

Farley 2

4Q/2011 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Dec 08, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Implement Design Control Measures to Verify the Adequacy of CST Design

Green. The team identified a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion III, "Design Control," (with two examples) for the licensee's failure to implement design control measures to verify the adequacy of design inputs, assumptions, or limiting plant conditions which were relied upon in the design basis analyses used to demonstrate the adequacy of Condensate Storage Tank (CST) design. The licensee entered these issues into their Corrective Action Program (CAP) as Condition Reports (CRs) 355226, 355293, and 355294. The licensee performed operability evaluations in support of current operability and implemented additional compensatory measures to ensure that CST level would be maintained above the condenser hotwell make-up elevation pending completion of proposed long term corrective actions which included a license amendment request to increase the minimum volume of water specified by the limiting condition for operation in

Technical Specification (TS) 3.7.6.

The failure to utilize conservative design inputs, assumptions, or limiting plant conditions when implementing design control measures to verify the adequacy of CST design was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the mitigating systems cornerstone attribute of design control and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the finding challenged the assurance that the CST contained an adequate volume of water to support its safety function to supply condensate to the Auxiliary Feedwater (AFW) system in response to design basis events. In accordance with NRC IMC 0609.04, "Initial Screening and Characterization of Findings," the team used the mitigating systems column to perform a Phase 1 Significance Determination Process (SDP) screening and determined the finding to be of very low safety significance (Green) because it was not a design issue resulting in loss of function, did not represent an actual loss of a system safety function, did not result in exceeding a TS allowed outage time, and did not affect external event mitigation. This analysis was based on information contained in licensee operability determinations which demonstrated that, although the TS required minimum volume of 150,000 gallons as non-conservative, reasonable assurance existed such that the volume of CST water below the condenser hotwell make-up elevation was sufficient for the tank to perform its safety function. A cross-cutting aspect was not identified because the design basis calculation associated with the finding was approved on March 25, 1999, and did not represent current licensee performance.

Inspection Report# : [2011010](#) (*pdf*)

Significance:  Dec 08, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Implement Design Control Measures to Verify the Adequacy of AFW Design

Green. The team identified a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion III, "Design Control," for the failure to implement design control measures to verify the adequacy of design inputs, assumptions, or limiting plant conditions which were relied upon in the design basis analyses used to demonstrate the capability of the Auxiliary Feedwater (AFW) system to deliver the required flowrates to the Steam Generators (SGs). The licensee entered this issue into the Corrective Action Program (CAP) as Condition Reports (CRs) 352210, 353743, 355898,

363850, and 369676. Additionally, the licensee performed an operability determination which concluded that the AFW system remained capable of performing its safety function because actual AFW pump performance was not degraded as assumed in the accident analyses.

The failure to conservatively model AFW system friction losses when implementing design control measures to verify the capability of the AFW system to deliver the flowrates required by accident analyses was a performance deficiency. The performance deficiency was determined to be more than minor because it was

associated with the mitigating systems cornerstone attribute of design control and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the finding challenged the assurance that the AFW system would be capable of delivering the required flow during worst case accident conditions due to non-conservative modeling of system friction losses. In accordance with NRC IMC 0609.04, "Initial Screening and Characterization of Findings," the team used the mitigating systems column to perform a Phase 1 Significance Determination Process (SDP) screening and determined the finding to be of very low safety significance (Green) because it was not a design issue resulting in loss of function, did not represent an actual loss of a system safety function, did not result in exceeding a Technical Specification (TS) allowed outage time, and did not affect external event mitigation. A cross-cutting aspect was not identified because the design basis calculation associated with the finding was approved on March 25, 1999, and did not represent current licensee performance.

