

Oyster Creek 4Q/2004 Plant Inspection Findings

Initiating Events

G**Significance:** Sep 30, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Green NCV was identified for failure to correct a condition adverse to quality affecting IRMs causing a reactor scram

A self-revealing non-cited violation of 10 CFR 50 App. B Crit. XVI was identified for failure to adequately correct a condition adverse to quality affecting the Intermediate Range Monitor (IRM) System, resulting in a reactor scram while at 2% power. The reactor protection system processed IRM Hi-Hi/INOP on channels 13, 14, and 18 IRMs, caused by EMI induced spiking through IRM cabling nicks and loose connections, while operators were driving the Source Range Monitor (SRM) detectors into the core.

This finding was more than minor because it resulted in a plant scram while the reactor was critical and can reasonably be viewed as a precursor to a significant event. This finding has a cross-cutting aspect of PI&R in that engineering evaluation and corrective actions implementation was inadequate to prevent repeat occurrence.

Inspection Report# : [2004004\(pdf\)](#)**G****Significance:** Jun 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Correct a Condition Adverse to Quality - RRCS Voltage Control Circuit

The inspectors identified a non-cited violation of 10 CFR 50 Appendix B, Criterion XI for failure to adequately correct a condition adverse to quality affecting the recirculation pump voltage regulator card which resulted in the trip of the 'D' recirculation pump during four loop full power operations. The licensee replaced the failed components on the voltage regulator cards of all five recirculation loops and have returned them to service.

This finding is greater than minor because it had an actual impact on the operating reactor recirculation pumps. It increased the likelihood of a plant transient, therefore it had an effect on initiating events. The finding is of very low safety significance because the finding does not contribute to a primary or secondary system LOCA initiator, the finding does not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available, and the finding does not contribute to the likelihood of a fire or internal/external flood. This finding has a cross-cutting aspect of PI&R in that engineering evaluation of External Operating Experience was inadequate to prevent a similar condition at the site.

Inspection Report# : [2004003\(pdf\)](#)

Mitigating Systems

G**Significance:** Sep 30, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Inadequate Procedure Resulted in a Temporary Loss of Shutdown Cooling

A self-revealing non-cited violation of Technical Specification 6.8.1 was identified because procedures for restoration of the shutdown cooling system were not adequate. This resulted in the loss of shutdown cooling while removing trip logic bypass jumpers in order to restore the shutdown cooling system to power operation standby readiness requirements in the plant technical specifications. Upon realization of the loss of shutdown cooling system, plant operators returned the shutdown cooling system to operation.

This finding is more than minor because the procedural control deficiency actually led to a loss of the normal shutdown decay heat removal capability and affected the Mitigating Systems Cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences.

Inspection Report# : [2004004\(pdf\)](#)**G****Significance:** Jun 30, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Inadvertent Loss of Shutdown Cooling

A self-revealing event involving an inadvertent loss of shutdown cooling resulted in a Green finding and non-cited violation (NCV) for failure to establish and maintain appropriate procedural requirements for the operation of the shutdown cooling system, as prescribed by Technical Specification 6.8.1 and the Oyster Creek Operation Quality Assurance Plan. The finding was more than minor because the procedural control deficiency actually led to a trip of the shutdown cooling system isolation actuation logic and a resultant loss of the normal shutdown decay heat removal capability. Therefore, this deficiency affected the availability of the decay heat removal function during shutdown operational conditions.

Inspection Report# : [2004003\(pdf\)](#)

G

Significance: Jun 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Human Performance Event Failure to Follow Procedures Led to Failure of Cooling System for EDG #1 on May 17, 2004.

A self-revealing event involving an inadvertent loss of the #1 Emergency diesel generator (EDG) cooling fan resulted in identifying a preliminary White finding and apparent violation for failure to implement appropriate procedural requirements for the maintenance of the #1 EDG system during an overhaul conducted April 26 - 30, 2004, as prescribed by Technical Specification 6.8.1. The finding was more than minor because it affected the mitigation 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. A Phase 1 SDP determined that the finding represented a degradation in both the mitigating systems and barrier integrity cornerstones, because both core spray and containment spray systems were affected. Since the #1 EDG was inoperable for a period of 17 days (April 30 - May 17), exceeding the Technical Specification Allowed Outage Time of 7 days, the finding required a Phase 2 approximation. The Phase 2 evaluation of this finding resulted in a preliminary greater than Green finding based on a Loss of Offsite Power and failure to recover power. A Phase 3 evaluation determined this finding to be Green. Also, this finding has a cross-cutting aspect of human performance in that technicians failed to follow written procedures when replacing the fan belts for the #1 emergency diesel generator during a two-year overhaul in April 2004.

