D.C. Cook 2
3Q/2014 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Sep 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Operability Determination Procedure
A finding of very low safety significance with an associated non-citied violation of 10 CFR 50, Appendix B, Criterion V, Procedures, was identified by the inspectors for the failure to follow the Operability Determination Procedure, PMP-7030-OPR-001. Specifically, for instances of high oil level in the turbine-driven auxiliary feedwater (TDAFW) pump governor sight-glasses and high water concentrations in motor-driven auxiliary feedwater (MDAFW) pump bearings, components were assumed to be operable without supporting technical justification. Further, past operability assessments were not assigned for the conditions. During a review of action requests (AR's) associated with the auxiliary feedwater (AFW) system, the inspectors identified four instances since 2008 when the licensee identified that oil level was high-out-of-sight in a TDAFW pump governor sight-glass. The licensee did not assess certain impacts on operability even though several references identified potential adverse impacts with the noted oil level. The operations logs set an appropriate level as being between half-full (minimum) and "visible" in the sight-glass (maximum). The logs also contained a note stating if level was visible in the sight-glass, the pump was operable. Additionally, the vendor manual and a maintenance procedure cautioned against the level being high in the system. No documentation was provided that addressed these concerns. In regards to the MDAFW pumps, the inspectors identified AR's documenting periodic instances of high water concentrations in the pump bearings. When subsequent licensee analysis confirmed significantly high concentrations of water,
no past operability assessments were done to assess any impacts the moisture may have had. In each instance of a high oil level or high moisture result, the licensee corrected the condition after discovery. The licensee also generated an AR to explore the inspectors' concerns with regard to a lack of documented justification for operability while the conditions existed.

The issue was more than minor because it adversely affected the Equipment Performance attribute of the Mitigating Systems Cornerstone. Specifically, the failure to properly assess the operability of safety related components (with all relevant information) can impact the availability, reliability, and capability of systems that respond to initiating events, in that components assumed to be operable may actually be in a condition where they cannot reliably perform their safety functions. Further, if left uncorrected, the issue could become a more significant safety concern as future operability determinations could also be deficient. The inspectors were also informed by IMC 0612, Appendix E, examples 3.j and 3.k, in that equipment inoperability is not a prerequisite for an issue being more than minor. Per the guidance, the inspectors determined reasonable doubt existed regarding the operability of components. The finding screened as Green, or very low safety significance, because the performance deficiency of failing to follow the Operability Determination procedure did not in itself represent a loss of system and/or function. The inspectors determined the finding had an associated cross-cutting aspect in the area of Problem Identification and Resolution. Specifically, the organization did not thoroughly evaluate issues to ensure resolutions address causes and extent of conditions commensurate with their safety significance (P.2). P.2, Evaluation, aligns with the Safety Culture Common

Language attribute of PI.2, Evaluation, outlined in NUREG-2165. Examples under PI.2 include prioritizing and thoroughly investigating issues with regard to their safety significance. The licensee did not address all of the relevant information which could impact the operability determinations associated with the AFW pumps.
Inspection Report# : 2014004 *(pdf)*

Significance: G Sep 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Classify the Internal Piping in the Auxiliary Feedwater Pump Room Coolers as ASME Code Class 3 Piping
The inspectors identified a finding of very low safety significance (Green) with an associated non-citied violation of 10 CFR 50, Appendix B, Criterion III, for failure to correctly translate regulatory requirements related to the American Society for Mechanical Engineers (ASME) code class boundary to the AFW pump room cooler. Specifically, the licensee failed to classify the internal piping in the AFW pump room coolers as ASME code class 3 piping when it should have been classified as such. As immediate action, the licensee declared the affected room cooler inoperable and repaired the leak. Because of low room temperature, the supported TDAFW pump remained operable.

