

Callaway

2Q/2004 Plant Inspection Findings

Initiating Events

G**Significance:** Mar 24, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Reactor trip during power ascension

A self-revealing finding and a noncited violation of Technical Specification 5.4.1, "Procedures," was identified after an operator error resulted in an unplanned reactor trip. The operator's action to open the main feedwater regulating valves, before the plant was stable and at the prescribed power level, was the direct cause of the reactor trip.

This finding is greater than minor because the reactor trip was a transient initiator affecting the initiating events cornerstone. The operator's failure to follow the procedure was a performance deficiency which affected the human performance attribute of the initiating events cornerstone. The inspectors determined this finding to be of very low safety significance (Green), because the condition did not contribute to the likelihood of a primary or secondary system loss of coolant accident initiator, did not contribute to a loss of mitigation of equipment functions, and did not increase the likelihood of a fire or internal/external flood. The licensee placed the issue into the corrective action program as CAR 200401167.

Inspection Report# : [2004002\(pdf\)](#)**G****Significance:** Mar 24, 2004

Identified By: Self Disclosing

Item Type: FIN Finding

Loss of the TDAFW pump during a transient

A self-revealing finding was identified after the unplanned loss of the turbine-driven auxiliary feedwater pump during a plant transient. After a reactor trip, an operator improperly secured the turbine-driven auxiliary feedwater pump, which lead to an overspeed trip.

This finding was greater than minor because the loss of the turbine-driven feedwater pump affected the availability/reliability objective of the mitigating system equipment performance cornerstone. The inspectors concluded that this finding was only of very low safety significance because: it was not a design or qualification deficiency, it did not represent the actual loss of the safety function of a system, it did not represent the actual loss of the safety function of a single train for greater than its Technical Specification allowed outage time, it did not represent the loss of a non-Technical Specification related train (designated as risk significant per 10 CFR 50.65 a(4)) for greater than 24 hours, and it did not screen as potentially risk significant due to a seismic, fire, flooding, or severe weather initiating event. The licensee's placed the issue into the corrective action program as CAR 200401167.

Inspection Report# : [2004002\(pdf\)](#)**G****Significance:** Mar 24, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Safety injection due to operator error

A self-revealing finding and a noncited violation of Technical Specification 5.4.1, "Procedures," was identified after an operator error resulted in an unplanned safety injection and main steamline isolation. The operator failed to place pressurizer pressure control in automatic during plant heatup operations. Pressurizer pressure exceeded the Permissive P-11 setpoint, while the main steamline pressure was still below the safety injection setpoint.

This finding is greater than minor because the safety injection was a transient initiator contributor affecting the initiating events cornerstone. The operator's failure to follow the procedure was a performance deficiency which affected the human performance attribute of the initiating events cornerstone. The inspectors concluded that this finding is of very low safety significance because the condition did not contribute to the likelihood of a primary or secondary system loss of coolant accident initiator, did not contribute to a loss of mitigation of equipment functions, and did not increase the likelihood of a fire or internal/external flood.

Inspection Report# : [2004002\(pdf\)](#)**G****Significance:** Dec 31, 2003

Identified By: Self Disclosing

Item Type: FIN Finding

The failure of a licensed operator to follow a procedure resulted in an unplanned plant transient.

An unplanned plant transient resulted from the failure of an operator to follow a written procedure. The transient occurred after the unexpected loss of all plant service cooling water and all but one of the condenser circulating water pumps. Cooling water was lost after an operator inadvertently opened the feeder breaker supplying power to the pumps.

This finding is greater than minor because the operator error affected the human performance attribute of the initiating events cornerstone. The inspectors determined that the finding did not contribute to the likelihood of a primary or secondary system loss of coolant accident initiator, did not contribute to a loss of mitigation equipment functions, and did not increase the likelihood of a fire or internal/external flood. The finding was similar to Example 4.b in MC 0612, Appendix E and was entered into the licensee's corrective action program as Callaway Action Request (CAR) 200308178. Inspection Report# : [2003006\(pdf\)](#)

Mitigating Systems

Significance:  Mar 24, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate smoke alarm response procedure for control room supply.

The alarm response procedure for responding to smoke in the control room outside supply duct was inadequate because it did not direct operators to isolate outside air makeup upon receipt of the alarm. This alarm would not cause an automatic isolation of the control room, so operators must recognize the condition and take manual action to prevent losing control room habitability. Failure to have a procedure, required by Technical Specification 5.4.1.a and Regulatory Guide 1.33, that provided appropriate response actions for abnormal or alarm conditions was a violation. This issue was entered into the licensee's corrective action program under Callaway Action Request 200306977.

