UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 7, 2001

Mr. Nathan L. Haskell, Director
Licensing and Performance Assessment
Palisades Plant
27780 Blue Star Memorial Highway
Covert, MI 49043

SUBJECT: PALISADES PLANT - ISSUANCE OF AMENDMENT RE: ELIMINATION OF REQUIREMENTS FOR POST-ACCIDENT SAMPLING SYSTEMS (TAC NO. MB0836)

Dear Mr. Haskell:

The Commission has issued the enclosed Amendment No. 193 to Facility Operating License No. DPR-20 for the Palisades Plant. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated December 8, 2000.

The amendment deletes TS Section 5.5.3, "Post Accident Sampling Program," for Palisades and thereby eliminates the requirements to have and maintain the post-accident sampling system for the plant.

A copy of our related safety evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

Darl S. Hood

Darl S. Hood, Senior Project Manager, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-255

Enclosures: 1. Amendment No. 193 to DPR-20
2. Safety Evaluation

cc w/encls: See next page

March 7, 2001

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Palisades Plant
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Palisades Plant

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

CONSUMERS ENERGY COMPANY

DOCKET NO. 50-255

PALISADES PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 193
License No. DPR-20

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Consumers Energy Company (the licensee) dated December 8, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public; and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to the license amendment and Paragraph 2.C.(2) of Facility Operating License No. DPR-20 is hereby amended to read as follows:

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 193 , and the Environmental Protection Plan contained in Appendix B are hereby incorporated in the license. Consumers Energy Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Claudia M. Craig

Claudia M. Craig, Chief, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: March 7, 2001

ATTACHMENT TO LICENSE AMENDMENT NO. 193

FACILITY OPERATING LICENSE NO. DPR-20

DOCKET NO. 50-255

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE	INSERT
5.0-8	5.0-8
B 3.3.7-9	B 3.3.7-9

5.5 Programs and Manuals

5.5.2 Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage to the engineered safeguards rooms, from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident, to as low as practical. The systems include the Containment Spray System, the Safety Injection System, the Shutdown Cooling System, and the containment sump suction piping. This program shall include the following:

a. Provisions establishing preventive maintenance and periodic visual inspection requirements, and

b. Integrated leak test requirements for each system at a frequency not to exceed refueling cycle intervals.

c. The portion of the shutdown cooling system that is outside the containment shall be tested either by use in normal operation or hydrostatically tested at 255 psig.

d. Piping from valves CV-3029 and CV-3030 to the discharge of the safety injection pumps and containment spray pumps shall be hydrostatically tested at no less than 100 psig.

e. The maximum allowable leakage from the recirculation heat removal systems' components (which include valve stems, flanges and pump seals) shall not exceed 0.2 gallon per minute under the normal hydrostatic head from the SIRW tank (approximately 44 psig).

5.5.3 Post Accident Sampling Program

[deleted]

BASES

ACTIONS (continued)

B.1

This Required Action specifies initiation of actions in accordance with Specification 5.6.6, which requires a written report to be submitted to the Nuclear Regulatory Commission. This report discusses the results of the root cause evaluation of the inoperability and identifies proposed restorative Required Actions. This Required Action is appropriate in lieu of a shutdown requirement, given the likelihood of plant conditions that would require information provided by this instrumentation. Also, alternative Required Actions are identified before a loss of functional capability condition occurs.

C.1

When one or more Functions have two required channels inoperable (i.e., two channels inoperable in the same Function), one channel in the Function should be restored to OPERABLE status within 7 days. The Completion Time of 7 days is based on the relatively low probability of an event requiring PAM instrumentation operation and the availability of alternate means to obtain the required information. Continuous operation with two required channels inoperable in a Function is not acceptable because the alternate indications may not fully meet all performance qualification requirements applied to the PAM instrumentation. Therefore, requiring restoration of one inoperable channel of the Function limits the risk that the PAM Function will be in a degraded condition should an accident occur.

Condition C is modified by a Note which indicates it is not applicable to hydrogen monitor channels.

