POINT BEACH RED FINDING FOR POTENTIAL LOSS OF ALL AFW

The Point Beach Nuclear Plant's probabilistic risk assessment (PRA) staff identified a vulnerability associated with auxiliary feedwater system (AFW) recirculation valves. The PRA staff identified the vulnerability while updating the Point Beach PRA model for internal events (a voluntary initiative). The recirculation valves are air operated valves which fail closed upon a loss of instrument air. Consequently, in certain transients, such as a loss of instrument air, a loss of off-site power, a loss of service water, or a seismic event, the flow path via the recirculation lines would be lost due to the recirculation valves failing closed upon a loss of instrument air. Closure of the recirculation valves could result in pump failure under low flow conditions, such as when AFW flow was throttled back by the operators to control steam generator level or mitigate reactor coolant system (RCS) overcooling. The potential common mode failure of AFW pumps, reported by the licensee on November 29, 2001, met the NRC Management Directive 8.3, "NRC Incident Investigation Program," threshold for a Special Inspection in that the potential common mode failure could have led to a loss of safety function. Region III conducted a Special Inspection and the results were documented in inspection report 50-266/01-17(DRS); 50-301/01-17(DRS). The outcome of the inspection was one preliminary Red finding and two violations. One violation was for inadequate procedures and the second was for inadequate corrective actions.

A common mode failure of the AFW pumps would result in substantially reduced mitigation capability for safely shutting down the plant in response to certain transients. Decay heat removal capability using steam generators would be adversely affected and other means of decay heat removal may not be available. The significance of the potential loss of all AFW on loss of instrument air was determined to be high largely due to the relatively high initiating event frequencies associated with the involved transients and the high likelihood of improper operator actions due to procedural inadequacies. Region III, OE, and IIPB discussed the issue at a SERP panel on February 21, 2002, and came to the consensus that the finding was appropriately characterized as being of high safety significance (Red) and that the appropriate approach was to adhere to the current policies and issue the preliminary Red finding associated with the operator actions issues. On April 29, 2002, Region III held a Regulatory Conference with the NMC on this issue. At the Regulatory Conference the licensee agreed with the Red risk characterization for the finding, agreed with the violation for inadequate procedures, and denied the violation for inadequate corrective actions (they did not believe that it was reasonable to have identified the issue earlier). They also made their case for the Red finding to be considered an old design issue (ODI).

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