



March 31, 2005

10 CFR 50.55a

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Palisades Nuclear Plant
Docket 50-255
License No. DPR-20

Request for Authorization to Extend the Third 10-Year IST Interval for Certain Relief Valves

- References:
- 1) *Letter from Consumers Energy to NRC, "Submittal of Revised Inservice Testing Valve Relief Request Numbers 30 & 31," dated July 24, 1997*
 - 2) *Letter from Consumers Energy to NRC, "Response to Request for Additional Information – Valve Relief Requests 28, 30, 31, and 32," dated September 29, 1997*
 - 3) *Letter from NRC to Consumers Energy, "Staff Review of Requests for Relief from Certain Pump and Valve Inservice Testing Requirements at the Palisades Plant (TAC NOS. M98923, M98924, M99344, and M99650)," dated March 6, 1998*
 - 4) *Letter from NMC to NRC, "Request for Clarification of Inservice Testing Interval for Certain Relief Valves RE: Relief Requests 28, 30 and 31," dated March 23, 2005.*
 - 5) *Letter from NMC to NRC, "Request for Authorization to Extend the Third 10-Year ISI Interval for Reactor Vessel Weld Examination," dated March 31, 2005*
 - 6) *Letter from NMC to NRC, "Request for Authorization to Extend the Third 10-Year ISI Interval for Reactor Vessel Visual Examination," dated March 31, 2005*

By letters dated July 24, 1997 (Reference 1) and September 29, 1997 (Reference 2), Consumers Energy, the previous licensee for the Palisades Nuclear Plant, submitted multiple relief requests, including valve relief request (VRR) No. 28, VRR No. 30, and VRR No. 31. The Nuclear Regulatory Commission (NRC) approved the relief requests by letter dated March 6, 1998 (Reference 3).

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By letter dated March 23, 2005 (Reference 4), Nuclear Management Company, LLC (NMC) requested clarification on statements made in the safety evaluation (Reference 3).

NMC is submitting the subject relief requests pursuant to 10 CFR 50.55a(a)(3)(ii), on the basis that compliance with the Operation and Maintenance (OM) Code requirements presents a hardship or unusual difficulty, without a compensating increase in the level of quality and safety. NMC is requesting approval for a one-cycle extension to the third 10-year inservice testing (IST) interval for the relief valves in the subject relief requests. In accordance with the American Society of Mechanical Engineers Code, Section XI, 1989 Edition, Subsection IWA-2430(e), the current IST Program, third 10-year testing interval will conclude on or before March 24, 2006. Approval of a one-cycle extension would allow testing of these relief valves to align with the full core offload currently scheduled for the fall 2007 refueling outage.

This request is associated with two other requests, both by letter dated March 31, 2005 (Reference 5, Reference 6). Both of these requests were to align reactor vessel examinations with the full core off load during the fall 2007 refueling outage. Approval of this request is contingent upon the approval of Reference 5 and Reference 6.

NMC requests approval by March 1, 2006, however, NMC would like approval sooner to accommodate outage planning.

Summary of Commitments

This letter contains no new commitments and no revisions to existing commitments.

 FOR DAN J. MALONE

Daniel J. Malone
Site Vice President, Palisades Nuclear Plant
Nuclear Management Company, LLC

Enclosures (3)

CC Administrator, Region III, USNRC
Project Manager, Palisades, USNRC
Resident Inspector, Palisades, USNRC

ENCLOSURE 1
REQUEST FOR AUTHORIZATION TO EXTEND THE THIRD 10-YEAR
INSERVICE TESTING INTERVAL FOR CERTAIN RELIEF VALVES
PALISADES NUCLEAR PLANT

Valve Relief Request No. 28

1.0 ASME Code Component Affected

System: Engineering Safeguards
 Component Cooling

Valves: RV-0402, RV-0403, RV-0954 and RV-0955

Category: C Class: 2 and 3

2.0 Applicable Code Edition and Addenda

The applicable code edition and addenda for the relief valves is the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BPV) Code, Section XI, 1989 Edition with no addenda. Palisades is currently in the third 10-year inservice inspection (ISI) interval.

3.0 Applicable Code Requirement

The applicable Code requirements are described in ASME/ANSI OM-1987, OMa-1988, "Operation and Maintenance of Nuclear Power Plants."

OM-1987, Part 1, "Requirements for Inservice Performance Testing of Nuclear Power Plant Pressure Relief Devices," Paragraph 1.3.4, requires periodic testing of Class 2 and Class 3 pressure relief devices.

- a. All valves of each type and manufacture shall be tested within each subsequent 10-year period.
- b. A minimum of 20% of the valves shall be tested within any 48 months.