D.1

Condition D applies when two hydrogen monitor channels are inoperable. Required Action D.1 requires restoring one hydrogen monitor channel to OPERABLE status within 72 hours. The 72 hour Completion Time is reasonable based on other core damage assessment capabilities available to provide information for operator decisions. Also, it is unlikely that a LOCA (which would cause core damage) would occur during this time.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 193 TO FACILITY OPERATING LICENSE NO. DPR-20

CONSUMERS ENERGY COMPANY

PALISADES PLANT

DOCKET NO. 50-255

1.0 INTRODUCTION

By application dated December 8, 2000, Consumers Energy Company (the licensee) requested changes to the Technical Specifications (TSs) for the Palisades Plant. The changes would delete TS Section 5.5.3, "Post Accident Sampling Program," in its entirety. The licensee also forwarded associated changes for the TS Bases.

In the aftermath of the accident at Three Mile Island (TMI), Unit 2, the Nuclear Regulatory Commission (NRC) imposed requirements on licensees for commercial nuclear power plants to install and maintain the capability to obtain and analyze post-accident samples of the reactor coolant and containment atmosphere. The desired capabilities of the post-accident sampling system (PASS) were described in NUREG-0737, "Clarification of TMI Action Plan Requirements." The NRC issued orders to licensees with plants operating at the time of the TMI accident to confirm the installation of PASS capabilities (generally as they had been described in NUREG-0737). A requirement for PASS and related administrative controls was added to the TSs of the operating plants and was included in the initial TSs for plants licensed during the 1980s and 90s. Additional expectations regarding PASS capabilities were included in Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants To Assess Plant and Environs Conditions During and Following an Accident."

Significant improvements have been achieved since the TMI accident in the areas of understanding risks associated with nuclear plant operations and developing better strategies for managing the response to potentially severe accidents at nuclear plants. Recent insights about plant risks and alternate severe accident assessment tools have led the NRC staff to conclude that some TMI Action Plan items can be revised without reducing the ability of licensees to respond to severe accidents. The NRC's efforts to oversee the risks associated with nuclear technology more effectively and to eliminate undue regulatory costs to licensees have prompted the NRC to consider eliminating the requirements for PASS in TSs and other parts of the licensing bases of operating reactors.

The NRC staff has completed its review of the topical reports submitted by the Combustion Engineering Owners Group (CEOG) and the Westinghouse Owners Group (WOG) that proposed the elimination of PASS. The justifications for the proposed elimination of PASS requirements center on evaluations of the various radiological and chemical sampling and their potential usefulness in responding to a severe reactor accident or making decisions regarding

actions to protect the public from possible releases of radioactive materials. As explained in more detail in the NRC staff's safety evaluations for the two topical reports, the NRC staff has reviewed the available sources of information for use by decision-makers in developing protective action recommendations and assessing core damage. Based on this review, the NRC staff found that the information provided by PASS is either unnecessary or is effectively provided by other indications of process parameters or measurement of radiation levels. The NRC staff agrees, therefore, with the owners groups that licensees can remove the TS requirements for PASS, revise (as necessary) other elements of the licensing bases, and pursue possible design changes to alter or remove existing PASS equipment.

2.0 BACKGROUND

In a letter dated May 5, 1999 (as supplemented by letter dated April 14, 2000), the CEOG submitted topical report CE NPSD-1157, Revision 1, "Technical Justification for the Elimination of the Post-Accident Sampling System From the Plant Design and Licensing Bases for CEOG Utilities." A similar proposal was submitted on October 26, 1998 (as supplemented by letters dated April 28, 1999, April 10 and May 22, 2000), by the WOG in its topical report WCAP-14986, "Post Accident Sampling System Requirements: A Technical Basis." The reports provided evaluations of the information obtained from PASS samples to determine the contribution of the information to plant safety and accident recovery. The reports considered the progression and consequences of core damage accidents and assessed the accident progression with respect to plant abnormal and emergency operating procedures, severe accident management guidance, and emergency plans. The reports provided the owners groups' technical justifications for the elimination for the various PASS sampling requirements. The specific samples and the NRC staff's findings are described in the following evaluation.

The NRC staff prepared this model safety evaluation (SE) relating to the elimination of requirements on post accident sampling and solicited public comment (65 FR 49271) in accordance with the consolidated line-item improvement process (CLIIP). The use of the CLIIP in this matter is intended to help the NRC to efficiently process amendments that propose to remove the PASS requirements from the TSs. Licensees of nuclear power reactors to which this model apply were informed (65 FR 65018) that they could request amendments confirming the applicability of the SE to their reactors and providing the requested plant-specific verifications and commitments.

