February 22, 1999

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

SUBJECT: PALISADES PLANT - ISSUANCE OF AMENDMENT RE: CONTAINMENT SYSTEMS TECHNICAL SPECIFICATIONS (TAC NO. M98291)

Dear Mr. Haskell:

The Commission has issued the enclosed Amendment No.184 to Facility Operating License No. DPR-20 for the Palisades Plant. The amendment consists of changes to the Technical Specifications (TS) in response to Consumers Energy Company's application dated March 26, 1997. A partial response to the March 26, 1997, application was provided with the issuance of Amendment No. 179, on April 8, 1998, which incorporated a TS note to allow opening an operable airlock door to perform repairs on inoperable airlock components when the other airlock door is inoperable.

The amendment modifies TS sections 3.6 and 4.5 by removing the list of containment isolation valves in accordance with Generic Letter 91-08, "Removal of Component Lists from Technical Specifications," dated May 6, 1991, and by revising requirements related to containment pressure and containment temperature. Additionally, several editorial changes are made to emulate the format and content of NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants."

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,
ORIGINAL SIGNED BY

Robert G. Schaaf, Project Manager
Project Directorate III-1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-255

Enclosures: 1. Amendment No.184 to DPR-20
2. Safety Evaluation

cc w/encl: See next page

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

February 22, 1999

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27780 Blue Star Memorial Highway
Covert, MI 49043

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Docket No. 50-255

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cc w/encl: See next page

DATED: February 22, 1999

AMENDMENT NO. 184 TO FACILITY OPERATING LICENSE NO. DPR-20 - PALISADES

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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. 184
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 March 26, 1997, 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. 184, 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.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert G. Schaaf, Project Manager
Project Directorate III-1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: February 22, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 184

FACILITY OPERATING LICENSE NO. DPR-20

DOCKET NO. 50-255

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

REMOVE	INSERT
i	i
1-2	1-2
3-40	3-40
3-40a	3-40a
3-40b	--
3-40c	--
3-40d	--
3-40e	--
3-40f	--
3-40g	--
4-20	4-20
4-21	4-21
4-22	4-22
4-23	4-23
4-23a	4-23a
--	4-23b

PALISADES PLANT TECHNICAL SPECIFICATIONS
TABLE OF CONTENTS

CHANNEL FUNCTIONAL TEST

A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated signal into the channel to verify that it is OPERABLE, including any alarm and trip initiating function.

COLD SHUTDOWN

The COLD SHUTDOWN condition shall be when the primary coolant is at SHUTDOWN BORON CONCENTRATION and T_{ave} is less than 210°F.

CONTAINMENT INTEGRITY

CONTAINMENT INTEGRITY is defined to exist when:

a. All nonautomatic containment isolation valves and blind flanges are closed (OPERABLE).

b. The equipment hatch is properly closed and sealed.

c. At least one door in each air lock is properly closed and sealed.

d. All automatic containment isolation valves are OPERABLE or are locked closed.

e. The uncontrolled containment leakage satisfies Specification 4.5.

CONTROL RODS

CONTROL RODS shall be all full-length shutdown and regulating rods.

CORE OPERATING LIMITS REPORT (COLR)

The COLR is the document that provides cycle specific parameter limits for the current reload cycle. These cycle specific parameter limits shall be determined for each reload cycle in accordance with Specification 6.6.5. Plant operation within these limits is addressed in individual Specifications.

DOSE EQUIVALENT I-131

DOSE EQUIVALENT I-131 shall be that concentration of I-131 (μCi/gm) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134 and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table III of TID-14844, "Calculation of Distance Factors for Power and Test Reactor Sites."

3.6 CONTAINMENT SYSTEM

3.6.1 CONTAINMENT INTEGRITY shall be maintained:*

a. When the plant is above COLD SHUTDOWN,

b. When the reactor vessel head is removed (unless the PCS boron concentration is at REFUELING BORON CONCENTRATION), and

c. When positive reactivity changes are made by boron dilution or CONTROL ROD motion (except for testing one CONTROL ROD at a time).

