D.C. Cook 1
3Q/2012 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2012
Identified By: NRC
Item Type: FIN Finding
Failure to Install a Grommet Seal on the Main Turbine Thrust Bearing Probe
One self revealed finding of very low safety significance was identified for the failure to install a grommet seal on the main turbine thrust bearing probes as required by a site design standard, VTD SKFI 0001, "Eddy Probe Systems Technical Manual," during the Unit 1 2009 turbine failure restoration project. Consequently, oil migrated into the thrust bearing probe conduit, which contributed to a main turbine trip and resultant automatic reactor trip on September 7, 2011. For corrective actions, the licensee separated the main turbine thrust bearing probe cables into separate conduits; wrapped the cables in additional shielding and insulation to prevent signal coupling; and installed sealing glands on the main turbine thrust housing to eliminate oil intrusion into the conduits. This issue was entered into the licensee's corrective action program as Action Request 2011 10107.

This finding was related to the Initiating Events Cornerstone and was more than minor because it adversely affects the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding is associated with the attribute of human performance. Specifically, the failure to install a grommet seal on the main turbine thrust bearing probes contributed to a main turbine trip and resultant automatic reactor trip. This finding was of very low safety significance because the finding does not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment will not be available. This finding is associated with a cross cutting aspect in the resources component of the human performance cross cutting area. Specifically, the work order associated with installing the main turbine thrust bearing probes did not include sufficient guidance to ensure that the grommet seal was installed

Inspection Report# : 2012002 *(pdf)*

Significance: G Dec 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Procedure for PT Examination on ASME Class 1 Piping Weld
A finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, procedures, and drawings," was identified by the inspectors on September 27, 2011, for the licensee's failure to follow procedure while performing a liquid dye penetrant (PT) examination on safety injection system piping weld. Specifically, on Unit 1, the examiner conducting the PT examination did not measure and hence, appropriately record indications that were identified during the PT examination. Licensee corrective actions included: re performing the PT examination on the safety injection piping weld, re performing the examiner's prior PT examinations conducted during the current outage to validate the PT examination results, and re train the examiner. This issue was entered into the licensee's corrective action program (CAP) as AR 2011 11130.

The finding was determined to be more than minor because the finding, if left uncorrected, would become a more significant safety concern. Absent NRC identification, the failure to follow the PT examination procedure would have

the potential to lead to a more significant safety concern. Specifically, failure to measure and hence, appropriately record all reportable indications leaves the potential to accept components with unacceptable cracks to be returned to service. Cracks in components returned to service would place safety related piping systems at increased risk for through wall leakage and/or failure. The licensee promptly corrected this issue and no components with unacceptable flaws were returned to service. The inspectors answered "No" to the SDP Phase I screening question for operating reactors in the Initiating Events Cornerstone, "Assuming worst case degradation, would the finding result in exceeding the Technical Specification (TS) limit for any reactor coolant system leakage or could the finding have likely affected other mitigation systems resulting in a total loss of their safety function assuming the worst case degradation"? Therefore, this finding screened as having very low safety significance (Green). This finding has a cross cutting aspect in the area of human performance, work practices, because the licensee contracted vendor did not follow the established PT examination procedure, and the licensee did not ensure appropriate supervisory and management oversight of work activities, including contractors, such that nuclear safety was supported.

Inspection Report# : 2011005 *(pdf)*

Significance: G Dec 31, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Follow the Clearance Procdure during Maintenance on Safety-Related Equipment
One self revealed finding of very low safety significance with an associated NCV of TS 5.4.1.a was identified for the failure to implement a procedure required during maintenance on safety-related equipment. The licensee did not follow the clearance procedure while performing maintenance on the Unit 1 reactor vessel head vent assembly. Specifically, workers did not verify that the head vent assembly was isolated from the reactor vessel prior to attempting to remove the vent hose as required by the clearance procedure. Consequently, maintenance workers breached a pressurized system that was not isolated, which resulted in a more than expected amount of reactor coolant being released from the system. For corrective actions the licensee immediately isolated the leak, modified the clearance procedure with additional instructions and communicated lessons learned to the workers. This issue was entered into the licensee's Corrective Action program (CAP) as AR 2011 12207.

