Perry 1
1Q/2008 Plant Inspection Findings

Initiating Events

Significance: G Dec 14, 2007
Identified By: NRC
Item Type: FIN Finding
FAILURE TO APPROPRIATELY INSTALL DIGITAL FEEDWATER CONTROL POWER SUPPLIES
The Team identified a finding having very low safety significance for improper installation of replacement power supplies in the digital feedwater control system. The Team observed that the orientation of installed replacement power supplies was 90 degrees to that required by the installation manual. The installation manual stated that they must be oriented correctly to assure proper cooling. The finding was not considered a violation of regulatory requirements. Subsequent to identification, the power supplies were reconfigured to the proper orientation.

The finding was determined to be more than minor because it involved the attribute of design control and affected the initiating events cornerstone objective to limit the likelihood of those events that upset plant stability. Specifically, if left uncorrected the improper installation of the digital feedwater control system power supplies would lead to improper cooling and increase the probability of power supply premature failure. Premature failure could cause a loss of feedwater and a reactor trip. Using IMC 0609, “Significance Determination Process” Appendix A, Phase 1, this finding was determined to screen as a GREEN finding. The primary cause of the performance deficiency was related to the human performance cross-cutting aspect of work practices, in that the licensee failed to ensure adequate supervisory and management oversight of work activities such that nuclear safety is supported H.4(c).

Inspection Report# : 2007010 *(pdf)*

Significance: G Jun 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
IMPROPER STORAGE OF COMBUSTIBLE MATERIAL
The inspectors identified a finding of very low significance and an associated non-cited violation of the operating license section C(6) for the storage of transient combustible material in the Turbine Building 620' elevation. Specifically, on May 7 and May 16, 2007, the inspectors identified several acetylene and oxygen cylinders as well as other combustible material in the area that exceeded the fire hazards analysis for the fire zone. The primary cause of this finding was related to the cross-cutting area of Human Performance per Inspection Manual Chapter 0305 H.4(b) because the licensee failed to properly communicate expectations regarding procedural compliance that specified combustible loading of the fire zone. As part of their immediate corrective actions, licensee personnel removed the excess combustible material from the area and entered the issue into their corrective action program.

This finding was more than minor because it was associated with the protection against external factors attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability. Specifically, the combustible storage amount exceeded the licensee’s fire hazard analysis limits. The finding was determined to be of very low safety significance because the inspectors determined that the combustible materials of significance, that exceeded the fire hazards analysis limits, were in approved containers.

Inspection Report# : 2007003 *(pdf)*

Significance: G Jun 30, 2007
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
FAILURE TO IMPLEMENT APPROPRIATE PROCEDURE IN REASSEMBLY OF REACTOR CORE ISOLATION COOLING PIPING

A finding of very low safety significance and a non-cited violation of Technical Specification 5.4, “Procedures,” was self-revealed when reactor water level indication was lost while the reactor was shut down on May 5, 2007. Specifically, licensee personnel failed to implement appropriate procedures in the re-assembly of reactor core isolation cooling head spray piping during a 1993 refueling outage. This resulted in leakage from a flange connection that affected the reference leg of the reactor shutdown and upset range level indication system, which caused a loss of reactor level indication. As part of their immediate corrective actions, licensee personnel repaired the flange, restored reactor water level indication, and entered the issue into the corrective action program.

The finding was more than minor because it was associated with the equipment performance attribute of the reactor safety Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the finding resulted in a loss of reactor water level indication. The finding was determined to be of very low safety significance because the inspectors determined that it did not result in a loss of control of reactor water level and it did not affect decay heat removal systems.
Inspection Report# : 2007003 *(pdf)*

Significance:  Jun 30, 2007
Identified By: NRC
Item Type: FIN Finding
MAIN TURBINE GENERATOR TRIPPED ON REVERSE POWER
A finding of very low safety significance was self-revealed when, during reactor power ascension after a refueling outage, the main turbine generator tripped on reverse power on May 13, 2007. The primary cause of this event was licensee personnel’s failure to appropriately install an electro-hydraulic control (EHC) circuit card following maintenance. The primary cause of this finding was related to the cross-cutting area of Human Performance per Inspection Manual Chapter 0305 H.4(a) because the organization failed to properly communicate human error prevention techniques for proper insertion of the control cards. As part of their immediate corrective actions, licensee personnel repaired the installation of the affected card and also repaired the installation of several other EHC system cards that were subsequently identified by the licensee as incorrectly installed. The licensee entered the issue into their corrective action program.