4.0 Reason for Request

Relief is requested in accordance with 10 CFR 50.55a(a)(3)(ii), from the requirement to perform set point verification on either a 10-year or a 48-month frequency, on the basis that compliance with OM Code requirements presents a hardship or unusual difficulty, without a compensating increase in the level of quality and safety.

NMC has extended the Palisades Nuclear Plant Inservice Testing (IST) Program, third 10-year testing interval from August 21, 2005, to March 24, 2006, in accordance with the ASME Code, Section XI, 1989 Edition, Subsection IWA-2430(e). This extension recaptured the 215-day extended outage in 2001, to repair the control rod drive mechanisms. Furthermore, the third 10-year ISI interval for the Palisades Nuclear Plant will end on or before December 12, 2006, considering the ASME Code-allowed extensions. This has resulted in a delay of the next full core offload until the fall 2007 refueling outage. Therefore, testing the subject relief valves by the surveillance due date of March 24, 2006, presents a hardship due to the delay of the full core offload to the 2007 refueling outage.

5.0 Proposed Alternative and Basis for Use

Relief valves RV-0402, RV-0403, RV-0954, and RV-0955 are designed to protect the shutdown cooling heat exchangers from thermal expansion of water when the heat exchangers are isolated for maintenance or inspection. These thermal relief valves have no active safety function when the heat exchangers are in service. They have a passive safety function to maintain the Class 2 system pressure boundary. The associated heat exchangers must be isolated to remove these thermal relief valves. However, the shutdown cooling heat exchangers cannot be isolated during power operation, or isolated when there is fuel in the reactor vessel.

Table 1 below provides information about each specific valve.

Table 1

Valve Number	Service Description	System	Safety Class	Vendor Info.	Connection	Set Point (psig)	Approx. Sys. Pressure (psig)
RV-0402	Shutdown Cooling Heat Exchanger E-60A Tube Side	Engineered Safeguards	2	Teledyne Farris Engg 2740 PKD/S4	Welded connections	500	270
RV-0403	Shutdown Cooling Heat Exchanger E-60B Tube Side	Engineered Safeguards	2	Teledyne Farris Engg 2740 PKD/S4	Welded connections	500	270
RV-0954	Shutdown Cooling Heat Exchanger E-60A West End	Component Cooling	3	Teledyne Farris Engg 2741 PKD	Flanged connections	150	80
RV-0955	Shutdown Cooling Heat Exchanger E-60B West End	Component Cooling	3	Teledyne Farris Engg 2741 PKD	Flanged connections	150	80

Due to the location of the relief valves, removal, testing and reinstallation would cause an increase of radiation exposure to plant staff. RV-0402, RV-0403, RV-0954 and RV-0955 do not provide overpressure protection when the associated heat exchanger is in service, nor do they serve a safety function during plant operation to ensure the reactor can be safely shutdown or to mitigate the consequences of an accident. These relief valves are only needed when the associated heat exchanger is isolated. Therefore, the useful life of these relief valves can be assumed to be extended. Furthermore, because the valves are not normally in service, they do not experience significant challenges resulting in wear. Therefore, a one-cycle extension of the IST for these relief valves will not adversely affect the system function.

Technical Specifications allow testing for each valve at specific operating modes, however, meeting the IST code requirement for Class 2 relief valves to test one valve on either a 10-year or a 48-month frequency, continues to present a hardship or unusual difficulty without a compensating increase in the level of quality and safety, due to the complex system outages required for relief valve removal.

A review of plant specific and industry experience for Teledyne-Farris relief valves, contained in the Institute of Nuclear Power Operation EPIX database, indicates that the type of relief valves installed for thermal overpressure protection are reliable. Failures are generally associated with test results outside of acceptable set point ranges, or failure to close sufficiently to assure leak tight integrity. The thermal protection function of these valves was maintained, even though specific performance criteria were not met.

In order to ensure the seat leakage does not impact system operability, Palisades Nuclear Plant will continue to perform examinations in accordance with the site's ASME Section XI pressure test program. Additionally, the requirements of the site's boric acid corrosion control program will be followed to assure leakage does not adversely impact other components that may be in the leak path. This will provide reasonable assurance that the relief valves are operationally ready.

Therefore, relief is requested in accordance with 10 CFR 50.55a(a)(3)(ii) from testing RV-0402, RV-0403, RV-0954 and RV-0955, on the basis that compliance with the OM Code requirements presents a hardship or unusual difficulty, without a compensating increase in the level of quality and safety.

