March 4, 2005

Mr. Craig W. Lambert
Site Vice President
Kewaunee Nuclear Power Plant
Nuclear Management Company, LLC
N490 Highway 42
Kewaunee, WI 54216-9511

SUBJECT: KEWAUNEE NUCLEAR POWER PLANT - FOURTH 10-YEAR INSERVICE TESTING INTERVAL PROGRAM REQUESTS FOR RELIEF (TAC NOS. MC4182, MC4183, MC4184, AND MC4185)

Dear Mr. Lambert:

By letter dated August 16, 2004 (ML042390156), as supplemented December 22, 2004 (ML043650368), Nuclear Management Company, LLC (the licensee) submitted requests for relief from certain requirements of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code), for the fourth 10-year interval inservice testing (IST) program at Kewaunee Nuclear Power Plant (KNPP). The ASME OM Code of record for KNPP for the fourth 10-year IST interval is the 1998 Edition with 2000 Addenda. The fourth 10-year IST interval began on February 16, 2005.

Based on the information provided in the relief requests, the U. S. Nuclear Regulatory Commission (NRC) staff concluded that the following requests for relief were acceptable: PRR-01, PRR-02, VRR-02, and VRR-05.

Relief requests PRR-01 and VRR-02 are granted pursuant to 10 CFR 50.55a(f)(6)(i) on the basis that compliance with the Code requirements is impractical and the proposed alternative testing will provide reasonable assurance of operational readiness. The staff further concludes that granting these reliefs is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

For relief request PRR-02, the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(i) based on the alternative providing an acceptable level of quality and safety. On February 9, 2005, the NRC staff (D. Terao, L. Raghavan) approved your request to use PRR-02 beginning on February 16, 2005, while awaiting the staff's written approval, as noted in a telephone conversation from F. Lyon (NRC) to G. Riste (NMC).

For relief request VRR-05, the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(ii) based on the determination that compliance with the specified Code requirements results in hardship without a compensating increase in the level of quality and safety and the proposed alternative provides reasonable assurance of operational readiness.

The above reliefs are applicable to the fourth 10-year interval IST program for the Kewaunee Nuclear Power Plant, which began on February 16, 2005.

The detailed results of the staff's review are provided in the enclosed safety evaluation. If you have any questions concerning this matter, please call Mr. F. Lyon of my staff at (301) 415-2296.

Sincerely,

/RA/

L. Raghavan, Section Chief, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-305

Enclosure: Safety Evaluation

cc w/ encl: See next page

The detailed results of the staff's review are provided in the enclosed safety evaluation. If you have any questions concerning this matter, please call Mr. F. Lyon of my staff at (301) 415-2296.

Sincerely,

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Kewaunee Nuclear Power Plant

cc:

John Paul Cowan
Executive Vice President &
Chief Nuclear Officer
Nuclear Management Company, LLC
700 First Street
Hudson, WI 54016

Plant Manager
Kewaunee Nuclear Power Plant
N490 Highway 42
Kewaunee, WI 54216-9511

Manager, Regulatory Affairs
Kewaunee Nuclear Power Plant
N490 Highway 42
Kewaunee, WI 54216-9511

David Molzahn
Nuclear Asset Manager
Wisconsin Public Service Corporation
600 N. Adams Street
Green Bay, WI 54307-9002

Resident Inspectors Office
U. S. Nuclear Regulatory Commission
N490 Hwy 42
Kewaunee, WI 54216-9511

Regional Administrator, Region III
U. S. Nuclear Regulatory Commission
2443 Warrenville Road, Suite 210
Lisle, IL 60532-4352

Jonathan Rogoff
Vice President, Counsel & Secretary
Nuclear Management Company, LLC
700 First Street
Hudson, WI 54016

Larry L. Weyers
Chairman, President and CEO
Wisconsin Public Service Corporation
600 North Adams Street
Green Bay, WI 54307-9002

David Zellner
Chairman - Town of Carlton
N2164 County B
Kewaunee, WI 54216

Mr. Jeffery Kitsembel
Electric Division
Public Service Commission of Wisconsin
PO Box 7854
Madison, WI 53707-7854

