

**Previous ROP inspection findings related to underground piping issues
January 1998- June 2009**

Mitigating Systems	12/19/2008*	CAT	Green	*SCWE: N	*HP: N	*PIR: Y
Docket/Status: 05000413 (C) , 05000414 (C)						
Open: 2008006						
(PIM) Failure to Perform Adequate System Leakage Tests (Section 40A2.a.3)						
<p>The team identified a Green non-cited violation (NCV) for a failure to comply with 10CFR50.55a(g)(4) in that, the licensee failed to perform adequate system leakage tests of buried Nuclear Service Water (RN) piping repairs. This issue was entered into the licensee's corrective action program as Problem Identification Process C-08-07137. The performance deficiency associated with this finding involved failure to perform adequate system leakage tests of buried RN piping repairs. Specifically, wooden plugs remained in through wall defects during system leakage tests to verify the quality of eight repair welds to RN piping. By leaving the plugs in place, the repair welds cannot be shown to have been subject to the system pressure required by the ASME B&PV Code, resulting in inadequate system leakage tests, therefore the quality of the welds cannot be fully demonstrated. The failure to perform adequate system leakage tests is more than a minor deficiency because it is associated with the Reactor Safety/Mitigating Systems Cornerstone attribute of Procedure Quality (testing procedures) and affected the cornerstone objective of ensuring the availability, reliability and capability of the RN system. Because the RN system remained operable but degraded and there was no loss of safety function, the failure to perform adequate system leakage tests was considered to be of very low safety significance (Green). This finding has a cross-cutting aspect in the area of problem identification and resolution in the component of corrective action program because the licensee's extent of condition failed to recognize that repairs were non-conforming despite being signed by an Authorized Nuclear Inservice Inspector (ANII) [P.1(c)] (Section 40A2.a.3).</p>						

*These are
NRC's
Records*

Mitigating Systems	12/12/2008	PRAI	SL-IV	*SCWE: N	*HP: Y	*PIR: N
Docket/Status: 05000282 (C) , 05000306 (C)						
Open: 2008007						
(PIM) Failure to Perform a 50.59 Evaluation for Bulk Hydrogen Storage Facility						
<p>Severity Level IV. The inspectors identified a Severity Level IV NCV, having very low safety significance, of 10 CFR 50.59, "Changes, Tests, and Experiments," for the licensee's failure to perform a safety evaluation associated with installation of a bulk hydrogen storage facility. Specifically, the licensee had not evaluated the adverse affects on the Circulating Water System from a postulated hydrogen tank explosion in the bulk storage facility located directly above buried Circulating Water System return lines. The licensee stopped work on the installation of the bulk hydrogen facility and documented the NRC</p>						

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identified issues in the corrective action system. The inspectors' concerns also prompted the licensee to identify above ground Cooling Water System pipe in the nearby Turbine Building which had not been evaluated in the hydrogen blast analysis. The finding was more than minor because the inspectors could not reasonably determine that this change would not have ultimately required prior approval from the NRC. This finding was categorized as Severity Level IV because the underlying technical issue for the finding was determined to be of very low safety significance based on a Phase 1 screening in accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situation." Specifically, the inspectors answered "No" to the Mitigating Systems screening questions in the Phase 1 Screening Worksheet because the licensee had not yet filled the bulk storage facility with hydrogen, so no possibility of explosion and damage to plant equipment existed. The cause of the finding is related to the cross-cutting element of Human Performance, Decision Making, because the licensee failed to make conservative assumptions in decision making associated with the effects of a postulated hydrogen tank explosion (IMC 305, Section 06.07.c, Item H.1(b)).

Mitigating Systems	12/31/2007	CAT	Green	*SCWE: N	*HP: N	*PIR: N
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Docket/Status: 05000413 (C) , 05000414 (C)

Open: 2007005

(PIM) Failure to Perform Required ASME Code Section XI Leakage Testing

The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50.55a(g)(4) for the failure to perform periodic leakage testing of buried piping portions of the service water system as required by Section XI of the ASME Code for the second 10-year Inservice Inspection interval for Units 1 and 2. The licensee entered this issue into their corrective action program for resolution. This finding is more than minor because it affects the Equipment Performance attribute of the Mitigating Systems cornerstone objective of ensuring availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. This finding is of very low safety significance because it did not represent an actual loss of a system's safety function. (Section 1R08.1)