Inspection Report# : [2004003\(pdf\)](#)

G

Significance: May 21, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Perform Corrective Actions for Mode Switch Failure on August 14, 2003

The team identified an NCV of 10 CFR 50, Appendix B, Criterion XVI, which requires that prompt corrective actions be implemented for conditions adverse to quality. Specifically, AmerGen did not implement a planned corrective action to address a deficiency associated with operation of the reactor mode switch during a reactor trip on August 14, 2003.

The finding was determined to be more than minor because it negatively affected the mitigating systems cornerstone attribute of human performance. Failure to place the reactor mode switch into the shutdown position following a reactor scram would be expected to result in a loss of the normal heat sink and complicate the event response. The finding was of very low safety significance (Green), because it was not a design or qualification deficiency, and it did not result in an actual loss of safety function for risk-significant equipment with respect to internal or external events. Additionally, the team noted that the heat sink would be recoverable from an event of this type.

Inspection Report# : [2004006\(pdf\)](#)

G

Significance: Mar 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate ESW Procedure due to a Poor Operability Evaluation

A Green NCV was identified for failure to adequately maintain the Emergency Service Water (ESW) pump trouble alarm response procedure as required by Technical Specification (TS) 6.8.1., due to an erroneous operability evaluation compensatory action. The finding was more than minor in that it is associated with the equipment performance and procedural quality attributes for the Mitigating Systems cornerstone, and affected the Mitigating System's objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. Additionally, this finding was associated with the design control attribute of maintaining the functionality of the containment for the Barrier Integrity cornerstone.

Inspection Report# : [2004002\(pdf\)](#)

W

Significance: Jan 22, 2004

Identified By: NRC

Item Type: VIO Violation

Finding Regarding the May 2003 4160 V Cable Fault & Loss of the 1C 4160 V Bus

On May 20, 2003, the 1C 4160 VAC vital bus was lost because of a fault on the feeder cable from the EDG 1 output breaker. The cable fault occurred because AmerGen Engineering failed to identify in Nov. 2001, following another 4160 V cable failure, that the cable in question was of a type and in an adverse environment that rendered it susceptible to an identical fault. As a result, AmerGen took no action to evaluate, test and/or replace this cable in spite of that event and an identical failure in 1996 of the same cable, subject to similar adverse environmental conditions, on EDG 2.

This finding was more than minor because it was associated with the equipment performance attribute of the initiating events and mitigating systems cornerstones. A Phase 2 evaluation of this issue concluded that the finding was of low to moderate safety significance (White). The final NOV was reviewed and closed in supplemental inspection 2004007.

Inspection Report# : [2003005\(pdf\)](#)

Inspection Report# : [2004007\(pdf\)](#)

Barrier Integrity**G**

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\(pdf\)](#)

G

Significance: Sep 30, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Failure to Adequately Correct a Condition Adverse to Quality Affecting a Main Steam Isolation Valve.affecting a Main Steam Isolation Valve.

A self-revealing Green NCV was identified for failure to adequately correct a condition adverse to quality affecting MSIV, NS04A, which resulted in the failure of the MSIV to close during testing. Contrary to 10 CFR 50 Appendix B, AmerGen failed to timely implement the installation of the back-seat modification provided in the 1993 GE SIL 568 and take proper action to reduce the MSIV susceptibility to rib guide wear and subsequent failure to close. This was entered into the AmerGen corrective action program under CAP O2004-2499.

This finding is more than minor because if left uncorrected, it could have resulted in a more significant safety concern regarding barrier integrity. The finding has a cross-cutting aspect of PI&R in that engineering evaluation of external OE was inadequate to prevent a similar failure at the site.

Inspection Report# : [2004004\(pdf\)](#)

G

Significance: Sep 30, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Failure to Maintain the Core Thermal Power Below the Licensed Limit

A self-revealing non-cited violation of Operating License No. DPR-16, Section 2.C.(1) was identified because operators exceeded the licensed thermal power limit of 1930 MWt by approximately 0.4% for a period of approximately 19 hours. When identified, Oyster Creek operators reduced power until steady state core thermal power was below 1930 MWt.

The finding is more than minor because if left uncorrected, reactor core thermal power could have exceeded the initial power level of 102% for certain analyzed plant events. The finding has a cross-cutting aspect of human performance in that operators failed to identify and respond to an

alarming condition in the Plant Computer System (PCS) that affected the heat balance calculation.

