

# Perry 1

## 3Q/2003 Plant Inspection Findings

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### Initiating Events

**Significance:**  Mar 31, 2003

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

#### **FAILURE TO FOLLOW PROCEDURES WHEN BYPASSING LPRMs**

Green. A self-revealing Non-Cited Violation of Technical Specification (TS) 5.4 occurred on January 31, 2003, when technicians bypassed two local power range monitoring (LPRM) detectors without using the appropriate procedure. As a result, average power range monitor (APRM) C was not bypassed prior to bypassing the LPRMs and the operating crew was not aware of the activities in progress.

Inspection Report# : [2003003\(pdf\)](#)

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### Mitigating Systems

**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\(pdf\)](#)

**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\(pdf\)](#)

**Significance:** TBD Sep 30, 2003

Identified By: NRC

Item Type: AV Apparent 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.

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



**Significance:** G 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. (Section 40A3.8)

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



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

 **Significance:** Jun 30, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

### **FAILURE TO FOLLOW PROCEDURES FOR SHIFT AND RELIEF TURNOVER**

A self-revealed violation of Technical Specification 5.4 occurred on May 7, 2003, when the licensed operator "at the controls" left the "at-the-controls" and operations area of the control room without using the appropriate procedure for shift and relief turnover. During the individual's absence, a control room annunciator was received. When the alarm was not acknowledged, two licensed operators in the "at-the-controls" area (conducting an emergency diesel generator (EDG) surveillance run) observed the "at-the-controls" operator's absence and responded to the annunciator. Operations management was not made aware of the personnel error until approximately 16.5 hours later at which time a condition report was generated and the individual was relieved of licensed operator duties pending incident review and remediation.

The finding was more than minor because it could reasonably be viewed as a precursor to a significant event. In other circumstances, a second licensed operator may not have been in the control room. Additionally, the failure to promptly identify a performance deficiency was not consistent with site expectations. The finding was of very low safety significance because the annunciator was expected due to inclined fuel transfer system operation and the licensed operator was out of the "at-the-controls" area for only approximately 20 seconds.

Inspection Report# : [2003004\(pdf\)](#)

 **Significance:** Jun 27, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to use an appropriate surveillance test procedure for the EDG using the fuel oil booster pump**

NCV, 50-440/03-05-01, was identified for failure to use an appropriate surveillance test procedure in accordance with 10 CFR 50, Appendix B, Criterion V. Condition reports documented four repetitive fuse failures for the Division 2 emergency diesel generator nonsafety-related fuel oil booster pump from July 16, 2002 to September 18, 2002.

Although the booster pump is nonsafety related, it is utilized as part of the emergency diesel generator start and load surveillance (surveillance instruction SVI-R43-T1318) required by Technical Specifications (TS) 3.8.1. The surveillance was not appropriate due to inclusion of a nonsafety-related, unreliable piece of equipment since during those periods when the booster pump had failed, actual diesel start time may have been outside of TS limits. The surveillance had never been run without the booster pump to demonstrate that the diesel would pass if the booster pump tripped.

This issue is more than minor because if left uncorrected it could become a more significant safety concern. Because no failure occurred during a surveillance test or in use, this issue had very low safety significance. (Section 4OA2.b)

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

**Significance:**  Jun 27, 2003

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

**Inadequate corrective action to preclude repetition of high pressure core spray (HPCS) drain line cracking**

A self-revealing NCV, 50-440/03-05-02, was identified for inadequate corrective action to preclude repetition of high pressure core spray (HPCS) drain line cracking in accordance with 10 CFR 50, Appendix B, Criterion XVI. On May 13, 2003, following receipt of a high level sump alarm the licensee discovered a broken 3/4" HPCS drain valve on the test return line to the condensate storage tank. The broken valve sprayed water on equipment in the HPCS room which subsequently required drying and inspection. Prior to this failure, on January 11, 1998 and on April 19, 1999, the licensee had discovered and reworked the weld joint due to cracks and leakage.