ACTION:

With one or more containment isolation valves inoperable (including during performance of valve testing), maintain at least one isolation valve OPERABLE in each affected penetration that is open and either:

a. Restore the inoperable valves to OPERABLE status within 4 hours; or

b. Isolate each affected penetration within 4 hours by use of at least one closed and deactivated automatic valve, closed manual valve, or blind flange; or

c. Be in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

3.6.2 The containment internal pressure shall not exceed:

a. 1.5 psig when above COLD SHUTDOWN and below HOT STANDBY; and

b. 1.0 psig when in POWER OPERATION or HOT STANDBY.

With containment internal pressure above the limit, restore pressure to within the limit within 1 hour, or be in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

3.6.3 The containment average air temperature shall not exceed 140°F when the plant is above COLD SHUTDOWN. With containment average air temperature above the limit, restore temperature to within the limit within 8 hours, or be in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

3.6.4 Two independent containment hydrogen recombiners shall be OPERABLE when the plant is in POWER OPERATION or HOT STANDBY. With one recombiner inoperable, restore the inoperable recombiner to OPERABLE status within 30 days or be in at least HOT SHUTDOWN within the next 12 hours.

3.6.5 The containment purge exhaust and air room supply isolation valves shall be locked closed whenever the plant is above COLD SHUTDOWN. With one containment purge exhaust or air room supply isolation valve not locked closed, lock the valve closed within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

* Entry and exit is permissible through a "locked" air lock door to perform repairs on other air lock components. Penetration flow paths may be unisolated intermittently under administrative control.

3.6.1 Basis

Maintaining CONTAINMENT INTEGRITY ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment. CONTAINMENT INTEGRITY also ensures that the release of radioactive material to the environment will be consistent with the assumptions used in Section 14 events of the Palisades FSAR.

COLD SHUTDOWN conditions assure that no steam will be formed and, hence, there would be no pressure buildup in the containment if the primary coolant system ruptures. REFUELING BORON CONCENTRATION provides sufficient SHUTDOWN MARGIN to precludes criticality under any circumstances.

A footnote to LCO 3.6.1 allows temporary deviation from the requirements of CONTAINMENT INTEGRITY. The allowance for air lock entry to perform repairs is discussed in the basis for Section 4.5.2. The opening of locked or sealed-closed containment penetration flow paths on an intermittent basis under administrative control includes the following considerations: (1) Stationing an operator, who is in constant communication with control room, at the valve controls, (2) Instructing this operator to close these valves in an accident situation, and (3) Assuring that environmental conditions will not preclude access to close the valves nor preclude the valves from closing, and that this action will prevent the release of radioactivity outside the containment.

The Actions specified in LCO 3.6.1 provide time for trouble-shooting, repairs, and pressure testing of isolation valves or other components.

The containment design pressure of 55 psig would not be exceeded during a Main Steam Line Break (MSLB) or a Loss of Coolant Accident (LOCA) if the average containment air temperature was ≤140°F and the internal containment pressure was ≤1.0 psig during reactor operation (or ≤1.5 psig when above COLD SHUTDOWN with the reactor shutdown)[1].

The function of the hydrogen recombiners is to eliminate the potential breach of containment due to a sudden hydrogen-oxygen burn following a LOCA or MSLB. The recombiners accomplish this by recombining hydrogen and oxygen in a slow continuous manner, to form water vapor. Operation of the hydrogen recombiners is manually initiated. Two 100% capacity, independent hydrogen recombiners are provided. A single recombiner is capable of maintaining the containment hydrogen concentration in containment below the hydrogen flammability limit.

The containment purge exhaust and air room supply isolation valves are required to be locked closed above COLD SHUTDOWN because they are not assured to be capable of closing during DBA conditions[2]. To ensure that the valves are closed and that the seals have not degraded, a between the valves leak rate test is periodically performed. Maintaining these valves locked closed during plant operation ensures that excessive quantities of radioactive materials will not be released via the containment purge exhaust or air room supply ventilation systems. The valves may be locked closed electrically, mechanically, or by other physical means.

References

(1) FSAR, Section 14.18.
(2) Standard Review Plan 6.2.4 and Branch Technical Position CSB 6-4.

4.5.2 Local Leak Detection Tests (continued)

b. Acceptance Criteria

(1) The total leakage from all penetrations and isolation valves shall not exceed 0.60 L_a.

