



UNITED STATES
NUCLEAR REGULATORY COMMISSION
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Docket Nos 50-266
and 50-301

Mr. Sol Burstein
Executive Vice President
Wisconsin Electric Power Company
231 West Michigan Street
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Dear Mr. Burstein:

A recent review of the Point Beach Nuclear Plant Unit 1 and 2 Technical Specifications has uncovered what the NRC staff feels are deficiencies regarding containment cooling system operability.

Section 6.3.1 of the Point Beach Final Facility Description and Safety Analysis Report (FFDSAR) defines the minimum allowable containment cooling capability for accident conditions as follows:

"Any of the following combinations of equipment will provide sufficient heat removal capability to maintain the post-accident containment pressure below the design value, assuming that the core residual heat is released to the containment as steam.

- 1) All four containment cooling units.
- 2) Both containment spray pumps.
- 3) Two of the four containment cooling units and one containment spray pump.

Portions of other systems which share functions and become part of this containment cooling system when required are designed to meet the criteria of this section. Neither a single active component failure in such systems during the injection phase nor an active or passive failure during the recirculation phase will degrade the heat removal capability of containment cooling."

Section 14.3.4 of FFDSAR establishes the basis for the minimum operability of the containment cooling system as follows:

"The containment cooling system capability assumed in the analysis was one of two available containment spray pumps and two of four available containment fan coolers. This is the minimum equipment available considering the single failure criterion in the emergency power system, the spray system, and the fan cooler system."

The basis for Technical Specification 15.3.3 reiterates these minimum operability requirements plus establishes the minimum conditions for containment cooling during normal operation as follows:

"The containment cooling function is provided by two independent systems: (a) fan-coolers and (b) containment spray which, with sodium hydroxide addition, provides the iodine removal function. During normal power operation, only three of the four fan-coolers are required to remove heat lost from equipment and piping within the containment. (3) In the event of a Design Basis Accident, any one of the following combinations will provide sufficient cooling to reduce containment pressure: (1) four fan-coolers, (2) two containment spray pumps, (3) two fan-coolers plus one containment spray pump. (4) Sodium Hydroxide addition via one spray pump reduces airborne iodine activity sufficiently to limit off-site doses to acceptable values. One of the four fan coolers is permitted to be inoperable when the reactor is made critical and during power operation."

However, Technical Specification 15.3.3.B reads as follows:

1. A reactor shall not be made critical, except for low temperature physics tests, unless the following conditions associated with that reactor are met.
 - a. The spray additive tank contains not less than 2675 gal. of solution with a sodium hydroxide concentration of not less than 30% by weight.
 - b. Two containment spray pumps are operable.
 - c. Three fan cooler units are operable.
 - d. All valves and piping, associated with the above components and required to function during accident conditions, are operable.
2. During power operation, the requirements of 15.3.3.B-1 may be modified to allow any one of the following components to be inoperable at any one time. If the system is not restored to meet the requirements of 15.3.3.B-1 within the time period specified, the reactor shall be placed in the hot shutdown condition. If the requirements of 15.3.3.B-1 are not satisfied within an additional 48 hours, the reactor shall be placed in the cold shutdown condition.
 - a. One additional fan cooler may be out of service, or
 - b. One containment spray pump may be out of service provided the pump is restored to operable status within 48 hours. The remaining containment spray pump shall be tested to demonstrate operability before initiating maintenance on the inoperable pump and shall be tested once every 24 hours thereafter, until both pumps are in an operable status or the reactor is shutdown, or

- c. Any valve required for the functioning of the system during accident conditions may be inoperable provided repairs are completed with 24 hours. Prior to initiating repairs, all valves in the system that provide the duplicate function shall be tested to demonstrate operability. (Exception: If a spray pump is removed from service per b above, valves associated with that train may be removed from service for the period specified for the pump.)

Several problems are evident with respect to this Technical Specification. The first problem is that only three fan-coolers are required to be operable during normal operation. As the fans are divided into two sets of two fans, one set receiving power from the "A" train 480 v safeguards bus and the other set receiving power from the "B" train 480 v safeguards bus, loss of normal and emergency power to one bus, a credible event under accident conditions, could result in having only one spray pump and one fan-cooler operable. This is less than considered in both the FFDSAR and the basis for Technical Specification 15.3.3.

