March 29, 1994

Docket No. 50-255

Mr. Robert A. Fenech
Vice President, Nuclear Operations
Palisades Plant
Consumers Power Company
27780 Blue Star Memorial Highway
Covert, Michigan 49043

Dear Mr. Fenech:

SUBJECT: PALISADES PLANT - ISSUANCE OF AMENDMENT RE: INCORPORATION OF GENERIC LETTER 90-06 REQUIREMENTS (TAC NOS. M77368 AND M77438)

The Commission has issued the enclosed Amendment No. 160 to Facility Operating License No. DPR-20 for the Palisades Plant. The amendment consists of changes to the Technical Specifications (TS) in response to your application dated April 15, 1992, as modified by letters dated December 8, 1992, June 25, 1993, and February 2, 1994.

The amendment incorporates the requirements of NRC Generic Letter 90-06 into Palisades' Technical Specification 3.1.8, "Power Operated Relief Valves (PORVs)," Table 3.17.4, Item 11, "PORV Isolation Valve Position Indication," and Technical Specification 4.1, "Instrumentation and Control." These requirements resulted from Generic Issue 70, "Power-Operated Relief Valve and Block Valve Reliability," and Generic Issue 94, "Additional Low-Temperature Overpressure Protection for Light-Water Reactors." This amendment is effective as of its date of issuance with full implementation within 60 days.

A copy of our Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

Original signed by Leonard Olshan, for

Anthony H. Hsia, Project Manager
Project Directorate III-1
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 160 DPR-20
2. Safety Evaluation

cc w/enclosures:
See next page

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DATE	2/8/94	2/9/94	3/9/94	3/14/94	3/29/94	3/10/94

OFFICIAL RECORD COPY - FILENAME: G:\WPDOCS\PALISADES\PAL77368.AMD
Addressee changed to reflect current organization.

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DATED: March 29, 1994

AMENDMENT NO. 160 TO FACILITY OPERATING LICENSE NO. DPR-20-PALISADES

Docket File
NRC & Local PDRs
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cc: Plant Service list

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

CONSUMERS POWER COMPANY

DOCKET NO. 50-255

PALISADES PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 160
License No. DPR-20

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

   A. The application for amendment by Consumers Power Company (the licensee) dated April 15, 1992, as modified by letters dated December 8, 1992, June 25, 1993, and February 2, 1994, 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:

Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 160 , and the Environmental Protection Plan contained in Appendix B are hereby incorporated in the license. The licensee 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 with full implementation within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

J. E. Dyer
FOR

L. B. Marsh, Director
Project Directorate III-1
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 29, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 160

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
3-25a	3-25a
3-25b	3-25b
--	3-25d
--	3-25e
--	3-25f
--	3-25g
3-81a	3-81a
4-1e	4-1e
4-2	4-2

3.1.8 OVER PRESSURE PROTECTION SYSTEMS

Specifications

3.1.8.1 Two PORV flow paths, each consisting of an OPERABLE PORV and an OPERABLE block valve, shall be OPERABLE.

Applicability

Specification 3.1.8.1 is applicable when the temperature of all PCS cold legs is ≥ 430°F.

Action

a. With one PORV flow path inoperable:

1. For each inoperable block valve, place the associated PORV control in the "CLOSE" position within 1 hour.

2. For each inoperable PORV, close the associated block valve within 1 hour.

3. Restore both PORV flow paths to OPERABLE status within 72 hours.

b. With two PORV flow paths inoperable:

1. For each inoperable block valve, place the associated PORV control in the "CLOSE" position within 1 hour.

2. For each inoperable PORV, close the associated block valve within 1 hour.

3. Restore one PORV flow path to OPERABLE status within 2 hours.

c. If any action required by 3.1.8.1 is not met AND the associated completion time has expired, the reactor shall be placed in HOT SHUTDOWN within 12 hours.

3.1.8 OVER PRESSURE PROTECTION SYSTEMS

Specification

3.1.8.2 Two PORV flow paths, each consisting of an OPERABLE PORV, with a lift pressure less than specified in Figure 3-4, shall be OPERABLE.

Note: The provisions of Specification 3.0.4 are not applicable.

Applicability

Specification 3.1.8.2 is applicable when the temperature of any of the PCS cold legs is < 430°F, unless the reactor vessel head is removed.