(2) The leakage for a Personnel air lock door seal test shall not exceed 0.023 L_a.

(3) An acceptable Emergency Escape Airlock door seal contact check consists of a verification of continuous contact between the seals and the sealing surfaces.

c. Corrective Action

(1) If at any time it is determined that 0.60 L_a is exceeded, repairs shall be initiated immediately. If repairs are not completed and conformance to the acceptance criterion of 4.5.2.b(1) is not demonstrated within 48 hours, the plant shall be placed in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

(2) If at any time it is determined that total containment leakage exceeds L_a, within one hour action shall be initiated to place the plant in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

(3) If the Personnel air lock door seal leakage is greater than 0.023 L_a, or if the Emergency Escape Lock door seal contact check fails to meet its acceptance criterion, repairs shall be initiated immediately to restore the door seal to the acceptance criteria of specification 4.5.2.b(2) or 4.5.2.b(3). In the event repairs cannot be completed within 7 days, the plant shall be placed in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

(4) If air lock door seal leakage results in one door causing total containment leakage to exceed 0.60 L_a, the door shall be declared inoperable and the remaining OPERABLE door shall be immediately locked closed* and tested within 4 hours. As long as the remaining door is found to be OPERABLE, the provisions of 4.5.2.c(2) do not apply. Repairs shall be initiated immediately to establish conformance with specification 4.5.2.b(1). In the event conformance to this specification cannot be established within 48 hours the plant shall be placed in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

* Entry and exit is permissible through a "locked" air lock door to perform repairs on the affected air lock components.

4.5.2 Local Leak Detection Tests (continued)

d. Test Frequency

(1) Individual penetrations and containment isolation valves shall be leak rate tested at a frequency of at least every refueling, not exceeding a two-year interval, except as specified in (a) and (b) below:

(a) The containment equipment hatch and the fuel transfer tube shall be tested at each refueling outage or after each time used, if that be sooner.

(b) A full air lock penetration test shall be performed at six-month intervals. During the period between the six-month tests when CONTAINMENT INTEGRITY is required, a reduced pressure test for the door seals or a full air lock penetration test shall be performed within 72 hours after either each air lock door opening or the first of a series of openings.

4.5.3 Containment Isolation Valves

a. The isolation valves shall be demonstrated OPERABLE by performance of a cycling test and verification of isolation time for auto isolation valves prior to declaring the valve to be OPERABLE after maintenance, repair, or replacement work is performed on the valve or its associated actuator, control, or power circuit.

b. Each isolation valve shall be demonstrated OPERABLE by verifying that on each containment isolation right channel or left channel test signal, applicable isolation valves actuate to their required position during COLD SHUTDOWN or at least once per refueling cycle.

c. The isolation time of each power operated or automatic valve shall be verified in accordance with Section XI of the ASME Boiler and Pressure Vessel Code.

d. Prior to the reactor going critical after a refueling outage, a visual check will be made to confirm that all "locked-closed" manual containment isolation valves are closed and locked (except for valves that are open under administrative control as permitted by LCO 3.6.1).

e. Each three months the isolation valves must be stroked to the position required to fulfill their safety function unless it is established that such operation is not practical during plant operation. The latter valves shall be full-stroked during each COLD SHUTDOWN.

Basis

The containment is designed for an accident pressure of 55 psig.[1] While the reactor is operating, the internal environment of the containment will not exceed a pressure of 1.0 psig or a temperature of 140°F. With these initial conditions, following a design basis LOCA, the steam-air mixture will not exceed 55 psig.

Prior to initial operation, the containment was strength-tested at 63 psig and then leak rate tested. The design objective of this preoperational leak rate test was established as 0.1% by weight per 24 hours at 55 psig. This leakage rate is consistent with the construction of the containment,[2] which is equipped with independent leak-testable penetrations and contains channels over all unaccessible containment liner welds, which were independently leak-tested during construction.

Accident analyses have been performed on the basis of a leakage rate of 0.1% by weight per 24 hours. With this leakage rate and with a reactor power level of 2530 MWt, the potential public exposure would be below 10 CFR 100 guideline values in the event of the Maximum Hypothetical Accident.[3]

The performance of a periodic integrated leak rate test during plant life provides a current assessment of potential leakage from the containment in case of an accident that would pressurize the interior of the containment. In order to provide a realistic appraisal of the integrity of the containment under accident conditions, this periodic leak rate test is to be performed without preliminary repairs or adjustments unless those repairs or adjustments are preceded and followed by local leak rate tests and the integrated leak rate results are adjusted to reflect the as found condition of the containment.

