

Perry 1

2Q/2004 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2004

Identified By: Self Disclosing

Item Type: FIN Finding

LOSS OF NORMAL POWER SUPPLY TO RPS BUS 'B'

A finding of very low safety significance was self-revealed when the normal power supply to reactor protection system (RPS) bus 'B' was lost on November 29, 2003. A comprehensive investigation by the licensee determined that an age-related failure of a contactor in the circuitry resulted in a blown fuse which de-energized RPS bus 'B.' The licensee's investigation also identified that General Electric (GE) Service Information Letter (SIL) 508 issued in 1990, if properly implemented, would have prevented the event. The licensee's immediate actions included restoration of RPS bus 'B' by transfer to the alternate power supply. The failed contactor was replaced. The primary cause of this finding was related to the cross-cutting area of Human Performance because the licensee's review of GE SIL 508 failed to identify all affected plant components.

This finding was more than minor because it was associated with reactor safety/initiating event cornerstone attribute of equipment performance and affected the cornerstone objective of limiting the likelihood of events that upset plant stability. The finding was of very low safety significance because mitigating system availability was unaffected. The affected contactors were not safety-related components. Therefore, no violation of regulatory requirements occurred.

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

Mitigating Systems

Significance: G Jun 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO DISPOSITION IDENTIFIED IMPAIRED TORNADO BARRIERS

On April 1, 2004, a finding of very low safety significance was identified by the inspectors in that on three occasions in 2003 the licensee failed to treat identified impaired tornado barriers in accordance with established procedures. The primary cause of this finding was related to the cross-cutting area of Human Performance. The licensee's corrective actions included returning to compliance with their procedure either through repair of the door or performance of an engineering analysis of the door.

The issue was more than minor because it was associated with the Mitigating System cornerstone attribute of protection against external factors and affected the Mitigating System Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee's failure to follow procedural guidance resulted in the existence of a degraded condition without compensatory action. The issue was of very low safety significance because, if the affected door's tornado wind function was assumed to be completely failed or unavailable, the loss of function by itself (1) would not cause a plant trip; (2) would not degrade two or more trains of a multi-train safety system or function; and (3) would not degrade one or more trains of a system that supports a safety system or function. The inspectors reached their conclusion based on the position of the impaired door relative to safety-related equipment. The issue was an NCV of Technical Specification 5.4 which required the implementation of procedures as recommended in Regulatory Guide 1.33. Regulatory Guide 1.33 recommended the establishment of procedures for equipment control.

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

Significance: G Jun 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

IMPROPERLY INSTALLED TEST EQUIPMENT DAMAGES VALVE IN COMBUSTIBLE GAS CONTROL SYSTEM

On March 30, 2004, a self-revealed finding of very low safety significance occurred when the licensee improperly installed test equipment which subsequently damaged a valve in the combustible gas control system. The finding also affected the cross-cutting area of Human Performance because the licensee's procedure, and worker attention to detail, were both less than adequate and contributed to damaging the valve. As corrective actions, the licensee replaced the damaged portions of the valve and performed training.

The issue was more than minor because the installation error resulted in over-stressing the valve operator and extending the time the plant was in a limiting condition for operation by four days. As such, the Mitigating System Cornerstone objective of system availability and operability was adversely affected. The finding was of very low safety significance due primarily to the short duration of extended unavailability. The issue was an NCV of Technical Specification 5.4 which required the implementation of procedures as recommended in Regulatory Guide 1.33. Regulatory Guide 1.33

recommended the establishment of procedures for performing maintenance that can affect the performance of safety-related equipment.
Inspection Report# : [2004007\(pdf\)](#)

Significance:  Jun 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

UNINTENTIONAL AIR-ROLL OF THE EMERGENCY DIESEL GENERATOR

On April 10, 2004, a self-revealed finding of very low safety significance occurred when the licensee unintentionally air-rolled the emergency diesel generator (EDG) following replacement of a timing relay. An investigation by the licensee revealed that the test method specified in the procedure actuated the air-start circuit but did not include steps to prevent air-roll of the EDG. This finding also affected the cross-cutting area of Human Performance because the licensee's development of the post-maintenance test failed to either inhibit air-roll of the EDG or verify the EDG could be safely air-rolled. Licensee corrective actions included conducting training for operations and planning personnel on appropriate controls during work activities.