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

FOURTH 10-YEAR INTERVAL INSERVICE TESTING PROGRAM

REQUESTS FOR RELIEF

NUCLEAR MANAGEMENT COMPANY, LLC

KEWAUNEE NUCLEAR POWER PLANT

DOCKET NO. 50-305

1.0 INTRODUCTION

By letter dated August 16, 2004, Nuclear Management Company, LLC (the licensee), submitted relief requests associated with its fourth 10-year inservice testing (IST) program for pumps and valves for its Kewaunee Nuclear Power Plant (KNPP). The licensee proposed several alternatives to the requirements of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code) for its Kewaunee Nuclear Power Plant fourth 10-year interval IST program. In response to the U. S. Nuclear Regulatory Commission (NRC) staff's request for additional information, the licensee submitted additional information and revised Pump Relief Request PRR-01 by letter dated December 22, 2004. The NRC evaluations of relief requests PRR-01, PRR-02, VRR-02,and VRR-05 are contained herein. These relief requests are applicable to the fourth 10-year interval IST program for the KNPP. The KNPP fourth 10-year IST interval began on February 16, 2005.

In Pump Relief Request PRR-01, the licensee proposes an alternative testing to use Code Case OMN-9, "Use of a Pump Curve for Testing," in lieu of the Code requirement as specified in paragraphs ISTB-5121(b) and ISTB-5123(b), and ISTB-5221(b) and ISTB-5223(b).

In Pump Relief Request PRR-02**,** the licensee proposes an alternative to the instrument range requirements of the paragraph ISTB(b)(1) for residual heat removal and auxiliary feedwater pumps.

In Valve Relief Request VRR-02, the licensee proposes an alternative to the Code requirement of paragraph ISTC-5131(b) for residual heat removal, main steam, and chemical and volume control systems valves.

In Valve Relief Request VRR-05, the licensee proposes an alternative testing frequency in lieu of the Code required frequency as specified by the paragraph ISTC-3700 for residual heat removal, main steam, and chemical and volume control systems valves.

2.0 REGULATORY EVALUATION

For KNPP's fourth 10-year interval, Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50.55a, requires that IST of certain ASME Code Class 1, 2, and 3 pumps and valves be performed at 120-month (10-year) IST program intervals in accordance with the ASME *Boiler*

and Pressure Vessel Code (ASME Code), Section XI and applicable addenda, except where alternatives have been authorized or relief has been requested by the licensee and granted by the Commission pursuant to paragraphs (a)(3)(i), (a)(3)(ii),or (f)(6)(i) of 10 CFR 50.55a. In accordance with 10 CFR 50.55a(f)(4)(ii), licensees are required to comply with the requirements of the latest edition and addenda of the ASME Code incorporated by reference in the regulations 12 months prior to the start of each 120-month IST program interval. In accordance with 50.55a(f)(4)(iv), IST of pumps and valves may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in 10 CFR 50.55a(b), subject to NRC approval. Portions of editions or addenda may be used provided that all related requirements of the respective editions and addenda are met.

In proposing alternatives or requesting relief, the licensee must demonstrate that: (1) the proposed alternatives provide an acceptable level of quality and safety; (2) compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety; or (3) conformance is impractical for the facility. Section 50.55a permits the Commission to authorize alternatives and to grant relief from ASME Code requirements upon making necessary findings. NRC guidance contained in Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," provides alternatives to Code requirements that are acceptable. Further guidance is given in GL 89-04, Supplement 1, and NUREG-1482, "Guidance for Inservice Testing at Nuclear Power Plants."

By letter dated August 16, 2004, as supplemented December 22, 2004, the licensee proposed several alternatives to the requirements of the ASME OM Code for its fourth 10-year IST interval. The Kewaunee Nuclear Power Plant's fourth 10-year IST interval will start on February 16, 2005. The fourth 10-year IST programs were developed to meet the requirements of the 1998 Edition through 2000 Addenda of the ASME OM Code pursuant to 10 CFR 50.55a(f)(4)(ii).