The inspectors determined that the failure of the licensee to correctly translate regulatory requirements for a safety related system into a drawing, as described in 10 CFR 50, Appendix B, Criterion III, Design Control, was a performance deficiency warranting further evaluation in the Significance Determination Process (SDP). The issue screened as more than minor because it adversely affected the Design Control attribute of the Mitigating Systems cornerstone. Using Appendix A of IMC 0609, the inspectors concluded the finding was of very low safety significance, Green, because the supported AFW system remained operable. Because the performance deficiency occurred in 2000, the finding does not reflect current performance and no cross-cutting aspect exists. Because the violation was of very low safety significance and promptly entered into the licensee's Corrective Action Program (CAP) (AR 2014 7570), and the violation was not repetitive or willful, this violation is being treated as an NCV, consistent with Section of 2.3.2 of the NRC Enforcement Policy.
Inspection Report# : 2014004 *(pdf)*

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Control Nonconforming Delivery Valve Holders on Emergency Diesel Generators
The inspectors identified a finding of very low safety significance with an associated non-citied violation of 10 CFR 50, Appendix B, Criterion XV, Nonconforming Materials, Parts, or Components, for the failure to prevent nonconforming parts from being used on the emergency diesel generators (EDGs). In 2006, the licensee changed the material used to manufacture delivery valve holders to address cracking of the component. However, the licensee failed to ensure all delivery valve holders were replaced. In 2009 and in 2013, the licensee identified installed delivery valve holders made from the susceptible material. In addition, the licensee determined in 2013 that a manufacturing defect impacted a lot of delivery valve holders. The licensee failed to control the non conforming components and installed one in an EDG. In both cases, although the licensee found the discrepant parts, the site failed to explore broader programmatic issues with nonconforming material control or shortfalls in the root cause evaluation done to address previous issues with cracking. As corrective actions, the licensee has since replaced all suspect pumps and generated action requests to assess programmatic issues with nonconforming material control.

The inspectors determined the finding to be more than minor because it adversely affected the Design Control attribute of the Mitigating Systems cornerstone. Specifically, allowing nonconforming parts to be installed on safety-related equipment without proper controls or review adversely affected the cornerstone objective of ensuring the

availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The issue screened as Green, or very low safety significance, utilizing IMC 0609 Attachment 4, Initial Characterization of Findings. Specifically, per Exhibit 2, the finding was determined to be a deficiency affecting the design or qualification of a mitigating system, structure or component where operability was maintained. The inspectors determined the finding had an associated cross cutting aspect in the area of Problem Identification and Resolution. Specifically, programmatic issues associated with material control were not identified for resolution by the corrective action program.
Inspection Report# : 2014003 *(pdf)*

Significance: N/A Jun 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Missed Event Notification
The inspectors identified a Severity Level IV non-citied violation of 10 CFR 50.72, “Immediate Notification Requirements for Operating Nuclear Reactors,” for the licensee’s failure to make required event notifications within the specified time following the discovery of a condition which required an event report. Specifically, a member of the public informed the Berrien County Dispatcher about a sounding siren. The dispatcher notified the site; however, the license failed to notify the NRC. Because of the age of this issue; the licensee did not make a late report. Since 2012, the licensee has conducted training regarding notifications for alarming sirens.

The inspectors determined that the licensee’s failure to submit an event notification within the required time was a violation of 10 CFR 50.72(b)(2)(xi). Since the failure to submit a required event report may impact the NRC’s ability to regulate, the violation

was evaluated using Section 2.2.4 of the NRC’s Enforcement Policy. Per the enforcement policy, this violation was of Severity Level IV. The inspectors concluded the reactor oversight process aspects of the finding were minor; therefore there is no cross-cutting aspect.

Inspection Report# : 2014003 *(pdf)*

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: FIN Finding
Deficient Annunciator/Plant Process Computer Design
The inspectors identified a finding of very low safety significance associated with the licensee’s failure to design the annunciator and plant process computer (PPC) systems in accordance with design specifications. Specifically, the licensee failed to design the systems to preclude loss of the system on a single active failure. In part,
this issue would result in loss of the annunciator and PPC systems following a loss of offsite power. The licensee recognized a weakness during a loss of power (LOP)/loss-of-coolant accident (LOCA) testing when the annunciator system failed about 15 minutes into the test. Although the licensee corrected the condition related to rack fans, the inspectors identified a similar issue associated with the server rooms. The annunciator and PPC systems do not have regulatory requirements; therefore this finding did not include a violation. The licensee has modified the ventilation system to provide cooling and assure operation following a loss of offsite power.

