

Seabrook 1

4Q/2006 Plant Inspection Findings

Initiating Events

Significance:  Dec 07, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

10 CFR 50, Appendix B, "Corrective Actions," Failure to Promptly Identify Incorrect Analysis Assumptions Used for an Inadvertent ECCS Initiation at-power Event 10 CFR 50, Appendix B, "Corrective

The inspectors identified a NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," in that FPL failed to promptly identify a condition adverse to quality associated with incorrect design assumptions used for the licensing basis in the station's stretch power uprate. Specifically, the station failed to promptly identify a discrepancy between emergency operating procedures (EOPs) implementation and the assumed emergency core cooling system (ECCS) termination criteria that had been used for a power uprate "interim design analysis" for an inadvertent SI actuation event. Consequently, FPL operated outside the "interim analysis" basis accepted per an NRC Safety Evaluation Report (SER) and challenged conclusions documented in that credited interim design basis. FPL entered this issue into their corrective action program and additional evaluation by the station determined that the issue remained bounded by original plant design basis conclusions and did not meet NRC reportability thresholds during this "interim analysis" time period.

This finding was more than minor because it was associated with the design control attribute of the initiating events cornerstone and impacted the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions. The finding is also similar to the more than minor examples in MC 0612, Appendix E, examples 3.j and 3.k. Inspectors evaluated this finding using Phase 1 of IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," and determined the finding to be of very low safety significance because it; did not affect loss of coolant accident initiators; did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available; and did not increase the likelihood of an external event.

Inspection Report# : [2006006 \(pdf\)](#)

Significance:  Jun 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Comply with TS 3.8.2.1 when a Battery Charger was not Supplying the "B" Bus

The inspectors identified a non-cited violation of Technical Specification (TS) 3.8.2.1, "DC (Direct Current) Sources - Operating." On June 21, 2006, the battery charger supply breaker was incorrectly opened due to a maintenance technician error. This removed the required full capacity battery charger from the 125 volt DC "B" Bus. The operators failed to properly evaluate the control room alarms on the evening of June 21, and did not recognize the degraded condition of their 125 volt DC "B" Bus for the next 12 hours. A new operating crew recognized the condition and determined that the plant was in a two hour TS shutdown action statement. Seabrook had been in a condition requiring the plant to enter TS action statement 3.8.2.1 from approximately 7:00 p.m. on June 21, 2006, until 6:20 a.m. the next morning without entering the action statement.

The finding was more than minor because it affected the Initiating Events cornerstone objective to limit the likelihood of events that upset plant stability due to unreliable equipment performance. This finding was determined to be of very low safety significance (Green) since there had been an increase in the probability of an initiating event without an impact on mitigating systems, reactor coolant system leakage, or external event initiators. This finding was associated with the cross-cutting area of human performance and the aspect of using human error prevention techniques since maintenance technicians opened the wrong breaker and the operators on two shifts did not identify and take the appropriate actions following the opening of the supply breaker from the battery charger to the 125 volt DC "B" Bus.

Inspection Report# : [2006003 \(pdf\)](#)

Mitigating Systems

Significance:  Dec 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Controls of a Heavy Load Lift over the Reactor Vessel

The inspectors identified a non-cited violation of Technical Specification 6.7.1.a, "Procedures and Programs." On October 11, 2006, Seabrook failed to adequately establish and implement procedural controls for a heavy load lift, which resulted in a reactor coolant floor plug passing over an open, partially fueled reactor vessel.

The finding was more than minor because it could be reasonably viewed as a precursor to a significant event because a portion of the heavy load traveled over the reactor vessel that contained irradiated fuel and the reactor vessel head was removed for refueling activities. This finding was not suitable for a significance determination process evaluation, but has been reviewed by NRC management and was determined to be a finding of very low safety significance (Green). This finding has a cross-cutting aspect in the area of human performance (sub-category resources) because Seabrook did not have complete and accurate procedural controls to assure safety of the heavy load lift.

