A001

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Forwards copies of proposed Amend#35 to subj facil Tech Specs. Proposed change responds to NRC request dtd 780828 re Overpressure Protection Tech Specs on mods installed in subj facil w/check for $4,000.

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WISCONSIN PUBLIC SERVICE CORPORATION Public Service

P.O. Box 1200, Green Bay, Wisconsin 54305

October 24, 1978

Division of Operating Reactors
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

ATTN: Mr. A. Schwencer, Chief
Operating Reactors Branch #1

Gentlemen:

Ref: Docket 50-305
Operating License DPR-43
Proposed Technical Specification Amendment No. 35
Reactor Coolant System Overpressure Protection

Please find enclosed forty (40) copies of proposed Amendment No. 35 to the Kewaunee Nuclear Power Plant Technical Specifications.

The proposed change is in response to your August 28, 1978, letter requesting Overpressure Protection Technical Specifications on the modifications installed in the Kewaunee Plant. In two separate submittals from E. W. James to A. Schwencer dated January 30, 1978, and June 23, 1978, we described the proposed overpressure relief valve on the RHR system and other necessary changes we would incorporate to provide overpressure protection at the Kewaunee Plant. The attached Technical Specifications define the conditions under which the relief valve must be operable and the basis reiterates the protection provided by the relief valve.

A001 S 3/40 w/CHECK $4,000.00

7810270139

Also, please find attached a check to the sum of $4000.00 to cover the fee associated with the processing of this Technical Specification Change which we have evaluated to be a Class III Amendment, since only one Technical issue is involved.

Very truly yours,

E. W. James
Senior Vice President
Power Supply & Engineering

EWJ/cmn

Attachments.

Subscribed and Sworn to
Before Me This 24TH Day of
October 1978

Notary Public, State of Wisconsin

My Commission Expires

9-13-79

3. Pressurizer Safety Valves

A. At least one pressurizer safety valve shall be operable whenever the reactor head is on the reactor pressure vessel, except for a hydro test of the RCS the pressurizer safety valves may be blanked provided the power operated relief valves are set for test pressure plus 35 psi and the charging pump has a safety valve to protect the system.

B. Both pressurizer safety valves shall be operable whenever the reactor is critical.

4. Overpressure Protection System for Low Temperature Operation

Whenever the Reactor Coolant System average temperature is $\leq 342^{\circ}F$ and the reactor vessel head is installed at least one of the following conditions shall be satisfied:

A. The overpressure relief valve on the RHR System (RHR 33-1) for low temperature overpressure protection shall be aligned to the Reactor Coolant System with a nominal setpoint $\leq$ 505 psig. 35

1. Alignment to the Reactor Coolant System shall be by maintaining valves RHR 1A, 1B, 2A and 2B open. If any of these valves are closed the valves in the other parallel flow path shall be opened and the motor breaker locked in the off position.

B. A vent shall be provided with an effective flow cross section ≥ 6.4 in^2. The vent, if employed, must be administratively controlled and identified as being subject to such control. 35

Basis

When the boron concentration of the Reactor Coolant System is to be reduced, the process must be uniform to prevent sudden reactivity changes in the reactor. Mixing of the reactor coolant will be sufficient to maintain a uniform boron concentration if at least one reactor coolant pump or one residual heat removal pump is running while the change is taking place. The residual heat removal pump will circulate the equivalent of the primary system volume in approximately one-half hour.

Part 1 of the specification requires that both reactor coolant pumps be operating when the reactor is in power operation to provide core cooling in the event that a loss of flow occurs. Planned power operation with one loop out of service is not allowed in the present design because the system does not meet the single failure (locked rotor) criteria requirement for this mode of operation. The flow provided in each case in Part 1 will keep DNBR well above 1.30. Therefore, cladding damage and release of fission products to the reactor coolant will not occur. One pump operation is not permitted for any length of time except for tests. Upon loss of one pump below 10% full power the core power shall be reduced to a level below the maximum power determined for zero power testing. Natural circulation will remove decay heat up to 10% power. Above 10% power, an automatic reactor trip will occur if flow from either pump is lost.[1]

Each of the pressurizer safety valves is designed to relieve 325,000 lbs per hour of saturated steam at set point. Below 350°F and 350 psig, the Residual Heat Removal System can remove decay heat and thereby control system temperature and pressure. If no residual heat were removed by any of the means available, the amount of steam which could be generated at safety valve relief pressure would be less than half the valves' capacity. One valve, therefore, provides adequate protection against over-pressurization.