The second problem is that the specification allows a second fan cooler to be removed from service for an indefinite period of time with no corresponding action statement. As the specification places no restrictions on which fan-coolers are taken out of service, it is conceivable that, under accident conditions, no fan-coolers would be available.

The third problem with the specification is that testing of redundant fan coolers is not required either as a prerequisite for taking a second cooler out of service or to periodically demonstrate continued system operability.

Technical Specification 15.4.5.I.C states, "Each fan-cooler unit shall be tested at each refueling to verify proper operation of the backdraft dampers and the service water bypass valves." Thus, the fan units need be tested only at approximately annual intervals. Continual operation of the fan units is not adequate to demonstrate accident fan cooler operability because of fan-cooler design. Each unit contains two fans, one for normal cooling and one for accident cooling. In the event of an accident, the normal fan is tripped, a backdraft damper separating the two fans is activated to prevent short circuiting unit air flow, and the accident fan starts if not already running. Because of the system lineup changes required in the event of an accident, continued normal power operation of the fan coolers does not guarantee accident operability. Thus, the Technical Specification does nothing to ensure system operability when in a degraded mode.

Technical Specifications 15.3.3 and 15.4.5 should be modified to correct these problems. The following is provided as one possible replacement specification for 15.3.3. Marginal bars are provided to indicate the suggested changes.

B. Containment Cooling and Iodine Removal Systems

1. A reactor shall not be made critical, except for low temperature physics tests, unless the following conditions associated with that reactor are met:

- a. The spray additive tank contains not less than 2675 gal. of solution with a sodium hydroxide concentration of not less than 30% by weight.
 - b. Two containment spray pumps are operable.
 - c. Four fan-cooler units are operable.
 - d. All valves and piping, associated with the above components and required to function during accident conditions, are operable.
2. During power operation, the requirements of 15.3.3.B-1 may be modified to allow any one of the following components to be inoperable at any one time. If the system is not restored to meet the requirements of 15.3.3.B-1 within the time period specified, the reactor shall be placed in the hot shutdown condition. If the requirements of 15.3.3.B-1 are not satisfied within an additional 48 hours, the reactor shall be placed in the cold shutdown condition.
- a. One fan-cooler may be out of service, provided that cooler is returned to operable status within 48 hours. The remaining fan-coolers shall be tested to demonstrate operability before initiating maintenance on the inoperable fan-cooler and shall be tested once every 24 hours thereafter until all fan coolers are in an operable status or the reactor is shutdown, or
 - b. One containment spray pump may be out of service provided the pump is restored to operable status within 48 hours. The remaining containment spray pump shall be tested to demonstrate operability before initiating maintenance on the inoperable pump and shall be tested once every 24 hours thereafter, until both pumps are in an operable status or the reactor is shut down or
 - c. Any valve required for the functioning of the system during accident conditions may be inoperable provided repairs are completed within 24 hours. Prior to initiating repairs, all valves in the system that provide the duplicate function shall be tested to demonstrate operability. (Exception: If a spray pump is removed from service per b above, valves associated with that train may be removed from service for the period specified for the pump.)

Technical Specification 15.4.5 should also be modified to reflect additional testing requirements for the containment fan coolers. As stated previously, because of the system lineup changes required in the event of an accident, continued fan operation during normal power operation does not guarantee accident fan operability. The basis for Technical Specification 15.4.5 states in part that "In addition, 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."

Therefore, the staff feels that the active components of the fan coolers (including accident fans) should be tested at least on the same monthly frequency to ensure proper operation during accident conditions. An addition to Technical Specification 15.4.5.II should be added, including the acceptable level of performance of the test (as modeled from existing specification 15.4.5.II.A) to ensure operability of the accident fan.

You are requested to respond to our concerns with a request for Technical Specification changes within 60 days receipt of this letter. The above listed concerns have been discussed previously with your staff by telephone conversation.

The reporting requirements of this letter affect fewer than 10 respondents; therefore OMB clearance is not required under P.L. 96-511.

Sincerely,



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cc: See next page

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