This normal manner is a coincident two-of-four high radiation or two-of-four high containment pressure signals which will close all containment isolation valves not required for engineered safety features except the component cooling lines' valves which are closed by CHP only. The control system is designed on a two-channel (right and left) concept with redundancy and physical separation. Each channel is capable of initiating containment isolation.[4]

The Type A test requirements including pretest test methods, test pressure, acceptance criteria, and reporting requirements are in accordance with the Containment Leak Rate Testing Program.[5,6]

The frequency of the periodic integrated leak rate test is keyed to the refueling schedule for the reactor because these tests can best be performed during refueling shutdowns. The specified frequency is based on three major considerations:

First is the low probability of leaks in the liner because of (a) the test of the leak tightness of the welds during erection; (b) conformance of the complete containment to a low leak rate at 55 psig during preoperational testing which is consistent with 0.1% leakage at design basis accident (DBA) conditions: and (c) absence of any significant stresses in the liner during reactor operation.

Basis (continued)

Second is the more frequent testing, at the full accident pressure, of those portions of the containment envelope that are most likely to develop leaks during reactor operation (penetrations and isolation valves) and the low value ($0.60L_a$) of the total leakage that is specified as acceptable from penetrations and isolation valves.

Third is the Containment Structural Integrity Surveillance Program which provides assurance that an important part, of the structural integrity of the containment is maintained.

The basis for specification of a total leakage rate of 0.60 L_a from penetrations and isolation valves is specified to provide assurance that the integrated leak rate would remain within the specified limits during the intervals between integrated leak rate tests. This value allows for possible deterioration in the intervals between tests.

The basis for specification of a Personnel air lock door seal leakage rate of 0.023 L_a is to provide assurance that the failure of a single air lock door will not result in the total containment leakage exceeding 0.60 L_a. Due to its design, a seal contact check is used on the Emergency Escape air lock. The seal contact check is intended to provide assurance that the Emergency Escape air lock doors will not leak excessively. The 7 day period specified for restoring the air lock door leakage to within limits is acceptable since it requires that the total containment leakage limit is not exceeded.

Action 4.5.2c(4) is modified by a footnote that allows entry and exit to perform repairs on the affected air lock component. After each entry and exit, the OPERABLE door must be immediately closed. If the outer door is inoperable, then it may be easily accessed for most repairs. However, if the inner door is inoperable, or if repairs on the outer door must be performed from the barrel side, then it is permissible to enter the air lock through the OPERABLE door, which means there is a short time during which the containment boundary is not intact (during access through the OPERABLE door). The ability to open the OPERABLE door, even if it means the containment boundary is temporarily not intact, is acceptable because of the low probability of an event that could pressurize the containment during the short time in which the OPERABLE door is expected to be open.

CONTAINMENT INTEGRITY will be assured if a visual check is made of all manual containment isolation valves which are required to be locked closed, to verify they are actually closed and locked, prior to plant start-up after a refueling outage where one or more valves could inadvertently be left open (except for valves that are open under administrative control as permitted by LCO 3.6.1).

Containment isolation valves which are required to be locked closed are discussed in the FSAR[7]. These valves are those manual containment isolation valves which are not opened during operation except as allowed by LCO 3.6.1.

Basis (continued)

A reduction in prestressing force and change in physical conditions are expected for the prestressing system. Allowances have been made in the reactor building design for the reduction and changes. The inspection results for each tendon inspected shall be recorded on the forms provided for that purpose and comparison will be made with previous test results and the initial quality control records.

Force-time records will be established and maintained for each of the tendon groups, dome, hoop and vertical. If the force measured for a tendon is less than the lower bound curve of the force-time graph, two adjacent tendons will be tested. If either of the adjacent or more than one of the original sample population falls below the lower bound of the force-time graph, an investigation will be conducted before the next scheduled surveillance. The investigation shall be made to determine whether the rate of force reduction is indeed occurring for other tendons. If the rate of reduction is confirmed, the investigation shall be extended so as to identify the cause of the rate of force reduction. The extension of the investigation shall determine the needed changes in the surveillance inspection schedule and the criteria and initial planning for corrective action.