The overpressure protection system for low temperature operation in accordance with 10CFR50 Appendix G analysis is an installed relief valve on the RHR system suction. Two parallel paths are available from the Reactor Coolant System to the relief valve. The controls associated with the isolation valves in each flow path from the Reactor Coolant System are designed such that no single event would disable the relief valve. Annunciation within the control room is provided to indicate to the operators a mis-alignment of any isolation valve. This annunciation system provides continuous monitoring of the proper alignment of the overpressure relief system. 35

In the event that the relief valve is inoperable for any reason, comparable protection will be provided in the form of an administratively controlled vent of at least equal cross sectional flow area to the relief valve. Normal administrative control in the form of tagging the vent and associated valves, if included in the vent path, will assure existance of overpressure protection.

References:

(1) FSAR Section 7.2.2

2. Valves

A. The Refueling Water Storage Tank and containment sump outlet valves shall be tested in performing the pump tests.

B. The accumulator check valves shall be checked for operability during each major refueling outage. The accumulator block valves shall be checked to assure "valve open" requirements during each major refueling outage.

C. The boric acid tank isolation valves to the safety injection pumps shall be tested at intervals not to exceed once every month during power operation.

D. Spray additive tank valves shall be tested during each major refueling outage.

E. 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.

F. Residual Heat Removal System valve interlocks shall be tested during each major refueling outage.

G. The overpressure relief valve (RHR 33-1) setpoint shall be
varified to be properly adjusted at alternate refueling 35
intervals not to exceed 30 months.

Basis

The Safety Injection System and the Containment Vessel Internal Spray System are principal plant safety systems that are normally inoperative during reactor operation. Complete systems tests cannot be performed when the reactor is operating because a safety injection signal causes containment isolation and a Containment Vessel Internal Spray System test requires the system to be temporarily disabled. The method of assuring operability of these systems is, therefore, to combine system tests to be performed during refueling shutdowns with more frequent component tests, which can be performed during reactor operation.

The systems tests demonstrate proper automatic operation of the Safety Injection and Containment Vessel Internal Spray Systems. With the pumps blocked from starting, a test signal is applied to initiate automatic action and verification is made that the components receive the safety injection signal in the proper sequence. The test demonstrates the operation of the valves, pump circuit breakers, and automatic circuitry.[1]

During reactor operation, the instrumentation which is depended upon to initiate safety injection and containment spray is checked daily and the initiating and logic circuits are tested monthly (in accordance with Specification 4.1). In addition, the active components (pumps and valves) are to be tested monthly to check the operation of the starting circuits and to verify that the pumps are in satisfactory running order. The test interval of one month is based on the judgment that more frequent testing would not significantly increase the reliability (i.e., the probability that the component would operate when required), yet more frequent testing would result in increased wear over a long period of time.

Testing of the closure of the boric acid tank isolation valves with concurrent opening of the refueling water storage tank valves upon receipt of simulated Lo Lo boric acid tank level signal is performed to verify proper operation to prevent inadvertent spillage of refueling water storage tank water through the boric acid tank should the isolation valves fail to close.

Other systems that are also important to the emergency cooling function are the accumulators, the Component Cooling System, the Service Water System, and the containment fan-coil units. The accumulators are a passive safety feature. In accordance with Specification 4.1, the water volume and pressure in the accumulators are checked each shift. The other systems mentioned operate when the reactor is in operation and by these means are continuously monitored for satisfactory performance.

The overpressure relief valve for low temperature protection in accordance with 10CFR50 Appendix G analysis limits is a passive component which will provide relief in the event of a mass input to the Reactor Coolant System
or a large temperature transient. The setpoint for valve setting is 35
specified in TS 3.1.a.4. The setpoint includes consideration for setpoint drift, repeatability, and instrumentation error throughout its surveillance period. Actual setpoint as measured during the surveillance verification is required to be below the upper limit of setpoint plus assumed errors associated with the valve setpoint adjustment addressed in the June 23, 1978, letter in regards to setpoint evaluation.

<u>References:</u>

(1) FSAR Section 6.2