

March 27, 2001

Mr. Mark Reddemann
Site Vice President
Kewaunee and Point Beach Nuclear Power Plants
Nuclear Management Company, LLC
6610 Nuclear Road
Two Rivers, WI 54241

SUBJECT: KEWAUNEE NUCLEAR POWER PLANT - THIRD 10-YEAR INTERVAL
INSERVICE TESTING PROGRAM REQUESTS FOR RELIEF, IST-RR-30 AND
IST-RR-31 (TAC NO. MB0570)

Dear Mr. Reddemann:

By letter dated November 1, 2000, Nuclear Management Company, LLC (NMC), the licensee for Kewaunee Nuclear Power Plant (KNPP), requested Nuclear Regulatory Commission (NRC) approval of alternative methods of testing to the American Society of Mechanical Engineers (ASME) Code inservice testing (IST) requirements pursuant to the provisions of 10 CFR 50.55a(a)(3)(i). You submitted two requests for relief from ASME Code IST requirements for certain valves at KNPP: (1) IST-RR-30 is a relief request to clarify power operated relief valve (PORV) block valve testing requirements, and (2) IST-RR-31 is a relief request to classify nine relief valves in the component cooling system as having "thermal relief application" as defined in ASME OM Code 1998 Appendix I, and perform testing as specified in the referenced edition of the Code.

The NRC staff has reviewed your requests. The NRC staff concluded that relief request IST-RR-30 does not require that relief be granted since your proposed alternative testing also meets the ASME Code requirements. The NRC staff concluded that relief request IST-RR-31 is authorized pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that it provides an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), the NRC authorizes your proposed alternative to the Code test frequency for the nine Component Cooling system relief valves and it is authorized for the remainder of the third 10-year IST interval.

Further details regarding the NRC staff's evaluation and conclusions are enclosed. This letter completes the NRC staff's effort for this relief request (TAC No. MB0570).

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and the enclosures will be available for public inspection at the NRC's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records are accessible electronically from the ADAMS Public Library component on the NRC Web site <http://www.nrc.gov> (the Electronic Reading Room).

Mr. M. Reddemann

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If you have any questions regarding this matter, please contact me at 301-415-1389.

Sincerely,

/RA/

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

Docket No: 50-305

Enclosure: As stated

cc w/encl: See next page

Mr. M. Reddemann

- 2 -

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* See memo from D. Fischer to C. Craig dated February 23, 2001.

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

THIRD 10-YEAR INTERVAL INSERVICE TESTING PROGRAM PLAN

REQUEST FOR RELIEF IST-RR-30 AND IST-RR-31

KEWAUNEE NUCLEAR POWER PLANT

NUCLEAR MANAGEMENT COMPANY

DOCKET NUMBER 50-305

1.0 INTRODUCTION

By letter dated November 1, 2000, Nuclear Management Company, LLC (NMC), the licensee for Kewaunee Nuclear Power Plant (KNPP), requested the Nuclear Regulatory Commission (NRC) approval of alternative methods of testing to the American Society of Mechanical Engineers (ASME) inservice testing (IST) requirements pursuant to the provisions of 10 CFR 50.55a(a)(3)(i). The licensee submitted two requests for relief from certain ASME Code IST requirements pertaining to testing of certain valves at KNPP: (1) IST-RR-30 is a relief request to clarify power operated relief valve (PORV) block valve testing requirements, and (2) IST-RR-31 is a relief request to classify nine relief valves in the component cooling system as having "thermal relief application" as defined in ASME Operations and Maintenance (OM) Code 1998 Appendix I, and perform testing as specified in the referenced edition of the Code. The KNPP IST program for the third 10-year interval requires that the testing meet the requirements of Part 10 of American National Standards Institute (ANSI)/ASME OM Standard, OM-1987 Edition through the OMa-1988 Addenda, which also references the requirements of OM Part 1-1987 Edition (herein referred to as Part 1).

2.0 BACKGROUND

The Code of Federal Regulations, 10 CFR 50.55a, requires that IST of certain ASME Code Class 1, 2, and 3 pumps and valves be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda, except where relief has been requested and granted or proposed alternatives have been authorized by the Commission pursuant to 10 CFR 50.55a (f)(6)(i), (a)(3)(i), or (a)(3)(ii). In order to obtain authorization or relief, the licensee must demonstrate that: (1) a conformance is impractical for its facility; (2) the proposed alternative provides an acceptable level of quality and safety; or (3) compliance would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety.

ENCLOSURE

3.0 EVALUATION FOR RELIEF REQUEST IST-RR-30

3.1 Code Requirement for IST-RR-30

The licensee has requested relief from the testing required by Paragraph 4.2.1.1 of Part 10 of the OM Code-1987 (the Code) which states that valves shall be exercise tested nominally every three months, except as provided by paragraph 4.2.1.2 of the Code. The licensee requests this relief from testing for the pressurizer PORV block valves which are identified below:

| Valve # | Flow Diagram |
|---------|--------------|
| PR-1A | XK100-10 |
| PR-1B | XK100-10 |

3.2 Licensee's Basis for Request for IST-RR-30

The licensee states that the PORV block valves are normally open when the plant is at power, but the valve(s) could be closed to isolate a leaking PORV. The plant technical specifications (TS) 3.1.a.5.A and Table 4.1-3 allow for this condition and provide an exemption from quarterly testing. Also, the licensee states that the open function of the PORV block valves is to provide an alternate means of Reactor Coolant System (RCS) depressurization when responding to a steam generator tube rupture event and the closed function is to maintain RCS inventory. Further, the licensee states that NUREG-1316 emphasizes the importance of not stroking the PORVs during power operation because of the potential for a PORV to stick open. The licensee states that testing the PORV block valve(s) with an associated leaking PORV should also be considered not practical. The licensee states that it can be inferred from previous regulatory actions with respect to NUREG-0578, NUREG-1316, Generic Issue 70, and Generic Letter 90-06, that exemption from exercise testing requirements exist for the block valve(s) if they are closed to isolate a leaking PORV. The licensee further states that the operability of the block valves is ensured by maintaining power available to the block valves and their inclusion in the Generic Letter 89-10 motor-operated valve (MOV) program.

