



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

November 30, 2000

Mr. Michael F. Hammer
Site General Manager
Monticello Nuclear Generating Plant
Nuclear Management Company, LLC
2807 West County Road 75
Monticello, MN 55362-9637

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT - ISSUANCE OF AMENDMENT
RE: SAFETY/RELIEF VALVE BELLOWS LEAK DETECTION SYSTEM TEST
FREQUENCY (TAC NO. MA8951)

Dear Mr. Hammer:

The Commission has issued the enclosed Amendment No. 114 to Facility Operating License No. DPR-22 for the Monticello Nuclear Generating Plant. The amendment consists of changes to the Technical Specifications (TSs) in response to the application dated May 12, 2000.

The amendment revises the TS 4.6.E.1.d safety/relief valve bellows monitoring system test frequency from quarterly to once per operating cycle.

A copy of our related safety evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

Carl F. Lyon, Project Manager, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-263

Enclosures: 1. Amendment No. 114 to DPR-22
2. Safety Evaluation

cc w/encls: See next page

U1RR-058

November 30, 2000

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NAME	FLyon	RBouling	DTerao	RDennig	K. Dennis	CCraig
DATE	10/20/00	10/20/00	10/11/00	11/2/00	11/20/00	11/28/00

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Monticello Nuclear Generating Plant

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October 2000



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

NUCLEAR MANAGEMENT COMPANY, LLC

DOCKET NO. 50-263

MONTICELLO NUCLEAR GENERATING PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 114
License No. DPR-22

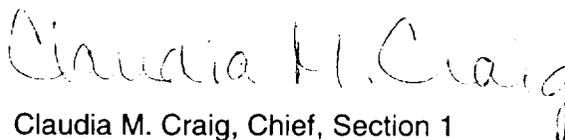
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the licensee, dated May 12, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 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; and
 - 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 this license amendment, and paragraph 2.C.2 of Facility Operating License No. DPR-22 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 114 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 45 days.

FOR THE NUCLEAR REGULATORY COMMISSION



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

Attachment: Changes to the Technical Specifications

Date of Issuance: November 30, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 114

FACILITY OPERATING LICENSE NO. DPR-22

DOCKET NO. 50-263

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE

127
151

INSERT

127
151

3.0 LIMITING CONDITIONS FOR OPERATION

E. Safety/Relief Valves

1. During power operating conditions and whenever reactor coolant pressure is greater than 110 psig and temperature is greater than 345°F the safety valve function (self actuation) of seven safety/relief valves shall be operable (note: Low-Low Set and ADS requirements are located in Specification 3.2.H. and 3.5.A, respectively).
2. If Specification 3.6.E.1 is not met, initiate an orderly shutdown and have reactor coolant pressure and temperature reduced to 110 psig or less and 345°F or less within 24 hours.

4.0 SURVEILLANCE REQUIREMENTS

E. Safety/Relief Valves

1.
 - a. Safety/relief valves shall be tested or replaced each refueling outage pursuant to Specification 4.15.B. The nominal self-actuation setpoints are specified in Section 2.4.B.
 - b. At least two of the safety/relief valves shall be disassembled and inspected each refueling outage.
 - c. The integrity of the safety/relief valve bellows shall be continuously monitored.
 - d. The operability of the bellows monitoring system shall be demonstrated each operating cycle.
2. Low-Low Set Logic surveillance shall be performed in accordance with Table 4.2.1.

Bases 3.6/4.6 (Continued):

The safety/relief valves have two functions; 1) over-pressure relief (self-actuation by high pressure), and 2) Depressurization/Pressure Control (using air actuators to open the valves via ADS, Low-Low Set system, or manual operation). The Low-Low Set and ADS functions are discussed further in Sections 3.2 and 3.5.

The safety function is performed by the same safety/relief valve with self-actuated integral bellows and pilot valve causing main valve operation. Article 9, Section N-911.4(a)(4) of the ASME Pressure Vessel Code Section III Nuclear Vessels (1965 and 1968 editions) requires that these bellows be monitored for failure since this would defeat the safety function of the safety/relief valve.

Provision also has been made to detect failure of the bellows monitoring system. Testing of this system once per cycle provides assurance of bellows integrity.

When the setpoint is being bench checked, it is prudent to disassemble one of the safety/relief valves to examine for crud buildup, bending of certain actuator members or other signs of possible deterioration.

Low-Low Set Logic has been provided on three non-Automatic Pressure Relief System valves. This logic is discussed in detail in the Section 3.2 Bases. This logic, through pressure sensing instrumentation, reduces the opening setpoint and increases the blowdown range of the three selected valves following a scram to eliminate the discharge line water leg clearing loads resulting from multiple valve openings.