3.0 EVALUATION

The technical evaluations for the elimination of PASS sampling requirements are provided in SEs dated May 16, 2000, for the CEOG topical report CE NPSD-1157 and June 14, 2000, for the WOG topical report WCAP-14986. The NRC staff's SEs approving the topical reports are located in the NRC's Agencywide Documents Access and Management System (ADAMS) (Accession Numbers ML003715250 for CE NPSD-1157 and ML003723268 for WCAP-14986).

The ways in which the requirements and recommendations for PASS were incorporated into the licensing bases of commercial nuclear power plants varied as a function of when plants were licensed. Plants that were operating at the time of the TMI accident are likely to have been the subject of confirmatory orders that imposed the PASS functions described in NUREG-0737 as obligations. The issuance of plant specific amendments to adopt this change, which would

remove PASS and related administrative controls from TSs, supersede the PASS-specific requirements imposed by post-TMI confirmatory orders.

As described in its SEs for the topical reports, the NRC staff finds that the following PASS sampling requirements may be eliminated for plants of Combustion Engineering and Westinghouse designs:

1. reactor coolant dissolved gases
2. reactor coolant hydrogen
3. reactor coolant oxygen
4. reactor coolant pH
5. reactor coolant chlorides
6. reactor coolant boron
7. reactor coolant conductivity
8. reactor coolant radionuclides
9. containment atmosphere hydrogen concentration
10. containment oxygen
11. containment atmosphere radionuclides
12. containment sump pH
13. containment sump chlorides
14. containment sump boron
15. containment sump radionuclides

The NRC staff agrees that sampling of radionuclides is not required to support emergency response decision making during the initial phases of an accident because the information provided by PASS is either unnecessary or is effectively provided by other indications of process parameters or measurement of radiation levels. Therefore, it is not necessary to have dedicated equipment to obtain this sample in a prompt manner.

The NRC staff does, however, believe that there could be significant benefits to having information about the radionuclides existing post-accident in order to address public concerns and plan for long-term recovery operations. As stated in the SEs for the topical reports, the NRC staff has found that licensees could satisfy this function by developing contingency plans to describe existing sampling capabilities and what actions (e.g., assembling temporary shielding) may be necessary to obtain and analyze highly radioactive samples from the reactor coolant system (RCS), containment sump, and containment atmosphere. (See item 4.1 under Licensee Verifications and Commitments.) These contingency plans must be available to be used by a licensee during an accident; however, these contingency plans do not have to be carried out in emergency plan drills or exercises. The contingency plans for obtaining samples from the RCS, containment sump, and containment atmosphere may also enable a licensee to derive information on parameters such as hydrogen concentrations in containment and boron concentration and pH of water in the containment sump. The NRC staff considers the sampling of the containment sump to be potentially useful in confirming calculations of pH and boron concentrations and confirming that potentially unaccounted for acid sources have been sufficiently neutralized. The use of the contingency plans for obtaining samples would depend on the plant conditions and the need for information by the decision-makers responsible for responding to the accident.

In addition, the NRC staff considers radionuclide sampling information to be useful in classifying certain types of events (such as a reactivity excursion or mechanical damage) that could cause fuel damage without having an indication of overheating on core exit thermocouples. However, the NRC staff agrees with the topical reports' contentions that other indicators of failed fuel, such as letdown radiation monitors (or normal sampling system), can be correlated to the degree of failed fuel. (See item 4.2 under Licensee Verifications and Commitments.)

In lieu of the information that would have been obtained from PASS, the NRC staff believes that licensees should maintain or develop the capability to monitor radioactive iodines that have been released to offsite environs. Although this capability may not be needed to support the immediate protective action recommendations during an accident, the information would be useful for decision makers trying to limit the public's ingestion of radioactive materials. (See item 4.3 under Licensee Verifications and Commitments.)