The issue was more than minor because the finding could reasonably be viewed as a precursor to a more significant event because the air-roll was not anticipated by the licensee. The finding was of very low safety significance because no safety-related mitigation systems were affected by the issue. The issue was an NCV of Technical Specification 5.4 which required the implementation of procedures as recommended in Regulatory Guide 1.33. Regulatory Guide 1.33 recommended the establishment of procedures for performing maintenance that can affect the performance of safety-related equipment.

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

Significance:  Jun 11, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW QUALITY CONTROL REQUIREMENTS OF ANSI N45.2.8 - 1975

A finding of very low significance was identified regarding the licensee's failure to establish quality control requirements described in American Nuclear Standards Institute (ANSI) N45.2.8 - 1975 for reassembling the ESW pump 'A' coupling in 1997. The primary cause of this finding was a general lack of knowledge of the quality control requirements.

This issue was more than minor because, if left uncorrected, it could lead to a more significant event. This finding was of very low safety significance because omitting the need for such inspections was a barrier to preventing the failure of the ESW pump coupling and not a direct cause of the failure. This finding was determined to be an NCV of 10 CFR 50, Appendix B, Criterion X. To address this issue, the licensee entered it into the corrective action program because the failure was programmatic in nature and not in need of an immediate corrective action.

Inspection Report# : [2004008\(pdf\)](#)

Significance:  Jun 11, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

MISSED PRIOR OPPORTUNITIES TO IDENTIFY MISSING VENT VALVE IN THE FEEDWATER LEAKAGE CONTROL SYSTEM DURING ROOT CAUSE EVALUATION FOR CR 03-04764

A finding of very low significance was identified in the root cause evaluation for CR 03-04764, "Post-Loss of Offsite Power (LOOP) LPCS/RHR 'A' Waterleg Pump Air Binding," regarding the licensee's failure to identify several missed opportunities that included the venting procedure biennial reviews between 1985 and 1995, a 1996 design review of the RHR system, and venting issues that occurred during the 2003 refueling outage. The primary cause of this finding was an inability to conduct a thorough root cause evaluation.

The issue was more than minor because, if left uncorrected, it could be a precursor to a significant event. This finding was of very low safety significance because the failing to identify these missed opportunities would not have directly prevented air binding of the LPCS/RHR waterleg pump. This finding was determined to be an NCV of 10 CFR 50, Appendix B, Criterion XVI. To address this issue, the licensee entered it into the corrective action program because the failure was programmatic in nature and not in need of an immediate corrective action.

Inspection Report# : [2004008\(pdf\)](#)

Significance:  Jun 11, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

TRAINING EFFECTIVENESS NOT ADDRESSED IN ROOT CAUSE REPORT FOR CRS 02-03972, 03-05065 AND 03-04912

A finding of very low significance was identified regarding the licensee's failure to recognize whether training was effective for the following root cause evaluations addressed in: 1) CR 03-04912 for operators not properly restoring the Division 1 EDG to standby following the loss of offsite power event that occurred on August 14, 2003; 2) CR 02-03972 for correcting maintenance craft's inability to adjust breaker linkage rods for the HPCS breaker; and 3) CR 03-05065 when the ESW pump 'A' coupling design changed from a screwed to a keyed configuration in 1985. The primary cause of this finding was the failure to recognize that effective training could have prevented these events, since these events typically involved skill-of-the-craft activities.