Action

a. With one PORV flow path inoperable, restore both PORV flow paths to OPERABLE status:

   1. within 24 hours with pressurizer water level > 57%, or

   2. within 7 days with pressurizer water level ≤ 57%.

b. With two PORV flow paths inoperable, or if action required by 3.1.8.2a is not met and the associated completion time has expired: depressurize and vent the PCS through a vent path capable of relieving 167 gpm at a PCS pressure of 315 psia within 8 hours, and

   1. When the pathway is through any valve that is not locked, sealed, or otherwise secured in the open position, verify the vent pathway is open at least once per 12 hours, or

   2. Otherwise, verify that the vent pathway is open at least once per 31 days.

3.1.8 OVER PRESSURE PROTECTION SYSTEMS

Basis 3.1.8

Specification 3.1.8 assures that the PORVs are available as a pressure relief path for the PCS. Specification 3.1.8.1 applies when the PCS is above 430°F, to assure the PORVs would be available to reduce PCS pressure in the event of the loss of normal means of PCS pressure control, or to provide an alternate path for removal of decay heat in the event of the loss of all normal methods. With the PCS above 430°F automatic PORV operation for Low Temperature Overpressure Protection (LTOP) is no longer required. Specification 3.1.8.2 applies when the temperature of either PCS cold leg is below 430°F, where excessive addition of either mass or energy could result in significant PCS pressure increases.

If an inoperable PORV flow path cannot be repaired within the specified completion time, Specification 3.1.8.1 requires the plant to be placed in HOT SHUTDOWN. It does not require a cooldown, which would place the plant in a condition where the PORVs provide the required automatic pressure protection. Time is allowed for repair of the valve, if possible, or to plan a cooldown with limited overpressure protection available. If a cooldown must be made to repair an inoperable valve, the specified completion times of 3.1.8.2 allow a slow, controlled evolution to occur.

Each completion time starts when it is discovered that the particular action statement applies. The specified actions and completion times are based on those in the model Technical Specifications provided in Generic Letter 90-06.

3.1.8.1

When PCS temperature is at or above 430°F, the maximum allowable PCS pressure is the Safety Limit of 2750 psia. The pressurizer safety valves, required by Specification 3.1.7, prevent exceeding this pressure. The PORVs are required to be OPERABLE above 430°F to support Emergency Procedure operation in case of the need for reducing PCS pressure or for Once-Through-Cooling. The PORVs are not assumed to function by the plant safety analyses.

Since the pressurizer safety valves provide the necessary automatic protection against excessive pressure when the PCS is above 430°F, automatic actuation of the PORVs is not required to be OPERABLE.

The PORVs and their block valves must provide two safety functions; maintenance of PCS integrity and PCS pressure control capability. If either of these safety functions is unavailable, corrective action must be taken.

Basis 3.1.8.1 (continued)

Normally, during operation at HOT STANDBY and above, the PORV controls are in the CLOSE position, and the block valves are closed. The PORVs, block valves, and the associated manual controls must be operable. If either valve in a PORV flow path is inoperable, the other valve in the flow path must provide PCS integrity assurance. When a PORV is inoperable, the block valve must be closed; when a block valve is inoperable, the PORV must have its control in the "CLOSE" position.

If the inoperable valves cannot be restored to OPERABLE status within the specified completion time, the plant must be placed in HOT SHUTDOWN. The completion times allow the required action to be accomplished without undue haste, yet allow less time when more equipment is inoperable.

3.1.8.2

When PCS is below 430°F with the reactor vessel head installed, two PORVs are required to be operable to avoid pressures which might lead to failure of the reactor vessel. Pressure increases could be caused by sudden additions (or imbalances) of either mass or energy.

The allowable pressure limits are determined in accordance with 10 CFR 50, Appendix G, and are referred to as "Low Temperature Overpressure Protection" (LTOP) limits. The variable setpoint of the LTOP system is programmed and calibrated to ensure opening of the pressurizer PORVs when the PCS pressure is above the limit in Figure 3-4. The pressure limit for each temperature is developed from the heating or cooling limits for the PCS.

The limit in Figure 3-4 includes an allowance for pressure overshoot during the interval between the time pressurizer pressure reaches the limit, and the time a PORV opens enough to terminate the pressure rise.