If the force measured for a tendon at any time exceeds the upper bound curve of the band on the force-time graph, an investigation shall be made to determine the cause.

If the comparison of corrosion conditions, including chemical tests of the corrosion protection material, indicate a larger than expected change in the conditions from the time of installation or last surveillance inspection, an investigation shall be made to detect and correct the causes.

The prestressing system is a necessary strength element of the plant safeguards and it is considered desirable to confirm that the allowances are not being exceeded. The technique chosen for surveillance is based upon the rate of change of force and physical conditions so that the surveillance can either confirm that the allowances are sufficient, or require maintenance before minimum levels of force or physical conditions are reached.

The end anchorage concrete is needed to maintain the prestressing forces. The design investigations concluded that the design is adequate. The prestressing sequence has shown that the end anchorage concrete can withstand loads in excess of those which result when the tendons are anchored. At the time of initial pressure testing, the containment building had been subjected to temperature gradients equivalent to those for normal operating conditions while the prestressing tendon loads are at their maximum.

However, after the initial pressure test both concrete creep and prestressing losses increase with the greatest rapidity and result in a redistribution of the stresses and a reduction in end anchor force. Because of the importance of the containment and the fact that the design was new, it was considered prudent to continue the surveillance after the initial period.

Basis (continued)

Containment dome delamination inspections performed in 1970 and 1982 have confirmed that no concrete delamination has occurred. The possibility that delamination might occur in the future is remote because dome tendon prestress forces gradually diminish through normal tendon relaxation and concrete strength normally increases over time. To account for this remote possibility, however, an additional delamination inspection will be performed in the event that 5% or more of the installed tendons must be retensioned to compensate for excessive loss of prestress. This inspection would be to confirm that any systematic excessive prestress loss did not result from delamination and that the retensioning process did not result in delamination.

References

(1) Updated FSAR Section 5.8.1.

(2) Updated FSAR Section 5.8.8

(3) Updated FSAR Section 14.22

(4) Updated FSAR Section 6.7.2.3

(5) 10 CFR Part 50, Appendix J.

(6) Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program", September 1995.

(7) Updated FSAR Section 5.1.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 184 TO FACILITY OPERATING LICENSE NO. DPR-20

CONSUMERS ENERGY COMPANY

PALISADES PLANT

DOCKET NO. 50-255

1.0 INTRODUCTION

By letter dated March 26, 1997, the Consumers Energy Company (the licensee) requested an amendment to the Technical Specifications (TS) appended to Facility Operating License No. DPR-20 for the Palisades Plant. The amendment would modify TS sections 3.6 and 4.5 by removing the list of containment isolation valves in accordance with Generic Letter (GL) 91-08, "Removal of Component Lists from Technical Specifications," dated May 6, 1991 and by revising requirements related to containment pressure and containment temperature. Additionally, several editorial changes were proposed to emulate the format and content of NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants," (STS).

One of the requested provisions would incorporate a note to allow opening an operable airlock door to perform repairs on inoperable airlock components when the other airlock door is inoperable. This provision was reviewed and approved in Amendment No. 179 issued on April 8, 1998. The remainder of the licensee's proposed changes are evaluated below.

2.0 EVALUATION

Deletion of Table 3.6.1

In its submittal, the licensee proposed deleting Table 3.6.1, "Containment Penetrations and Valves," from TS 3.6.1, in accordance with the guidance of GL 91-08. The current table lists containment penetrations, their functions, the isolation valve number, and the required closure time. The table also included an allowance to open the manual valves on penetration 33, the safety injection tank drain line, for sampling. GL 91-08 provides guidance on revising the wording of the TS to incorporate the deletion of lists of containment isolation valves. The licensee followed the guidance in GL 91-08 as applicable to the plant and has proposed the following TS changes.

> Table 3.6.1 would be deleted.
>
> References to Table 3.6.1 would be removed from the TS Table of Contents and from the definition of containment integrity.