This finding was related to the Initiating Events cornerstone and was more than minor because it adversely affects the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding is associated with the attribute of human performance. Specifically, performing maintenance on a pressurized plant system without verifying the system was properly isolated increased the likelihood of events that challenge plant stability while shutdown. This finding was of very low safety significance because the safety function guidelines for core heat removal, inventory control, power availability, containment integrity, and reactivity control were met in accordance with a phase 1 screening using Appendix G to IMC 0609 for shutdown operations significance determination. This finding is associated with a cross cutting aspect in the work control component of the human performance cross cutting area. Specifically, the outage command center did not adequately coordinate work activities between maintenance and operations to ensure the reactor vessel head vent hose assembly was properly removed
Inspection Report# : 2011005 *(pdf)*

Mitigating Systems

Significance: G Sep 30, 2012
Identified By: NRC

Item Type: NCV NonCited Violation
Failure to Properly Preplan and Perform Maintenance on Safety-related Equipment
The inspectors identified a finding of very low safety significance with an associated NCV of Technical Specification (TS) 5.4.1 for the failure to implement procedures to perform preventative maintenance in vaults containing safety related cabling subject to water intrusion. Specifically, licensee personnel failed to ensure the cables were not wetted as required by PMI 5053, "Cable Management Program." Cables were on the ground in the vaults exposing the cables to periodic wetting, which will degrade the cable insulation. On August 27, 2012, the inspectors noted that cables in one vault were on the ground and the vault showed evidence of periodic wetting of the cables. For corrective action, the licensee is performing an apparent cause evaluation; inspecting all cable vaults that have had safety related cabling elevated since February 2010; and raising and re securing cabling in vaults subject to water intrusion. This issue was entered into the licensee's corrective action program as AR 2012 10680.

This finding affected the Mitigating Events Cornerstone and was more than minor because the issue could become a more significant safety concern if left uncorrected. Specifically, failure to properly perform preventative maintenance in vaults containing safety related cables subjected to water intrusion resulted in periodic wetting of cables. Wetting of cables has led to degradation of cable insulation at nuclear facilities. The inspectors used IMC 0609, "Significance Determination Process," Attachment 4, "Initial Characterization of Findings," which directed the inspectors to Exhibit 2, "Mitigating Systems Screening Questions," of Appendix A, to determine significance. This finding was of very low safety significance (Green) because the finding constituted a design or qualification deficiency but did not result in a loss of system safety function. This finding is associated with a cross cutting aspect in the work control component of the human performance cross cutting area. Specifically, engineering did not appropriately plan for maintenance personnel to assist with lifting the floor grating to ensure visual inspections were adequately performed.
Inspection Report# : 2012004 *(pdf)*

Significance: G Jun 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Replace Post-Accident Monitor Displays
The inspectors identified a finding of very low safety significance and associated NCV for the failure to establish preventive maintenance schedules. Technical Specification (TS) 5.4.1 requires that written procedures be established, implemented and maintained for activities specified in Regulatory Guide 1.33. Regulatory Guide 1.33, Appendix A, section 9, Procedures for Performing Maintenance, states, in part, that "Preventive Maintenance schedules should be developed to specify… inspection or replacement of parts that have a specific lifetime…." The licensee did not develop a maintenance schedule for replacing liquid crystal diodes (LCD) within a manufacturer specified five-year life. Consequently, 14 LCDs failed after about eight years of service and three failures resulted in unplanned Limiting Condition for Operation (LCO) entries. The licensee subsequently replaced the LCDs for safety-related displays and has entered the condition into the corrective action program as AR 2012 5744.

The inspectors concluded that the issue was more that minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control. In addition, it adversely affected the cornerstone objective to ensure the availability and reliability of systems that respond to initiating events. Specifically, the failure to establish and implement scheduled replacement of the LCD displays resulted in three unplanned LCO entries for the affected recorders. The inspectors reviewed the finding in accordance with IMC 0609, Attachment 0609.04 Table 4a for the Mitigating Systems Cornerstone and concluded the finding was of very low safety significance because the answer to all four questions for mitigating structures, systems and components and functionality was 'no'. The inspectors concluded that the finding included a cross-cutting aspect in problem identification and resolution, Corrective Action Program, in that the licensee did not take appropriate corrective actions to address safety issues in a timely manner (P.1(d)). Specifically, the licensee did not replace safety-related LCD displays prior to failure until prompted by the Inspectors.

Inspection Report# : 2012003 *(pdf)*

Significance: G Jun 01, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Vortexing was not evaluated for the volume control, containment spray additive, refueling water storage tanks.
The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to evaluate vortexing in the volume control, containment spray additive, and refueling water storage tanks. Consequently, the minimum allowable submergence for the suction piping of these tanks did not consider the potential for air entrainment due to vortices. This finding was entered into the licensee's corrective action program to evaluate the potential for vortexing at these tanks and revise the affected calculations.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating System cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. In addition, the finding was associated with the Containment Barrier cornerstone attribute of structure, system, component, and barrier performance 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 screened as of very low safety significance (Green) because: (1) the finding examples associated with the volume control and refueling water storage tanks were deficiencies confirmed not to result in loss of operability in that the licensee performed an evaluation that reasonably concluded the current limit setpoints prevent vortexing in these tanks; and (2) the finding example associated with the containment spray (CTA) additive tank was a design deficiency of the physical integrity of the reactor containment that did not affect the barrier function of the control room against smoke or a toxic atmosphere, represent an actual open pathway in the physical integrity of reactor containment, or involve an actual reduction in function of hydrogen igniters in the reactor containment. This finding did not have an associated cross-cutting aspect because it was not confirmed to reflect current performance due to the age of the performance deficiency.
Inspection Report# : 2012008 *(pdf)*