6.0 Duration of Proposed Alternative

NMC requests approval to extend the third IST interval for the subject relief valves for one refueling cycle beyond the ASME Code-required 10-year inspection interval. This request is applicable to the third inspection interval only. If this relief request is approved, the third IST interval will end at the conclusion of the fall 2007 refueling outage for the subject relief valves.

The fourth IST interval will not be extended for these valves. Upon completion of set point testing requirements during the 2007 refueling outage, the fourth interval start date for these valves will be set at March 24, 2006. Testing intervals and scope will be determined based on the March 24, 2006 date.

7.0 Precedent

By letter dated February 10, 2004, as supplemented on March 15, 2004, NMC submitted valve relief request (VRR) 03-01 for Point Beach Nuclear Plant. The request was a one-time request for relief from certain requirements of the ASME OM Code-1995 Edition with 1996 Addenda (OM Code) for inservice testing of a residual heat removal system relief valve. By letter dated April 1, 2004, the Nuclear Regulatory Commission approved this request.

ENCLOSURE 2
REQUEST FOR AUTHORIZATION TO EXTEND THE THIRD 10-YEAR
INSERVICE TESTING INTERVAL FOR CERTAIN RELIEF VALVES
PALISADES NUCLEAR PLANT

Valve Relief Request No. 30

1.0 ASME Code Component Affected

System: Shutdown Cooling System

Valve: RV-0401

Category: C Class: 1

2.0 Applicable Code Edition and Addenda

The applicable code edition and addenda for the relief valves is the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BPV) Code, Section XI, 1989 Edition with no addenda. Palisades is currently in the third 10-year inservice inspection (ISI) interval.

3.0 Applicable Code Requirement

The applicable Code requirements are described in ASME/ANSI OM-1987, OMa-1988, "Operation and Maintenance of Nuclear Power Plants."

OM-1987, Part 1, "Requirements for Inservice Performance Testing of Nuclear Power Plant Pressure Relief Devices," Paragraph 1.3.3, requires periodic testing of Class 1 pressure relief devices.

- a. All valves of each type and manufacture shall be tested within each subsequent 5-year period.
- b. A minimum of 20% of the valves shall be tested within any 24 months.

4.0 Reason for Request

Relief is requested in accordance with 10 CFR 50.55a(a)(3)(ii), from the requirement to perform set point verification on either a 5-year or a 24-month frequency, on the basis that compliance with OM Code requirements presents a hardship or unusual difficulty, without a compensating increase in the level of quality and safety.

NMC has extended the Palisades Nuclear Plant Inservice Testing (IST) Program, third 10-year testing interval from August 21, 2005, to March 24, 2006, in accordance with the ASME Code, Section XI, 1989 Edition, Subsection IWA-2430(e). This extension recaptured the 215-day extended outage in 2001, to repair the control rod drive mechanisms. Furthermore, the third ISI interval for the Palisades Nuclear Plant will end on or before December 12, 2006, considering the ASME Code-allowed extensions. This has resulted in a delay of the next full core offload until the fall 2007 refueling outage. Therefore, testing the subject relief valves by the surveillance due date of March 24, 2006, presents a hardship due to the delay of the full core offload to the 2007 refueling outage.

5.0 Proposed Alternative and Basis for Use

Relief valve RV-0401 has a safety function to provide overpressure protection to the shutdown cooling return header between two motor operated valves.

Table 1 below provides information about relief valve RV-0401.

Table 1

Valve Number	Service Description	System	Safety Class	Vendor Info.	Connection	Set Point (psig)	Approx. Sys. Pressure (psig)
RV-0401	Shutdown Cooling Relief	Engineered Safeguards	1	Teledyne Farris Engg 2741 PKD/S4	Flanged Connections	2485	270 to 2045

Relief valve RV-0401 is located in the letdown from the primary coolant system (PCS) to the shutdown cooling system. Testing cannot be performed with the PCS greater than cold shutdown, because RV-0401 provides the second isolation barrier for the PCS. Failure of the first isolation barrier would result in uncontrollable and highly contaminated PCS leakage.

Testing cannot be performed during cold shutdown, with shutdown cooling in service, because the Palisades Nuclear Plant has no alternate letdown paths for shutdown cooling. Shutdown cooling cannot be isolated unless there is a full core off load. Based on this fact, RV-0401 can only be tested during full core off loads.

A historical review of plant specific set point testing for RV-0401 showed that in 1995, the set point drifted from 2482 psig to 2450 psig. Even with the drift in set point, system operability and safety requirements were maintained with no reduction in safety margin.