3.3 Proposed Alternate Testing for IST-RR-30

The licensee proposes to continue testing the PORV block valves on a nominal three-month frequency as required by the Code. If the valves are closed to isolate a leaking PORV, as defined by the plant TS, the licensee proposes to defer testing until the next plant shutdown. This testing would be performed prior to achieving hot standby on the subsequent plant start up.

3.4 Evaluation for IST-RR-30

The staff has reviewed the licensee's request for relief regarding deferral of PORV block valve testing if the valve(s) are closed to isolate a leaking PORV and finds the licensee's request to be acceptable. The staff has determined that maintaining power available to the valve(s) if they are closed to isolate a leaking PORV and including them in the MOV program provides reasonable assurance that the isolated block valve(s) would perform their safety functions. The plant TS currently allow for the proposed alternate testing, and the staff has determined

that testing the block valve(s) when a PORV is leaking may be considered to be not practical under these conditions.

Paragraph 4.2.1.2 of the Code states that if exercise testing of valves is not practical during plant operation, the testing may be performed during plant shutdown conditions. The licensee's proposed testing meets this requirement.

3.5 Conclusion for IST-RR-30

The staff finds the licensee's alternate method of testing to be acceptable for the remainder of the third 10-year IST interval, and, since the provisions of paragraph 4.2.1.2 of the Code would be met, the staff has determined that no relief from the requirements of 10 CFR 50.55a is necessary.

4.0 EVALUATION FOR RELIEF REQUEST IST-RR-31

4.1 Code Requirement for IST-RR-31

The licensee has requested relief from the testing required by Paragraph 1.3.4 of Part 1 of the Code, which states that 20 percent of the valves of each type and manufacture shall be tested within any 48 months. The Code further states that this 20 percent shall be previously untested valves if they exist. The licensee requests this relief from testing for the following relief valves in the Component Cooling System.

| Valve # | Flow Diagram |
|----------|--------------|
| CC-201 | X-K100-19 |
| CC-301 | X-K100-19 |
| CC-401A | X-K100-19 |
| CC-401B | X-K100-19 |
| CC-501 | X-K100-20 |
| CC-803 | X-K100-20 |
| CC-907 | X-K100-20 |
| CC-1003A | X-K100-20 |
| CC-1003B | X-K100-20 |

4.2 Licensee's Basis for Request for IST-RR-31

The licensee states the following:

"OM Code 1998 Appendix I defines a thermal relief application as "a relief device whose only overpressure protection function is to protect isolated components, systems, or portions of systems from fluid expansion caused by changes in fluid temperature." These nine Code Class 3 valves can be classified as thermal reliefs in that they are installed on heat exchangers and discharge to the downstream side of the heat exchanger isolation valves. Therefore, they do not provide any system overpressure protection and only protect the heat exchanger when the isolation valves are closed. Additionally, these valves are located in the Component Cooling system such that removal for testing requires a complete system shutdown. This, in turn, requires a full core off load. Therefore, based on the current 18-month refueling frequency, a

full core off load would be required every other outage to meet the 20 percent tested within any 48-month requirement.”

4.3 Proposed Alternate Testing for IST-RR-31

The licensee proposes to test the above nine Component Cooling system relief valves in accordance with ASME OM Code 1998 Appendix I, paragraph I-1390, and Code Case OMN-2, “Thermal Relief Valve Code Case, OM Code-1995, Appendix I.” This would require that the valves be tested or replaced once every 10 years, unless performance data indicates more frequent testing or replacement is necessary.

4.4 Evaluation for IST-RR-31

Prior to reviewing the licensee’s relief request, the staff has reviewed activities of the ASME Code committee responsible for the development of this Code Case OMN-2. In making their determination to reduce the testing requirements for thermal relief valves, the Code committee evaluated the Nuclear Plant Reliability Data System (NPRDS) database to assess the quantity and type of thermal relief valve failures. The Code committee concluded that the low number of failures found supports the 10-year test or replacement frequency and the elimination of sample expansion if the failures are discovered during testing. To evaluate the acceptability of applying this Code Case to Part 1, as opposed to OM Code-1995, Appendix I (the Code edition which the Code Case was intended for), the staff compared the requirements of both Code editions. Thermal relief valves currently fall within the requirements of Class 2 and 3 relief valves of both Code editions. They are not separately defined in either Code edition. The OM Code-1995, Appendix I, requirements represent a relaxation of the Part 1 requirements in the following areas: (1) elimination of the specific testing schedule for relief valves in the first ten-year interval; and (2) elimination of the requirement to repair or replace all valves which exceed their stamp set pressure by 3 percent or greater. The remaining requirements between the two codes are technically identical. No related requirements have been identified in OM Code-1995, Appendix I, that are not included in Part 1. Therefore, there does not appear to be any conflict in applying Code Case OMN-2 to the Part 1 requirements for the above stated Component Cooling system valves. On this basis, the staff finds that the licensee’s alternate testing provides an acceptable level of quality and safety.

4.5 Conclusion for IST-RR-31

The proposed alternative to the Code test frequency for the above listed nine Component Cooling system relief valves is authorized for the remainder of the third 10-year IST interval pursuant to 10 CFR 50.55a(a)(3)(i) based on the alternative providing an acceptable level of quality and safety.

Principal Contributor: G. Hammer

Dated: March 27, 2001