Potential backflow of water from the recirculation sumps into the RWST tanks was prevented by the outlet check valves in the piping from these tanks. Section 6.3.2.5.5 of the UFSAR stated that failures of check valves in the safety injection system are not considered credible failures. The check valves in question are part of the safety injection system. Therefore, these check valves alone were sufficient to preclude any significant loss of recirculation water inventory through the piping into the RWSTs.

The inspectors concluded that the ECCS would have been capable of performing its safety function in the recirculation mode.

d. Radiological Containment Safety Function

The NRR staff evaluated the radiological consequences of having the RWST isolation valves open during a design basis event. The licensee documented its assessment of the issue in Calculation N04060-024, "Radiological Consequences of Valve Leakage Following a Loss of Coolant Accident." A review of the calculation revealed that no credit for the RWST isolation valves was assumed; only the outlet check valves were credited for preventing backflow through the RWST piping. As stated above, the facility was licensed based on the assumption that failures of the check valves in the safety injection system are not considered credible. The value for backleakage through the outlet check valves assumed by the licensee was consistent with NRC staff guidelines contained in Standard Review Plan Section 15.6.5, Appendix B. The licensee's radiological analysis maximized the RWST water volume, since minimizing the RWST air volume would minimize dilution of radioactive material prior to release to the environment. The staff concurred with the licensee's determination that minimizing the RWST air volume maximizes the radiological consequences.

In addition, the staff reviewed the impact on the radiological consequences of draining the RWSTs and concluded that, as long as the outlet check valves remained submerged, the leak rate assumptions used in the licensee's analysis would remain valid. The elevation of the subject check valves was compared to the minimum water level in the RWST piping, as calculated by the Reactor Systems Branch. This comparison showed that there would be at least 20 feet of water over the check valves at all times. Therefore, the staff concluded that having the RWST isolation valves open does not affect the results of the licensee's radiological analysis and concurred with the licensee's determination that radiation levels were acceptable.

However, the staff also noted that the inability of the RWST isolation valves to close upon a recirculation actuation signal causes operation to be degraded from its original design purpose because the water level in the RWST could be pumped down to the RWST exit line. The reduced water level did not agree with the assumption of a 18.5% +3.8% RWST water level used in the radiological calculation. In addition, if the ECCS pumps are not running and there is no isolation between the sump and the RWST, the large containment accident pressure could push water (and containment gases) from the sump into the tank. The staff noted that this illustrates the importance of the two isolation valves to perform an important redundant containment boundary function.

In summary, since the license basis documented in the UFSAR is based on the assumption that check valve failure is not credible, and the check valves were found to be functional at the time of the event, the ECCS function remained within the design basis for

preventing water flow back to the RWST and the estimated radiological consequences remained acceptable. However, with the RWST isolation valves left open, the redundant containment boundary and the ability to prevent any leakage past the check valves and back to the RWST was degraded.

e. Reportability

In an August 13, 1992, memorandum to file, the licensee documented an active failure exemption justification for the RWST outlet check valves. The operability assessments documented by the licensee in ARs 950300186 and 950500087, addressing the failure of the Unit 3 RWST outlet isolation valves, extrapolated this exemption justification to mean that the outlet check valves fully satisfied the design basis function of isolating the RWST after a recirculation actuation and that the outlet isolation valves had no design function and were not part of the design basis. The licensee determined in 1995 that the valve failures were not reportable.

Based on the recent NRC staff's determination that the ability of the RWST outlet isolation valves to close is part of the design basis and that the RWST outlet isolation valves perform an important redundant containment boundary function when the ECCS pumps are not running during the course of an accident, the inspectors determined that the licensee may have been required to have reported the event in accordance with 10 CFR 50.73(a)(2)(ii)(B).

This issue is in the licensee's corrective action program as AR 990400496. Based on the additional information from the NRC staff, the licensee planned to reevaluate their original reportability determination. This item is unresolved to give the licensee an opportunity to provide their perspective on the NRC staff's determination prior to NRC making a final determination regarding whether a violation occurred (URI 362/99004-04)

E8.2 (Closed) Unresolved Item 361; 362/99001-04: review of reportability assessment regarding control room emergency air cleanup system operability.

The inspectors reviewed the licensee's reportability assessment regarding the licensee's determination that a cable for the Train A control room emergency air cleanup system had insufficient ampacity while a Cerablanket fire barrier was installed over a section of the cable raceway. Subsequent review by Nuclear Engineering Design determined that environmental qualification testing had demonstrated that the aging factors for the cable in question were not as severe as had been assumed in the cable ampacity calculations. Additionally, the ambient temperature of the room in which the cable was installed was, historically, significantly lower that had been assumed in the calculations. The licensee's subsequent evaluation concluded that the original configuration of the cable, with the Cerablanket installed, was adequate under all design conditions. The evaluation also considered the future aging of the cable to ensure that the cable would remain operable for the remainder of the facility license. The licensee's initial action to declare the system inoperable and to take corrective measures, although appropriate at the time, proved to be conservative. No noncompliance with NRC requirements was identified.