Significance: G Jun 01, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Incomplete methodology for developing acceptance criteria for suction voids
The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to correctly incorporate the interim methodology for developing acceptance criteria for suction voids in Emergency Core Cooling Systems, Decay Heat Removal, and Containment Spray Systems pumps into procedures. Specifically, the licensee did not translate the limitations of the acceptance criteria with respect to rated performance of pump operation. This finding was entered into the licensee's corrective action program to revise the affected procedure.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating System cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding screened as of very low safety significance (Green) because it was a design deficiency confirmed not to result in loss of operability. Specifically, a review of recent monitoring results determined that identified voids did not exceed the applicable acceptance criteria. The inspectors did not find an applicable cross-cutting aspect which represented the underlying cause of this performance deficiency; therefore, no cross-cutting aspect was assigned.

Inspection Report# : 2012008 *(pdf)*

Significance: G Jun 01, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Procedures were not developed for performance monitoring of plant parameters.
The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to establish minimum flowrate and time required in procedures used to perform dynamic flushing activities affecting Emergency Core Cooling Systems, Decay Heat Removal, and Containment Spray Systems pumps. This finding was entered into the licensee's corrective action program to revise the affected procedures.

The performance deficiency was determined to be more than minor because, if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, the failure to establish an appropriate procedure for flushing would have the potential of not removing voids to ensure system operability. The finding screened as of very low safety significance (Green) because it was a design deficiency confirmed not to result in loss of operability. Specifically, a historical review of previous dynamic flushing activities determined that sufficient flowrates and time values were achieved at the appropriate sequences. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : 2012008 *(pdf)*

Significance: G Jun 01, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Minimum flowrates and time requirements for dynamic flushing were not established
The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to include adequate venting instructions in the procedure use to respond to a MODE 4 loss-of-coolant accident. Specifically, the procedure did not include instructions to address all of the affected residual heat removal system high points, including the discharge piping. The finding was entered into the licensee's corrective action program to leave one train of the system idle while the other train cools down the reactor coolant system below 200°F to ensure that the discharge side of one train of residual heat removal system is not vulnerable to steam formation.

The performance deficiency was determined to be more than minor because, if left uncorrected, it would have the potential to lead to a more significant safety concern. The finding screened as of very low safety significance (Green) using a Phase II evaluation. The inspectors determined that this finding had a cross-cutting aspect in the area of problem identification and resolution because the licensee did not thoroughly evaluate relevant external operating experience. Specifically, the licensee's evaluation of Information Notice 2010-11 incorrectly concluded that procedures contained sufficient direction to preclude flashing.
Inspection Report# : 2012008 *(pdf)*

Significance: G Jun 01, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedure for Responding to a MODE 4 LOCA
The inspectors identified a finding of very low safety significance and associated Severity Level IV violation of 10

CFR 50.59, “Changes, Tests, and Experiments,” for the failure to perform a written evaluation, which provided the bases for the determination that a change did not require a license amendment. Specifically, the licensee failed to provide a basis for not applying for a license amendment associated with a modification of the residual heat removal pump casing drain lines. The finding was entered into the licensee’s corrective action program to: (1) stage a hose and pipe couplings to support venting at the residual heat removal pump casing vent; (2) create a work order request to flush flow through the abandoned drain lines that were cut from the pump casing vent to show the lines could still pass water; (3) develop an alternate means to accomplish this activity; and (4) evaluate the change.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating System cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the capability and availability of systems that respond to initiating events to prevent undesirable consequences. Violations of 10 CFR 50.59 are dispositioned using the traditional
enforcement process instead of the significance determination process because they are considered to be violations that potentially impede or impact the regulatory process. The finding screened as of very low safety significance (Green) using a Phase II evaluation. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : 2012008 *(pdf)*