The inspectors determined that failure to design and install the annunciator system in accordance with the design description of the applicable Engineering Calculation
(EC) was a performance deficiency that warranted a significance evaluation. Using
IMC 0612, Appendix B, issue screening, the inspectors determined the finding was more than minor because it is associated with mitigating system cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events and is related to the human performance attribute, post event. Specifically, the annunciator

and PPC systems aid human performance by alerting operators to degrading plant and equipment conditions. Using IMC 0609, Significance determination process for at power findings, the inspectors determined that the condition would result in loss of the annunciator and PPC function during some accident scenarios. Therefore the inspectors determined a detailed risk analysis was needed and forwarded the issue to the Region III Senior Reactor Analyst (SRA). The Region III SRA performed a detailed risk evaluation for the finding. To perform the risk evaluation, the SRA determined that the reliability of some operator actions modeled in the NRC's Standardized Plant Analysis Risk (SPAR) model for Donald C. Cook would be negatively impacted if annunciators were not available to cue operators to take action. The delta core damage frequency calculated was 5.5E 7/yr, which represents a finding of very low safety significance (Green). The SRA determined delta large early release frequency was minor as well. Because the licensee failed to identify the extent of condition, the inspectors concluded that the finding included cross cutting aspect, PI.2 Evaluation, in the area of problem identification and resolution.

Inspection Report# : 2014003 *(pdf)*

Significance: G Mar 31, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Degraded Latch Prevents Closure of Fire Door
The inspectors identified a finding of very low safety significance (Green) and associated non-citied violation of License Condition 2.C.4 for Unit 1, for the licensee's failure to ensure that a fire door would be closed at the time of a fire. Specifically, fire door 1 DR AUX387 was found with a degraded latch that prevented the door from closing. Donald C. Cook is required to comply with the National Fire Protection Association (NFPA) 80, 1970 which requires a closing device to ensure fire doors close and latch at the time of a fire. Contrary to this requirement, fire door 1 DR AUX 387 would not close and latch because the latching mechanism for the inactive leaf had failed in a manner preventing the door from closing. As immediate corrective action, the licensee started hourly fire watches on the door and performed an interim repair to restore the door to a functional status. The licensee has entered the condition into the corrective action program as AR 2014 0802.

The inspectors determined the finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of Protection Against External Events (Fire) and adversely affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee failed to maintain door 387 such that it could perform its required function as a 3 hour fire barrier. Using IMC 0609, Appendix F, the inspectors concluded that the finding was of very low safety significance (Green) because the fire loading was below the screening criteria of 120,000 btu/ft2. The inspectors concluded the finding included a cross cutting aspect of H.5, Work Planning, in the area of human performance because the licensee did incorporate risk insights.

Inspection Report# : 2014002 *(pdf)*

Significance: G Mar 27, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Evaluate the Adverse Effects of TRM Section Deletion
The inspectors identified a Severity Level IV Non-Cited Violation of 10 CFR 50.59(d)(1), "Changes, Tests, and Experiments," and an associated finding of very low safety significance (Green) for the licensee's failure to perform a written safety evaluation that provided the bases for the determination that the deletion of Technical Requirement Manual, Section 8.4.3, "ASME Code Class 1, 2, and 3 Components," did not require a license amendment. Specifically, the licensee did not evaluate the adverse effects of the change. The licensee entered this issue into their

Corrective Action Program and initiated corrective actions to implement compensatory measures in accordance with the deleted section of the Technical Requirement Manual.