LTOP is provided by two independent channels each consisting of measurement, control, actuation, and valves. Either channel is capable of providing full protection. The actual setpoint of PORV actuation for LTOP will be below the limit in Figure 3-4 to allow for potential instrument inaccuracies, and drift. This will ensure that at no time between calibration intervals will the PCS pressure exceed the limit of Figure 3-4 without PORV actuation.

Mass additions could come from the starting of pumps or from opening a Safety Injection Tank isolation valve. Only the charging pumps or high pressure safety injection pumps could cause the PCS pressure to exceed its limits. Neither the shutoff head of the low pressure safety injection nor the operating pressure of the safety injection tanks is above the cold PCS pressure limit. Specification 3.3.2.g places limits on HPSI pump operability when the PCS is below 260°F to assure inadvertent starting does not cause overpressurization of the PCS.

Basis 3.1.8.2 (continued)

Energy additions could come from either the steam generators or from the reactor core. Small energy addition could come from operation of the pressurizer heaters. Energy addition from the steam generators could occur if a primary coolant pump was started when the steam generator secondary temperature was significantly above the PCS temperature. Specification 3.1.1.h places limits on the starting of primary coolant pumps to avoid undesired energy additions from the steam generators. Energy addition from the reactor core could occur due to an inadvertent criticality or to an imbalance in decay heat removal. Specification 3.10.1 places limits on shutdown margin to avoid a rod withdrawal event causing a criticality and to provide sufficient time for operator action to terminate a dilution event prior to criticality.

The potential causes of a sudden PCS pressure increase which the LTOP system must be able to mitigate are imbalance in charging and letdown flow, starting of the HPSI pumps when above 260°F, and in an imbalance in decay heat (and pressurizer heat) addition and removal. A Safety Injection Signal (SIS) could both initiate flow from two HPSI pumps (when above 260°F) and three charging pumps, and isolate letdown. The PCS heatup from a loss of shutdown cooling event occurring 24 hours after shutdown from a continuous full power run would generate less additional coolant volume than the starting of three charging pumps (Reference 5). The limiting event for the LTOP system would be an inadvertent SIS occurring during an established PCS heatup.

Analysis (Reference 1) has concluded that an SIS occurring, during a PCS and pressurizer heatup at the maximum allowable rates, either between 260°F and 430°F with the HPSI pumps, or below 260°F without the HPSI pumps, would not cause PCS pressure to exceed the Appendix G limit if either PORV opens when the set pressure is reached. With the PCS above 430°F, the pressurizer safety valves, required by Specification 3.1.7, provide adequate overpressure protection. Both PORVs are required to be operable to allow for a single failure.

If a PORV becomes inoperable when it is required for LTOP, it must be restored to operable status, or the plant must be cooled down, depressurized, and vented through a vent path with sufficient capacity to provide the necessary protection. Since the pressure response to a transient is greater if the pressurizer steam space is small or if PCS is solid, the allowed outage time for a PORV flow path out of service is shorter. The maximum pressurizer level at which credit can be taken for having a bubble (57%, which provides about 700 cubic feet of steam space) is based on judgement rather than on analyses. This level provides the same steam volume to dampen pressure transients as would be available at full power. This steam volume provides time for operator action, if the PORVs failed to operate, between an inadvertent SIS and PCS pressure reaching the 10 CFR 50 Appendix G pressure limit. The time available for action would depend upon the existing pressure and temperature when the inadvertent SIS occurred.

Basis 3.1.8.2 (continued)

Reference 1 has determined that any vent path capable of relieving 167 gpm at a PCS pressure of 315 psia is acceptable. The 167 gpm flow rate is based on an assumed charging imbalance due to interruption of letdown flow with three charging pumps operating, a 40°F per hour PCS heatup rate, a 60°F per hour pressurizer heatup rate, and an initially depressurized and vented PCS. The PCS heatup rate is limited to 40°F per hour by Specification 3.1.2a; the pressurizer heatup rate is limited to 60°F per hour by Specification 3.1.2c. Neither HPSI pump nor PCP starts need to be assumed with the PCS initially depressurized, because Specification 3.3.2g requires both HPSI pumps to be inoperable and operating procedures prohibit PCP operation.