E8.3 (Closed) LER 361; 362/1998-008-00: 4.16 kV supply cable exceeds ampacity rating.

On March 6, 1998, the licensee determined that the feeder cables from a unit auxiliary transformer to the Class 1E 4.16 kV buses for both Units 2 and 3 could exceed their maximum allowable conductor temperature when a unit is in the backfeed alignment, is supplying power to its shutdown loads, and is also providing power to the maximum postaccident loads in the other unit via the 4.16 kV bus crosstie. Subsequent calculations revealed that the Unit 2 ampacity was acceptable. However, Unit 3 would require a design change to correct the ampacity deficiency.

In the LER, the licensee stated that the cables would have been able to supply the maximum calculated amperage, in spite of exceeding the allowable temperature limits. In addition, all connected loads would have been able to perform their intended functions. Based on the licensee's analysis, the inspectors concluded that there was negligible safety consequence associated with this condition and no actual safety consequence.

To return the Unit 3 feeder cables to an acceptable ampacity rating, the licensee implemented Field Change Notice F14774E. The field change notice removed sections of the top cable tray cover, providing greater heat dissipation of the feeder cables, and installed appropriate fire barriers on the Class 1E raceways that did not meet the required separation distances. The licensee completed the field change notice on March 15, 1999.

The licensee determined that, under worst case loading conditions while backfeeding, the feeder cable temperatures could exceed the allowed 130°C and might not return to 90°C, or less, within the allowed 100 hours. This condition did not comply with the design information of UFSAR Section 8.3.1.1.3. 10 CFR Part 50, Appendix B, Criterion III, requires, in part, that measures shall be established to assure that the design basis is correctly translated into specifications, drawings, procedures, and instructions. The failure of the licensee to assure the design basis was correctly translated into specifications was a violation of 10 CFR Part 50, Appendix B, Criterion III. This Severity Level IV violation is being treated as a noncited violation, consistent with Appendix C of the NRC Enforcement Policy (NCV 362/99004-05). This violation was in the licensee's corrective action program as AR 980300480.

IV. Plant Support

P1 Conduct of Emergency Preparedness Activities

P1.1 Alert Declared because of a Suspicious Looking Pipe/Potential Bomb - Units 2 and 3

a. Inspection Scope (71750, 93702)

The inspectors monitored the licensee's performance during a declaration of an Alert. The inspectors reviewed Procedure SO123-VIII-10, "Emergency Coordinator Duties," Revision 9, and Procedure SO123-VIII-1, "Recognition and Classification of Emergencies," Revision 11. The inspectors reviewed ARs 990300467, 496, 503, 506, 509, 597, and 991.

b. Observations and Findings

On March 15, 1999, at 10:15 a.m., the licensee declared an Alert because of a potential bomb that had been discovered in the protected area. The suspicious looking device was an approximately 12-inch long, 2-inch diameter copper pipe that was capped on both ends and was discovered behind a large storage container on the turbine deck 70 feet elevation by a contract employee.

The inspectors responded to the control room and then to the technical support center. The licensee activated the technical support, operations support, and emergency operations centers and performed an evacuation of local plant areas surrounding the device. Security contacted the United States Marine Corps Explosive Ordnance Disposal Team for assistance. The Explosive Ordnance Disposal Team x-rayed the device and ultimately determined that it was not a bomb. The event was terminated at 12:27 p.m.

The licensee initiated several ARs, as a result of the event, to capture lessons-learned and areas for improvement. The inspector reviewed the ARs and concluded that the licensee's actions were self-critical.

c. Conclusions

The licensee's declaration of an Alert and response to a potential explosive device (pipe bomb) were conservative. Licensee performance in the technical support center was good and included appropriate personnel, communications, and briefings. The licensee's assessment of the event was self-critical.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the exit meeting on April 7, 1999. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified

E-Mail report to T. Frye (TJF)
E-Mail report to D. Lange (DJL)
E-Mail report to NRR Event Tracking System (IPAS)
E-Mail report to Document Control Desk (DOCDESK)
E-Mail report to Richard Correia (RPC)
E-Mail report to Frank Talbot (FXT)

bcc to DCD (IE01)

bcc distrib. by RIV:
Regional Administrator
DRP Director
DRS Director
Branch Chief (DRP/E)
Senior Project Inspector (DRP/E)
Branch Chief (DRP/TSS)
Resident Inspector
DRS-PSB
MIS System
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