I. Deleted



UNITED STATES
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 114 TO FACILITY OPERATING LICENSE NO. DPR-22

NUCLEAR MANAGEMENT COMPANY, LLC
MONTICELLO NUCLEAR GENERATING PLANT

DOCKET NO. 50-263

1.0 INTRODUCTION

By application dated May 12, 2000, the licensee requested changes to the Technical Specifications (TSs) for Monticello Nuclear Generating Plant. The proposed amendment would revise the TS Section 4.6.E.1.d safety/relief valve (SRV) bellows leakage detection system (BLDS) test frequency from quarterly to once per operating cycle.

2.0 EVALUATION

2.1 Background

Monticello is a boiling-water reactor (BWR) whose reactor coolant system is protected from overpressure by eight three-stage Target Rock SRVs. Each of the SRV self-actuating setpoints is controlled by a pilot valve stage that includes a bellows. As system pressure is increased, the bellows expands and, at the SRV setpoint, actuates the pilot valve which results in opening of the main stage of the SRV. In the event a leak develops in the bellows, the SRV setpoint could be adversely affected by pressurizing the outside of the bellows. To detect bellows leakage, the BLDS incorporates a pressure sensor on each SRV that continuously monitors buildup of pressure outside the bellows.

Current TS 4.6.E.1.d requires that the BLDS be demonstrated operable at least every three months. To meet the current quarterly surveillance requirement, the BLDS on each SRV is equipped with three solenoid valves which permit the BLDS to be remotely pressurized with nitrogen during plant operation. This testing pressurizes the space around the bellows and checks that the BLDS pressure switch properly actuates and verifies proper operation of the associated annunciator circuitry.

2.2 Licensee's Basis for Proposed Change

The licensee states that on two occasions, leaking or failed solenoids caused nitrogen to inadvertently pressurize the area around the bellows of the SRVs, resulting in the inoperability of their self-actuating function. One of these events required a plant shutdown because two SRVs became inoperable. The licensee states that reducing the required testing of the BLDS to once per cycle would permit removal of the solenoid valves and nitrogen inertie. The licensee states that this would potentially improve system reliability by removing a failure path in the BLDS.

The licensee states that based on a survey of other BWRs which have three-stage SRVs, the BLDSs at the other plants consist only of a pressure sensor with no solenoid valves or external pressurization source. The licensee states that at all of these plants, surveillance testing of the BLDS is only required once per operating cycle.

The licensee also states that the BLDS is very reliable. The licensee states that since 1977 and after 704 BLDS quarterly tests, there has been no failure of a pressure sensor. There have been five occurrences of the annunciator failing to alarm during testing, but these failures were caused by solenoid valve failure or by tests being performed prior to completion of maintenance activities or in conjunction with other post maintenance testing. The licensee also states that there have been two actual bellows leaks that have occurred, and both were detected by the BLDS. The licensee states that the leaks were small and did not adversely affect the operation of the SRV.

2.3 Evaluation of the Proposed Change

The fact that there have been two actual bellows leaks at Monticello indicates a relatively frequent occurrence of leakage of the bellows and emphasizes the importance of the BLDS safety function. While the two leaks experienced were not large enough to affect proper SRV operation at the time the leaks were discovered, it is also known that erosion of the bellows material at a leaking flaw can quickly increase the amount of leakage which could occur later in time. However, based on the prior tests and operating experience for the BLDS which show that no pressure sensor has ever failed, the licensee has demonstrated that the system is sufficiently reliable such that decreasing the surveillance frequency to once per operating cycle is acceptable. In reviewing the BLDS test experience, the staff notes that the five occurrences of the annunciator failing to alarm during testing resulted in the identification of the failed solenoid valve, in the identification of the maintenance activity which had not been completed, or in identification of the post maintenance activity involved. This leads to the potential concern that other components or maintenance activities could result in not detecting a failure of a pressure sensor. However, the staff finds that the undetected failure of a pressure sensor during testing is not likely, even when such adverse interactions occur, since the failure of the annunciator to alarm would indicate that a problem exists either with the sensor or with another component of activity. Further, the staff agrees with the licensee that leakage or failure of the solenoid valves and inadvertent pressurization of the BLDS pressure sensors with nitrogen is undesirable in that it incorrectly indicates failure of the SRV bellows. Therefore, based on a review of the information provided by the licensee, the staff finds that the proposed change to the plant TS to decrease the surveillance frequency from quarterly to once each operating cycle is acceptable.

The licensee also proposes to revise the Bases for TS Section 4.6 to clarify the American Society of Mechanical Engineers Pressure Vessel Code section and edition that are applicable to the BLDS at Monticello. The clarification to the Bases avoids confusion regarding the applicable code. The staff does not object to the licensee's proposed Bases change.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Minnesota State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a surveillance requirement. 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 (65 *FR* 39959). 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 reviewed the proposed amendment to the plant TS regarding reducing the surveillance of the BLDS from quarterly to once per operating cycle. Based on its review, the staff finds that the proposed change provides adequate assurance of proper operation of the BLDS to perform its safety function. Therefore, the proposed amendment is acceptable.

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: C. Hammer

Date: November 30, 2000