The NRC staff believes that the changes related to the elimination of PASS that are described in the topical reports, related safety evaluations and this proposed change to TS are unlikely to result in a decrease in the effectiveness of a licensee's emergency plan. Each licensee, however, must evaluate possible changes to its emergency plan in accordance with 10 CFR 50.54(q) to determine if the change decreases the effectiveness of its site-specific plan. Evaluations and reporting of changes to emergency plans should be performed in accordance with applicable regulations and procedures.

The NRC staff notes that redundant, safety-grade, containment hydrogen concentration monitors are required by 10 CFR 50.44(b)(1), are addressed in NUREG-0737 Item II.F.1 and Regulatory Guide 1.97, and are relied upon to meet the data reporting requirements of 10 CFR Part 50, Appendix E, Section VI.2.a.(i)(4). The NRC staff concludes that during the early phases of an accident, the safety-grade hydrogen monitors provide an adequate capability for monitoring containment hydrogen concentration. The NRC staff sees value in maintaining the capability to obtain grab samples for complementing the information from the hydrogen monitors in the long term (i.e., by confirming the indications from the monitors and providing hydrogen measurements for concentrations outside the range of the monitors). As previously mentioned, the licensee's contingency plan (see item 4.1) for obtaining highly radioactive samples will include sampling of the containment atmosphere and may, if deemed necessary and practical by the appropriate decision-makers, be used to supplement the safety-related hydrogen monitors.

4.0 LICENSEE VERIFICATIONS AND COMMITMENTS

As requested by the NRC staff in the notice of availability for this TS improvement, the licensee has addressed the following plant-specific verifications and commitments.

4.1 Each licensee should verify that it has, and make a regulatory commitment to maintain (or make a regulatory commitment to develop and maintain), contingency plans for obtaining and analyzing highly radioactive samples of reactor coolant, containment sump, and containment atmosphere.

The licensee has made a regulatory commitment to develop contingency plans for obtaining and analyzing highly radioactive samples from the RCS, containment sump, and containment atmosphere. The licensee has committed to maintain the contingency plans within its

emergency plan implementing procedures and to implement the commitment within the implementation period of the license amendment (60 days).

4.2 Each licensee should verify that it has, and make a regulatory commitment to maintain (or make a regulatory commitment to develop and maintain), a capability for classifying fuel damage events at the Alert level threshold (typically this is 300 μCi/ml dose equivalent iodine). This capability may utilize the normal sampling system and/or correlations of sampling or letdown line dose rates to coolant concentrations.

The licensee has made a regulatory commitment to implement and maintain the capability for classifying fuel damage events at the Alert level threshold. The licensee has committed to maintain the capability for the Alert classification within its emergency plan implementing procedures. The licensee will implement this commitment within the implementation period for this amendment (60 days).

4.3 Each licensee should verify that it has, and make a regulatory commitment to maintain (or make a regulatory commitment to develop and maintain), the capability to monitor radioactive iodines that have been released to offsite environs.

The licensee has verified that it has the capability to monitor radioactive iodines that have been released to offsite environs. The licensee has committed to maintain the capability for monitoring iodines within its emergency plan implementing procedures. The licensee has implemented this commitment.

The NRC staff finds that reasonable controls for the implementation and for subsequent evaluation of proposed changes pertaining to the above regulatory commitments are provided by the licensee's administrative processes, including its commitment management program. Should the licensee choose to incorporate a regulatory commitment into the emergency plan, final safety analysis report, or other document with established regulatory controls, the associated regulations would define the appropriate change-control and reporting requirements. The NRC staff has determined that the commitments do not warrant the creation of regulatory requirements which would require prior NRC approval of subsequent changes. The NRC staff has agreed that NEI 99-04, Revision 0, "Guidelines for Managing NRC Commitment Changes," provides reasonable guidance for the control of regulatory commitments made to the NRC staff. (See Regulatory Issue Summary 2000-17, Managing Regulatory Commitments Made by Power Reactor Licensees to the NRC Staff, dated September 21, 2000.) The commitments should be controlled in accordance with the industry guidance or comparable criteria employed by a specific licensee. The NRC staff may choose to verify the implementation and maintenance of these commitments in a future inspection or audit.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Michigan State official was notified of the proposed issuance of the amendment. The Michigan State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (66 FR 7679). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: W. Reckley

Date: March 7, 2001