The pressure relieving ability of a vent path depends not only upon the area of the vent opening, but also upon the configuration of the piping connecting the vent opening to the PCS. A long, or restrictive piping connection may prevent a larger vent opening from providing adequate flow, while a smaller opening immediately adjacent to the PCS would be adequate. The areas of multiple vent paths cannot simply be added to determine the necessary vent area.

The following vent path examples are acceptable:

1. Removal of the reactor vessel head,
2. Removal of a steam generator primary manway,
3. Removal of the pressurizer manway,
4. Removal of a PORV or pressurizer safety valve,
5. Both PORVs and associated block valves open,
6. Opening of both PCS vent valves PC-514 and PC-515.

Reference 2 determined that venting the PCS through PC-514 and PC-515 provided adequate flow area. The other listed examples provide greater flow areas with less piping restriction and are therefore acceptable. Other vent paths shown to provide adequate capacity could also be used. One open PORV provides sufficient flow area to prevent excessive PCS pressure. However, if the PORVs are elected as the vent path, both valves must be used to meet the single failure criterion, since the PORVs are held open against spring pressure by energizing the operating solenoid.

When the shutdown cooling system is in service with MO-3015 and MO-3016 open, additional overpressure protection is provided by the relief valves on the shutdown cooling system. References 3 and 4 show that this relief capacity will prevent the PCS pressure from exceeding its pressure limits during any of the above mentioned events.

References

1. Consumers Power Company Engineering Analysis, EA-FC-809-13, Rev 1
2. Consumers Power Company Engineering Analysis, EA-TCD-91-01-01.
3. Consumers Power Company Engineering Analysis, EA-PAL-89-040-1
4. Consumers Power Company Corrective Action Document, A-PAL-91-011
5. Consumers Power Company Engineering Analysis, EA-AG-93-02

Table 3.17.4 (Cont'd)

No	Functional Unit	Minimum Operable Channels	Minimum Degree of Redundancy	Permissible Bypass Conditions
8.	Pressurizer Wide Range Water Level Indication	2 [m, n, o]	None	Not required in Cold or Refueling Shutdown
9.	Pressurizer Code Safety Relief Valves Position Indication (Acoustic Monitor or Temperature Indication)	1 per Valve	None	Not Required below 325°F
10.	Power Operated Relief Valves (Acoustic Monitor or Temperature Indication)	1 per Valve	None	Not required when PORV isolation valve is closed and its indication system is operable
11.	PORV Block Valve Position Indication	1 per Valve	None	Not required when reactor is depressurized and vented in accordance with Specification 3.1.8
12.	Subcooling Margin Monitor	1	None	Not required below 325°F
13.	Auxiliary Feed Flow Rate Indication	1 per flow[h] Control Valve	None	Not required below 325°F
14.	Auxiliary Feedwater Actuation System Sensor Channels	2 per steam generator[e]	1	Not required below 325°F
15.	Auxiliary Feedwater Actuation System Actuation Channels	2[f]	1	Not required below 325°F
16.	Excore Detector Deviation Alarms	1[g]	None	Not Required Below 25% of Rated Power
17.	Axial Shape Index Alarm	2[i]	1	Not Required Below 25% of Rated Power
18.	Reactor Vessel Water Level	2[j,k,l,m]	None	Not Required Below 325°F
19.	Core Exit Thermocouples	4/core Quadrant [p, q, r]	None	Not required below 300°F

4.1 INSTRUMENTATION AND CONTROL

Applicability

Applies to the reactor protective system and other critical instrumentation and controls.

Objective

To specify the minimum frequency and type of surveillance to be applied to critical plant instrumentation and controls.

Specifications

Calibration, testing, and checking of instrument channels, reactor protective system and engineered safeguards system logic channels and miscellaneous instrument systems and controls shall be performed as specified in 4.1.1 and in Tables 4.1.1 to 4.1.3.

4.1.1 PORVs and Overpressure Protection System Tests

In addition to the requirements of Specification 4.0.5, each PORV flow path shall be demonstrated OPERABLE by:

1. Testing the PORVs in accordance with the inservice inspection requirements for ASME Boiler and Pressure Vessel Code, Section XI, Section IWV, Category B valves.

2. Performance of a CHANNEL CALIBRATION on the PORV actuation channel at least once per 18 months.

3. When the PORV flow path is required to be OPERABLE by Specification 3.1.8.1:

   (a) Performing a complete cycle of the PORV with the plant above COLD SHUTDOWN at least once per 18 months.