The NRC's findings with respect to authorizing alternatives and granting or denying the IST program relief requests are given below.

3.0 TECHNICAL EVALUATION

3.1 Pump Relief Request PRR-01

3.1.1 Code Requirements

Paragraph ISTB-5121(b) for Group A testing of centrifugal pumps (except vertical line shaft centrifugal pumps) states, "The resistance of the system shall be varied until the flow rate equals the reference point. The differential pressure shall then be determined and compared to the reference value. Alternatively, the flow rate shall be varied until the differential pressure equals the reference point and the flow rate determined and compared to the reference flow value."

Paragraph ISTB-5123(b) for Comprehensive testing states, "For centrifugal and vertical line shaft pumps, the resistance of the system shall be varied until the flow rate equals the reference point. The differential pressure shall then be determined and compared to the reference value. Alternatively, the flow rate shall be varied until the differential pressure equals the reference point and the flow rate determined and compared to the reference flow value."

Paragraph ISTB-5221(b) and ISTB-5223(b) for Group A and Comprehensive testing of vertical line shaft centrifugal pumps states, “The resistance of the system shall be varied until the flow rate equals the reference point. The differential pressure shall then be determined and compared to the reference value. Alternatively, the flow rate shall be varied until the differential pressure equals the reference point and the flow rate determined and compared to the reference flow value.”

The licensee requested relief from the OM Code paragraphs ISTB-5121(b) and ISTB-5123(b), ISTB-5221(b) and ISTB-5223(b) which requires that either flow rate or differential pressure be held constant while measuring the other required parameters. Relief is requested for the following group A pumps:

Component cooling water pumps 1A, 1B
Service water pumps 1A1, 1A2, 1B1, 1B2

3.1.2 Licensee’s Basis for Requesting Relief

Pursuant to 10 CFR 50.55a(f)(5)(iii), relief is being requested on the basis that conformance to Code requirements is impractical for the facility.

The component cooling water and service water pumps perform the safety-related function of providing heat removal from essential safety-related equipment during accident conditions.

The component cooling water pumps operate under a variety of flow rates, differential pressure conditions, and system demands resulting in the inability to easily establish a stable flow rate or differential pressure for evaluation against reference values. Varying the flow rate of the component cooling water pumps is impractical during normal plant operation due to the potential of creating reactor coolant pump transients, which could cause a plant trip. The Code required test method would be an undue burden in that damage to plant equipment could occur as well as a plant transient/trip. The alternative testing can provide an adequate level of assurance of operational readiness of the component cooling water pumps without creating adverse condition.

The service water pumps operate under a variety of flow rates, differential pressure conditions and system demands resulting in the inability to easily establish a stable flow rate or differential pressure for evaluation against reference values. Varying the flow rate of the service water pumps is impractical during normal plant operation due to the potential loss of adequate flow to various components dependent upon service water for cooling water flow and heat removal. The potential interruption of cooling water flow to these components is burdensome and could result in a reactor transient or a trip.

3.1.3 Licensee’s Proposed Alternative Testing

Service water and component cooling water pumps will be tested in a range of flows, and the results compared to the acceptable criteria based upon a portion of the pump curve and the hydraulic acceptance criteria given in the ASME OM Section ISTB. The guidelines set forth in Code Case OMN-9, “Use of a Pump Curve for Testing,” and OM Code 1998 Edition through 2000 Addenda, will be followed.

3.1.4 Evaluation of Pump Relief Request No. PRR-01

Paragraphs ISTB-5121(b) and ISTB-5123(b) for centrifugal pumps, and paragraphs ISTB-5221(b) and ISTB-5223(b) for vertical line shaft pumps require that pump flow rate and differential pressure be evaluated against reference values to monitor pump condition and to allow detection of degradation. The component cooling water pumps and service water pumps operate under a variety of flow rate and differential pressure conditions. Varying the flow rate of these pumps is impractical during normal plant operating conditions because of the potential loss of adequate flow to heat exchangers and the potential of creating plant transients. Imposing the Code requirements on the licensee would be a burden in that interruption of cooling water flow could cause a reactor transient or a trip.

