches as compensatory actions for the cable spreading room. This compensatory action is consistent with the licensee's Fire Protection Program. As a conservative measure, the licensee also established roving fire watches for all other alternate shutdown areas. These areas were chosen, because they represented the fire areas with the highest potential risk.

For long term actions, the licensee performed a code compliance review/walkdown for all fire detection system required for Appendix R. This review was completed and documented. As a result, additional areas to the ones already identified by the NRC during the triennial Fire Protection Inspection were found to require upgrades to their detection systems. The licensee established hourly fire watches for the applicable areas

as an immediate compensatory measure. Additionally, because of extent of condition concerns, the licensee has performed a code compliance review/walkdown of all fire protection systems used to comply with the plant's original fire protection SER and supplements. The licensee has initiated several Condition Reports and has established compensatory measures as appropriate based upon this review.

The final corrective action for the detection of non-compliances were incorporated into the Palisades Fire Detection System Upgrade Plan. This plan included actions to upgrade the high voltage fire detection systems to resolve the identified discrepancies. Final corrective actions for the other fire protection related non-compliances will be handled under the Palisades Corrective Action process by the associated CRs.

b. Prioritization of corrective actions

The licensee immediately assigned appropriate compensatory measures for both the NRC findings and the self-identified non-compliances. Additionally, the licensee scheduled and performed the corrective actions in a logical manner based upon the risk vulnerability of the plant. For instance, the code conformance review of fire detection features was performed before the code conformance review of all fire protection features, because it was clear from the NRC findings in the triennial FPI that detection was a clear vulnerability at Palisades Nuclear Plant. Additionally, upgrades to the detection in the cable spreading room was scheduled in the Palisades Fire Detection System Upgrade Plan prior to other upgrades based upon the heightened significance of the non-conformance in this area.

c. Establishment of schedule for implementing and completing the corrective actions.

The corrective actions for the Condition Report associated with this "White" finding have all been complete with the exception of the corrective action for upgrading the fire detection system in the cable spreading room. This last corrective action was scheduled to be complete by the end of 2002. Additionally, any corrective actions resulting from the code conformance reviews were scheduled for implementation and completion by the Palisades Fire Detection System Upgrade Plan and the Condition Reports associated with any non-conformances. The inspector noted that the schedule associated with the corrective actions was appropriate for the significance of the issues.

d. Establishment of quantitative or qualitative measures of success for determining the effectiveness of the corrective actions to prevent recurrence

No specific effectiveness review was developed for the Condition Report associated with this issue. However, the Corrective Action Process (Procedure No. 3.03, "Corrective Action Process") required that a Closeout Review be performed on this Condition Report prior to closeout. One of the questions on the Corrective Action Closeout Review Checklist was "Are Corrective Actions adequate?" This portion of the Palisades Corrective Action program would serve as a very basic type of effectiveness review.

03 MANAGEMENT MEETINGS

Exit Meeting Summary

On July 25, 2002, the inspector presented the inspection results to Mr. D. J. Malone and other members of licensee management. The licensee acknowledged the issues presented.

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

KEY POINTS OF CONTACT

Licensee

M. Carlson, Manager Engineering Programs
B. Dotson, Licensing Analyst
P. Russell, Manager Performance Improvement
R. White, Supervisor Programs and Analysis Engineering

NRC

R. Krsek, Resident Inspector

LIST OF ACRONYMS USED

CAQ	Condition Adverse to Quality
CARB	Corrective Action Review Board
CFR	Code of Federal Regulations
CR	Condition Report
FPI	Fire Protection Inspection
IMC	Inspection Manual Chapter
IR	Inspection Report
NFPA	National Fire Protection Association
NMC	Nuclear Management Company, LLC
SER	Safety Evaluation Report

LIST OF DOCUMENTS REVIEWED

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

Condition Reports Initiated as a Result of Inspection

CPAL0202775	Palisades Corrective Action Process Significance Guideline Needs Update	July 24, 2002
CPAL0202776	Review of AP 3.03 to Determine if Process Enhancements are Required for "Downgrading" a Condition Report Assignment	July 24, 2002
CPAL0202808	Containment Fire Detection Does not Meet Code of Record	July 26, 2002

Documents Reviewed During Inspection

CPAL 0102369	Code Compliance of Detectors in Cable Spreading Room	July 14, 2001
CPAL0103289	NRC Triennial Fire Protection Inspection Preliminary White Finding	October 15, 2001
FHA	Palisades Plant Fire Hazards Analysis Report	Revision 4
FPIP-4	Fire Protection Systems and Fire Protection Equipment	Revision 16
NFPA No. 72E	Automatic Fire Detectors	1974
SER	NRC SER for Amendment 42	September 1, 1978
Palisades Letter to NRC	Response to Staff Request for Additional Information on FHA	May 15, 1978
NRC Letter	Letter from NRC to Consumers Power Company Requesting Additional Information	June 19, 1978
Palisades Letter to NRC	Response to NRC Fire Protection Positions	June 30, 1978
Palisades Letter to NRC	Fire Protection - Exemption Requests and Modified Commitments - Revision 2	July 20, 1984
NRC Letter	Exemptions to Section III.G of Appendix R	July 23, 1985

Proc No 3.03	Corrective Action Process	Revision 27
Proc No 3.03	Corrective Action Process	Revision 28
Proc No 3.07	10 CFR 50.59 and 72.48 Reviews	Revision 13