   (b) Performing a complete cycle of the block valve prior to heatup from COLD SHUTDOWN, if not cycled within 92 days.

4. When the PORV flow path is required to be OPERABLE by Specification 3.1.8.2:

   (a) Performance of a CHANNEL FUNCTIONAL TEST on the PORV actuation channel, but excluding valve operation, at least once per 31 days.

   (b) Verifying the associated block valve is open at least once per 72 hours.

Basis 4.1

Failures such as blown instrument fuses, defective indicators, and faulted amplifiers which result in "upscale" or "downscale" indication can be easily recognized by simple observation of the functioning of an instrument or system. Furthermore, such failures are, in many cases, revealed by alarm or annunciator action and a check supplements this type of built-in surveillance.

Based on experience in operation of both conventional and nuclear plant systems when the plant is in operation, a checking frequency of once-per-shift is deemed adequate for reactor and steam system instrumentation. Calibrations are performed to insure the presentation and acquisition of accurate information.

The power range safety channels and ΔT power channels are calibrated daily against a heat balance standard to account for errors induced by changing rod patterns and core physics parameters.

Other channels are subject only to the "drift" errors induced within the instrumentation itself and, consequently, can tolerate longer intervals between calibration. Process system instrumentation errors induced by drift can be expected to remain within acceptable tolerances if recalibration is performed at each refueling shutdown interval.

Substantial calibration shifts within a channel (essentially a channel failure) will be revealed during routine checking and testing procedures. Thus, minimum calibration frequencies of one-per-day for the power range safety channels, and once each refueling shutdown for the process system channels, are considered adequate.

The minimum testing frequency for those instrument channels connected to the reactor protective system is based on an estimated average unsafe failure rate of 1.14×10^{-5} failure/hour per channel. This estimation is based on limited operating experience at conventional and nuclear plants. An "unsafe failure" is defined as one which negates channel operability and which, due to its nature, is revealed only when the channel is tested or attempts to respond to a bonafide signal.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 160 TO FACILITY OPERATING LICENSE NO. DPR-20

CONSUMERS POWER COMPANY

PALISADES PLANT

DOCKET NO. 50-255

1.0 INTRODUCTION

By letter dated April 15, 1992, as modified by letters dated December 8, 1992, June 25, 1993, and February 2, 1994, the Consumers Power Company (the licensee) requested an amendment to the Technical Specifications (TS) appended to Facility Operating License No. DPR-20 for the Palisades Plant. The proposed amendment would incorporate the requirements of NRC Generic Letter (GL) 90-06 into the licensee's Technical Specification 3.1.8, "Power Operated Relief Valves (PORVs)," Table 3.17.4, Item 11, "PORV Isolation Valve Position Indication," and Technical Specification 4.1, "Instrumentation and Control." These requirements resulted from Generic Issue 70, "Power-Operated Relief Valve and Block Valve Reliability," and Generic Issue 94, "Additional Low-Temperature Overpressure Protection for Light-Water Reactors." The licensee's February 2, 1994, letter provided minor editorial changes which did not affect the staff's initial proposed no significant hazards consideration determination.

1.1 Proposed Changes

To incorporate the requirements of GL 90-06, the licensee requested the following changes to its TSs:

A. TS 3.1.8 is changed as follows:

1. A new Specification 3.1.8.1, PORV requirements when the temperature of all primary coolant system (PCS) cold legs is greater than or equal to 430°F, has been added to implement the model TS of GL 90-06.

2. Existing Specification 3.1.8.1, PORV requirements when below 430°F, has been renumbered as 3.1.8.2, and revised to coordinate the Action statements with those of the model TS.

3. The Basis section for Specification 3.1.8 has been revised to discuss the newly added requirements.

B. Table 3.17.4, Item 11, PORV block valve position indication, has been changed to utilize the term "block valve" rather than "Isolation Valve" for consistency with Specification 3.1.8 and with general plant usage. The associated Permissible Bypass Condition entry has been changed to

reference Specification 3.1.8, rather than to repeat the specific PCS vent requirement.