Inspection Report# : [2004004\(pdf\)](#)

G

Significance: Jun 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Operator Failure to Recognize Degraded Secondary Containment Airlock

The inspectors identified a Green finding and NCV for failure to identify a condition adverse to quality when a secondary containment airlock door was found open, resulting in a momentary violation of TS 3.5.B and Procedure 312.10, "Secondary Containment Control," Rev. 8. The airlock doors function to ensure secondary containment integrity and to support the SGTS capability to maintain a negative pressure in the reactor building and minimize ground level releases of radioactive materials.

The finding was more than minor because the failure to timely identify the condition adverse to quality for the airlock door led to inappropriate controls being used to override the interlock. If left uncorrected this condition could have led to a more significant event involving a failure of the airlock because of a door interlock failure. Also, this condition is associated with the Reactor Safety Barrier Integrity Cornerstone and affects the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases from accidents or events. This finding has a cross-cutting aspect of PI&R because AmerGen failed to identify the degraded secondary containment airlock door.

Inspection Report# : [2004003\(pdf\)](#)

Emergency Preparedness

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\(pdf\)](#)

Occupational Radiation Safety

G

Significance: Dec 31, 2004

Identified By: Self Disclosing

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\(pdf\)](#)

G

Significance: Mar 31, 2004

Identified By: Self Disclosing

Item Type: FIN Finding

ALARA Planning and Controls

A self-revealing finding having very low safety significance associated with occupational radiation exposure reduction was identified. During the Fall 2002 refueling outage, conduct of reactor vessel reassembly activities resulted in 12.4 person-rem of collective radiation exposure versus an exposure estimate of 6.5 rem.

The finding was more than minor in that the screening criteria (work exposure greater than five person-rem and greater than 50% above estimated) specified in NRC Manual Chapter 0612, Appendix E, were exceeded. This finding was determined to be of very low safety significance (Green) because the additional dose did not exceed 25 person-rem and involved only one occurrence.

Inspection Report# : [2004002\(pdf\)](#)

G

Significance: Mar 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Access Control to Radiologically Significant Areas

On March 18, 2004, the inspector determined that secondary keys for locked High Radiation Areas were not maintained under the administrative control of operations and/or radiation protection supervision on duty to prevent unauthorized entry. The keys were accessible to unauthorized personnel. This is a violation of Technical Specification 6.13.2.

The finding was determined to be more than minor in that it is associated with one of the Radiation Safety Cornerstone attributes (procedures and exposure control) and did affect the objective of the Cornerstone. The finding was determined to be of very low safety significance in that: 1) it did not involve an ALARA finding, 2) it did not involve an overexposure, 3) there was no substantial potential of an overexposure and, 4) the ability to assess dose was not compromised.

Inspection Report# : [2004002\(pdf\)](#)

G

Significance: Mar 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Radiation Monitoring Instrumentation and Protective Equipment

On March 18, 2004, the inspector identified that AmerGen was not functionally testing self-contained breathing apparatus (SCBAs) in accordance with the manufacturer's recommendations. This is a violation of 10 CFR50.47(b)(10) associated with failure to maintain protective measures for emergency workers.

The finding is more than minor in that it was associated with a failure to meet a regulatory requirement and the failure to maintain onsite respiratory protective equipment in accordance with regulatory requirements.

Inspection Report# : [2004002\(pdf\)](#)

Public Radiation Safety

Physical Protection

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

Miscellaneous

Significance: N/A May 21, 2004

Identified By: NRC

Item Type: FIN Finding

Identification and Resolution of Problems

The team concluded the implementation of the corrective action program at Oyster Creek Generating Station was adequate. The team determined that AmerGen was generally effective at identifying discrepant conditions at an appropriate threshold and entering them into the corrective action program. Identified issues were typically prioritized appropriately and in a timely fashion and were properly evaluated commensurate with the potential safety significance. Overall, the evaluations reasonably identified the causes of the problem, the extent of the condition, and provided for corrective actions to address the causes. However, in some cases, the corrective action program was not effectively used to evaluate, resolve and prevent problems. There were also some examples where issue evaluations were not complete, and corrective

actions were not effective at resolving problems. Audits and self-assessments identified adverse conditions and negative trends, and were generally self-critical and consistent with the team's findings. On the basis of interviews conducted, the team determined that plant staff personnel were familiar with and utilized the corrective action program to identify problems.
Inspection Report# : [2004006\(pdf\)](#)

Last modified : April 21, 2005