As discussed in NUREG-1482, Revision 0, Section 5.2, the use of pump curves for reference values of flow rate and differential pressure is acceptable when it is impractical to establish a fixed set of reference values. Pump curves represent a set of infinite reference points of flow rate and differential pressure. Establishing a reference curve for the pump when it is known to be operating acceptably and basing the acceptance criteria on this curve can permit evaluation of pump condition and detection of degradation. However, because of a greater potential for error associated with the use of pump curves, Section 5.2 of NUREG-1482, Revision 0 delineates seven elements on the procedures for developing and implementing the curves that should be incorporated into the IST program. These elements are included in the Code Case OMN-9.

The licensee proposed use of Code Case OMN-9, “Use of a Pump Curve for Testing,” which is consistent with the guidelines in Section 5.2 of NUREG-1482, Revision 0 and provides reasonable assurance of the operational readiness of the component cooling water and service water pumps. However, NUREG-1482, Revision 0, was developed based on the ASME Boiler and Pressure Vessel Code, Section XI, 1989 Edition. The latest staff guidance is described in (Draft) NUREG-1482, Revision 1, which is applicable to the ASME OM Code, 1998 Edition through 2000 Addenda and has been issued for public comment. (Draft) NUREG-1482, Revision 1, Section 5.2 allows the use of Code Case OMN-9, Revision 0, “Use of Pump Curves for Testing,” which the NRC staff subsequently included in Regulatory Guide (RG) 1.192, “Operation and Maintenance Code Case Acceptability, ASME Code Case.” This regulatory guide lists the OM Code Cases that the NRC staff finds acceptable for licensees to implement in their IST program. In particular, the staff accepted Code Case OMN-9, with the conditions identified in RG 1.192. The licensee states that new pump curves will be developed in accordance with OMN-9 and the conditions identified in RG 1.192.

3.1.5 Conclusion

Based on the above evaluation, the staff concludes that the licensee’s request for relief should be granted pursuant to 10 CFR 50.55a(f)(6)(i) on the basis that compliance with the Code requirements is impractical and that the proposed alternative provides reasonable assurance of the operational readiness of the component cooling water and service water pumps. Granting the relief pursuant to 10 CFR 50.55a(f)(6)(i) is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility. Relief is applicable to the fourth 10-year interval IST program for KNPP, which began on February 16, 2005.

3.2 Pump Relief Request No. PRR-02

3.2.1 Code Requirement

Paragraph ISTB-3510(b)(1) of the ASME OM Code requires that the full-scale range of each analog instrument shall not be greater than three times the reference value.

3.2.2 Specific Relief Requested

Relief is requested from the Code requirements of paragraph ISTB-3510(b)(1) for residual heat removal (RHR) 1A and 1B and Auxiliary Feedwater (AFW) pumps 1A, 1B, and 1C.

3.2.3 Basis for Relief

Pursuant to 10 CFR 50.55a(a)(3)(i), relief is being requested on the basis that proposed alternative testing provides an acceptable level of quality and safety.

The local suction pressure gauges for the RHR pumps have a range of 0-100 psig and an accuracy of ± 0.5 percent. The normal value for suction pressure of the RHR pumps is 28 psig. The suction pressure gauges exceed the three times the reference value criteria of ISTB-3510(b)(1). As previously stated, the accuracy of the suction gauge is ± 0.5 percent, or 0.5 psig over the full scale reading. Using this accuracy with the three times reference value of 84 psig (3x28 psig) yields an accuracy of ± 0.6 percent.