The performance deficiency was determined to be more than minor because, if left uncorrected, it would become a more significant safety concern. In addition, the associated traditional enforcement violation was more than minor because the inspector could not reasonably determine that the changes would not have ultimately required NRC prior approval. The finding was of very low safety significance (Green) based on the inspectors' review of corrective action documents associated with non-conforming conditions related to structural integrity of ASME components generated since the TRM removal. Specifically, the inspectors used the two most bounding cases for the evaluation and determined the issues did not result in the loss of operability or functionality, represent a loss of system and/or function, represent an actual loss of function exceeding the Technical Specification allowed outage time, or represent an actual loss of function of non-Technical Specification equipment designated as high safety significant in accordance with the licensee's Maintenance Rule Program. This finding had a cross-cutting aspect in the area of problem identification and resolution because the licensee did not take effective corrective actions to address the issue. Specifically, the licensee identified that they had not evaluated the adverse effects of deleting Section 8.4.3 of the Technical Requirement Manual and, as a result, they
performed a 50.59 evaluation. However, the evaluation did not address these adverse effects.

Inspection Report# : 2014007 *(pdf)*

Significance: G Mar 27, 2014
Identified By: NRC
Item Type: FIN Finding
Failure to Evaluate the Adverse Effects of TRM Section Deletion
The inspectors identified a Severity Level IV Non-Cited Violation of 10 CFR 50.59(d)(1), "Changes, Tests, and Experiments," and an associated finding of very low safety significance (Green) for the licensee's failure to perform a written safety evaluation that provided the bases for the determination that the deletion of Technical Requirement Manual, Section 8.4.3, "ASME Code Class 1, 2, and 3 Components," did not require a license amendment. Specifically, the licensee did not evaluate the adverse effects of the change. The licensee entered this issue into their Corrective Action Program and initiated corrective actions to implement compensatory measures in accordance with the deleted section of the Technical Requirement Manual.

The performance deficiency was determined to be more than minor because, if left uncorrected, it would become a more significant safety concern. In addition, the associated traditional enforcement violation was more than minor because the inspector could not reasonably determine that the changes would not have ultimately required NRC prior approval. The finding was of very low safety significance (Green) based on the inspectors' review of corrective action documents associated with non-conforming conditions related to structural integrity of ASME components generated since the TRM removal. Specifically, the inspectors used the two most bounding cases for the evaluation and determined the issues did not result in the loss of operability or functionality, represent a loss of system and/or function, represent an actual loss of function exceeding the Technical Specification allowed outage time, or represent an actual loss of function of non-Technical Specification equipment designated as high safety significant in accordance with the licensee's Maintenance Rule Program. This finding had a cross-cutting aspect in the area of problem identification and resolution because the licensee did not take effective corrective actions to address the issue. Specifically, the licensee identified that they had not evaluated the adverse effects of deleting Section 8.4.3 of the Technical Requirement Manual and, as a result, they performed a 50.59 evaluation. However, the evaluation did not address these adverse effects.

Inspection Report# : 2014007 *(pdf)*

Significance: G Mar 27, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Heat Exchanger Inspection Procedure
The inspectors identified a finding having very low safety significance and a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to establish inspection procedures that were appropriate for the circumstances for the component cooling water heat exchangers. Specifically, the inspection procedure did not include instructions to verify the as-found essential service water flow rate through the heat exchangers met the minimum required value, which was a prerequisite for the licensee's inspection methodology. This finding was entered into the licensee's Corrective Action Program with a proposed action to revise the affected procedure.

The performance deficiency was determined to be more than minor because, if left uncorrected, it has the potential to lead to a more significant safety concern. The finding screened as of very low safety significance (Green) because it did not result in the loss of operability or functionality. Specifically, the licensee reviewed recent heat exchanger inspection results and reasonably determined the as-found macro fouling conditions did not impacted operability. The inspectors did not identify a cross-cutting aspect associated with this finding because it was confirmed not to be reflective of current performance due to the age of the performance deficiency.

Inspection Report# : 2014007 *(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

Last modified : November 26, 2014