This issue was more than minor because failure to isolate the control room ventilation could lead to unnecessary evacuation, which would result in a plant transient and disabling much of the mitigation equipment that would otherwise be available. This issue was of very low safety significance because the frequency of the specific fire scenario necessary to cause an unnecessary control room evacuation was determined to be very small.

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

Significance:  Oct 21, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Take Required Compensatory Measures When CREVIS Operation Rendered ESF Switchgear Room Halon System Inoperable

The licensee did not recognize that the halon system protecting both engineered safety feature switchgear rooms was rendered inoperable and, therefore, failed to take the required compensatory action when the control room emergency ventilation and isolation system was in operation. Two ventilation dampers in parallel through the common fire wall between these rooms open when this system starts. The team identified that these dampers do not automatically shut when the halon system actuates. The halon system would not be capable of reaching the required concentration to suppress a fire because halon would be allowed to escape under these conditions. License Condition 2.C.(5)(c) requires that the licensee implement and maintain in effect all provisions of the approved fire protection program as described in the Standardized Nuclear Unit Power Plant System Final Safety Analysis Report. Updated Final Safety Analysis Report, Table 9.5.1-2, "Halon Systems," requires that when this halon system is inoperable, the licensee shall establish a continuous fire watch with backup fire suppression capability in the affected area. Contrary to this, on numerous occasions throughout the operating life of the plant, the team found that the licensee had failed to post a continuous fire watch whenever the vital switchgear room halon system was rendered inoperable due to testing of the control room ventilation system. This violation of License Condition 2.C.(5)(c) will be treated as a noncited violation, consistent with Section VI.A of the Enforcement Policy. This issue was in the licensee's corrective action program under Callaway Action Request 200307189.

This finding was greater than minor because it involved the potential degradation of a fire protection feature protecting the electrical distribution equipment powering both trains of mitigating systems. This finding is of very low safety significance because the fire ignition frequency in the rooms affected is low, the remaining fire detection and suppression capability are unaffected, and sufficient accident mitigation equipment was available.

Inspection Report# : [2003007\(pdf\)](#)

Significance:  Sep 20, 2003

Identified By: NRC

Item Type: NCV NonCited Violation


Ineffective corrective actions following an EDG rocker arm lube oil valve mispositioning.

The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action." This violation was related to inadequate corrective actions taken following an emergency diesel generator rocker arm lube oil valve mispositioning. The licensee's corrective actions were not adequate to prevent recurrence.

This finding was greater than minor because it could reasonably be viewed as a precursor to a significant event and if left uncorrected, would become a more significant safety concern. This finding was of very low safety significance because the condition was not a design or qualification deficiency, did not represent the actual loss of a safety function of a system, did not represent the actual loss of a safety function of a single train for greater than its Technical Specification allowed outage time, did not represent the loss of a non-Technical Specification related train for greater than 24 hours, or did not screen as potentially risk significant due to a seismic, fire, flooding, or severe weather initiating event.

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

Barrier Integrity


Significance:  Apr 12, 2004
 Identified By: Self Disclosing
 Item Type: NCV NonCited Violation

Inadequate Work Instructions Resulted in the Failure of Residual Heat Removal Pump Seal.

Green. A self-revealing finding and noncited violation of Technical Specification 5.4.1, "Procedures," was identified after maintenance resulted in the failure of a residual heat removal pump seal during shutdown cooling operations. The licensee's maintenance work instructions were not adequate to ensure the mechanical seal matting ring surface was fully seated when replaced on March 31, 2004. The seal failed on April 11 after about 36 hours of operation.

This finding was greater than minor because it affected the barrier integrity cornerstone attribute of procedure quality, as related to maintenance procedures affecting the functionality of containment. The failed seal provided a containment leakage path for 7 gallons per minute reactor coolant. The inspectors evaluated the finding using the significance determination process for at-power situations because the issue involved the potential degradation of containment barrier integrity during power operations prior to the reactor shutdown on April 10. The finding was only of very low safety significance because the condition did not represent an actual open pathway in the physical integrity of reactor containment during power operation, was not an actual reduction of the atmospheric pressure control function of the reactor containment, and did not represent a degradation of a the control room auxiliary building or spent fuel pool barrier function. The licenses placed the issue into the corrective action program as CAR 200402749.

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


Significance:  Apr 02, 2004
 Identified By: NRC
 Item Type: NCV NonCited Violation

Inadequate procedure for implementation of TS 5.5.2.