Inspection Report# : [2006005](#) (*pdf*)

Significance:  Sep 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Inoperable Main Steam Isolation Valve for Greater than Technical Specification Allowed Outage Time

A Green self-revealing non-cited violation of Technical Specification (TS) 3.7.1.5, "Main Steam Line Isolation Valves" was identified by the inspectors. On June 30, 2006, operators received a control room alarm associated with a main steam isolation valve (MSIV). Subsequent troubleshooting identified a failed valve control module which affected operability of the MSIV. Seabrook determined that one MSIV was inoperable for approximately 20 hours which was greater than the 4 hour TS allowed outage time. The extended inoperability time was caused, in-part, by improperly assessing the initial operability of the MSIV.

The finding was more than minor because it affected the Mitigating Systems cornerstone objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance (Green) since it did not result in the loss of a safety function and it did not impact external initiating events. This finding has a cross-cutting aspect in the area of human performance because Seabrook did not properly assess the available information and follow procedural requirements though a conservative decision-making process for operability of the MSIV.

Inspection Report# : [2006004](#) (*pdf*)

Significance:  Jun 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Untimely Corrective Actions for Degraded Floor Drains

The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action" in that Seabrook did not promptly identify and correct degraded cable spreading room floor hydrostatic barriers. Seabrook identified the degraded barriers following water leakage into the essential switchgear room from an inadvertent cable spreading room deluge system actuation on February 5, 2006. However, following the actuation, Seabrook did not properly evaluate and implement timely compensatory measures for the degraded hydrostatic barrier to protect the essential switchgear rooms. The inspectors concluded that Seabrook had multiple opportunities including internal and external operating experience to identify the degraded barriers.

The finding was more than minor because it affected the Mitigating System cornerstone attribute of Protection Against External Factors such as flood hazards and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. Based on a detailed evaluation of the location and condition of the degraded barriers, the finding was determined to be of very low safety significance (Green) since the flooding-related finding would not cause a plant trip or degrade two or more trains of safety systems. This finding was associated with the cross-cutting area of problem identification and resolution in that Seabrook failed to thoroughly evaluate the degraded hydrostatic barriers in the cable spreading room.

Inspection Report# : [2006003](#) (*pdf*)

Significance:  Jun 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Untimely Identification and Evaluation of Degraded Hydrostatic Barriers

The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action" in that Seabrook did not take timely corrective actions for clogged drains that support safety-related systems. In 2006, Seabrook completed an inspection of the Emergency Feedwater Pump House drains and discovered three floor drains and two of five hub drains clogged with debris. Seabrook had multiple opportunities to identify and correct the issue including: a 2000 Condition Report which identified that Seabrook had no inspection program for their drains; the initial drain inspections, some of which identified partially clogged drains; and in 2005 when the inspectors identified that the inspection program was not risk or safety-related prioritized. The inspectors concluded that Seabrook did not inspect and remediate their drains which support safety-related systems in a timely manner.

The finding was more than minor because it affected the Mitigating Systems cornerstone objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance (Green) since the flooding- related finding would not cause a plant trip or degrade two or more trains of safety systems. This finding was associated with the cross-cutting area of problem identification and resolution in that Seabrook did not take appropriate corrective actions in a timely manner for the degraded floor drain systems in the plant.

Inspection Report# : [2006003](#) (*pdf*)

Significance:  Mar 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Inappropriate 10 CFR 50.59 Safety Evaluation Screen

The inspectors identified a Severity Level IV non-cited violation of 10 CFR 50.59; "Changes, Tests, and Experiments." Specifically, Seabrook adversely changed the bases of Technical Specification (TS) 3.4.10, "Structural Integrity," to make it applicable to only the reactor coolant system pressure boundary piping, and not all American Society of Mechanical Engineers (ASME) code class piping. This, in effect, changed the intent of TS 3.4.10 without a license amendment. Following identification of this issue, Seabrook entered the issue into their corrective action program as condition report 06-03108.

This finding was addressed using traditional enforcement since it potentially impacted or impeded the regulatory process in that Seabrook used the 10 CFR 50.59 process to change the intent of an existing TS. This is contrary to the regulatory process that allows licensees to make changes without a license amendment provided that licensees comply with the 10 CFR 50.59 process. The finding is more than minor because there was a reasonable likelihood that the change would have required Commission review and approval prior to implementation. The finding is of very low safety significance because it did not require a quantitative assessment based on the shutdown risk mitigation capability of other available equipment.