C. Surveillance Requirement 4.1.1 has been revised to include additional testing in accordance with GL 90-06.

2.0 EVALUATION

Palisades does not utilize Standard Technical Specifications; therefore, the format of the proposed specifications differs from that provided in GL 90-06.

Palisades safety analyses do not assume automatic PORV operation above a temperature of 430°F, but do assume automatic, variable setpoint operation when below 430°F. Existing Palisades TSs address PORV operability only at temperatures below 430°F. However, proposed Specification 3.1.8.1 is applicable at temperatures greater than or equal to 430°F and proposed Specification 3.1.8.2 is applicable at temperatures below 430°F. This allows for surveillance at all times.

Proposed Specifications 3.1.8.1 and 3.1.8.2 stipulate requirements similar to those of GL 90-06 Specification 3.4.4 and 3.4.9.3, respectively. Proposed Specification 4.1.1 addresses the requirements of GL 90-06 Specifications 4.4.4.1, 4.4.4.2, and 4.4.9.3.

A. The proposed Specification 3.1.8.1 differs from GL 90-06 Specification 3.4.4 for the following reasons:

1. The wording of proposed Specification 3.1.8.1 differs from that of GL 90-06 Specification 3.4.4 in order to address the required function of two operable flow paths, rather than to simply address the required components.

2. Actions of GL 90-06 were combined for one and two inoperable valves also to address the PORV function, rather than only the individual component.

3. In proposed Specification 3.1.8.1, Actions "a.1" and "b.1" place the PORV in "CLOSE" position instead of the GL 90-06 requirement of "MANUAL" position because Palisades does not have a "MANUAL" position. Placing the Palisades PORVs in the "CLOSE" position is equivalent to the GL 90-06 requirement of placing the PORV in "MANUAL" position.

4. The licensee did not adopt the GL 90-06 requirement to remove power from the block valve when the PORV is inoperable due to causes other than excessive seat leakage. This requirement is not acceptable for Palisades because if power is removed, and the PORV is then restored to operable, the block valve would have to be cycled in order to show that it is operable. Palisades' past experiences have shown that cycling block valves while at power can lead to partly cycling the PORVs which leads to momentary relief of the PCS. Therefore, maintaining power to the block valves is more practical at Palisades. The proposed Action maintains pressure control capability when the

PORV is still functional but allows power removal if it is deemed necessary.

Palisades TSs contain a PCS Leakage Limiting Condition for Operation (LCO) (LCO 3.1.5) which contains specified actions to be taken for varying amounts of PCS leakage. Although not identical, this LCO is similar to the required TS 3.4.4. Action a.

5. The wording of proposed Specification 3.1.8.1.c which states, "the reactor shall be placed in HOT SHUTDOWN within 12 hours." differs from that of GL 90-06 which says, "be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours." The difference between these statements results from the desire to provide flexibility in the rate of power decrease and to avoid violating other parts of the Palisades TS limits. The proposed wording is also consistent with the wording of the new Standard Technical Specifications.

6. Action e of GL 90-06 Specification 3.4.4, "The provisions of Specification 3.0.4 are not applicable," was not adopted by Palisades because it is not necessary.

B. The proposed Specification 3.1.8.2 differs from GL 90-06 Specification 3.4.9.3 for the following reasons:

1. As for proposed Specification 3.1.8.1, the wording of proposed Specification 3.1.8.2 differs from that of GL 90-06 Specification 3.4.9.3 in order to address the required function of two operable flow paths, rather than to simply address the required components.

2. In Action a, the 57% level specified for taking credit for a bubble in the pressurizer provides a steam space of approximately 700 cubic feet out of a total pressurizer volume of 1500 cubic feet. This bubble is maintained to absorb additional coolant mass from a pump start or temperature increase. This volume is essentially the same as would be available during full power operation. The analysis is based on full power operation where the specified volume is adequate to absorb the increased PCS water volume caused by a turbine trip unaccompanied by a reactor trip (although a reactor trip is assumed to occur soon after the turbine trip due to PCS pressure increase). The creation of a pressurizer steam bubble, at Palisades, during heatup and the filling of the pressurizer on cooldown do not coincide, exactly, with mode changes nor with the entry into the conditions where low temperature overpressure protection (LTOP) is required. During heatup, the bubble is created after the PCS temperature reaches 350°F, while during cooldown, the pressurizer is filled after shutdown cooling is placed in service, below 300°F. LTOP is required when the PCS is below 430°F.