Surveillance Requirement (SR) 4.5.3.c would be revised to delete the reference to Table 3.6.1. The proposed revision to SR 4.5.3.c, Isolation Valve Timing, omits specifying valve closure time, but requires valve timing to be verified in accordance with Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code. The inservice testing required by TS 6.5.7, the Inservice Inspection and Testing Program, includes the verification of stroke times for a broader class of valves than those listed in Table 3.6.1. The removal of valve closure times from this SR does not alter the TS requirement to verify that the valve stroke times are within their limits.

A footnote would be added to Limiting Condition for Operation (LCO) 3.6.1 to address opening isolation valves under administrative controls. The proposed wording for the footnote and for the basis explanation of the note were in accordance with the guidance of GL 91-08. Reference to this footnote would also be added to current TS 3.6.3 (which will be renumbered SR 4.5.3d as discussed under Administrative Changes below).

The staff has reviewed the licensee's proposed deletion of Table 3.6.1 and its associated TS changes and determined that the changes are in accordance with the guidance of GL 91-08. Deleting the list of containment isolation valves does not alter the existing TS requirements or the components they apply to. Lists of containment isolation valves are provided in the Final Safety Analysis Report and in the plant procedures for performing penetration leak testing and isolation valve closure time testing. The set of valves subject to the requirements of TS 3.6 and 4.5 will not change due to the proposed change. The staff, therefore, finds the proposed changes acceptable.

Containment Pressure

The licensee also proposed changes to TS 3.6.2 regarding containment pressure. The current TS requires containment pressure to be maintained below 3 psig. This TS limit has not been changed since the initial Palisades TS were issued in 1971. However, since that time the accident analyses, for at-power conditions, have been revised to use a more restrictive limit of 1.0 psig. The 1.0 psig limit has been maintained by administrative controls.

Because the containment purge valves must remain closed, containment air temperature and pressure tend to rise as the plant is heated to operating temperature. The licensee stated that, due to the low allowable pressure and limited containment ventilation path, this pressure rise has occasionally restricted the heatup rate and unnecessarily delayed returning the plant to service. The licensee performed a special containment analysis that is applicable only with the reactor shutdown. The analysis demonstrated that containment design pressure and temperature would not be exceeded for a loss-of-coolant accident (LOCA) or a main steam line break (MSLB) with an initial containment pressure of 1.5 psig, provided the reactor was subcritical.

The licensee has proposed revising LCO 3.6.2 to provide two containment pressure limits. A limit of 1.5 psig, to be applicable when the plant is above Cold Shutdown (i.e., when the primary coolant system (PCS) is above 210 °F); and a limit of 1.0 psig, to be applicable when the plant is in Power Operation or Hot Standby (i.e., when the reactor may be critical). The proposed LCO does not apply when the plant is in Cold Shutdown (i.e., below 210 °F). The containment pressure LCO is not necessary during Cold Shutdown because it is intended to assure that design containment pressure is not exceeded if a LOCA or MSLB should occur. With the plant at Cold Shutdown, neither the PCS nor the main steam system contains sufficient energy to cause containment pressurization if a piping failure should occur.

In addition, the licensee has proposed adding an action statement to TS 3.6.2 to provide guidance on action to be taken if containment pressure exceeds the specified limit. The proposed action statement requires restoring containment pressure to within the limit within 1 hour or be in at least Hot Shutdown within the next 6 hours and in Cold Shutdown within the following 30 hours.

The staff has reviewed the licensee's proposed changes to TS 3.6.2. Since the revised limits are both more restrictive than the current TS limit, and the applicability and action statements are consistent with the STS, the staff finds the proposed changes acceptable.

<u>Containment Air Temperature</u>

The licensee proposed adding a new LCO to provide a TS limit on containment average air temperature. The new LCO would replace LCO 3.6.3 which would be renumbered as SR 4.5.3d (this renumbering is discussed as an administrative change below). The current TS contain no limit on containment air temperature, yet the value is used as an initial condition of the safety analyses and therefore meets Criterion B of 10 CFR 50.36(c)(2)(ii). The proposed limit is the value used in the safety analyses and the proposed Action is modeled after the STS. The basis discussion on containment pressure would also be expanded to discuss containment temperature.