A review of industry experience for Teledyne-Farris relief valves, contained in the Institute of Nuclear Power Operation EPIX database, indicates that the type of relief valve installed for thermal overpressure protection is reliable. Failures are generally associated with test results outside of acceptable set point ranges or failure to close

sufficiently to assure leak tight integrity. In all cases but one, failure occurred after more than ten years of service. In the remaining case, failure was maintenance induced. The thermal protection function of these valves was maintained, even though specific performance criteria were not met.

In order to ensure the leakage does not impact system operability, Palisades Nuclear Plant will continue to monitor system parameters and perform examinations in accordance with the site's ASME Section XI pressure test program. Additionally, the requirements of the site's boric acid corrosion control program will be followed to assure leakage does not adversely impact other components that may be in the leak path. This will provide reasonable assurance that relief valve RV-0401 is operationally ready.

Therefore, relief is requested in accordance with 10 CFR 50.55a(a)(3)(ii) from testing RV-0401, on the basis that compliance with OM Code requirements presents a hardship or unusual difficulty, without a compensating increase in the level of quality and safety.

6.0 Duration of Proposed Alternative

NMC requests approval to extend the third IST interval for the subject relief valves for one refueling cycle beyond the ASME Code required 10-year inspection interval. This request is applicable to the third inspection interval only. If this relief request is approved, the third IST interval will end at the conclusion of the fall 2007 refueling outage for the subject relief valves.

The fourth IST interval will not be extended for these valves. Upon completion of setpoint testing requirements during the 2007 refueling outage, the fourth interval start date for these valves will be set at March 24, 2006. Testing intervals and scope will be determined based on the March 24, 2006 date.

7.0 Precedent

By letter dated February 10, 2004, as supplemented on March 15, 2004, NMC submitted valve relief request (VRR) 03-01 for Point Beach Nuclear Plant. The request was a one-time request for relief from certain requirements of the ASME OM Code-1995 Edition with 1996 Addenda (OM Code) for inservice testing of a residual heat removal system relief valve. By letter dated April 1, 2004, the Nuclear Regulatory Commission approved this request.

ENCLOSURE 3
REQUEST FOR AUTHORIZATION TO EXTEND THE THIRD 10-YEAR
INSERVICE TESTING INTERVAL FOR CERTAIN RELIEF VALVES
PALISADES NUCLEAR PLANT

Valve Relief Request No. 31

1.0 ASME Code Component Affected

System: Shutdown Cooling System

Valves: RV-3162 and RV-3164

Category: C Class: 2

2.0 Applicable Code Edition and Addenda

The applicable code edition and addenda for the relief valves is the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BPV) Code, Section XI, 1989 Edition with no addenda. Palisades is currently in the third 10-year inservice inspection (ISI) interval.

3.0 Applicable Code Requirement

The applicable Code requirements are described in ASME/ANSI OM-1987, OMa-1988, "Operation and Maintenance of Nuclear Power Plants."

OM-1987, Part 1, "Requirements for Inservice Performance Testing of Nuclear Power Plant Pressure Relief Devices," Paragraph 1.3.4, requires periodic testing of Class 2 pressure relief devices.

- a. All valves of each type and manufacture shall be tested within each subsequent 10-year period.
- b. A minimum of 20% of the valves shall be tested within any 48 months.

4.0 Reason for Request

Relief is requested in accordance with 10 CFR 50.55a(a)(3)(ii), from the requirement to perform set point verification on either a 10-year or a 48-month frequency, on the basis that compliance with OM Code requirements presents a hardship or unusual difficulty, without a compensating increase in the level of quality and safety.

NMC has extended the Palisades Nuclear Plant Inservice Testing (IST) Program, third 10-year testing interval from August 21, 2005, to March 24, 2006, in accordance with the ASME Code, Section XI, 1989 Edition, Subsection IWA-2430(e). This extension recaptured the 215-day extended outage in 2001 to repair the control rod drive mechanisms. Furthermore, the third ISI interval for the Palisades Nuclear Plant will end on or before December 12, 2006, considering the ASME Code-allowed extensions. This has resulted in a delay of the next full core offload until the fall 2007 refueling outage. Therefore, testing the subject relief valves by the surveillance due date of March 24, 2006, presents a hardship due to the delay of the full core offload to the 2007 refueling outage.

5.0 Proposed Alternative and Basis for Use

Relief valve RV-3162 has a safety function to provide overpressure protection for the shutdown cooling discharge header. Overpressure protection is required due to small amounts of back leakage from the primary coolant system (PCS). Relief valve RV-3164 has a safety function to provide overpressure protection for the shutdown cooling supply line. Overpressure protection is required during plant heatup, and failure in this operating scenario could render the line inoperable during plant cooldown.

