Docket No. 50-305

APR 3 1974

Wisconsin Public Service Corporation
ATTN: Mr. E. W. James
Senior Vice President
P. O. Box 1200
Green Bay, Wisconsin 54305

Change No. 1
License No. DPR-43

Gentlemen:

Reference is made to your letter to Mr. O'Leary dated March 15, 1974, submitting a request for change to the Technical Specifications for the Kewaunee Nuclear Power Plant.

The staff has evaluated the proposed change and has concluded that it does not involve significant hazards considerations and that there is reasonable assurance that the health and safety of the public will not be endangered. A copy of the staff evaluation of the proposed change is enclosed.

Accordingly, your request for change to the Technical Specifications for Kewaunee is approved. Copies of replacement pages TS 3.3-2, TS 3.3-3, and TS 3.3-8, implementing this change are enclosed.

Sincerely,

Voss A. Moore, Assistant Director
for Light Water Reactors, Group 2
Directorate of Licensing

Enclosures:
As stated

ccs: See page 2

cIP LB

OFFICE	LWR 1-2	LWR 2-2	RO	AD/LWR-2		
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DATE	3/28/74	4/1/74	4/2/74	4/3/74		

Form AEC-318 (Rev. 9-53) AECM 0240 GPO C43 16 81465-1 520-264

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ACRS 16

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UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

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UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

April 3, 1974

Docket No. 50-305
License No. DPR-43

SAFETY EVALUATION OF PROPOSED TECHNICAL SPECIFICATIONS CHANGE -
KEWAUNEE NUCLEAR POWER PLANT

Introduction

The safety injection system for the Kewaunee Nuclear Power Plant is designed so that upon receipt of a safety injection signal, the high head safety injection pumps initially pump concentrated boric acid from either of two boric acid tanks to the cold legs of the reactor coolant loops. When the fluid in the selected boric acid tank reaches a low-low level, a signal from a level sensor causes block valves between the boric acid tanks and the suction side of the safety injection pumps to close and block valves between the refueling water storage tank and the suction side of the safety injection pumps to open, such that a continuing supply of emergency cooling water is available to the pumps.

Technical Specification 4.5.b.2.E requires that, "Closing of the boric acid tank isolation valves and concurrent opening of refueling water storage tank valves upon receipt of simulated Lo Lo boric acid tank level signal shall be tested at intervals not to exceed once every month during power operation."

Problem and Proposed Solution

The licensee has observed that during the monthly tests of the block valves in the lines to the suction side of the safety injection pumps, during the time that the boric acid tank block valves are closing and the refueling water storage tank valves are opening, dilution or loss of the concentrated boric acid occurs depending upon the water level in the refueling water storage tank. To avoid this problem, the licensee proposes that use of an additional, manual block valve, already installed in the line from each boric acid tank, be permitted during the test periods to isolate the tanks and preclude flow to or from the tanks. During the test period when the manual valve is closed, an operator would stand by the valve, in constant communication with the control room, prepared to open the valve if safety injection should be required. Upon completion of the test, the operator would reopen the valve, verify that it is returned to the open position and this would be checked by one additional person. This operation would be covered by an additional Technical Specification 3.3.A.1.H, as submitted as an enclosure to a letter from the licensee dated March 15, 1974.

Evaluation

The problem observed during valve testing would not occur during an actual safety injection since the boric acid tank would be drained to a low-low level prior to change of valve positions. Further, since the contents of the boric acid tank and the coolant from the refueling water storage tank are pumped into the reactor vessel during safety injection, such minor dilution as might occur would have no safety significance.

The manual valves in question are numbered 8815A and 8815B on Figure 6.2-2 of the FSAR. These valves can isolate Boric Acid Tanks A and B, respectively, from the common header equipped with the motor operated block valves. Under normal plant operating conditions, one of these valves is closed such that either tank A or tank B is lined up with the suction piping to the safety injection pumps. The licensee proposes to close the remaining valve during the test periods while the motor operated valves are being cycled.

The total period of each test, during which the boric acid tank would be isolated is estimated to be approximately five minutes. This will allow a simulated low-low level signal to be applied to the control circuitry of the motor operated valves and provide time for the valves to complete their cycle. Opening of the manual valve, should such be required for actual safety injection, would require no more than a few seconds. The valves are located in positions that are easily accessible to the operator from the operating floor.

Our evaluation of the licensee's proposal is that it is of minor safety significance. While the boric acid flow to the safety injection pumps would be blocked during the short test period, the presence of an operator standing by the manual valve, in constant communication with the control room, would assure that the valve could be opened and boric acid flow restored at any time should safety injection be required. The check by the operator with independent verification by one additional person will assure that the valve is returned to the open position following the test. Further, we note that the control room operator will have confirmation of valve open position by light indication on the control board.