This finding was considered more than minor because it was associated with the availability and reliability of equipment attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability. Specifically, the finding resulted in a turbine trip. The finding was determined to be of very low safety significance because it did not affect the likelihood that mitigation equipment or functions would be available. No violation of NRC requirements occurred.
Inspection Report# : 2007003 *(pdf)*

Significance:  Jun 30, 2007
Identified By: NRC
Item Type: FIN Finding
REACTOR SCRAMMED ON LOW REACTOR WATER LEVEL
A finding of very low safety significance was self-revealed when, during post-modification testing of the feedwater system after a refueling outage, the reactor scrammed on low reactor water level on May 15, 2007. The primary cause of this event was the licensee’s failure to appropriately control the implementation of a digital feedwater control system design modification. Specifically, the licensee installed the modification with a control system software logic that was contrary to plant design and this resulted in a loss of feedwater flow to the reactor. The primary cause of this finding was related to the cross-cutting area of Human Performance per Inspection Manual Chapter 0305 H.3(a) because the organization failed to properly plan work activities that incorporated insights to risk. As part of their immediate corrective action, the licensee revised the digital feedwater control system software and entered the issue into their corrective action program.

This finding was considered more than minor because it was associated with the availability and reliability of equipment attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability. Specifically, the finding resulted in a reactor scram. The finding was determined to be of very low safety significance because it did not affect the likelihood that mitigation equipment or functions would be available. No violation of NRC requirements occurred.
Inspection Report# : 2007003 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO ADHERE TO PROCEDURES FOR SCAFFOLD AFFECTING REACTOR CORE ISOLATION COOLING
The inspectors identified a finding of very low safety significance and a non-cited violation of Technical Specification 5.4, “Procedures,” during an inspection of the reactor core isolation cooling (RCIC) system on December 12, 2007. The inspectors observed scaffold construction in the RCIC pump room that was attached to a safety-related RCIC waterleg pump structural support and to the pump base, and was in contact with small diameter waterleg pump piping. The scaffold construction was determined to be contrary to seismic clearance procedural requirements. As part of their immediate corrective actions, licensee personnel removed the affected scaffolding from the RCIC system.

The finding was more than minor because it was associated with the Protection Against External Factors attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events in order to prevent undesirable consequences. Specifically, the finding was determined to have placed RCIC in an unacceptable seismic configuration. The finding was determined to be of very low safety significance because it was determined not to represent a loss of safety function. The primary cause of this finding was related to the cross-cutting area of Human Performance per IMC 0305 H.3(a), because the licensee failed to appropriately plan the scaffold work activity by not incorporating the affect on plant structures, systems and components.

Inspection Report# : 2007005 *(pdf)*

Significance: G Dec 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO IDENTIFY A CONDITION ADVERSE TO QUALITY ASSOCIATED WITH SCAFFOLDING CONTACTING THE REACTOR CORE ISOLATION COOLING SYSTEM
The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” during an inspection of the reactor core isolation cooling (RCIC) system. On December 12, 2007, the inspectors observed conditions adverse to quality associated with scaffold, erected on October 31, contact affecting the RCIC system. In response to the inspectors' observations, licensee personnel investigated the RCIC room and documented that no issues with scaffold associated with the RCIC system were identified. On December 14, 2007, the inspectors accompanied licensee personnel to the RCIC pump room to point out the conditions. The licensee determined that the conditions were unacceptable and, as part of their immediate corrective actions, licensee personnel removed the scaffold from the RCIC area.

The primary cause of this non-cited violation was related to the cross-cutting area of Problem Identification and Resolution per IMC 0305, P.2(b) because the licensee failed to implement and institutionalize internal operating experience through changes in station processes and procedures.

Inspection Report# : 2007005 *(pdf)*

Significance: G Dec 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO CONTROL POST- MAINTENANCE TESTING
The inspectors identified a finding of very low safety significance and a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, “Test Control,” during an inspection of reactor core isolation cooling (RCIC) system testing between December 8 and December 9, 2007. The testing did not adequately incorporate requirements contained in design documents. The inspectors noted: (1) licensee personnel performed a test and later determined that the test was inappropriate; (2) personnel failed to control a test and exceeded a system design limit; and (3) personnel

failed to control system configuration during testing. As part of their immediate corrective actions, operators restored the RCIC system to a normal configuration and performed an evaluation to determine whether system damage had occurred.