The team identified a noncited violation of Technical Specification 5.4.1(e) for failure to establish an adequate procedure for evaluating emergency core cooling system leakage outside of containment as required by Technical Specification 5.5.2.

This finding was more than minor since it represented a programmatic weakness which, if left uncorrected could become a more significant safety concern. This finding screened as Green, very low safety significance, during the SDP Phase 1 analysis, because it only represented a degradation of the radiological barrier function provided for the control room and auxiliary building.

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


Significance:  Dec 31, 2003
 Identified By: NRC
 Item Type: NCV NonCited Violation

Inadequate postmaintenance test of a pressurizer power operated relief block valve.

The inspectors identified a finding and noncited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control." This finding is related to inadequate testing of the pressurizer power operated relief valve (PORV) block valve following modifications to the actuator circuit. The testing failed to detect that the valve actuator had failed.

This finding is greater than minor because the block valve failure affected the reactor coolant system equipment and barrier performance attribute of the barrier integrity cornerstone. The inspectors evaluated the condition with the Phase 2 worksheet because the finding involved the reactor coolant system barrier. The finding was only of very low safety significance because the block valve failure did not significantly contribute to an increase in core damage frequency. The licensee placed this issue in their corrective action program as CAR 200306563.

Inspection Report# : [2003006\(pdf\)](#)

Significance:  Dec 31, 2003
 Identified By: NRC
 Item Type: NCV NonCited Violation

Inadequate incorporation of design information into work instructions lead to the failure of a pressurizer block valve.

The inspectors identified a finding and NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." This finding is related to inadequate incorporation of design information into the work instructions for modifications to a pressurizer PORV block valve actuator circuit. The inadequate work instructions resulted in the failure of the valve actuator following return to service.

This finding is greater than minor because the block valve failure affected the reactor coolant system equipment and barrier performance attribute of the barrier integrity cornerstone. The inspectors evaluated the condition with the Phase 2 worksheet because the finding involved the reactor coolant system barrier. This finding is only of very low safety significance because the block valve inoperability did not significantly contribute to an increase in core damage frequency. The licensee placed this issue in their corrective action program as CAR 200306563.

Inspection Report# : [2003006\(pdf\)](#)

Significance:  Sep 20, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

Ineffective actions following an unanalyzed condition.

The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action." This violation was related to inadequate corrective actions taken following identification of an unanalyzed condition (control room ventilation envelope door open) which resulted in the postulated postaccident control room dose limits to be exceeded. The licensee's corrective actions failed to prevent recurrence of the condition.

This finding was greater than minor because it was associated with the integrity of the control room envelope. Because this finding involved the degradation of barrier integrity, the finding was evaluated using the significance determination process for at-power situations. The inspectors concluded that the finding was only of very low safety significance because the finding only represented a degradation of the radiological barrier function provided for the control room.

Inspection Report# : [2003005\(pdf\)](#)**G****Significance:** Sep 20, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

Failure of containment radiation monitors to meet Technical Specifications operability requirements.

The inspectors identified a green noncited violation of 10 CFR Part 50, Appendix B, Criterion III, associated with the licensee's failure to assure that applicable regulatory requirements and the design basis for the containment radiation gas monitors were correctly translated into Calculation GT-13 and, ultimately, the radiation monitor setpoint. This deficiency resulted in the containment gaseous channel becoming incapable of performing the design bases function to detect a one gallon per minute reactor coolant system leak within one hour in accordance with the licensee's commitment to Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems."

This finding was greater than minor because the containment gas channel radiation monitor was not capable of performing the design basis function for an extended period of time. The inoperability of the radiation monitor resulted in potential impact on reactor safety and adversely affected the reactor coolant leakage performance attribute of the barrier integrity reactor safety cornerstone. The finding was only of very low safety significance because other methods of reactor coolant system leak detection were available to the licensee. The unavailability of the gaseous channel leak detection function did not contribute to an increase in core damage sequences when evaluated using the significance determination process Phase 2 worksheets.

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

Emergency Preparedness

Occupational Radiation Safety

G**Significance:** Jun 23, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Inadequate Operational Control Resulted in an Unexpected High Radiation Field.

Green. A self-revealing finding and NCV of Technical Specification 5.4.1 was identified after three plant workers were exposed to an unplanned high radiation area. The event was the result of inadequate operational control of the in-core system. The exposure occurred when a reactor engineer removed two in-core detectors from the core after control room personnel authorized a reactor building entry. The procedure used by the reactor engineer to operate the in-core system was not appropriate to the circumstances.