This issue was more than minor because if left uncorrected, it could lead to a more significant event. This finding was of very low significance because

failure to evaluate training effectiveness was not a direct cause to these three events. This finding was determined to be an NCV of 10 CFR 50, Appendix B, Criterion XVI. To address this issue, the licensee entered it into the corrective action program because the failure was programmatic in nature and not in need of an immediate corrective action.

Inspection Report# : [2004008\(pdf\)](#)

Significance: TBD Jun 04, 2004

Identified By: Self Disclosing

Item Type: AV Apparent Violation

REPEAT FAILURE OF ESW PUMP UPPER SHAFT COUPLING

A self-revealed apparent violation of 10 CFR Part 50, Appendix B, Criterion XVI, corrective action requirements, having a potential safety significance greater than very low occurred, on May 21, 2004, when the Division 1 emergency service water (ESW) pump failed when the uppermost split ring coupling broke in half. The primary cause for this failure was related to the cross-cutting issue of problem identification and resolution in that the licensee neither understood nor corrected the design deficiencies associated with the coupling. After a loss of ESW occurred due to a coupling failure in September 2003, the licensee did not take adequate corrective actions to preclude repetition of a significant condition adverse to quality.

This finding is unresolved pending completion of a significance determination. This finding is more than minor because it directly affects the mitigating system cornerstone objective of system operability, availability, and reliability. Specifically, the finding is associated with loss of one division of ESW for 12 days. This finding was determined to have a potential safety significance greater than very low because of the loss of one division of ESW. The licensee has replaced the pump.

Inspection Report# : [2004011\(pdf\)](#)

Significance:  Mar 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

UNATTENDED ITEMS LEFT IN CONTAINMENT

A finding of very low safety significance was identified by the inspectors for a violation of Technical Specification 5.4, "Procedures." A licensee procedure required that unless risk-assessed, no items shall be left unattended below the 623' 4" level in containment at any time. On February 5, 2004, the inspectors observed a large sheet of permalox by the 'A' hydraulic power unit with no workers in the area. The licensee removed the material later that same day. The primary cause of this finding was related to the cross-cutting area of Human Performance because plant personnel failed to follow licensee procedures and left material unattended in the swell region of containment.

This finding was more than minor because the inspectors concluded that it could reasonably be viewed as a precursor to a more significant event. Specifically, leaving unattended items in containment can lead to the items falling into the suppression pool without being noticed or being transported into the pool during an actual event. This material can then clog suppression pool strainers thereby reducing emergency core cooling system flow. Since no material fell into the suppression pool and no actual loss of safety function occurred, the inspectors determined the finding to be of very low safety significance. This issue was a Non-Cited Violation of Technical Specification 5.4 which required implementation of procedures for performing maintenance that can affect the performance of safety-related equipment.

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

Significance:  Dec 31, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO COMMUNICATE THAT THE MOTOR FEED PUMP WAS TO BE PROTECTED AS REQUIRED BY ONLINE RISK MANAGEMENT STRATEGY

The inspectors identified a Non-Cited Violation (NCV) of 10 CFR 50.65(a)(4) for the licensee's failure to manage risk during a Division 1 outage on November 3, 2003. The licensee failed to communicate that the motor feed pump (MFP) was to be protected as required by their online risk management strategy. As a result, the MFP was not posted as protected equipment in accordance with site policies and procedures nor, more significantly, was control room supervision aware that the MFP required such protection. Once the condition was brought to the attention of control room personnel, the area was immediately posted.

This finding was more than minor because it could reasonably be viewed as a precursor to a more significant event. Specifically, since the control room was unaware of the need to protect the MFP, the inspectors concluded that work on or near the MFP could have been authorized. Further, without the local posting and with the absence of the MFP on the promulgated list of protected systems, workers would not have questioned the release of work on the MFP nor demonstrated heightened awareness when working in the area. In addition, had the MFP become unavailable, the plant's online risk configuration would have crossed the yellow to orange threshold. The finding was of very low safety significance because no work occurred to cause the MFP to become unavailable.