The local suction pressure gauges for AFW pumps have a range of -15 to 100 psig and an accuracy of ± 1 psig. The normal value of suction pressure of the AFW pumps is 15 psig. The suction pressure gauges exceed the three times the reference value criteria of ISTB-3510(b)(1). Three times normal suction pressure would have a Code allowable scale of 45 psig. The required accuracy for the group A test would be ± 2 percent of 45 psig or ±0.9 psig. The required accuracy for the comprehensive and/or pre-service test would be 0.5 percent of 45 psig or 0.225 psig. The installed instrument accuracy of ±1 psig exceeds the Group A requirement by 0.1 psig and the comprehensive and/or pre-service test requirements by 0.775 psi.

The AFW pump discharge pressure gauge is a 0-3000 psig gauge accurate to 0.5 percent or 15 psig at full scale. The normal AFW discharge pressure value is approximately 1200 psig and therefore allowed inaccuracies for the discharge pressure gauge would be ±2 percent of 3600 psig or ±72 psig for group A tests, and 18 psig for comprehensive test. For the Group A tests, this leaves a margin of 57 psi which is more than sufficient to compensate for the 0.1 psi over in the suction pressure instrument for the total differential pressure measurement. For the comprehensive pump test, the discharge gauge has a Code accuracy margin of 3 psi, which is also sufficient to compensate for the 0.775 psi overage in the suction pressure accuracy for total differential pressure measurement.

The existing permanently installed pump instrumentation is acceptable provided the indicated accuracy is less than or equal to that required by the OM Code. No alternate testing will be performed. Any change in the baseline reference value shall be determined acceptable provided the indicated accuracy of the new reference valve does not exceed the range or indicated accuracy allowable of the OM Code.

In response to NRC staff's request for additional information, the licensee submitted additional information related to this relief request as follows:

RHR pump discharge pressure is measured with installed instrumentation that meets the range requirements for Group A test, (0.7 percent, 0-350 psig range, 170 psig expected reading). For the comprehensive test, a different installed suction pressure gauge is used as this is performed under different plant conditions (cool down alignment). Temporary high accuracy discharge pressure gauges are used for this design point comprehensive flow test. On this basis, the licensee stated that the RHR discharge instrumentation meets the Code requirement.

3.2.4 Alternative Examinations

The licensee states that as an alternative to the instrument range requirements of the paragraph ISTB-3510(b)(1), RHR and AFW pump suction pressure will be measured with the currently installed instrumentation with the accuracies stated in the "Basis for Relief." The use of the existing gauges is supported by NUREG-1482, Paragraph 5.5.1 when the combination of range and accuracy yields a reading at least equivalent to the reading achieved from instruments that meet the Code requirements. No alternate testing will be performed. Any change in the baseline reference value shall be determined acceptable provided the indicated accuracy of new reference value does not exceed the range or indicated accuracy allowable of the OM Code.

3.2.5 Evaluation of Valve Relief Request No. PRR-02

The licensee requests relief from the Code instrumentation requirements of paragraph ISTB-3510(b)(1) for pressure gauges, which are used to measure suction and discharge pressure for RHR and AFW pumps. The Code paragraph ISTB-3510(b)(1) requires that the full-range of each instrument be no greater than three times the reference value. The licensee proposes to use instrumentation that does not meet these Code requirements.

The suction pressure gauges for the RHR pumps have a range of 0-100 psig and accuracy of ± 0.5 percent. The normal value for suction pressure of the RHR pumps is 28 psig. In its response to the staff's request for additional information, the licensee stated that the discharge instrumentation of the RHR pumps meets the Code requirement.

The suction pressure gauge for AFW pumps has a range of -15 to 100 psig and an accuracy of ± 1 psig. The normal value for suction pressure of the AFW pumps is 15 psig. The AFW pump discharge pressure gauge is a 0-3000 psig gauge accurate to 0.5 percent or 15 psig at full scale. The normal AFW discharge pressure value is approximately 1200 psig.