On the basis of our review of the proposed change in the Technical Specifications, we conclude that it does not involve significant hazards considerations and that there is reasonable assurance that health and safety

of the public will not be endangered. The change will allow required periodic testing of the motor operated block valves and associated circuitry without degradation of the boric acid storage volume.

L. P. Crocker, Senior Project Manager
Light Water Reactors Branch 2-2
Directorate of Licensing

Karl Kniel, Chief
Light Water Reactors Branch 2-2
Directorate of Licensing

E. TWO residual heat exchangers are operable.

F. Isolation valves 8806A, 8801A and 8801B in the discharge header of the high head SIS and the block valve 8809C are in the open position with their power breaker locked out.

G. Automatic valves, instrumentation, piping, and interlocks associated with the above components and required to function during accident and post-accident functions.

H. During the Monthly Valve Operation Surveillance Testing of the Safety Injection System it is permissible to close the hand operated valve isolating the Concentrated Boric Acid Tanks from the Safety Injection Pump Suction. During this short test period an operator shall stand by the valve to open it if Safety Injection is required. He will have headset communication with the Control Room. At completion of the test he will verify the valve is returned to open, and this will be checked by at least one additional person.

2. During power operation or recovery from inadvertent trip, any one of the following conditions of inoperability may exist during the time intervals specified. The reactor shall be placed in the hot shutdown condition if operability is not restored within the time specified, and it shall be placed in the cold shutdown condition if operability is not restored within an additional 48 hours.

A. ONE safety injection pump may be out of service, provided the pump is restored to operable status within 24 hours. The other safety injection pump shall be tested to demonstrate operability prior to initiating repair of the inoperable pump.

B. ONE residual heat removal pump may be out of service, provided the pump is restored to operable status within 24 hours. The other residual heat removal pump shall be tested to demonstrate operability prior to initiating repair of the inoperable pump.

C. ONE residual heat exchanger may be out of service for a period of no more than 48 hours.

D. Any va_ in the system, required to fu_ion during accident conditions, may be inoperable for a period not to exceed 24 hours, provided all valves in the system that provide the duplicate function are tested to demonstrate operability.

E. ONE accumulator may be out of service for a period of 1 hour.

F. Instrumentation for the above may be out of service for 48 hours, after which time the reactor shall be placed in hot shutdown.

b. Containment Cooling Systems

1. The reactor shall not be made critical unless the following conditions are satisfied, except for low-power physics tests and except as provided by Specification 3.3.b.2.

A. The spray additive tank contains not less than 300 gallons of not less than 30% by weight of NaOH solution.

B. TWO containment spray pumps are operable.

C. FOUR fan-coil units are operable.

D. All valves, piping, and instrumentation associated with the above components and required to function during accident conditions are operable.

2. During power operation or recovery from inadvertent trip, any one of the following conditions of inoperability may exist during the time intervals specified. The reactor shall be placed in the hot shutdown condition if operability is not restored within the time specified, and it shall be placed in the cold shutdown condition if operability is not restored within an additional 48 hours.

A. ONE fan-coil unit may be out of service for a period not to exceed 7 days.

B. ONE containment spray pump and/or its flow path may be out of service for a period not to exceed 48 hours provided the remaining containment spray pump and its flow path are operable, prior to initiating maintenance and provided three fan-coil units are demonstrated to be operable.

Failure to complete repairs within 48 hours after placing the reactor in the hot shutdown condition is considered indicative of need for major maintenance, and in such case the reactor would therefore be placed in the cold shutdown condition.

The accumulator and refueling water tank conditions specified are consistent with those assumed in the LOCA analysis.(2)

The containment cooling function is provided by two independent systems: fan-coil units and containment sprays. During normal operation, only three of the four fan-coil units are required to remove heat lost from equipment and piping within the containment.(3) In the event of the Design Basis Accident, any one of the following combinations will provide sufficient cooling to reduce containment pressure: four fan-coil units, two containment spray pumps, or two fan-coil units plus one containment spray pump.(4)

One component cooling water pump together with one component cooling heat exchanger can accommodate the heat removal load either following a loss-of-coolant accident, or during normal plant shutdown. If, during the post-accident phase, the component cooling water supply were lost, core and containment cooling could be maintained until repairs were effected.(5)

A total of four service water pumps are installed, and a minimum of two are required to operate during the postulated loss-of-coolant accident.(6)

The closure of the hand operated valve for a brief period of time during the surveillance testing of the automatic valves in the safety injection system will prevent dilution of the concentrated boric acid or loss of concentrated boric acid to the refueling water storage tank.

References

(1) FSAR Section 3.2
(2) FSAR Section 14.3
(3) FSAR Section 6.3
(4) FSAR Section 6.4
(5) FSAR Section 9.3
(6) FSAR Section 9.6