Inspection Report# : [2003010\(pdf\)](#)

Significance:  Dec 31, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO VERIFY COMPONENT OPERABILITY DURING SYSTEM RESTORATION FOLLOWING REMOTE SHUTDOWN SYSTEM SURVEILLANCE TESTING

The inspectors identified a non-cited violation of Technical Specification 5.4, Procedures, for the licensee's failure to perform verification of component operability during system restoration following surveillance testing of the Division 2 remote shutdown system on September 9, 2003. While the licensee tested the capability of the system to control safe shutdown systems from outside the control room, the inspectors observed that the licensee failed to verify that control capability was returned to the control room prior to declaring systems and components operable. Specifically, the licensee failed to verify reestablishment of safety-related circuit continuity, such that the components could be operated from the control room during system restoration. The inspectors additionally noted that the licensee did not test the ability of the transfer switch to isolate the control circuitry from the control room.

This finding is greater than minor because it was associated with the mitigating system cornerstone attribute of equipment reliability and the finding is associated with the objective of ensuring operability, availability, reliability and function of the safety-related systems. The inspectors determined that the finding was of very low safety significance in accordance with the Significance Determination Process Phase 1 worksheet because the continuity of the safety-related circuitry was subsequently successfully demonstrated by other licensee surveillance procedures. Therefore, no actual loss of safety function occurred.

Inspection Report# : [2003010\(pdf\)](#)

W

Significance: Dec 31, 2003

Identified By: NRC

Item Type: VIO Violation

INADEQUATE LPCS/RHR 'A' FILL AND VENT PROCEDURES RESULTS IN SYSTEM INOPERABILITY AFTER LOSS OF OFFSITE POWER

An apparent self-revealed violation of Technical Specification 5.4 occurred when the waterleg pump for low pressure core spray (LPCS) and residual heat removal (RHR) 'A' became air bound following a loss of offsite power. Subsequent investigation revealed that the procedures for venting these systems did not include the high point vent valve on the discharge of the pump, thus allowing gas to accumulate in a vertical section of system piping. When the waterleg pump lost power on August 14, 2003, the accumulated gas expanded and caused voiding of the pump. As a result, both LPCS and RHR 'A' were rendered inoperable.

The NRC assessed this finding through Phase 3 of the Significance Determination Process and made a preliminary determination that it is an issue with low to moderate safety significance.

After considering the information developed during the inspection, the NRC has concluded that the inspection finding is appropriately characterized as White (i.e., an issue with low to moderate increased importance to safety) and a final Significance Determination Process letter was issued on March 12, 2004, and will be inspected within the scope of a supplemental 95002 inspection in May 2004

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

G

Significance: Sep 30, 2003

Identified By: NRC

Item Type: FIN Finding

FAILURE TO MAINTAIN FIRE BARRIERS

The inspectors identified a finding of very low safety significance for the failure of the licensee to promptly identify a degraded fire barrier between the Division 3 and Division 2 Emergency Diesel Generator (EDG) rooms. The inspectors observed that with the ventilation system operating as required for EDG operations, the fire door separating the two rooms would not close without assistance and thus, was an impairment or degradation of a fire protection feature.

This finding is greater than minor because it is associated with fire protection equipment performance and degraded the ability to meet the cornerstone objective. This issue had very low safety significance because the separation of redundant trains of safe shutdown equipment was not compromised.

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

G

Significance: Sep 30, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ESTABLISH PERFORMANCE CRITERIA FOR (a)(1) SYSTEMS

The inspectors identified a Non-Cited Violation of 10 CFR 50.65(a)(1) for the failure of the licensee to monitor the performance of the rod control and information system (RCIS) against licensee established goals. The licensee Maintenance Rule expert panel approved re-categorization of the system function of manual rod insertion to (a)(1) on November 6, 2002. As of September 25, 2003, the licensee had failed to establish goals for system monitoring. The inspectors identified a similar deficiency with five additional systems or system functions currently classified as (a)(1) by the licensee.