The following Table-PRR-02 contains all the details related to RHR and AFW pumps' instrumentations as provided by the licensee, and the Code requirements and their evaluation:

Table -PRR-02

Items	RHR Pumps Suction	AFW Pumps Suction		AFW Pumps Discharge	
Pump No.	1A and 1B	1A and 1B		1A and 1B	
Type of Inservice Test	Group A Test	Group A Test	CPT or Pre-service Test	Group A Test	CPT or Pre-service Test
Pressure Gauges Range psig	0-100	-15 - 100	-15 - 100	0- 3000	0- 3000
Reference Value psig	28	15	15	1200	1200
Three times the reference value	(3 x 28) = 84 psig	(3 x 15) = 45 psig	(3 x 15) = 45 psig	(3x1200) =3600 psig	(3x1200) =3600 psig
Installed instrument effective gauge accuracy	± 0.5% or 0.5 psig over full scale (0-100), which is ± 0.6% or ± 0.42 psig for 84 psig	± 1 psig	± 1 psig	± 0.5% or 15 psig over full scale (0-3000), which is ±18 psig for 3600 psig	± 0.5% or 15 psig over full scale (0-3000), which is ±18 psig for 3600 psig
Actual accuracy required by the Code	(± 2%) x 84 psig = ± 1.68 psig	(± 2%) x 45 psig = ± 0.9 psig	(± 0.5%) x 45 psig = ± 0.225 psig	(± 2%) x 3600 psig = ± 72 psig	(± 0.5%) x 3600 psig = ± 18 psig
Meets the Code requirement	Yes	No[Note 1]	No[Note 2]	Yes[Note 1]	Yes[Note 2]

Note 1: For AFW pump group A tests, there is a margin of 57 psi (72-18) in the AFW discharge pressure gauge, which is more than sufficient to compensate for the 0.1 psi (1-0.9) in the AFW suction pressure gauge.

Note 2: For AFW pump comprehensive pump tests, there is a margin of 3 psi (18-15) in the AFW discharge pressure gauge, which is more than sufficient to compensate for the 0.775 psi (1-0.225) in the AFW suction pressure gauge.

Therefore, the suction and discharge pressure gauge instruments of RHR and AFW pumps yield readings at least equivalent to the reading achieved from instruments that meet Code requirements and, thus, provide an acceptable level of quality and safety.

3.2.6 Conclusion

The proposed alternative to the Code requirements of paragraph ISTB-3510(b)(1) for RHR and AFW pumps is authorized pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that the alternative provides an acceptable level of quality and safety. This authorization does not apply to digital instrumentation. Relief is applicable to the fourth 10-year interval IST program for KNPP, which began on February 16, 2005.

3.3 Valve Relief Request VRR-02

3.3.1 Code Requirements

Paragraph ISTC-5131(b), Valve Stroke Testing, of the ASME OM Code requires that the limiting values(s) of full-stroke time of each valve shall be specified by the Owner.

Paragraph ISTC-5132, Stoke Test Acceptance Criteria, requires that test results shall be compared to the reference values established in accordance with ISTC-3300, ISTC-3310, or ISTC-3320.

3.3.2 Specific Relief Requested

The licensee requested relief from the Code requirements of paragraph ISTC-5131(b) for RHR, Main Steam, and Chemical and Volume Control system valves. Relief is requested for the following valves:

Category A: CVC-7
Category B: RHR-8A and RHR-8B, and SD-3A and SD-3B

3.3.3 Licensee's Basis for Requesting Relief

Pursuant to 10 CFR 50.55a(f)(5)(iii) and (a)(3)(i), relief is being requested on the basis of impracticality and that the proposed alternative testing provides an acceptable level of quality and safety.

These valves are not provided with conventional position indication and control switch circuitry, but are provided with a percent open thumb wheel. This control circuitry creates the potential for the inability to acquire repeatable test results when stroke timing the valves. This could result in a failed test and an inoperable valve when the valve is operating acceptably. It is impractical to meet the requirements of the Code for measuring stroke time of these valves because of the design of the valves control systems. Valve exercising by the control station thumb wheel while locally observing the valve to verify the lack of any abnormality or erratic action is an acceptable alternative method to demonstrate valve operational readiness without affecting plant safety or unnecessarily declaring the valve inoperable.

This relief request was previously approved for the Third 10-year IST Interval in NRC Safety Evaluation Report dated July 1, 2004 (ML041680247).

