

# Perry 1

## 3Q/2004 Plant Inspection Findings

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### Initiating Events

**G****Significance:** 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\(pdf\)](#)

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### Mitigating Systems

**Significance:** N/A Sep 30, 2004

Identified By: NRC

Item Type: FIN Finding

**REPETITIVE FAILURE TO IMPLEMENT ON-LINE RISK MANAGEMENT STRATEGY**

The inspectors identified a finding of very low safety significance for the licensee's repetitive failure to identify and correct issues associated with the implementation of on-line risk management. On June 29, 2004, the inspectors identified that the licensee failed to establish the appropriate protected train postings during a planned Division 3 emergency diesel generator unavailability. This occurred on the licensee's first opportunity to implement a new internal procedure (revision dated June 22, 2004) for posting protected equipment, following the November 3, 2003, failure to post the motor feed pump as protected during a Division 1 outage. The licensee took immediate corrective action to correct the identified posting deficiency and commenced a complete walkdown of all required postings. The primary cause of this finding was related to the cross-cutting area of Problem Identification and Resolution.

This finding was greater than minor because if left uncorrected it could evolve into a more significant safety concern. This was previously demonstrated when the motor feed pump was left unprotected in November 2003. Although not suited for Significance Determination Process review, the finding was determined to be of very low safety significance, in that in this instance, the repetitive failure to implement on-line risk management did not result in a substantive increase in on-line risk due to the short duration of the elevated risk configuration (less than three hours actual unavailability); no work was scheduled on the improperly posted equipment; no personnel were observed in the area; and it is not a likely "transit" area for personnel. The finding was not considered a violation of regulatory requirements because the licensee programs and procedures for the management of on-line risk are not 10 CFR Part 50, Appendix B programs or procedures.

Inspection Report# : [2004013\(pdf\)](#)**G****Significance:** Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**INADEQUATE INSTRUMENTATION CALIBRATION**

The inspectors identified a finding of very low safety significance for a violation of 10 CFR Part 50, Appendix B, Criterion XII. On July 7, 2004, the licensee failed to ensure that instrumentation used to measure diesel room temperature was calibrated with sufficient accuracy to ensure diesel generator starting air operability. After the inspectors discussed instrument accuracy with the licensee, the licensee implemented a reduced control temperature to account for instrument inaccuracy. The finding also affected the cross-cutting issue of Human Performance because the licensee's staff failed to recognize that instrument accuracy must be considered when establishing operating limits.

The inspectors determined that the licensee's failure to establish limits sufficient to ensure that limits in the operability evaluation were not exceeded was more than minor because it could reasonably be a precursor to a more significant event. The inspectors determined the finding did not involve the loss of safety function; and therefore, concluded that the finding was of very low safety significance.

Inspection Report# : [2004013\(pdf\)](#)

**G**

**Significance:** Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

#### **FAILURE TO IDENTIFY MOST SEVERE LIMITING FUEL OIL RETURN LINE FRETTING**

The inspectors identified a finding of very low safety significance for a violation of 10 CFR Part 50, Appendix B, Criterion XVI, for failure to identify a condition adverse to quality. Specifically, the licensee identified fretting on emergency diesel generator (EDG) fuel oil return lines but did not measure the depth of the worst fret and erroneously declared operability based on a less severe fret. After the issue was brought to their attention on August 12, 2004, the licensee performed vibration measurements and performed calculations on the pipe to determine available margin. This analysis concluded that minimal margin existed and that the EDG could no longer be considered operable. The licensee declared the EDG inoperable, replaced the fretted section of pipe, and performed a successful post-maintenance test of the EDG. The primary cause of this finding was related to the cross-cutting area of Problem Identification and Resolution.

This finding was more than minor because it directly affected the mitigating system cornerstone objective of equipment reliability. The inspectors concluded that without repair, the pipe fret would have progressed to the point of fuel leakage and the diesel would not have been able to fulfill its mission. The inspectors concluded that there was no loss of safety function; therefore, the finding was of very low safety significance.

Inspection Report# : [2004013\(pdf\)](#)

**G**

**Significance:** Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

#### **FAILURE TO IDENTIFY MISALIGNED AUXILIARY SWITCH**

The inspectors identified a finding of very low safety significance for a violation of 10 CFR Part 50, Appendix B, Criterion XVI, for failure to identify a condition adverse to quality. Specifically, non-licensed operators failed to identify that the auxiliary switch in the control complex chilled water system 'A' chiller breaker cubicle was misaligned. After the condition was brought to the attention of the licensee on August 13, 2004, immediate corrective action was taken to align the switch later that same day. The primary cause of this finding was related to the cross-cutting area of Problem Identification and Resolution.

The finding was more than minor because it could reasonably be a precursor to a more significant event. In fact, the issue was similar to the failure to properly align the high pressure core spray system pump breaker cell switch which resulted in the failure of the pump to start in October 2002. The inspectors determined the finding did not involve the loss of safety function; and therefore, concluded that the finding was of very low safety significance.

Inspection Report# : [2004013\(pdf\)](#)

**G**

**Significance:** Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

#### **FAILURE TO SPECIFY ADEQUATE TESTING PROTOCOL AND ACCEPTANCE CRITERIA**

The inspectors identified a finding of very low safety significance for a violation of 10 CFR Part 50, Appendix B, Criterion XI. The inspectors determined that the combination of licensee testing protocol and established acceptance criteria was inadequate to demonstrate check valve position as required by Technical Specification 5.5.6 and American Society of Mechanical Engineers Code for reactor core isolation cooling condensate storage tank suction check valve 1E51-F011. Specifically, on July 12, 2004, the surveillance procedure failed to establish steady-state flow conditions at the outlet of the test piping prior to data collection necessary for the verification of check valve position. Additionally, operators used non-calibrated timing and liquid collection devices while obtaining data. The net effect of the procedural deficiencies was the collection of meaningless data. The licensee corrected the deficiency by reperforming the surveillance with appropriate controls and instrumentation prior to declaring the check valve operable and initiated corrective action to obtain and implement the use of accurate flow measuring devices during future performance of the surveillance. The primary cause of this finding was related to the cross-cutting area of Human Performance.

This finding was greater than minor because it was directly associated with the mitigating systems cornerstone objective of mitigating system availability and operability. The inspectors concluded that with the observed test methodology and acceptance criteria, an operator could credibly conclude the check valve was shut when in fact it was open. The finding was of very low safety significance because the operator performing the July 12, 2004 surveillance determined the valve to have failed the surveillance test despite inconclusive test data. As such, reactor core isolation cooling suction remained aligned to the suppression pool and system operability was maintained.

Inspection Report# : [2004013\(pdf\)](#)

**G****Significance:** 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\(pdf\)](#)**G****Significance:** 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\(pdf\)](#)**G****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\(pdf\)](#)**G****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:**  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 permalloy 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\(pdf\)](#)

**G**

**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\(pdf\)](#)

**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\(pdf\)](#)

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## **Barrier Integrity**

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## **Emergency Preparedness**

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## **Occupational Radiation Safety**

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## **Public Radiation Safety**

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## **Physical Protection**

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

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## **Miscellaneous**

Last modified : December 29, 2004