Mitigating Systems	09/30/2007	NA	Green	*SCWE: N	*HP: Y	*PIR: N
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Docket/Status: 05000338 (C)

Open: 2007004

(PIM) Failure to Perform Required ASME Code Section XI Leakage Testing

The inspectors identified a non-cited violation of 10 CFR 50.55a(g)(4) associated with failure to perform testing of buried, isolable piping for the charging, safety injection, recirculation spray, quench spray, auxiliary feedwater, and service water systems in accordance with the American Society of Mechanical Engineers Code Section XI requirements. The licensee promptly entered the issue into their corrective action program. In response to NRC questions, the licensee performed an evaluation to

demonstrate the piping condition was acceptable. This finding is more than minor because it affected the Equipment Performance attribute of the Mitigating Systems cornerstone objective, and would have allowed undetected through-wall flaws to develop in the header piping. These flaws would then grow in size until leakage from the buried headers degraded system operation, or if sufficient general corrosion occurred, a gross rupture or collapse of the piping occurs. The finding is of very low safety significance because the affected systems remained able to perform their safety functions and it did not affect external event mitigation. The cause of the violation is related to the complete documentation and component labeling aspect of the cross-cutting area of human performance, in that, procedures failed to include required testing (H.2(c)).

Mitigating Systems	09/30/2007	TP	Green	*SCWE: N	*HP: N	*PIR: N
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Docket/Status: , 05000250 (C) , 05000251 (C)

Open: 2007004

(PIM) Failure to Perform Required ASME Code Section XI Leakage Testing

The inspectors identified a non-cited violation (NCV) of 10 CFR 50.55a(g)(4) for the failure to perform periodic leakage testing of buried piping portions of the Intake Cooling Water system as required by Section XI of the ASME Code for the third 10-year Inservice Inspection interval for Units 3 and 4. The licensee entered this issue into their corrective action program for resolution. This finding is more than minor because it affects the Equipment Performance attribute of the Mitigating Systems cornerstone objective of ensuring availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. This finding is of very low safety significance because it was not a design issue resulting in a loss of operability, did not represent an actual loss of a system's safety function, did not result in exceeding a technical specification (TS) allowed outage time, and did not affect external event mitigation. The inspectors determined that this finding had no cross-cutting aspect. (Section 1R08)

Mitigating Systems	08/17/2007	HAT	Green	*SCWE: N	*HP: N	*PIR: N
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Docket/Status: 05000321 (C) , 05000366 (C)

Open: 2007006

(PIM) Failure to Perform Required ASME Code, Section XI Testing

An NRC-identified Green non-cited violation of 10 CFR 50.55a(g)(4) for the failure to perform periodic leakage testing of buried piping sections of the High Pressure Coolant Injection (HPCI) and Standby Diesel Service Water (SBDSW) systems as required by Section XI of the ASME Code for the third 10-year In-service Inspection (ISI) interval. This finding is more than minor because it affects the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affects the cornerstone objective in that if a significant leak or rupture should occur as a result of undetected piping degradation, water could not be delivered to mitigating system components preventing

these systems from fulfilling their intended safety functions. This finding is of very low safety significance (Green) because it does not represent an actual loss of a system's safety function. Further, the licensee performed the required testing on the SBDSW piping on May 22, 2007, and performed HPCI piping inspections in 2005 and found no significant degradation. This finding was reviewed for any cross-cutting aspects and none were identified. The licensee has entered the violation into their corrective action program as CRs 2007102265 and 2007104138.

Mitigating Systems	09/30/2005	BRAI	Green	*SCWE: N	*HP: N	*PIR: N
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Docket/Status: 05000456 (C) , 05000457.(C)

Open: 2005007

(PIM) FAILURE TO LEAK TEST BURIED SX INTAKE HEADER PIPING

The inspectors identified a finding involving a Non-Cited Violation (NCV) violation of 10 CFR Part 50.55a(g)4 having very low safety significance for failure to perform periodic leakage testing required by the American Society of Mechanical Engineers Code on the buried portions of the essential service water (SX) system intake piping. This finding was more than minor because failure to perform periodic leakage testing could have allowed undetected through-wall flaws to remain inservice. These undetected flaws could grow in size until leakage from the buried SX intake pipe degrades system operation or if sufficient general corrosion occurs, a gross rupture or collapse of the SX piping sections could occur. The finding was of very low safety significance because the licensee concluded that the piping systems were currently operable based upon pump surveillance testing which measured adequate SX system flow. The licensee also documented that piping failure was not anticipated due to the external pipe coating, cathodic protection and low system operating pressure.