Therefore, specifying a 24-hour allowable outage time (AOT) when there is less steam space than required for full power operation and a 7-day

AOT when that steam space is available meets the intent of GL 90-06. The 57% pressurizer level provides protection comparable to that provided by the nitrogen bubble in Babcock and Wilcox facilities.

3. Proposed Specification 3.1.8.2.b refers to a path capable of relieving 167 gpm at a PCS pressure of 315 psia instead of a required, plant-specific vent area. The need for this change occurred because it was discovered that newly installed PCS manual vent valves, PC-514 and PC-515, were slightly smaller than the specified vent area of 1.3 square inches. The valves were originally thought to have an effective area of 1.33 square inches but actually had an effective area of 1.228 square inches. An analysis, included in the licensee's submittal dated June 25, 1993, has shown that the newly installed manual vent valve area was sufficient to meet Appendix G criteria.

   The intent of the required area is to protect the PCS from overpressure transients which could exceed the 10 CFR Part 50, Appendix G, limits with the PORVs inoperable. The licensee's analysis concluded that manual vent valves PC-514 and PC-515 will provide a relief capacity of 167 gpm at a PCS pressure of approximately 115 psig. This is well below the minimum 331 psig limit (Appendix G curve limit for a 40°F/hr heatup rate). This relief capacity will protect the PCS against a pressure transient caused by a maximum charging/letdown imbalance coincident with a 40°F/hr PCS heatup rate and a 60°F/hr pressurizer heatup rate.

   Two other potential overpressure transients, a high pressure safety injection (HPSI) pump start and a primary coolant pump (PCP) start, are precluded based on the following reasons. With the PCS in a vented and depressurized state, the PCS temperature would be below 212°F, and TS 3.3.2.g requires both HPSI pumps to be rendered inoperable below 260°F. With the system depressurized, normal operating procedures prohibit a PCP start due to insufficient pump net positive suction head (NPSH).

   Therefore, the 1.3 square inch requirement can be replaced with a requirement to have a vent capable of relieving 167 gpm at a PCS pressure less than or equal to 300 psig. Specifying a flow rate at a certain pressure instead of a vent area is also consistent with the licensee's addressing of the function of the flow path instead of the required components.

4. Action e of GL 90-06 model Specification 3.4.9.3, regarding reporting requirements when PORVs or RCS [reactor coolant system] vents are used, was not adopted by Palisades because the requirement already exists as part of 10 CFR 50.73(a)(2)(iv) and 10 CFR 50.73(b).

C. The proposed Specification 4.1.1 differs from GL 90-06 Specifications 4.4.9.3, 4.4.4.1, and 4.4.4.2 for the following reasons:

1. The format and wording of proposed Specification 4.1.1 differs from those of GL 90-06 Specifications 4.4.9.3, 4.4.4.1, and 4.4.4.2 in

order to group the different requirements according to their referenced sections. This is required because Palisades does not utilize Standard Technical Specifications.

2. Proposed Specification 4.1.1.3.(a) uses "above COLD SHUTDOWN" in place of GL 90-06's requirement of "during MODES 3 or 4." This difference exists due to Palisades TSs definitions of reactor operating conditions. Palisades TSs do not define mode numbers. Therefore, the proposed specification is acceptable.

3. Proposed Specification 4.1.1.3.(b) proposes cycling the block valves "prior to heatup from COLD SHUTDOWN, if not cycled within 92 days." instead of GL 90-06's requirement of "at least once per 92 days." The once per 92 days as suggested by GL 90-06 is inappropriate for Palisades because opening the block valves during power operation may cause the PORVs to momentarily relieve. The momentary relief of the PORV will lead to increased chance of seat leakage. Therefore, the proposed specification is acceptable.

4. Requirement 4.4.4.3 of GL 90-06 was not addressed by Palisades. This is due to the fact that Palisades does not have an emergency power supply for the PORVs and block valves.

All other specifications are effectively the same as those of GL 90-06.

The NRC staff has reviewed the licensee's submittal and concludes that it meets the requirements of GL 90-06 and is therefore acceptable. Based on the above, the staff has determined that an amendment should be granted.

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 (59 FR 4937). 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 staff 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.

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Date: March 29, 1994