

Oyster Creek

3Q/2005 Plant Inspection Findings

Initiating Events

Significance:  Sep 23, 2005
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Follow Procedures

A self-revealing non-cited violation (NCV) of Technical Specification 6.8.1 was identified for failure to follow an abnormal operating procedure that resulted in the loss of the No. 1 North Intake Service Water Pump, the No.1 Emergency Service Water system and the associated containment spray heat exchangers. The licensee took immediate corrective actions which included the issuance of standing orders to reinforce management's expectations and provided interim guidance related to the shortcomings of the shift crew's performance.

This finding is greater than minor because the failure to follow the abnormal procedure impacted the control room's ability to adequately monitor intake levels and impacted prompt operator response actions due to decreasing intake level. This finding is associated with the cornerstone objectives of Initiating Events, Mitigating Systems and Containment Barriers Cornerstones. The attributes affected are protection against external factors such as loss of heat sink, equipment performance in availability and reliability, human performance in human error (pre-event), containment structure system and component and barrier performance. The cause of the finding is related to the cross-cutting element of human performance (personnel). (Section 2.0)

Inspection Report# : [2005011\(pdf\)](#)

Mitigating Systems

Significance:  May 27, 2005
Identified By: NRC
Item Type: NCV NonCited Violation

Inadequate Design Control Associated with Containment Spray Suction Valves

The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion III, Design Control, where the licensee did not maintain the containment spray system's capability to close the pump suction valves from an accessible location during the post-accident phase of a postulated accident. The controlling modification also introduced an unexpected suction valve operational anomaly and did not adequately test the completed modification.

This finding is greater than minor because it is associated with the Design Control attribute of the Mitigating Systems cornerstone, and affected the cornerstone's objective of providing containment spray and core spray system availability, reliability and capability to respond to a large break loss of coolant initiating event. Also, the finding is associated with the System and Barrier Performance attribute of the Barrier Integrity cornerstone (containment functionality aspect) and affected the cornerstone's objective of providing reasonable assurance that the containment will protect the public from radio nuclide releases caused by accidents or events. This finding was determined to be of very low safety significance based on the low frequency of a large loss of coolant accident concurrent with a passive failure of piping. (Section 1R21.2)

Inspection Report# : [2005006\(pdf\)](#)

Significance: SL-IV May 27, 2005
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to Perform an Adequate 10 CFR 50.59 Analysis (ESW Overboard)

The inspectors identified a Severity Level IV non-cited violation of 10 CFR 50.59 Changes, Tests, and Experiments, requirements for the failure to perform an adequate safety evaluation of a change to the facility. Specifically, the safety evaluation did not evaluate the potential for a new type of malfunction of an installed liner associated with the 30-inch overboard discharge line on the emergency service water (ESW) system.

This finding was addressed using traditional enforcement since it potentially impacts or impedes the regulatory process in that a required 10 CFR 50.59 evaluation was not adequate. This is contrary to the regulatory process that allows licensees to make changes without a license amendment provided that licensees comply with 10 CFR 50.59 process. The finding is more than minor because there was a reasonable likelihood that the change could have required Commission review and approval prior to implementation. However, the finding has been evaluated as very low safety significance (Green) because the liner was subsequently determined to have not have introduced a new

malfunction that would impact on the ESW system. (Section 1R21.3)

Inspection Report# : [2005006\(pdf\)](#)

G

Significance: Mar 31, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Ineffective corrective actions leading to the #1 EDG being inoperable on February 15, 2005.

A self-revealing finding and non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, was identified for a February 15, 2005, event involving an inadvertent trip of the #1 Emergency Diesel Generator during troubleshooting repairs to the area lighting system.

This finding was more than minor because it affected the mitigating system cornerstone objective to ensure the availability, reliability, and capability of systems (emergency AC power) that respond to initiating events to prevent undesirable consequences and the related attributes of equipment performance, human performance and procedure quality. The finding is of very low safety significance because the redundant train of AC power was available and the affected train safety function was lost for less than its Technical Specification allowed outage time. This finding also has a cross-cutting aspect of PI&R in that corrective actions for similar prior events were not effective at preventing a repeat condition. (Section 1R13)

Inspection Report# : [2005002\(pdf\)](#)

G

Significance: Mar 31, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Ineffective corrective actions leading to the "A" CRD pump being inoperable on February 17, 2005.

A self-revealing finding and non-cited violation of Technical Specification 3.4.D was identified for failure to adequately restore the "A" control rod drive (CRD) pump to standby readiness after testing and maintenance on February 17, 2005.