The inspectors used the occupational radiation safety determination processes to analyze the significance of the finding. This finding was greater than minor because it affected the programs and process attribute of the occupational radiation safety cornerstone. The use of the inappropriate procedure could have resulted in unplanned or unintended dose which could have been significantly greater as a result of a single, minor, alteration of the circumstances. The inspectors concluded the issue was of very low safety significance because the inspection finding was not related to as low as is reasonably achievable, did not involve an overexposure, and there was no substantial potential for overexposure. The licensee entered this issue into the corrective action program as Callaway Action Request 200402640. This issue was determined to have crosscutting aspects regarding human performance.

Inspection Report# : [2004003\(pdf\)](#)**G****Significance:** Dec 31, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to barricade a high radiation area.

The inspectors identified a non-cited violation of Technical Specification 5.7.1 because the licensee failed to barricade a high radiation area to prevent inadvertent entry. Specifically, on October 21, 2003, while performing independent radiation measurements, the inspectors identified a high radiation

area on the 2031-foot elevation of the radwaste building that was not enclosed by a barricade. Radiation dose rates around a demineralizer sample panel drain tank were as high as 140 millirems per hour at 30 centimeters from the surface penetrated by the radiation. The finding is in the licensee's corrective action program as CAR 200307676.

This finding was greater than minor because inadequate controls of high radiation areas affect the licensee's ability to ensure adequate protection of worker health and safety from exposure to radiation and affected the cornerstone attribute/exposure control. Because the finding involved the potential for workers to receive significant unplanned, unintended dose as a result of conditions contrary to technical specification requirements, the inspector used the Occupational Radiation Safety Significance Determination Process described in Manual Chapter 0609, Appendix C, to analyze the significance of the finding. The inspector determined that a substantial potential for overexposure did not exist; therefore, the finding had very low significance. Inspection Report# : [2003006\(pdf\)](#)

Public Radiation Safety

Significance:  Jul 02, 2003

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Dose rates on the external surface of a package in excess of DOT limits.

The licensee failed to maintain contact dose rates to 200 millirems per hour or less on a package transported in an open, exclusive use shipment, in violation of 49 CFR 173.441(b)(1).

This self-revealing, noncited violation was greater than minor because the finding is associated with one of the Public Radiation Safety Cornerstone attributes (transportation packaging) and the finding affects the associated cornerstone objective (to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain). The finding was related to an occurrence in the licensee's radioactive material transportation program that was contrary to Department of Transportation regulations and, therefore, was processed through the Public Radiation Safety Significance Determination Process. The finding is of very low safety significance because it involved a radiation dose limit (200 millirems per hour) that was exceeded, but the dose rate (300 millirems per hour) did not exceed the limit by more than two times and it was not accessible to the public.

Inspection Report# : [2003009\(pdf\)](#)

Physical Protection

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

Miscellaneous

Significance:  Apr 02, 2004

Identified By: NRC

Item Type: FIN Finding

Identification and resolution of problems.

The team reviewed approximately 105 corrective action documents, 28 self-assessments and audits, and numerous procedures, industry information, and other documents. The team determined that there was a general improvement in implementation of the corrective action program; thresholds for identifying issues remained appropriately low, and in most cases, corrective actions were adequate to address conditions adverse to quality. However, in some instances, improper prioritization or the lack of a rigorous evaluation of problems continued to challenge the licensee. The team also concluded that a safety conscious work environment exists at Callaway, however some negative comments received during interviews indicated that efforts to improve in this area have not been completely effective.

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

Significance: SL-III May 14, 2001

Identified By: NRC

Item Type: VIO Violation

Discrimination against a security officer and a training instructor for having engaged in protected activity

10 CFR 50.7(a) prohibits discrimination by a Commission licensee against an employee for engaging in certain protected activities. On October 27, 1999, the security officer and the training instructor identified to the Wackenhut Corporation a violation of NRC requirements at the Callaway Nuclear Plant. Based at least in part on this protected activity, the Wackenhut Corporation unfavorably terminated the security officer's employment for lack of trustworthiness and gave a written reprimand to the training instructor on November 19, 1999.

In consideration of the severity of the actions taken against the former security officer and the training instructor, the level of management involved in the adverse action, and the nature of contractor/licensee relationships, this violation has been categorized in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy), NUREG-1600 at Severity Level III (EA-01-005, dated May 14, 2001).
Inspection Report# : [2001003\(pdf\)](#)

Last modified : September 08, 2004