3.3.4 Licensee's Proposed Alternative Testing

The valves will be full-stroke exercised and verified to exhibit smooth stroke by locally observing the valve and verifying the lack of any abnormality or erratic action. Any abnormality or erratic action experienced during valve exercising shall be recorded in the record of tests, and an evaluation shall be performed regarding need for corrective action.

3.3.5 Evaluation of Valve Relief Request No. VRR-02

The valves are air-operated control valves that perform a safety function as defined within the scope of the ASME OM Code. Because the valves operate as control valves, they are not provided with conventional position indication and control switch circuitry to allow stroke-time measurement using indicating lights and a stopwatch.

The licensee proposes to full-stroke exercise the valves and observe that valve operation is "smooth." Based on the design of the valve control circuitry, it is impractical to meet the requirements of the Code for measuring valve stroke time due to the lack of conventional position indication. Compliance with the Code requirements is impractical in that design modifications would be required to implement the Code requirements. The proposed alternative testing will provide a means of assuring the operational readiness of the valves.

3.3.6 Conclusion

Based on the above evaluation, the staff concludes that the licensee's request for relief should be granted pursuant to 10 CFR 50.55a(f)(6)(i) on the basis that compliance with the Code requirements is impractical and the proposed alternative testing will provide a means of assuring the operational readiness of the valves. The staff further concludes that granting the relief is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility. Relief is applicable to the fourth 10-year interval IST program for KNPP, which began on February 16, 2005.

3.4 Valve Relief Request VRR-05

3.4.1 Code Requirements

Paragraph ISTC-3700, Position Verification Testing, of the ASME OM Code requires that valves with remote position indicators shall be observed locally at least once every 2 years to verify that valve operation is accurately indicated.

3.4.2 Specific Relief Requested

The licensee requested relief from the Code requirements of paragraph ISTC-3700 for safety injection valves SI-350A and SI-350B.

3.4.3 Licensee's Basis for Requesting Relief

Pursuant to 10 CFR 50.55a(a)(3)(ii), relief is being requested on the basis that compliance with the specified requirements of the Code would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

These valves are located within separate enclosures outside containment in the lines leading from containment sump "B" to the suction of the RHR pumps. The valves perform an active safety function in the open position. Valves SI-350A and SI-350B must be capable of opening, by remote manual switch actuation, when transitioning from injection mode of safety injection pump sump recirculation for long-term core cooling. The valves also perform an active safety function in closed position. SI-350A and B are designated as containment isolation valves for penetrations 30W and 30E per USAR Table 5.2-2. SI-350A and B must be capable of closure by remote manual switch actuation to maintain containment integrity should an automatic system malfunction occur.

These valves are containment isolation valves located outside the containment building in separate enclosures. Local observation of the valves during the performance of position indication verification requires disassembly and removal of the enclosures. Subsequent to reassembly, the enclosures require leak testing in accordance with Appendix J. The additional activities involved with local observation are time consuming and performed in a Radiation Area. It is the licensee's position that compliance with the 2-year Code requirement for local observation of valve position indication would result in a hardship without a compensating increase in the level of quality and safety.

This relief request was previously approved as IST-RR-29 for the Third 10-year Interval via NRC Safety Evaluation Report dated September 10, 1998 (9809160225).

3.4.4 Licensee's Proposed Alternative Testing

The licensee states that these valves will have remote position indication verification performed on a 36-month frequency. This verification will normally be performed coincident with preventive maintenance on the valve motor operators, which is scheduled on a 36-month frequency. The 36-month frequency is based on past preventive maintenance and inspection results, and corresponds with every other 18-month refueling cycle. In addition, the valves will be leak tested on a refueling outage frequency to ensure valve closure. These activities in conjunction with quarterly monitoring of valve stroke times will ensure reliable operation of the valves, including remote position indication.