This finding was more than minor because it affected the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (high pressure decay heat removal water makeup). The specific attributes of equipment performance, human performance, and procedure quality were adversely impacted for the CRD system, which functions as a high pressure injection makeup source for decay heat removal for transient event sequences. The finding is of very low safety significance because the redundant CRD pump was available and the condition was identified and corrected within 30 days. In accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the inspectors conducted a Significance Determination Process (SDP) Phase 1 screening and determined that this finding required a Phase 2 approximation based upon the loss of a safety function of a single train for greater than its Technical Specification allowed outage time (AOT). The inspectors conducted a Phase 2 SDP evaluation and the issue screened to Green. The most dominant core damage sequences involved the transients without power conversion system (TPCS) and the failure of make-up to the isolation condensers and either failure of the low pressure injection system or failure to depressurize the reactor vessel. This finding was of very low risk significance because of the availability of the redundant CRD pump and the relatively short period of time the "A" CRD pump was inoperable.

This finding involved the cross-cutting aspect of PI&R, in that troubleshooting actions were not sufficient to identify the problem that caused the "A" CRD pump to fail to start on several occasions during testing on February 17, 2005. This issue also involved the cross-cutting aspect of human performance in that maintenance and surveillance personnel did not identify that the drive motor did not charge the breaker closing springs, and plant procedures also failed to include appropriate steps to ensure that breaker closing springs charged at the end of surveillance and maintenance activities to confirm the standby readiness configuration of the system. (Section 1R15)

Inspection Report# : [2005002\(pdf\)](#)

G

Significance: Mar 31, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Ineffective corrective actions leading to the "B" IC system being inoperable due to pressure loading in October 2004.

A self-revealing finding and non-cited violation was identified for failure to comply with 10 CFR 50, Appendix B, Criterion XVI, related to the evaluation of Generic Letter 95-07, "Pressure Locking and Thermal Binding of Safety Related Power Operated Gate Valves," in that the "B" train Isolation Condenser condensate return isolation valve was pressure locked and failed to open on October 8, October 12, and again on October 14, 2004, during testing.

This finding was more than minor because it affected the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (Decay Heat Removal). The specific attributes of design control and equipment performance were adversely impacted for the isolation condenser system which functions to remove post-shutdown decay heat. The finding is of very low safety significance because the redundant train was not similarly affected by the pressure locking condition and remained available, and the pressure locking condition was detected and corrected in sufficient time such that the affected train safety function was lost for less than its Technical Specification allowed outage time. This issue involved the cross-cutting aspect of PI&R, in that the evaluation of Generic Letter 95-07 was insufficient to recognize the susceptibility of the Isolation Condenser System condensate return isolation valves to pressure locking from an at power initiating condition due to thermal binding. (Section 40A5)

Inspection Report# : [2005002\(pdf\)](#)

Barrier Integrity

Significance:  Jul 12, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Maintain Primary Containment Penetration Integrity

A self-revealing non-cited violation (NCV) of Technical Specification (TS) 3.5.A.3 was identified for AmerGen's failure to maintain primary containment penetration integrity. On July 12, 2005, while conducting a primary containment isolation valve surveillance for the nitrogen supply system, the operators failed to adequately evaluate an unexpected indication on the drywell makeup flow recorder. Without pursuing other potential causes, AmerGen concluded that the nitrogen supply system inboard containment isolation valve was leaking by its closed seat and declared the inboard containment isolation valve inoperable. However, on July 13, 2005, AmerGen found that the local leak rate test (LLRT) connection cap located between the two isolation valves was missing. This condition resulted in the outboard containment isolation valve being rendered functionally operable. Amergen's failure to adequately access the plant indications resulted in the primary containment penetration not being properly isolated for a period of time greater than the TS action statement (after discovery).

This finding is considered more than minor because it was associated with the configuration control attribute of the barrier integrity cornerstone and affected the cornerstone objective to provide reasonable assurance that containment will protect the public from radionuclide releases caused by accidents or events. The condition of concern is a failure of the inboard valve to isolate during a design basis accident. This violation has been determined to have a very low safety significance since there was not an actual open pathway in the physical integrity of reactor containment. This finding is related to the cross-cutting area of Human Performance. (Section 1R22)

Inspection Report# : [2005004\(pdf\)](#)

Significance:  May 27, 2005

Identified By: NRC

Item Type: FIN Finding

Failure to Perform Containment Spray System Header Nozzle Inspections

The team identified a finding where the licensee was not performing spray nozzle and header inspections as specified in the Updated Final Safety Analysis Report (UFSAR).