The finding was considered more than minor because it was associated with the Procedure Quality attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events in order to prevent undesirable consequences. Specifically, the failure to properly control the testing caused the system piping design pressure limit to be exceeded. The finding was determined to be of very low safety significance because it did not represent a loss of safety function. The primary cause of this finding was related to the cross-cutting area of Human Performance per IMC 0305 H.3(a), because the licensee failed to appropriately plan work activities by incorporating planned contingencies, compensatory actions, and abort criteria.
Inspection Report# : 2007005 *(pdf)*

Significance: G Dec 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO TAKE PROMPT CORRECTIVE ACTION TO ADDRESS EXTENT OF CONDITION FOR NONCONFORMING CONDITIONS AFFECTING THE DIVISION 1 EDG
The inspectors identified a finding of very low safety significance and a non-cited violation of 10 CFR 50 Appendix B, Criterion XVI, “Corrective Action,” when a nonconforming condition associated with the Division 1 Emergency Diesel Generator was discovered on November 16, 2007. One cylinder head stud was torqued below the minimum required torque setting. The inspectors determined that the licensee failed to perform an appropriate extent-of-condition review when several cylinder head studs were found below minimum torque level on November 13, 2006. Also, the licensee did not perform an extent-of-condition review during a subsequent refueling outage when both emergency diesel generators were available for maintenance. As part of its immediate corrective actions, the licensee entered the issue into the corrective action program.

The finding was more than minor because it was associated with the Equipment Performance attribute of the Reactor Safety Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the finding addressed a lack of timely corrective action that adversely impacted the amount of time that the emergency diesel generator was subject to a degraded condition. The finding was determined to be of very low safety significance because it was determined not to represent a loss of operability. The primary cause of this finding was related to the cross cutting area of Problem Identification and Resolution per IMC 0305 P.1(d) because the licensee failed to take appropriate corrective action to address safety issues in a timely manner.

Inspection Report# : 2007005 *(pdf)*

Significance: G Dec 31, 2007
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
FAILURE TO CORRECT LACK OF AN ALTERNATE DECAY HEAT REMOVAL SYSTEM IN A TIMELY MANNER - RESULTS IN OPERATION PROHIBITED BY TECHNICAL SPECIFICATIONS
A finding of very low safety significance and an associated non cited violation of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Actions,” was self revealed on July 11, 2007, when the licensee failed to assure that deficiencies associated with alternate decay heat removal capability were corrected in a timely manner. Technical Specification (TS) 3.4.10 required the licensee to verify the availability of an alternate method of decay heat removal when a residual heat removal shutdown cooling subsystem was inoperable. On May 23, 2004, the licensee was unable to meet this requirement due to the lack of an approved alternate decay heat removal system. On July 11, 2007, operators were again unable to meet TS requirements because the lack of an alternate decay heat removal system deficiency had not been corrected. As part of their immediate corrective actions, the licensee entered the issue into their corrective action program and planned to complete a design change to install an alternate decay heat removal system.

This finding was more than minor because it was related to the Equipment Performance attribute of the Mitigating System Cornerstone and affected the cornerstone objective to ensure the availability of a mitigating system that responds to initiating events to prevent undesirable consequences. Specifically, the finding affected the availability of

a decay heat removal system. Although not suited for Significance Determination Process review, the finding was determined to be of very low safety significance because the licensee restored shutdown cooling within two hours and the plant remained in Mode 4. The primary cause of this finding was related to the cross-cutting area of Human Performance per IMC 0305 H.2(a), because the licensee failed to minimize long standing equipment issues and maintenance deferral.

Inspection Report# : 2007005 *(pdf)*

Significance: G Dec 31, 2007
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
FAILURE TO ADHERE TO PROCEDURES RESULTS IN TEMPORARY LOSS OF DECAY HEAT REMOVAL
A finding of very low safety significance and a non cited violation of Technical Specification 5.4, "Procedures," was self-revealed when a loss of cooling water flow to the reactor occurred while the reactor was shutdown on July 11, 2007. A maintenance technician failed to adhere to procedures while performing a surveillance test and performed an action that caused the 'B' residual heat removal pump to trip. The 'B' residual heat removal pump was providing cooling water flow to the reactor when the pump trip occurred. As part of their immediate corrective actions, licensee personnel restored shutdown cooling water flow to the reactor by placing the 'A' residual heat removal loop in service and entered the issue into the corrective action program.