Inspection Report# : [2011010](#) (pdf)

Significance:  Dec 08, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Provide Adequate Procedural Guidance for Controlling Steam Generator and Pressurizer Level During Loss of Air Events

Green. The team identified a non-cited violation (NCV) of Technical Specification (TS) 5.4, "Procedures," for the licensee's failure to provide adequate procedural guidance for controlling steam generator (SG) and pressurizer level during loss of instrument air events and Chemical and Volume Control System (CVCS) malfunctions. Specifically, the licensee failed to evaluate the capability of motoroperated valves (MOV) to be cycled as directed by abnormal operating procedures (AOPs). The licensee entered these issues into their Corrective Action Program (CAP) as Condition Reports (CRs) 355230, 355672 and 355695; performed DOEJ – FRSNC326893-E001, "Evaluate Cycling of Q1E21MOV8107, Q1E21MOV8107, and Q1E21MOV3764A through F"; and implemented a standing order (S-2011-12) that restricted the cycling the of the MOVs until the procedures were revised.

The failure to provide adequate procedural guidance for controlling SG and pressurizer level during loss of air events and CVCS malfunctions was a performance deficiency. The performance deficiency was more than minor because it was associated with the mitigating systems cornerstone attribute of equipment performance and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee directed the cycling of MOVs in AOPs without performing evaluations to provide assurance that the components would not fail as a result of the cycling operations and lead to a condition of inadequate SG and pressurizer level control. In accordance with NRC IMC 0609.04, "Initial Screening and Characterization of Findings," the team used the mitigating systems column to perform a Phase 1 Significance Determination Process (SDP) screening and determined the finding to be of very low safety significance (Green) because it was not a design issue resulting in loss of function, did not represent an actual loss of a system safety function, did not result in exceeding a Technical Specification (TS) allowed outage time, and did not affect external event mitigation. A cross-cutting aspect was not identified because the finding did not represent current performance.

Inspection Report# : [2011010](#) (pdf)

Significance:  Dec 08, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Correctly Translate the Design Basis into Procedures for Minimum CCW Flow to the RHR Seal Coolers and Minimum Flow Requirements for the AFW Pumps

Green. The team identified a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion III, "Design Control," involving two examples. In the first example, the licensee failed to translate the minimum Component Cooling Water

(CCW) flow for the Residual Heat Removal (RHR) seal coolers into Annunciator Response Procedures (ARPs). In the second example, the licensee failed to translate the Motor Driven Auxiliary Feedwater (MDAFW) and Turbine Driven Auxiliary Feedwater (TDAFW) pump minimum flow requirements into applicable ARPs. The licensee entered these issues into their Corrective Action Program (CAP) as Condition Reports (CRs) 348613 and 352485.

The failure to correctly translate the applicable design bases information for the RHR pump seal coolers and the Auxiliary Feedwater (AFW) pumps into procedures was a performance deficiency. The finding was determined to be more than minor because it was associated with the procedure quality attribute of the mitigating system cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to translate the appropriate minimum flow requirements into ARPs adversely affected the quality of procedures used to respond to alarm conditions that are required by Regulatory Guide 1.33, "Quality Assurance Program Requirements." The inadequate procedures adversely affected the ability of operators to assess operability and to combat deficiencies associated with risk significant equipment. In accordance with NRC IMC 0609.04, "Initial Screening and Characterization of Findings," the team used the mitigating systems column to perform a Phase 1 Significance Determination Process (SDP) screening and determined the finding to be of very low safety significance (Green) because it was not a design issue resulting in loss of function, did not represent an actual loss of a system safety function, did not result in exceeding a Technical Specification (TS) allowed outage time, and did not affect external event mitigation. A cross-cutting aspect was not identified because the finding did not represent current performance.

Inspection Report# : [2011010](#) (*pdf*)

Significance:  Dec 08, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Monitor or Perform Effective Preventive Maintenance on the 2C EDG Exhaust Fan Louvers

Green. The team identified a non-cited violation (NCV) of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for the licensee's failure to perform condition monitoring or otherwise implement an appropriate preventive maintenance program for the 2C Diesel Generator (DG) A and B room exhaust fan louvers. The licensee entered this issue into their corrective action program (CAP) as condition reports (CRs) 351580, 349883, and 355130.