Table 1 below provides information about each specific valve.

Table 1

Valve Number	Service Description	System	Safety Class	Vendor Info.	Connection	Set Point (psig)	Approx. Sys. Pressure (psig)
RV-3162	Low Pressure Injection Relief Valve	Engineered Safeguards	2	Teledyne Farris Engg 26FB12-141	Flanged connections	500	270
RV-3164	Shutdown Cooling Relief	Engineered Safeguards	2	Teledyne Farris Engg 26GB12L-141/S3	Flanged connections	300	270

Maintenance and testing of RV-3162, located on the common low pressure safety injection discharge header, would require the function associated with this system to be removed from service. Presently, there are no allowances in Technical Specifications that would provide a window for this work at any plant-operating mode. Testing during the period between cold shutdown and reactor critical requires the draining of a safety system and the removal of the relief valve for set point testing. Testing cannot be performed during cold shutdown with shutdown cooling in service, because this valve is located in a non-redundant portion of the shutdown cooling system. Palisades has no alternate discharge paths for shutdown cooling, and the relief valve cannot be isolated unless there is a full core off load. Based on this fact, RV-3162 can only be tested during full core off loads.

Maintenance and testing of RV-3164, located on the common low pressure safety injection inlet header, would require the functions associated with shutdown cooling to be removed from service. This valve can be isolated from the PCS, however, it discharges to the primary system drain tank, from which it cannot be isolated. Maintenance and testing is allowed by Technical Specifications at Mode 5, with forced PCS circulation in service.

The portions of the shutdown cooling system where RV-3162 and RV-3164 are located are static except during periodic inservice testing and when providing core cooling. Therefore, RV-3162 and RV-3164 are not exposed to excessive system vibration or pressure fluctuations, which contribute to valve wear and set point fluctuation.

Technical Specifications may allow testing of relief valve RV-3164 at specific operating modes, however, testing of RV-3162 at any normal operating mode would not be allowed. Therefore, meeting the IST code requirement for Class 2 relief valves to test one valve every 48 months, continues to present a hardship or unusual difficulty, without a compensating increase in the level of quality and safety.

A review of industry experience for Teledyne-Farris relief valves, contained in the Institute of Nuclear Power Operation EPIX database, indicates that the type of relief valves installed for thermal overpressure protection are reliable. Failures are generally associated with test results outside of acceptable set point ranges, or failure to close sufficiently to assure leak tight integrity. In all cases but one, failure occurred after more than ten years of service. In the remaining case, failure was maintenance induced. The thermal protection function of these valves was maintained, even though specific performance criteria were not met.

A historical review of plant specific set point testing data for RV-3162 and RV-3164 was conducted. This review showed that RV-3162 and RV-3164 remained within set point tolerance from the time of initial installation until the performance of set point testing in 1995. In addition, RV-3164 was replaced in 2001 due to signs of degradation. The degraded valve was set point tested and continued to meet the acceptance criteria. System operability and safety requirements were maintained with no reduction in safety margin.

In order to assure the seat leakage does not impact system operability, Palisades Nuclear Plant will continue to perform examinations in accordance with the site's ASME Section XI pressure test program. Additionally, the requirements of the site's boric acid corrosion control program will be followed to assure leakage does not adversely impact other components that may be in the leak path. This will provide reasonable assurance that the relief valves are operationally ready.

Therefore, relief is requested in accordance with 10 CFR 50.55a(a)(3)(ii) from testing RV-3162 and RV-3164, on the basis that compliance with OM Code requirements presents a hardship or unusual difficulty, without a compensating increase in the level of quality and safety.

6.0 Duration of Proposed Alternative

NMC requests approval to extend the third IST interval for the subject relief valves for one refueling cycle beyond the ASME Code-required 10-year inspection interval. This request is applicable to the third inspection interval only. If this relief request is approved, the third IST interval will end at the conclusion of the fall 2007 refueling outage for the subject relief valves.

The fourth IST interval will not be extended for these valves. Upon completion of set point testing requirements during the 2007 refueling outage, the fourth interval start date for these valves will be set at March 24, 2006. Testing intervals and scope will be determined based on the March 24, 2006 date.

7.0 Precedent

By letter dated February 10, 2004, as supplemented on March 15, 2004, NMC submitted valve relief request (VRR) 03-01 for Point Beach Nuclear Plant. The request was a one-time request for relief from certain requirements of the ASME OM Code, 1995 Edition with 1996 Addenda (OM Code) for inservice testing of a residual heat removal system relief valve. By letter dated April 1, 2004, the Nuclear Regulatory Commission approved this request.