The finding was more than minor because it was associated with the Equipment Performance attribute of the Initiating Events Cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the finding resulted in a disruption of reactor decay heat removal while the reactor was shutdown. The finding was determined to be of very low safety significance after a Phase 3 Significance Determination Process review. The primary cause of this finding was related to the cross cutting area of Human Performance per IMC 0305 H.3(b) because the organization failed to keep personnel apprised of plant conditions that affect the work.

Inspection Report# : 2007005 *(pdf)*

Significance: G Sep 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO FOLLOW PROCEDURES DISABLED EMERGENCY DIESEL OVERSPEED TRIP
A finding of very low safety significance and a non-cited violation of Technical Specification 5.4, "Procedures," was self-revealed when the Division 2 emergency diesel generator failed to trip during surveillance testing on August 20, 2007. Specifically, operators failed to position an overspeed trip reset valve in accordance with diesel startup procedures on August 19, 2007, and this disabled the essential overspeed trip function of the diesel. The primary cause of this finding was related to the cross-cutting area of Human Performance per Inspection Manual Chapter 0305 H.4(b) because the licensee failed to communicate and use human error prevention techniques commensurate with the risk of the assigned task. As part of their immediate corrective actions, licensee personnel restored the diesel to the appropriate equipment alignment and conducted additional training for operators on procedure adherence.

The finding was more than minor because it was associated with the Human Performance attribute of the reactor safety Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the finding adversely affected an essential trip feature designed to protect the diesel from an overspeed condition. The finding was determined to be of very low safety significance because it was determined not to represent a loss of safety function.
Inspection Report# : 2007004 *(pdf)*

Barrier Integrity

Significance: G Dec 31, 2007
Identified By: Self-Revealing
Item Type: FIN Finding
FAILURE OF DESIGN CONTROL LEADING TO DROP OF FUEL CHANNEL ONTO SPENT FUEL
A finding of very low safety significance was self-revealed on October 18, 2007, when a fuel channel dislodged from a grapple during movement in the spent fuel pool. The licensee implemented a design change to the spent fuel handling bridge grapple system that resulted in an inadequate method of verification for grapple attachment to the fuel channel. The fuel channel was inadequately attached to the grapple and dropped onto several spent fuel assemblies. As part of their immediate corrective actions, licensee personnel reinstated the previous grapple design that allowed for positive visual verification of grapple attachment and entered the issue into the corrective action program.

The finding was more than minor because it was associated with the design control attribute of the reactor safety Barrier Integrity Cornerstone and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding resulted in an event that challenged spent fuel cladding barrier. Although not suitable for Significance Determination Process review, the finding was determined to be of very low safety significance because the dropped fuel channel did not cause damage to the spent fuel. The primary cause of this finding was related to the cross-cutting area of Human Performance per IMC 0305 H.2(d) because the organization failed to ensure that equipment, including physical improvements, was adequate to assure nuclear safety.
Inspection Report# : 2007005 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Significance: G Dec 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO DEVELOP AN ACCURATE DOSE ESTIMATE FOR SCAFFOLDING WORK AND TO MAINTAIN WORKERS' DOSES ALARA
The inspectors identified a finding of very low safety significance and a non cited violation of Technical Specification 5.4.1.a was for the failure to adequately implement radiological dose controls as a result of ineffective radiological/As Low As Is Reasonably-Achievable (ALARA) planning and control during Refueling Outage Number 11. The total sum of the occupational radiation doses (collective dose) received by individuals for certain work activities was found in excess of that collective dose planned or intended (i.e., that dose the licensee determined was ALARA for those work activities). Corrective actions included the assignment of high impact teams to address and evaluate lessons learned from the refuel outage.

The finding was more than minor because the finding was associated with the Occupational Radiation Safety Cornerstone attribute of ALARA planning/dose projection, and affected the cornerstone objective of programs and processes for ensuring adequate protection of worker health and safety from exposure to radiation. The finding did not involve: (1) an overexposure; (2) a substantial potential for an overexposure; or (3) an impaired ability to assess dose. It did involve ALARA planning and controls; however, the 3-year rolling average for Perry station is less than the Significance Determination Process (SDP) threshold of 240-person-rem for boiling water reactors. Consequently, the inspectors concluded through the SDP assessment that this is a finding of very low safety significance. The finding was determined to be associated with a cross cutting aspect in the area of Human Performance per IMC 0305 H.3(a) in work controls.

Inspection Report# : 2007005 *(pdf)*

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : June 05, 2008