Inspection Report# : [2006002](#) (*pdf*)

Significance:  Mar 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Identify and Correct Degraded Component Cooling Water Flow to Safety-Related Components

The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action." In January

2006, the inspectors identified degraded component cooling water flow to the residual heat removal pump seal cooler and the enclosure air handling cooler. Although the flows were determined to be below design basis values, additional engineering analysis demonstrated the degraded flow would not result in inoperability of the systems. Seabrook completed immediate actions to adjust the component cooling water flow to the safety-related components. This finding was associated with the cross-cutting area of problem identification and resolution in that operators performing routine tours in the areas of the flow indicators and system engineers recording flows during quarterly walkdowns did not identify that the flow was degraded for eight months.

The finding is more than minor because it affected the Mitigating System cornerstone objective to ensure the availability, reliability, and capability of systems that respond to an initiating event. The attribute of equipment performance was impacted by the degraded component cooling water flow. The finding is determined to be of very low safety significance (Green) since it did not result in loss of safety function of the equipment and it did not impact external initiating events.

Inspection Report# : [2006002](#) (*pdf*)

Significance:  Mar 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Corrective Actions Result in a Repeat Failure of the "B" EDG

The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action." In December of 2005, Seabrook experienced a failure of the "B" emergency diesel generator (EDG) due to a voltage excursion. Corrective actions completed in April and May of 2005, to a previous voltage excursion were ineffective in preventing the December 2005 failure. Seabrook has since taken additional corrective actions to prevent additional failures of the "B" EDG including replacement of selected components. This finding was associated with the cross-cutting area of problem identification and resolution in that Seabrook did not assure adequate corrective actions were taken to preclude repetition of the "B" EDG failure.

The finding is more than minor because it affected the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. The failure to the "B" EDG affected one of the two EDGs which maintain power following the initiating event of a loss of offsite power. The finding is determined to be of very low safety significance (Green) since the EDG was inoperable for a short period of time due to the intermittent nature of the failure.

Inspection Report# : [2006002](#) (*pdf*)

Barrier Integrity

Significance:  Dec 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedural Compliance Results in Inadvertent Dilution during Shutdown

A self-revealing non-cited violation of Technical Specification 6.7.1.a, "Procedures and Programs" was identified by the inspectors. On October 25, 2006, during a cold shutdown, operators inadvertently performed a 500-gallon dilution instead of a planned blended makeup to the reactor coolant system. Seabrook determined the root cause of this event was a loss of configuration control of the boric acid storage system due to a lack of procedure use in accordance with established standards. This resulted in isolating the normal flow path from the boric acid storage system for boric acid additions and blended makeups.

The finding is more than minor because if left uncorrected it would become a more significant safety concern. Specifically, if the dilution occurred while the plan was online, this would have resulted in a more significant reactivity change and potential overpower condition. The finding was determined to be of very low safety significance (Green) since the reactivity change did not result in exceeding the Technical Specification shutdown margin requirements. This finding has a cross-cutting aspect in the area of human performance (sub-category work practices) because personnel did not follow procedural compliance standards.

Inspection Report# : [2006005](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous

Significance: N/A Dec 07, 2006

Identified By: NRC

Item Type: FIN Finding

Problem Identification and Resolution

The team concluded that the implementation of the corrective action program (CAP) at Seabrook was generally effective. The team determined that Seabrook station had a low threshold for identifying problems and entering them in the corrective action program. Once entered into the system, items were screened and prioritized in a timely manner using established criteria. The station properly evaluated items entered into the corrective action program commensurate with their safety significance. Corrective actions addressed the identified causes and were typically implemented in a timely manner based upon significance. The team observed that the station was generally effective in reviewing and applying operating experience information from industry. Overall, FPL audits and assessments that were reviewed were critical, and appropriate actions were taken to address identified issues. On the basis of interviews conducted during the inspection, the team found station employees at the site expressed the willingness and freedom to enter safety concerns into the CAP.

Inspectors identified one Green NCV during this inspection. The NCV was associated with a failure to promptly identify a condition adverse to quality associated with analysis assumptions credited by the station an inadvertent safety injection (SI) event.

Inspection Report# : [2006006](#) (*pdf*)

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