The failure to perform condition monitoring or otherwise implement an appropriate preventive maintenance program for the 2C DG A and B exhaust fan louvers was a performance deficiency. This performance deficiency was more than minor because it was associated with equipment performance attribute of the mitigating systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to perform condition monitoring or otherwise implement an appropriate preventive maintenance program for the 2C DG A and B room exhaust fan louvers challenged the assurance that

these components would remain capable of performing their intended functions. In accordance with NRC IMC 0609.04, "Initial Screening and Characterization of Findings," the team used the mitigating systems column to perform a Phase 1 SDP screening and determined the finding to be of very low safety significance (Green) because it was not a design issue resulting in loss of function, did not represent an actual loss of a system safety function, did not result in exceeding a TS allowed outage time, and did not affect external event mitigation. Because the licensee had initiated CRs in 2008 and 2009 for the 2C DG room exhaust louvers, and repairs were not made in a timely manner to address the issue, this finding was assigned a cross-cutting aspect in the corrective action program component of the problem identification and resolution area [P.1(d)].

Inspection Report# : [2011010](#) (*pdf*)

Significance:  Sep 30, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to properly pre-plan maintenance activities while conducting tagout operations on the 2C charging pump

A self-revealing NCV of Technical Specification (TS) 5.4.1a was identified for the licensee's failure to implement procedures recommended in Regulatory Guide (RG) 1.33. Specifically, the licensee did not properly pre-plan maintenance tagout activities on the unit 2 charging system. As a result, the licensee inadvertently overpressurized the 2C high head safety injection (HHSI) pump suction piping, adversely affecting the availability of the safety-related

pump. Upon discovery of this condition, the licensee immediately depressurized the pump suction piping and initiated condition report (CR) 343336.

Failure to properly pre-plan maintenance activities is a performance deficiency. This performance deficiency is more than minor because it is associated with the human performance attribute of the mitigating systems (MS) cornerstone, and adversely affected the cornerstone objective to ensure system availability of components responding to initiating events preventing undesirable consequences. The human performance attribute of the MS cornerstone was determined to be adversely affected because: 1) the licensee's tagout procedure relied on a check valve as part of the maintenance boundary; 2) the licensee's tagout sequence isolated the pump suction valve prior to isolating the pump discharge valve; resulting in overpressurization of the 2C charging pump suction piping, which rendered the 2C charging pump inoperable from August 11, 2011, to September 9, 2011. The significance of this finding was screened using IMC 0609, Significance Determination Process (SDP), Phase 1 worksheets of Attachment 4. The finding screened as Green, because it did not represent an actual loss of safety function of a single train of emergency core cooling system (ECCS) for greater than its TS allowable outage time. The finding was assigned a cross cutting aspect in the resources component of the human performance area (H.2(c)). Specifically, complete, accurate and up-to-date work packages could have prevented overpressurization of the pump. (Section 1R12)

Inspection Report# : [2011004](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Aug 24, 2007

Identified By: NRC

Item Type: FIN Finding

Biennial Identification and Resolution of Problems Inspection Results

One finding of very low safety significance (Green) was identified. The licensee was generally effective in identifying problems at a low threshold and entering them into the corrective action program. The licensee properly prioritized issues entered into the corrective action program (CAP) and routinely performed evaluations that were technically

accurate and of sufficient depth to address the issue documented in the condition reports (CRs). Overall, corrective actions were effective; however, minor examples of inadequate condition report broadness reviews and documentation issues related to the closure of action items were identified. In general, operating experience was found to be used both proactively and reactively by personnel involved in the corrective action program; however, an example of industry operating experience was identified in which the licensee did not completely develop interim compensatory measures for a condition to which Farley was vulnerable. The licensee's programmatic self-assessments and audits were generally effective in identifying weaknesses in the corrective action program; however, a missed opportunity in the trending of issues which could result in adverse effects on safety-related plant components was identified. The inspectors also concluded that the workers at Farley felt free to report safety concerns.

Inspection Report# : [2007006](#) (*pdf*)

Last modified : March 02, 2012