This finding is greater than minor because it was associated with the mitigating system cornerstone attribute of equipment reliability and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Although not suited for Significance Determination Process review, the finding was determined to be of very low safety significance in that the failure to establish goals and monitor system performance in accordance with 10 CFR 50.65(a)(1) did not directly result in additional system or function failures.

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

W

Significance: Sep 30, 2003

Identified By: NRC
Item Type: VIO Violation

IMPROPER MAINTENANCE CAUSES EMERGENCY SERVICE WATER PUMP FAILURE

A self-revealed apparent violation of Technical Specification (TS) 5.4 occurred when the Division 1 emergency service water (ESW) pump failed during routine pump operation. The licensee rebuilt the pump in 1997 and during this reassembly, failed to properly reassemble the pump shaft connections. The improper reassembly led to pump failure on September 1, 2003.

The NRC assessed this finding through Phase 3 of the Significance Determination Process and made a preliminary determination that it is an issue with low to moderate safety significance. On January 28, 2004, a final significance determination letter was issued which characterized this issue as white. Inspection Report# : [2004005\(pdf\)](#)

G

Significance: Sep 12, 2003

Identified By: Self Disclosing
Item Type: NCV NonCited Violation

FAILURE TO IMPLEMENT AND FOLLOW PROCEDURES FOR DIESEL GENERATOR OPERATION

A self-revealed violation of Technical Specification (TS) 5.4 occurred on August 21, 2003, when the Division 1 emergency diesel generator (EDG) failed its surveillance due to high output voltage. Technical Specification 5.4 required maintenance and implementation of procedures required by Regulatory Guide 1.33. Regulatory Guide 1.33 required procedures for EDG operation. Licensee procedures did not provide direction to perform proper EDG restoration following an automatic EDG trip.

The finding was greater than minor because it could reasonably be viewed as a precursor to a significant event and was associated with the mitigating system cornerstone attribute of equipment reliability. The finding affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the EDG was relied upon to provide emergency power to safety systems in the event of a LOOP. The finding is of very low safety significance because no damage to equipment occurred and operators would have been able to restore proper EDG output voltage. As such, no loss of safety function would have occurred.

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

G

Significance: Aug 01, 2003

Identified By: NRC
Item Type: NCV NonCited Violation

INADEQUATE IDENTIFICATION OF EXTENT OF CONDITION ASSOCIATED WITH HIGH PRESSURE CORE SPRAY PUMP FAILURE TO START

The inspector identified a licensee performance deficiency involving a Non-Cited Violation for failure to promptly identify and correct a condition adverse to quality. The inspector determined that while the licensee's evaluation of the high pressure core spray pump failure to start event properly identified the root cause of this issue to be inadequate procedural guidance for cell switch alignment and inspection, the licensee failed to identify that the same procedural inadequacy existed in other licensee procedures. Specifically, the licensee inaccurately concluded that 5kv and 15kv breaker auxiliary switches were not affected by the issue.

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

Barrier Integrity

Emergency Preparedness

W

Significance: Sep 30, 2003

Identified By: NRC
Item Type: VIO Violation

FAILURE TO CLASSIFY AN ALERT WITHIN 15 MINUTES

The inspectors identified an apparent violation having preliminarily low to moderate safety significance when the licensee failed to follow the requirements of the Perry Emergency Plan during an ALERT level event on April 24, 2003. During this event, damage to irradiated fuel caused a high alarm on the fuel handling building ventilation exhaust gaseous radiation monitor.

After considering the information developed during the inspection and at the Regulatory Conference, the NRC has concluded that the inspection finding is appropriately characterized as White (i.e., an issue with low to moderate increased importance to safety, which may require additional NRC inspections).

[This item closed in Supplemental Inspection Report 05000440/2004009.]

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

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

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

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

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

Miscellaneous

Last modified : September 08, 2004