Significance: G Jun 01, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
10 CFR 50.59 evaluation for modification of RHR pump casing drain lines was not performed
The inspectors identified a finding of very low safety significance and associated Severity Level IV violation of 10 CFR 50.59, “Changes, Tests, and Experiments,” for the failure to perform a written evaluation, which provided the bases for the determination that a change did not require a license amendment. Specifically, the licensee failed to provide a basis for not applying for a license amendment associated with a modification of the residual heat removal pump casing drain lines. The finding was entered into the licensee’s corrective action program to: (1) stage a hose and pipe couplings to support venting at the residual heat removal pump casing vent; (2) create a work order request to flush flow through the abandoned drain lines that were cut from the pump casing vent to show the lines could still pass water; (3) develop an alternate means to accomplish this activity; and (4) evaluate the change.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating System cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the capability and availability of systems that respond to initiating events to prevent undesirable consequences. Violations of 10 CFR 50.59 are dispositioned using the traditional
enforcement process instead of the significance determination process because they are considered to be violations that potentially impede or impact the regulatory process. The finding screened as of very low safety significance (Green) using a Phase II evaluation. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : 2012008 *(pdf)*

Significance: G Jun 01, 2012
Identified By: NRC
Item Type: FIN Finding
10 CFR 50.59 evaluation for modification of RHR pump casing drain lines was not performed
The inspectors identified a finding of very low safety significance and associated Severity Level IV violation of 10 CFR 50.59, “Changes, Tests, and Experiments,” for the failure to perform a written evaluation, which provided the

bases for the determination that a change did not require a license amendment. Specifically, the licensee failed to provide a basis for not applying for a license amendment associated with a modification of the residual heat removal pump casing drain lines. The finding was entered into the licensee's corrective action program to: (1) stage a hose and pipe couplings to support venting at the residual heat removal pump casing vent; (2) create a work order request to flush flow through the abandoned drain lines that were cut from the pump casing vent to show the lines could still pass water; (3) develop an alternate means to accomplish this activity; and (4) evaluate the change.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating System cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the capability and availability of systems that respond to initiating events to prevent undesirable consequences. Violations of 10 CFR 50.59 are dispositioned using the traditional
enforcement process instead of the significance determination process because they are considered to be violations that potentially impede or impact the regulatory process. The finding screened as of very low safety significance (Green) using a Phase II evaluation. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : 2012008 *(pdf)*

Significance: G Jun 01, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedure for RCS Vacuum Fill During Reduced Inventory Operations
The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for failure to establish procedures for reduced inventory operations that were appropriate to preclude air entrainment into Residual Heat Removal (RHR) and Reactor Coolant Systems (RCS). Specifically, a procedure allowed operation of RHR while in reduced inventory operations with a minimum RCS level and maximum pump flowrate combination that was determined to result in air-entrainment vortices. The finding was entered into the licensee's corrective action program to place an administrative hold to the procedure until proper documentation is revised and updated and to revise the procedure to require stricter use of high accuracy level instrumentation.

The performance deficiency was determined to be more than minor because it was associated with the initiating event cornerstone attribute of procedure quality and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. The finding screened as of very low safety significance (Green) using a Phase II evaluation. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : 2012008 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Sep 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedures for Implementation of Annulus Cooling to Remain in a Analyzed Thermal Condition
A Severity Level IV NCV of very low safety significance of Title 10 of the Code of Federal Regulations (CFR) Part 72.150, "Instructions, Procedures, and Drawings," was identified by the inspectors for the failure of the licensee to have procedures in place to ensure that the design basis peak fuel cladding temperature limit would not be exceeded during dry cask canister processing operations. The licensee took appropriate actions prior to conducting evolutions that may have challenged these limits. This has been documented in the licensee's corrective action program as Action Request (AR) 2012 9676.

Consistent with the guidance in Section 2.2 of the NRC Enforcement Manual, Independent Spent Fuel Storage Installation (ISFSIs) are not subject to the Reactor Oversight Process enforcement and, thus, traditional enforcement will be used for these facilities. Therefore the violation was dispositioned using the traditional enforcement process using Section 2.3 of the Enforcement Policy. The violation was determined to be of more than minor significance using IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," Example 3i, since the bounding conditions for the analyzed thermal condition was not reflected in the procedures to perform the port cap repair. Specifically, the licensee's lack of evaluation did not ensure spent fuel cladding temperatures during canister processing operations would remain less than Spent Fuel Storage and Transportation Interim Staff Guidance 11, "Cladding Considerations for the Transportation and Storage of Spent Fuel," safety limits. The inspectors determined that that the violation could be evaluated using Section 6.5.d.2 of the NRC Enforcement Policy, as a Severity Level IV violation, in that the licensee failed to establish, maintain, or implement adequate controls to ensure that the replacement of the port cap was performed under conditions bounded by a thermal analysis that ensured the integrity of the fuel would be maintained during the repair. Because the finding is associated only with traditional enforcement, there is not an associated cross cutting aspect.
Inspection Report# : 2012004 *(pdf)*

Last modified : November 30, 2012