This issue is more than minor because if left uncorrected it could become a more significant safety concern. Because the reactor was shut down at the time of the failure, this issue had very low safety significance. (Section 4OA2.c)

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

**Significance:**  Jun 27, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to take actions to correct deficiencies in contractor oversight which permitted contract personnel to err.**

The inspectors identified an NCV, 50-440/03-05-03, for failure to take corrective action as required by 10 CFR 50 Appendix B, Criterion XVI. Specifically, the licensee failed to take actions to correct deficiencies in contractor oversight which permitted contract personnel to err in ways that had the potential to adversely impact the safety of the site.

The finding is of very low safety significance because the specific items identified did not initiate an event nor result in the loss of function of a mitigating system. The inspectors determined that the violation was more than minor using guidance in Appendix B, of Inspection Manual Chapter 0612. The inspectors determined that the failure to correct this condition could reasonably be viewed as a precursor to a significant event and, in the case of local power range monitor configuration did affect the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. (Section 4OA2.c)

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

**Significance:**  Mar 31, 2003

Identified By: NRC

Item Type: FIN Finding

**FAILURE TO PROMPTLY IDENTIFY AND CORRECT DEGRADED FIRE BARRIER**

Green. The inspectors identified a licensee performance deficiency in that the licensee failed to promptly identify and correct a degraded fire barrier between the Division 3 and Division 1 switchgear rooms. The condition existed since May 2001 but was not identified until May 2002. Following identification of the degradation, the licensee established an hourly fire watch, but 10 months later had yet to correct the degraded fire barrier.

Inspection Report# : [2003003\(pdf\)](#)

**Significance:**  Mar 31, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

**INADEQUATE EXTENT OF CONDITION REVIEW FOR ECCW INOPERABILITY DUE TO**

**SAFETY/NON-SAFETY PIPING INTERFACE**

Green. The inspectors identified a licensee performance deficiency involving a Non-Cited Violation for failure to promptly identify and correct a condition adverse to quality in that the licensee did not recognize that during chemical addition to the emergency closed cooling water (ECCW) system, the system is cross-connected to non-safety piping. The licensee had previously identified that ECCW was rendered inoperable during periodic testing of check valves due to cross-connection with non-safety piping, but failed to thoroughly evaluate the extent of condition and recognize a similar condition existed during routine chemical additions.

Inspection Report# : [2003003\(pdf\)](#)

**Significance: SL-IV** Feb 14, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

**Severity Level IV Non-Cited Violation associated with the licensee's failure to perform safety evaluations in accordance with 10 CFR 50.59**

The team identified a Severity Level IV Non-Cited Violation associated with the licensee's failure to perform safety evaluations in accordance with 10 CFR 50.59 for changes made to the facility as described in the Updated Final Safety Analysis Report. Specifically, the licensee failed to complete a documented safety evaluation for a change to the facility as described in the Updated Final Safety Analysis Report that involved: 1) the incorporation of new electrical standards affecting battery maintenance and acceptance criteria, and 2) changes to a plant drawing and procedure which reduced electrical separation criteria.

Inspection Report# : [2003002\(pdf\)](#)

**Significance:**  Feb 14, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to perform adequate design reviews for installation of half-couplings on a B train emergency service water elbow.**

Green. The team identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's inadequate design reviews associated with the installation of half-couplings on a B train 14 inch emergency service water elbow. The licensee installed half-couplings in response to a through-wall leak and an area of wall loss identified on a 14 inch emergency service water elbow. However, the licensee's design review was inadequate in that, it failed to include the requirements of Section XI of the American Society of Mechanical Engineers Code. Specifically, the licensee failed to identify the cause of the flaw, failed to adequately characterize the dimensions of the flaw, nor was the potential growth of these flaws considered. Further, the repair design did not include flaw removal or component replacement.