The team determined that this finding was greater than minor because it is associated with Design Control attribute of maintaining containment functionality under the Barrier Integrity cornerstone objective to provide reasonable assurance that the containment will protect the public from radio-nuclide releases caused by accidents or events. This finding is of very low safety significance because the finding did not result in the actual loss of the safety function of the containment spray system. (Section 1R21.1)

Inspection Report# : [2005006\(pdf\)](#)

Significance:  Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Violation of TS 6.8.1 for Inadequate Written Startup Procedure Causing a Loss of Containment Integrity

A self-revealing event involving an inadvertent loss of the containment isolation function resulted in a Green finding and NCV for failure to establish and maintain appropriate procedural requirements for the operation of the containment vent isolation valves, as prescribed by TS 6.8.1 and the Oyster Creek Operational Quality Assurance Plan.

This finding is more than minor because it affects the barrier integrity cornerstone objective to provide reasonable assurance that physical design barriers (containment) protect the public from radionuclide releases caused by accidents or events and the related attributes of configuration control and procedure quality. The finding represented a degradation in the barrier integrity cornerstone, because both drywell vent containment isolation valves were open and the primary containment isolation logic was bypassed for each valve causing a loss of safety function for the containment barrier. Per Appendix H, Containment Integrity SDP for the containment barrier being degraded due to an actual open pathway. Table 6.2, Phase 2 Risk Significance for BWR Mark 1 Containment Types screened to Green because: although the finding resulted in the possible leakage rate from the drywell to the environment of >100% containment volume/day through the open vent system, the fault exposure time was very small (less than 2 hours). A cross-cutting aspect of human performance was identified in that: (1) the procedure development involved a human error in identifying the wrong switch listed in step 6.51.6, and (2) that the initial questioning of this action by an operator did not result in preventing the action and resultant loss of containment integrity.

Inspection Report# : [2004005\(pdf\)](#)

Emergency Preparedness

Significance: TBD Sep 23, 2005

Identified By: NRC

Item Type: AV Apparent Violation

EAL Matrix Not Reviewed For Declaring an Alert

An NRC-identified apparent violation (AV) of 10 CFR 50.47(b)(4) was identified. This AV, which has low to moderate safety significance, occurred because the Oyster Creek E-Plan EAL matrix was not properly utilized to determine if a plant parameter met the EAL threshold for declaring an emergency classification. This resulted in not recognizing during an actual event, that plant parameters met the EAL thresholds for declaring a UE and a subsequent Alert. Immediate corrective actions were taken in which shift crews were retrained on the implementation of E-Plan requirements.

The finding is greater than minor because it is associated with the EP cornerstone attribute of response organization (RO) performance (actual event response). It affects the cornerstone objective of ensuring the capability to implement measures to protect the health and safety of the public during an emergency. The licensee did not use the Oyster Creek E-Plan EAL matrix when plant parameters met the EAL thresholds for declaring a UE and a subsequent Alert. As a consequence, both the onsite and offsite EROs were not activated during actual Alert conditions. Had the event degraded further, the onsite ERO would not have been readily available to assist in the mitigation of the event and the offsite agencies could have been prevented from taking initial offsite response measures. This finding is of low to moderate safety significance because it constituted a failure to implement a Risk Significant Planning Standard during an actual event in which plant conditions met an Alert. The cause of the finding is related to the cross-cutting element of human performance (personnel). (Section 3.1)

Inspection Report# : [2005011\(pdf\)](#)**G****Significance:** Sep 23, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Untimely State/Local Notification of UE

A self-revealing NCV of 10 CFR 50.47(b)(2) was identified in which state and local agencies were not notified within 15 minutes after declaring a UE. The licensee immediately re-trained shift managers in the offsite notification process and proper completion of the notification form.

This finding is greater than minor because it affects the RO performance (actual event response) attribute of the EP cornerstone. Failure to notify offsite agencies in a timely manner impacts the EP cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the public health and safety during an emergency. Timely offsite notifications enable state and local agencies to make decisions for taking initial offsite response measures that could affect the general public. This finding is of very low safety significance because it was a failure to implement a Risk Significant Planning Standard during an actual event associated with the notification of a UE. The cause of this finding is related to the cross-cutting element of human performance (personnel). (Section 3.1)

Inspection Report# : [2005011\(pdf\)](#)**W****Significance:** Nov 29, 2004

Identified By: Licensee

Item Type: VIO Violation

Incorrect EAL Due to EOP Change

Failure to maintain EAL procedure per 50.47(b)(4) which has low to moderate safety significance (White) because the EAL contained an incorrect threshold value used for making a GE declaration. The finding is more than minor because it is associated with the EP cornerstone attribute of standard emergency classification and action level scheme and offsite EP. It affects the cornerstone objective of ensuring the capability to implement measures to protect the health and safety of the public during an emergency. The finding is potentially greater than very low safety significance because an untimely General Emergency could delay actions directed by State and local response plans. This issue was finalized as a White finding on March 1, 2005.