Mitigating Systems	12/13/2001	INP3	Green	*SCWE: N	*HP: N	*PIR: N
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Docket/Status: , 05000286 (C)

Open: 2001011

(PIM) Failure to pressure leak test the auxiliary feedwater system suction piping in accordance with ASME Section XI

The licensee failed to perform a pressure leak test on the isolable portion of the auxiliary feedwater (AFW) buried suction piping as required by Section XI of the ASME (American Society of Mechanical Engineers) Boiler and Pressure Vessel Code for Class III buried pipe. In addition, the procedure used for conducting inservice pressure testing did not include the requirement for this test. This finding was considered to be of very low safety significance (Green) since there was no indication of leakage, the system performed as required during previous operational inservice testing, and there was no actual loss of AFW system safety function. This finding was entered into the licensee's Corrective Action program and is being treated as a Non-cited Violation consistent with Section VI.A.1 of the NRC Enforcement Policy.

Initiating Events	12/17/2004	SEAB	Green	*SCWE: N	*HP: Y	*PIR: Y
Docket/Status: 05000443 (C)						
Open: 2004008						
(PIM) Failure to Take Effective Corrective Action for Underground Utility and Equipment Damage During Excavation						
<p>The team identified a non-cited violation of 10CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Seabrook failed to take adequate corrective actions to prevent damage to underground utilities and equipment during site excavations. Following a series of issues where contract personnel hit buried cables and pipes while excavating, Seabrook failed to take effective corrective actions and later hit a safety-related control building ventilation line. This finding was associated with the cross-cutting area of problem identification and resolution. This finding was more than minor because it affected the Initiating Events Cornerstone objective of limiting events that upset plant stability and challenge critical safety functions. Specifically, an underground utility or buried equipment could be damaged and result in an initiating event. The finding was determined to be of very low safety significance since it did not contribute to both an increased likelihood of a reactor trip and an increased likelihood that mitigating equipment would be unavailable.</p>						

Initiating Events	09/30/2004	SEAB	Green	*SCWE: N	*HP: Y	*PIR: Y
Docket/Status: 05000443 (C)						
Open: 2004004						
(PIM) Failure to Properly Implement Dig Safe Procedure						
<p>The inspectors identified a non-cited violation of Technical Specification (TS) 6.7.1.a, "Procedures and Programs." Seabrook failed to properly implement their "Dig Safe" procedure which resulted in three incidents where underground utilities were damaged during site excavations. This finding, which involved Seabrook's failure to properly implement a procedure on multiple occasions, was associated with the cross-cutting areas of human performance and problem identification and resolution (PI&R). The finding was more than minor because if left uncorrected the potential exists that an underground utility could be damaged and result in an initiating event. The finding is of very low safety significance since the damaged utilities did not actually impact plant operations.</p>						

Mitigating Systems	04/19/2004	PALO	Green	*SCWE: N	*HP: N	*PIR: N
Docket/Status: , 05000530 (C)						
Open: 2004005						

(PIM) FAILURE TO PROVIDE ADEQUATE MAINTENANCE PROCEDURE

A noncited violation of Technical Specification 5.4.1.d was identified for an inadequate fire protection program maintenance procedure used to replace underground fire protection post indicator valves. The procedure did not clearly indicate that the preassembled bolts (body to bonnet), as well as other bolts, were to be coated for corrosion protection. This allowed the bolts to corrode, causing failure of the valve and a degradation of the site yard fire main distribution piping and a loss of approximately 278,000 gallons of fire protection water. The issue was entered into the licensee's corrective action program as Condition Report/Disposition Request 2700170. This finding is greater than minor because it is associated with the degraded fire protection attribute of the mitigating systems cornerstone and affected the cornerstone objective, which is to ensure the availability, reliability, and capability of systems that mitigate initiating events to prevent reactor accidents. Specifically, the site yard fire main distribution piping was degraded for 45 minutes. Using the Significance Determination Process Phase 1 Worksheet, the finding was determined to have a very low safety significance because it did not involve complete, long-term impairment of the fire protection system. Specifically, the required fire protection water inventory remained above the design reserve level, and the fire main was degraded less than 1 hour.