Inspection Report# : [2003002\(pdf\)](#)

**Significance:**  Feb 14, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to perform adequate design reviews for installation of a rupture disc in the exhaust piping of the division 3 high pressure core spray diesel generator.**

Green. The team identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's inadequate design review associated with installation of a rupture disc in the exhaust piping of the division 3 high pressure core spray emergency diesel generator. This finding was self-revealed on October 25, 2000, after the diesel generator was placed in service following this modification, the rupture disc failed in less than 3 minutes due to pressure induced fatigue. The licensee's design review for the rupture disc was inadequate because it did not adequately consider pressure induced fatigue loading.

Inspection Report# : [2003002\(pdf\)](#)



**Significance:** Dec 28, 2002

Identified By: NRC

Item Type: VIO Violation

### **HIGH PRESSURE CORE SPRAY PUMP FAILURE TO START**

Technical Specification 5.4 requires, in part, that procedures be established, implemented, and maintained as recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Regulatory Guide 1.33, Appendix A, Section 9, "Procedures for Performing Maintenance," recommends that maintenance activities that affect the performance of safety-related equipment should be performed in accordance with written procedures appropriate to the circumstances. Procedure GEI-0135, Revision 1, March 30, 1999, "ABB Power Circuit Breakers 5 KV Types 5HK250 and 5HK350 Maintenance," Step 15.14.3.3 requires a visual check of the cell switch normally open contacts to verify they are in the flat horizontal position prior to breaker installation.

The procedure allows in a note to the step, that it may be acceptable for contact bars to not be in flat horizontal alignment provided a clear make/break of the contacts is observed.

Contrary to the above, the licensee failed to implement procedure GEI-0135 during the installation and inspection of the high pressure core spray pump breaker from 1994 through October 23, 2002. Specifically, the licensee did not verify that the contacts were in the flat horizontal position prior to breaker installation or that there was a clear make/break of the contacts. This failure to verify the alignment of the contacts resulted in degradation of the connection over time and failure of the pump to start during surveillance testing on October 23, 2002. This performance issue was characterized as having low to moderate risk significance ("White") in the NRC's final significance determination letter dated March 4, 2003 (VIO 2002008-02). During this supplemental inspection, performed in accordance with Inspection Procedure 95001, significant deficiencies were identified with regard to the licensee's extent of condition evaluation. As a result of these concerns, the white issue associated with the HPCS pump failure to start will not be closed at this time.

Inspection Report# : [2002008\(pdf\)](#)

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

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## **Barrier Integrity**



**Significance:** Dec 28, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

### **FAILURE TO PERFORM TECHNICAL SPECIFICATION REQUIRED TESTING**

Green. The inspectors identified a violation of TS surveillance requirement (SR) 3.6.1.9.1 in that the licensee failed to perform TS required surveillance testing and appropriate post-maintenance testing (PMT) following packing adjustment of a main steam shutoff valve. SR 3.6.1.9.1 specified that the licensee verify isolation times of main steam shutoff valves at a frequency in accordance with the Inservice Testing Program. The Inservice Testing Program specifically stated that following adjustment of stem packing, stroke time testing will be performed. Contrary to this requirement, no stroke time testing was performed on the valve. The inspectors also noted that the condition was further aggravated by the licensee's use of an operability determination to declare the valve operable once the missed PMT was initially identified. The licensee failed to recognize the TS compliance aspect until prompted, repeatedly, by

the inspectors.

The inspectors determined that the finding was more than minor because the failure to perform PMT on a safety related component could reasonably be viewed as a precursor to a significant event. The finding was of very low risk significance because, although the barrier integrity cornerstone was affected in that containment systems capability was not demonstrated through TS required surveillance testing, subsequent testing demonstrated that the system would have performed its intended safety function. (Section 1R19)

Inspection Report# : [2002008\(pdf\)](#)

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## Emergency Preparedness

**Significance:** TBD Sep 30, 2003

Identified By: NRC

Item Type: AV Apparent 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.

The finding was determined to be greater than minor because it affected the Emergency Preparedness Cornerstone objective of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The finding was preliminarily determined to be of low to moderate safety significance because the licensee failed to implement a risk significant planning standard (10 CFR 50.47(b)(4)) during an actual Alert emergency.