Inspection Report# : [2004009\(pdf\)](#)Inspection Report# : [2005007\(pdf\)](#)

Occupational Radiation Safety

G**Significance:** Dec 31, 2004

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Violation of 10 CFR 20.1501 for Erroneous Radiological Surveys Associated with Repairs to MSIV

A self-revealing event involving a significant underestimation of airborne radioactivity for in-valve grinding work resulted in a Green finding and NCV violation of 10 CFR 20.1501, in that AmerGen did not provide reasonable surveys to evaluate the magnitude of airborne radioactivity concentrations, and potential radiological hazards present, during work on main steam isolation valve.

This finding is more than minor in that it is associated with the program and processes for exposure control and monitoring attribute of the

Radiation Safety Cornerstone attributes and did affect the objective of the Cornerstone. Specifically, analyses of airborne radioactivity sample concentrations for in-valve grinding work, significantly underestimated airborne radioactivity due to incorrect assessment of radionuclides, relative to applicable exposure limits, and incorrect analysis of alpha airborne radioactivity concentrations. The finding was determined to be of very low risk significance (Green) in that: 1) it did not involve an ALARA finding, 2) it did not involve an overexposure, 3) there was no substantial potential for an overexposure and, 4) the ability to assess dose was not compromised. AmerGen implemented additional radiological controls and modified sample analysis. No significant personnel dose was identified.

Inspection Report# : [2004005\(pdf\)](#)

Public Radiation Safety

Significance:  Mar 31, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to implement ODCM requirements for radioactive gaseous and liquid effluent monitoring.

An NRC identified non-cited violation of Technical Specification 6.8.1.a. was identified associated with failure to implement provisions of the radioactive effluent control program specified therein. Specifically, AmerGen did not determine cumulative or projected dose contributions for the current calendar quarter and current calendar year (2004), at least once per 31 calendar days, as required and did not determine, and adjust, the alarm setpoints for the stack and augmented off-gas building radioactive gaseous effluent monitoring instrumentation in accordance with specified methodology and parameters. Further, in April 2004, AmerGen did not take remedial actions to resolve an out-of-specification radioactivity analysis result from its radio-chemistry cross-check analysis laboratory. Lastly, no specific program was identified to ensure use of the gaseous waste treatment system when the projected annual dose could exceed 2 percent of the guidelines of Appendix I to 10 CFR 50.

The failure to implement Technical Specification effluent control requirements is a performance deficiency in that various requirements were not met by AmerGen which were reasonably within its ability to foresee and correct, and which should have been prevented. This finding is greater than minor because failure to implement Technical Specification radioactive effluents controls program requirements affected the cornerstone objective to ensure adequate protection of public health and safety. This finding was evaluated against criteria in NRC Manual Chapter 0609, Appendix D, and determined to be of very low safety significance (Green), in that: 1) it was not a radioactive material control issue, 2) it did involve the effluent release program, 3) there was no impaired ability to assess dose, and 4) public radiation doses did not exceed 10 CFR 50, Appendix I values. This finding also had a cross-cutting aspect of Problem Identification and Resolution in that AmerGen failed to identify this problem during routine self-assessments and audits of the effluent program. (Section 2PS1)

Inspection Report# : [2005002\(pdf\)](#)

Physical Protection

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

Miscellaneous

Significance:  Sep 23, 2005

Identified By: NRC

Item Type: FIN Finding

Inadequate Root Cause Analysis

The inspectors identified a green finding for ineffective corrective actions in that the root cause analysis team did not correctly identify the amount of time Alert conditions existed during the August 6, 2005, event. AmerGen initiated some of their immediate corrective actions and their analysis of the significance of this event based on the Alert lasting for five minutes when it actually lasted for approximately 45 minutes. The licensee confirmed the error, revised the root cause analysis report and entered this issue into their corrective action program.

The finding was more than minor because if left uncorrected, it could have resulted in a more significant safety concern. Specifically, failure to accurately identify information pertaining to operating events can lead to deficiencies in corrective actions. Because this finding does not involve a violation of regulatory requirements, this finding is not suitable for SDP evaluation, but has been reviewed by NRC management and is determined to be a finding of very low safety significance. The cause of the finding is related to the cross-cutting element of problem identification and resolution. Section 4.0

Inspection Report# : [2005011\(pdf\)](#)

Last modified : November 30, 2005