The licensee's proposed addition of a containment air temperature LCO meets the criteria of 10 CFR 50.36 and is consistent with the STS. The staff, therefore, finds the proposed change acceptable.

<u>Administrative Changes</u>

In addition to the changes discussed above, the licensee has proposed several administrative changes to enhance the clarity of these TS sections by grouping the LCOs together, by deleting unnecessary wording, and by using consistent terminology throughout. These changes are summarized below.

> Throughout TS Sections 3.6 and 4.5, terms defined in TS Section 1.0, "Definitions," would be replaced with upper case text to indicate that the term is a defined term.
>
> The definition of containment integrity would be revised by deleting the phrase, "when all the following are true," since it is implied that the listed conditions must be true. The word "personnel" would be deleted from the definition to assure the requirement is understood to apply to both the Personnel and Emergency Escape air locks. In addition the parenthetical reference to the TS 4.5.2 SR to amplify "operable" would be deleted since it is redundant with the TS 4.0.3 requirement that SRs be performed within their specified intervals in order for a component to be considered operable.

TS Section 3.6 would be restructured by deleting the "applicability" and "objective" statements since they contain no requirements. The LCO section would be rearranged to put all LCOs on one page and the bases on the following page. A basis paragraph for hydrogen recombiners would be added where none previously existed.

In LCO 3.6.1, the wording "Containment Integrity shall not be violated," would be replaced with "Containment Integrity shall be maintained." The statement, "as defined in Specification 1.0," would be deleted since that information would now be provided by upper case text for definitions as proposed above.

LCO 3.6.1a would be revised to state the LCO applicability as "when the plant is above COLD SHUTDOWN" rather than to state that it "shall not be violated unless the reactor is in the cold shutdown condition." The revised wording will provide a more direct statement of the requirement and its applicable conditions by stating when containment integrity must be met rather than when it may be violated. LCOs 3.6.1b and 3.6.1c would be revised similarly and editorially reworded for clarity.

LCO Actions 3.6.1b and 3.6.1c would be combined and revised to use wording similar to the STS. Action 3.6.1d would be renumbered 3.6.1c.

Current LCO 3.6.3 is actually an SR so it is proposed to be moved to Section 4 as SR 4.5.3d. The requirement would also be revised to require a "visual" check rather than an "administrative" check. The licensee stated that this is considered to be a clarification since the basis describes the required check as visual and the requirement has always been performed by visually checking each valve. The basis paragraph would also be moved to Section 4.5.

LCO 3.6.4 and the included Action would be rewritten to use more consistent terminology for the hydrogen recombiners.

LCO 3.6.5 would be rewritten. The title would be deleted and parts a. and b. would be combined similar to the proposed revisions to other LCOs in Section 3.6. The applicable conditions would be made more restrictive in order to agree with the LCO for containment integrity. The component identifiers for the purge exhaust and air room supply isolation valves would be deleted. A revision would be made to address the subject valves as not being locked closed rather than addressing them being open and the specific requirement to "electrically" lock the valves would be removed since it implied that other means of locking the valves were unacceptable.

Section 4.5 would be revised for consistency and clarification purposes. Numbers written in the form "six (6)" would be revised to eliminate the redundancy. The second paragraph of action statement 4.5.2c(3) would be renumbered as its own paragraph (4) since it addresses a different condition and provides different required actions then the first paragraph of c(3). Paragraph 4.5.2d(1) would be revised to delete a frequency requirement referring to the period prior to the first post-operational integrated leak rate testing, which is no longer applicable.

SR 4.5.2d(2) would be moved from Section 4.5.2 to Section 4.5.3 and renumbered 4.5.3e, since the subject paragraph deals with containment isolation valve testing (the subject of 4.5.3) and not the frequency of local leak rate testing (the subject of 4.5.2).

SR 4.5.3a would be revised to change the wording, "prior to returning the valve to service," with "prior to declaring the valve to be operable." This change is intended to avoid the implication that the valve cannot be returned to service during periods when containment integrity (and isolation valve operability) is not required without performance of the required testing.

The proposed administrative changes provide clarification and consistency within the TS without affecting their technical content. The staff, therefore, finds the proposed changes acceptable.

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 requirements 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 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 (62 *FR* 66136). 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: R. Laufer

Date: February 22, 1999

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