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

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## Occupational Radiation Safety

**Significance:**  Jun 30, 2003

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

### **FAILURE TO PROVIDE CONTINUOUS RADIOLOGICAL SURVEILLANCE**

A finding of very low safety significance was self-revealed during work in the reactor water clean up (RWCU) heat exchanger (HX) room when the licensee failed to provide continuous radiological surveillance (electronic telemetry dosimetry) for a worker in an area where a major portion of the body could receive in one hour a dose >3000 mrem, as required by Technical Specification 5.7.4.

The finding was more than minor because the failure to provide continuous monitoring in a high radiation area resulted in an individual worker's unplanned, unintended dose, and resulted from actions or conditions contrary to licensee Technical Specifications. This finding was associated with the "Programs and Processes" and "Human Performance" attributes of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring the adequate protection of worker health and safety from exposure to radiation. The finding was of very low safety significance because it did not involve as-low-as-is-reasonably-achievable (ALARA) planning or work controls, there

was no overexposure or a substantial potential for an overexposure, and the ability to assess dose was not compromised. This was a violation of Technical Specification 5.7.4.

Inspection Report# : [2003004\(pdf\)](#)

**Significance:**  Jun 30, 2003

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

**FAILURE TO PLACE DOSIMETRY TO PROPERLY REFLECT HIGHEST WHOLE BODY DOSE**

A finding of very low safety significance was self-revealed during work in the RWCU HX room when the licensee failed to place dosimetry to properly reflect the highest whole body dose for the working position as required by licensee procedure HPI-C0005, "Radiation Work Permit Surveys and Surveillances."

The finding was more than minor because the failure to place dosimetry to properly reflect the highest whole body dose for the working position resulted in an individual worker's unplanned, unintended dose and resulted from actions or conditions contrary to licensee procedures. This finding was associated with the "Programs and Processes" attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring the adequate protection of worker health and safety from exposure to radiation. The finding was of very low safety significance because it did not involve as-low-as-is-reasonably-achievable (ALARA) planning or work controls, there was no overexposure or a substantial potential for an overexposure, and the ability to assess dose was not compromised. This was a violation of licensee procedure HPI-C0005.

Inspection Report# : [2003004\(pdf\)](#)

**Significance:**  Jun 30, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO PROPERLY CONTROL ACCESS TO A LOCKED HIGH RADIATION AREA**

A finding of very low safety significance was NRC-identified during work in the drywell when the licensee failed to properly control access to a locked high radiation area (LHRA), as required by Technical Specification 5.7.2 and 5.7.3.

The finding was more than minor because the failure to adequately control access to Technical Specification LHRAs had an impact on radiological safety (external dose) and if not corrected would become a more significant concern given the elevated dose rates that occur in accessible areas during refueling outages. The finding was associated with the "Programs and Processes" attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring the adequate protection of worker health and safety from exposure to radiation. The finding was of very low safety significance because it did not involve as-low-as-is-reasonably-achievable ALARA planning or work controls, there was no overexposure or a substantial potential for an overexposure, and the ability to assess dose was not compromised. This was a violation of Technical Specification 5.7.3

Inspection Report# : [2003004\(pdf\)](#)

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## Public Radiation Safety

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## Physical Protection



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## Miscellaneous

**Significance:** N/A Jun 27, 2003

Identified By: NRC

Item Type: FIN Finding

### **PI&R Biannual Summary**

The team concluded that, in general, the licensee effectively identified, evaluated, and corrected plant problems. Problem identification was determined to be effective based on the limited examples of missed issues the team identified. Licensee audits and assessments also identified issues similar to NRC observations. Generally, corrective actions were appropriate based on the identified causes and were effective; however, a notable number of repetitive issues were identified indicating need to be more aggressive in resolving issues. Plant staff willingness to identify safety issues, a user friendly condition report initiation process, and a low program threshold for initiating condition reports supported a safety conscious work environment.

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

Last modified : December 01, 2003