3.4.5 Evaluation of Valve Relief Request No. VRR-05

Paragraph ISTC-3700, Position Verification Testing, of the ASME OM Code requires that valves with remote position indicators shall be observed locally at least once every 2 years to verify that valve operation is accurately indicated. In lieu of the 2-year test, the licensee proposes to verify the remote position indication locally on a 36-month frequency. In addition, the closed position indication of the valves will be verified by leak testing on a refueling outage frequency, and the open position indication will be verified by monitoring the results of quarterly valve opening stroke-time tests.

These valves are containment isolation valves located outside the containment building in separate enclosures. To perform the required local test, the enclosures must be disassembled and removed. Following the test, the enclosures need to be reassembled and leak tested in accordance with Appendix J. The additional activities involved with this local observation are time consuming and performed in a Radiation Area. Therefore, the licensee proposes to perform the required local verification in conjunction with preventive maintenance on the valve

motor operators, which is required on a 36-month frequency. The NRC staff finds that more frequent local verification of the valve position indication would result in a hardship without a compensating increase in the level of quality and safety.

The licensee's proposed alternative to verify remote position indication of these valves on a 36-month frequency would provide the Code-required information, but it would be on an extended interval. To supplement a 36-month test, the licensee proposes to verify the closed position indication of the valves by performing a leak test on a refueling outage frequency. The open position would be verified by monitoring results of the quarterly open valve stroke time tests. The proposed leak testing would confirm that the valve is in closed position, which can be used to verify the closed position indication of the valve. The proposed stroke-time tests would confirm that the valve moves from a closed to open position within acceptable stroke time. It would indicate that the valve is in an acceptable open position, which can be used to verify the open position indication of the valve. The staff finds that the proposed alternative provides reasonable assurance of the valve position indication on a refueling frequency. In addition, the 36-month test provides the Code-required local position verification for the affected valves.

3.4.6 Conclusion

Based on the above evaluation, the staff finds acceptable the licensee's proposed alternative to perform the Code required test on a 36-month frequency and verify the remote position indication of the affected valves indirectly by performing leak testing every refueling outage and a stroke-time test quarterly. Pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee's proposed alternative is authorized on the basis that the proposed alternative provides reasonable assurance of remote position indication for the affected valves, and compliance with the specified Code requirements would result in a hardship without a compensating increase in the level of quality and safety. Relief is applicable to the fourth 10-year interval IST program for KNPP, which began on February 16, 2005.

4.0 CONCLUSIONS

Relief requests PRR-01 and VRR-02 are granted pursuant to 10 CFR 50.55a(f)(6)(i) on the basis that compliance with the Code requirements is impractical and the proposed alternative testing will provide reasonable assurance of operational readiness. The staff further concludes that granting these reliefs is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

For relief request PRR-02, the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(i) based on the alternative providing an acceptable level of quality and safety.

For relief request VRR-05, the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(ii) based on the determination that compliance with the specified Code requirements results in hardship without a compensating increase in the level of quality and safety and the proposed alternative provides reasonable assurance of operational readiness.

The above reliefs are applicable to the fourth 10-year interval IST program for KNPP, which began on February 16, 2005.

5.0 REFERENCES

U. S. Code of Federal Regulations, Domestic Licensing of Production and Utilization Facilities," Part 50, Chapter I, Title 10, "Energy," Section 50.55a, Codes and standards.

U. S. Nuclear Regulatory Commission, "Guidance on Developing Acceptable Inservice Testing Programs, " Generic Letter 89-04, through Supplement 1, April 4, 1995.

U. S. Nuclear Regulatory Commission, "Guidance for Inservice Testing at Nuclear Power Plants," NUREG-1482, April 1995.

Letter, T. Coutu, Nuclear Management Company, LLC to NRC, "Inservice Testing Program Fourth Ten-year Interval Update," dated August 16, 2004 (TAC Nos. MC4182, MC4183, MC4184, and MC4185).

Letter, T. Coutu, Nuclear Management Company, LLC to NRC, "Response to Request for Additional Information Related to the Kewaunee Nuclear Power Plant Fourth Ten-year Interval Inservice Testing Program" dated December 22, 2004.

Principal Contributor: G. Bedi

Date: