

Fermi 2

2Q/2016 Plant Inspection Findings

Initiating Events

Significance:  Jun 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Control Combustible Materials

The inspectors identified a finding of very low safety significance with an associated NCV of Technical Specification (TS) 5.4, "Procedures." During fire protection walkdowns in safety-related and risk-significant areas of the plant, the inspectors identified multiple instances of the licensee's failure to implement procedural requirements for implementing its fire protection program as required by TS 5.4.1.d, specifically for the controls of combustible materials. The licensee entered this violation into its corrective action program for evaluation and identification of appropriate corrective actions. As immediate corrective actions, the licensee rectified all of the inspector-identified issues, performed walkdowns inspecting all fire storage cabinets in the plant, and directed individual departments to examine all other storage cabinets for combustible materials. Any additional discrepancies found during these walkdowns were promptly corrected.

The finding was of more than minor safety significance because it was related to the Initiating Events Cornerstone attribute of Protection Against External Factors (Fire) and adversely affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during plant operations. Specifically, the failure to properly control combustible materials in safety-related and risk-significant plant areas could increase the likelihood of a fire in these areas causing a plant transient and/or affecting plant equipment. The finding was determined to be a licensee performance deficiency of very low safety significance since redundant safe shutdown systems would have remained available during a postulated fire scenario in the affected locations. The inspectors concluded this finding affected the cross-cutting area of human performance and the cross-cutting aspect of avoid complacency. The licensee's failure to follow its fire protection program implementing procedure requirements involved several work groups and had existed for a sufficient period of time, such that individuals were accustomed to and accepted the discrepancies between what was required by the licensee's fire protection program and the actual condition of materials in the plant.

Inspection Report# : [2016002](#) (*pdf*)

Significance:  Jun 30, 2016

Identified By: Self-Revealing

Item Type: FIN Finding

Failure to Use Correct Material in a Feedwater Heater Level Control Valve Resulted in a Loss of Feedwater Heater Drains and a Reactor Recirculation System Runback

A finding of very low safety significance was self-revealed when a reactor recirculation system runback occurred during power ascension due to a loss of feedwater heater drains caused by a feedwater heater level control valve malfunction. The control valve malfunction occurred because the licensee had failed to use correct material in the component during maintenance in October 2010. No violation of regulatory requirements was identified because the feedwater heating system is not safety-related and the applicable maintenance procedures were not covered under 10 CFR Part 50, Appendix B.

The finding was of more than minor safety significance because it was related to the Equipment Performance attribute

of the Initiating Events Cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the control valve malfunction resulted in a reactor recirculation system runback. In addition, the finding was sufficiently similar to IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," Examples 4(b) and 4(f), to conclude it was not of minor significance because there was an adverse safety impact (i.e., a plant transient) due to the licensee's failure to meet its technical requirements. The finding was determined to be a licensee performance deficiency of very low safety significance because it did not cause a reactor scram. The inspectors concluded that because the error occurred greater than three years ago, this issue would not be reflective of current licensee performance and no cross-cutting aspect was identified.

Inspection Report# : [2016002](#) (*pdf*)

Significance:  Mar 31, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure of the Plant-Referenced Simulator to Demonstrate Expected Plant Response for Safety Relief Valves

A finding of very low safety significance with an associated Non-Cited Violation of 10 CFR 55.46(c), "Plant-Referenced Simulators," was self-revealed. The licensee failed to ensure the plant-referenced simulator demonstrated expected plant response to normal, transient, and accident conditions to which the simulator was designed to respond. Specifically, the licensee failed to maintain the simulator consistent with actual plant response when using the safety relief valves for reactor pressure control after a reactor scram. The licensee entered this issue into the corrective action program. To restore compliance, the licensee modified the simulator model to more accurately emulate actual reactor pressure vessel (RPV) water level response during manual control of reactor pressure using safety relief valves.

The performance deficiency was of more than minor safety significance because it adversely affected the human performance attribute of the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the simulator provided unrealistic or negative training to licensed operators due to inaccurate modeling of the RPV level response during manual control of reactor pressure using safety relief valves as compared to the actual plant response. Although the simulator provided unrealistic or negative training to licensed operators, the inspectors concluded the unrealistic simulator training did not negatively impact licensed operator performance during the event since operators had successfully demonstrated manual control of RPV level and pressure for greater than 12 hours. Therefore, the finding was determined to be of very low safety significance. The inspectors concluded that because the discrepancy between the simulator and the plant existed since simulator use began (i.e., greater than three years ago), this issue would not be reflective of current licensee performance and no cross-cutting aspect was identified.

Inspection Report# : [2016001](#) (*pdf*)

Significance:  Mar 31, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Incorporate Operating Experience into Preventive Maintenance Activities Associated with the TBCCW System

A finding of very low safety significance with an associated Non-Cited Violation of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," was self-revealed when the failure of a tube inside the east turbine building closed cooling water (TBCCW) heat exchanger caused a trip of the TBCCW pumps and a manual reactor scram due to the loss of all TBCCW. The heat exchanger tube failure occurred, in part, due to the licensee's failure to incorporate industry operating experience in order to perform adequate preventive maintenance on the component. The licensee entered this issue into the corrective action program and inspected all

tubes in both TBCCW heat exchangers using a rotating pancake coil eddy current test during the Cycle 17 refueling outage. Any tubes identified with indications of stress corrosion cracking (SCC) were either plugged or replaced.

The performance deficiency was of more than minor safety significance because it was associated with the equipment performance attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the TBCCW heat exchanger tube failure resulted in a loss of all TBCCW and a reactor scram. In addition, the inspectors found this issue sufficiently similar to Example 7(c) in IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," for not of minor safety significance. The finding was determined to be a performance deficiency of very low safety significance based on a detailed significance determination process review since the delta core damage frequency was determined to be less than $1.0E-6$ /year. The inspectors concluded this finding affected the cross-cutting aspect of trending in the problem identification and resolution area. Specifically, the licensee failed to analyze operating experiences concerning circumferential SCC information in the corrective action program and other assessments in the aggregate to identify programmatic and common cause issues.

Inspection Report# : [2016001](#) (pdf)

Significance:  Mar 31, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Inadvertent Reactor Water Low Level Reactor Protection System Actuation Due to Operator Error

A finding of very low safety significance with an associated Non-Cited Violation of Technical Specification 5.4, "Procedures," was self-revealed when a valid automatic reactor scram signal and isolation signal for multiple primary containment isolation valves was actuated. A reactor operator, who was maintaining reactor pressure vessel (RPV) water level and reactor pressure following a plant scram, did not initiate reactor core isolation cooling (RCIC) system flow in time to maintain level above the Level 3 reactor protection system actuation setpoint. As an immediate corrective action, control room operators promptly restored RPV level by manual operation of the RCIC system. The licensee entered this issue into the corrective action program and provided remedial training for the reactor operator in the simulator, communicated lessons learned from this event with other licensed operators, and subsequently implemented improvements for licensed operator training and procedure changes to incorporate a revised strategy for manual control of RPV level and pressure control with main steam line isolation valves closed.

The performance deficiency was of more than minor safety significance because it was associated with the Human Performance attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the human performance error unnecessarily challenged a plant protection feature, which resulted in a valid automatic reactor scram signal and isolation signal for multiple primary containment isolation valves. In addition, the finding was sufficiently similar to Example 4(b) in IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," to conclude the issue was minor safety significance since the error resulted in a valid automatic reactor scram signal and isolation signal for multiple primary containment isolation valves. The finding was determined to be of very low safety significance since it did not cause a reactor scram and a loss of mitigation equipment relied upon to transition the plant to a stable shutdown condition (e.g., loss of condenser, loss of feedwater). The inspectors concluded this finding affected the cross-cutting aspect of resources in the human performance area. Specifically, the licensee's evaluation identified the reactor operator had been performing a complicated task for a long period of time without adequate rest/recovery periods.

Inspection Report# : [2016001](#) (pdf)

Significance: G Dec 31, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Satisfy Technical Specification Requirements During an Unplanned Operation with the Potential to Drain the Reactor Vessel

A finding of very low safety significance with an associated Non-Cited Violation of Technical Specification (TS) 3.0.4 was self-revealed on October 4, 2015, when the licensee inadvertently entered an operation with the potential to drain the reactor vessel (OPDRV) condition while in Mode 5 (refueling) without an operable secondary containment. The licensee failed to provide adequate configuration control of reactor recirculation system boundary isolation valves while establishing conditions to support maintenance during the Cycle 17 refueling outage. As an immediate corrective action, the licensee terminated the OPDRV and restored compliance with the TS by closing recirculation pump seal cavity drain valves to isolate the drain path. In addition, the licensee reviewed all remaining refueling outage system tag outs that interfaced with the reactor vessel to ensure appropriate configuration controls were established to prevent impacting reactor vessel water level, initiated actions to make procedure changes to improve its processes for review of system tag outs for conditions that drain systems that interface with the reactor vessel, and communicated lessons learned from this event with plant operators.

The finding was of more than minor safety significance because it was associated with the Configuration Control and Human Performance attributes of the Initiating Events Cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown, as well as power operations. Specifically, the system tag out error resulted in an inadvertent and uncontrolled loss of reactor coolant system inventory. The finding was determined to be a licensee performance deficiency of very low safety significance during a detailed Significance Determination Process review since the delta core damage frequency was determined to be less than $1.0E-7$ /year. The inspectors concluded this finding affected the cross cutting area of human performance and the cross-cutting aspect of avoiding complacency. The cause of the event was primarily attributed to a failure to properly use human error reduction techniques, specifically inadequate self-checking by the operators who prepared and reviewed the system tag out configuration for the maintenance, as well as inadequate identification of OPDRV conditions during refueling outage preparations.

Inspection Report# : [2015004](#) (*pdf*)

Significance: G Dec 18, 2015

Identified By: NRC

Item Type: FIN Finding

Failure to Comply with ASME B30.16 for Planned Engineered Lifts

The inspectors identified a finding of very low safety significance for the licensee's failure to meet American Society of Mechanical Engineers (ASME) Code requirements to perform planned engineering lifts of loads that exceeded a hoist's rated capacity. Specifically, on September 25 and September 26, 2013, the licensee used the Unit 2 turbine building reactor feed pump monorail hoist to perform multiple lifts of floor plugs. The weight of the floor plugs exceeded the rated capacity of the hoist and the licensee did not follow the requirements of ASME Code B30.16, Section 16-3.4, "Planned Engineered Lifts," for lifts in excess of the rated load. These requirements include, in part, inspections, calculations, test lifts, distances traveled, and record keeping and retention. The Code also limits the number of lifts to two within any continuous 12-month period without meeting additional requirements. The licensee captured this issue in their CAP as Condition Assessment Resolution Document (CARD) 15-30077. No violation of regulatory requirements was identified.

The performance deficiency was of more than minor safety significance because if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, if the hoist failed, and a heavy object were to fall through the turbine building hatch opening, it could cause a loss of condenser vacuum and subsequent plant trip or possibly a steam leak into the turbine building. The finding was of very low safety significance because it did not

cause a reactor trip. The inspectors determined this finding affected the cross-cutting aspect of problem identification and resolution, evaluation (P.2) due to the failure of the organization to thoroughly evaluate issues to ensure resolutions address causes and extend of condition commensurate with their safety significance. Specifically, the licensee failed to evaluate thoroughly the causes for not complying with ASME Code requirements once a lift exceeded a hoist's rated capacity had occurred. Therefore, effective corrective actions and an extent of condition were not identified.

Inspection Report# : [2015007](#) (*pdf*)

Significance:  Sep 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Establish Correct Classification and Preventative Maintenance for Reactor Recirculation Pump Flow Switches

A finding of very low safety significance with an associated Non-Cited Violation of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," was self revealed on March 19, 2015, when the reactor recirculation pump 'A' seal cooling water flow switch failed, resulting in a leak of Reactor Building closed cooling water and emergency equipment cooling water into the drywell and a subsequent reactor recirculation pump trip. The reactor recirculation pump seal cooling water flow switch was incorrectly classified in the licensee's preventive maintenance program and did not have appropriate preventive maintenance tasks assigned to prevent its failure. The licensee replaced the failed flow switch prior to plant start up from the forced outage. Corrective actions to prevent recurrence for this event include replacing the recirculation pump seal cooling water flow switches with a more robust design that do not have glass tubes, thus eliminating the failure mechanism.

The finding was of more than minor safety significance because it was associated with the Equipment Performance attribute of the Initiating Events Cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the reactor recirculation pump seal cooling water flow switch failure caused a loss of cooling water flow to a reactor recirculation pump that subsequently resulted in loss of the pump and single loop operation. In addition, the finding was sufficiently similar to Inspection Manual Chapter 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," Example 7(d), in that this violation of 10 CFR 50.65(a)(2) had a consequence such that "[a]n actual failure had occurred with the non scoped component causing a transient/scram." The finding was determined to be a licensee performance deficiency of very low safety significance during a quantitative Significance Determination Process review since the delta core damage frequency was determined to be less than 1.0E-6/year. The inspectors concluded this finding affected the cross-cutting area of problem identification and resolution and the cross-cutting aspect of identification. Specifically, licensee personnel had opportunities through execution and analysis of its preventive maintenance program to ascertain the effect the recirculation pump seal flow switch failure would have on the closed cooling water systems that connect to the component.

Inspection Report# : [2015003](#) (*pdf*)

Mitigating Systems

Significance:  Jun 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Test Procedure Used for Measuring and Determining Average Silt Levels in the Service Water Reservoir

The inspectors identified a finding of very-low safety significance with an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the failure to have a procedure that prescribed instructions to determine the average silt level in the residual heat removal (RHR) reservoir to ensure the stand alone document ensures silt levels in the reservoir are maintained below the proceduralized limit of 3 inches. Specifically, in 2014 and 2015, the licensee failed to include the documented reservoir surveys or a method to determine the average silt levels in the RHR reservoir. After discussing the issue with the responsible site staff for the 2014 inspection, the licensee was able to locate the reservoir survey map outside of the quality records system; the records for 2015 were not provided. The licensee entered this issue into its corrective action program, verified that additional margin existed, and confirmed the reservoirs were still able to maintain their required design volume with the silt accumulation. 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, since licensee procedures failed to prescribe instructions for silt depth determination, and failed to prescribe how responsible site staff determines an average reservoir silt level based on diver inspection reports, both quality related activities, the potential exists for an unacceptable condition to go unnoticed, affecting service water systems operability. The finding was of very-low safety significance because the finding did not represent a loss of system operability and/or function. The inspectors did not assign a cross-cutting aspect because the finding was not indicative of current performance.

Inspection Report# : [2016002](#) (*pdf*)

Significance:  Jun 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Implement Adequate Preventive Maintenance on Spare Terminals in Safety-Related Motor Control Centers

A finding of very low safety significance with an associated NCV of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” was self-revealed when the Division 1 low pressure coolant injection (LPCI) outboard injection motor-operated valve failed to open during surveillance testing. The licensee failed to have preventive maintenance work instructions and procedures for safety-related motor control center (MCC) inspections appropriate to the circumstances, such that appropriate steps were incorporated to ensure spare terminal screws were maintained tight. The licensee entered this violation into its corrective action program for evaluation and identification of appropriate corrective actions. Corrective actions for the event included revising preventive maintenance work instructions and procedures to include instructions to check accessible spare terminal screws for tightness, personnel training, and inspection of all engineered safety feature MCC positions with relays susceptible to loose or missing screws and for susceptible contactor orientations.

The finding was of more than minor safety significance because it was related to the Equipment Reliability 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 to prevent undesirable consequences.

Specifically, the failure of the Division 1 LPCI outboard isolation valve to stroke open affected the LPCI loop select logic function to respond to a design basis event. The finding was determined to be of very low safety significance based on a detailed significance determination process review since the delta core damage frequency was determined to be less than $1.0E-6$ /year. The inspectors concluded that because the inadequate procedures were in use for greater than three years, this issue would not be reflective of current licensee performance, and no cross-cutting aspect was identified.

Inspection Report# : [2016002](#) (*pdf*)

Significance:  Mar 31, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Correctly Interpret and Implement TS Requirements for RPS Trip Functions

The inspectors identified a finding of very low safety significance with an associated Non-Cited Violation of

Technical Specification (TS) 5.4, “Procedures.” Specifically, the licensee failed to enter TS 3.3.1.1, Condition C when the high pressure stop valve (HPSV) closure and high pressure control valve (HPCV) fast closure reactor protection system (RPS) trip functions became inoperable while the main turbine bypass valves cycled open during a plant transient on January 6, 2016. The licensee entered this issue into the corrective action program for evaluation and identification of appropriate corrective actions. As an immediate corrective action, the licensee established an expectation to enter TS 3.3.1.1, Condition C, when the main turbine bypass valves are open above 29.5 percent power and declare the HPSV closure and HPCV fast closure RPS trip functions inoperable pending another resolution.

The performance deficiency was of more than minor safety significance because a failure to correctly implement TS Limiting Condition for Operation (LCO) requirements has the potential to lead to a more significant safety concern if left uncorrected. Specifically, a failure to declare an LCO not met, enter the applicable condition(s), and follow the applicable actions could reasonably result in operations outside of established safety margins or analyses. The finding was determined to be of very low safety significance based on a detailed significance determination process review since the delta core damage frequency was determined to be less than 1.0E-6/year. The inspectors concluded this finding affected the cross-cutting aspect of conservative bias in the human performance area. Specifically, the licensee failed to correctly interpret and implement the TS requirements due to a non conservative interpretation of the TS Bases and a failure to reconcile differences between information in the annunciator response procedure and the TS Bases.

Inspection Report# : [2016001](#) (*pdf*)

Significance:  Mar 31, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Translate Design Requirements of the RHRHVAC System into Procedures

The inspectors identified a finding of very low safety significance with an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion III, “Design Control.” Specifically, the licensee failed to demonstrate the residual heat removal heating, ventilation, and air conditioning (RHRHVAC) system would be able to maintain a required minimum temperature of 40 degrees Fahrenheit (°F) for the emergency diesel generator (EDG) fuel oil storage tank (FOST) rooms under minimum design conditions, potentially rendering the EDGs inoperable. The licensee entered this issue into the corrective action program and revised the operator rounds procedure to record ambient air temperature readings in the EDG FOST rooms on a daily basis when the outside ambient air temperature is below 45° F.

The performance deficiency was of more than minor safety significance because a failure to correctly incorporate design requirements into plant procedures has the potential to lead to a more significant safety concern if left uncorrected. Specifically, since the EDG FOST rooms were unmonitored and a subsequent calculation demonstrated the RHRHVAC system was not able to maintain the minimum required temperature in the rooms as described in the design basis, the EDGs could have been rendered inoperable without the licensee’s knowledge. The finding was determined to be of very low safety significance since it affected the design or qualification of a mitigating structure, system, or component (SSC), for which the SSC maintained its operability or functionality. The inspectors concluded that because this condition has existed for greater than three years, this issue would not be reflective of current licensee performance and no cross-cutting aspect was identified.

Inspection Report# : [2016001](#) (*pdf*)

Significance:  Sep 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Incorporate Operating Experience Into Preventive Maintenance Activities Associated With RPS Timing Relays

A finding of very low safety significance with an associated Non-Cited Violation of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," was self-revealed on May 24, 2015, when the failure of a reactor protection system (RPS) timing relay caused an invalid half-scam due to loss of power and the resultant closure of multiple containment isolation valves. The timing relay failure occurred, in part, due to the licensee's failure to perform preventive maintenance on the component. The licensee replaced the failed timing relay and initiated corrective actions to create preventive maintenance activities for replacing the RPS timing relays.

The finding was of more than minor safety significance because it was associated with the Equipment Performance 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 to prevent undesirable consequences (i.e., core damage). Specifically, the RPS timing relay failure resulted in the loss of RPS Train B power and caused multiple containment isolation valves to spuriously close. In addition, the finding was sufficiently similar to Inspection Manual Chapter 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," Example 7(c), in that this violation of 10 CFR 50.65(a)(3) had a consequence "...such as equipment problems attributable to failure to take industry operating experience into account when practicable." The finding was determined to be a licensee performance deficiency of very low safety significance. Although the issue affected the design or qualification of a mitigating system or component, failure of the timing relay and loss of RPS B power did not result in the loss of safety function of any safety-related structure, system, or component. Actuation of the RPS relies on a loss of power, which was not affected by the relay failure. The inspectors concluded this finding affected the cross cutting area of human performance and the cross-cutting aspect of design margins. Specifically, the licensee did not place special attention to appropriately operate and maintain RPS timing relays subject to age-related degradation within design margins with respect to an appropriate service life. Relevant external operating experience was not evaluated by the licensee and factored into an appropriate evaluation of component service life because the relay was not entered into its central component database.

Inspection Report# : [2015003](#) (*pdf*)

Significance:  Sep 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Perform Preventative Maintenance on Safety-Related Auxiliary Trip Unit Relays for the Spent Fuel Pool Ventilation Exhaust Radiation Monitors

A finding of very low safety significance with an associated Non-Cited Violation of Technical Specification 5.4, "Procedures," was self-revealed on May 16, 2015, when the failure of an auxiliary trip unit relay for the Division 2 spent fuel pool ventilation exhaust radiation monitor caused an invalid actuation of primary and secondary containment isolation valve logic for numerous valves in the drywell and suppression pool ventilation and nitrogen inerting systems, and an invalid engineered safety features system actuation of the standby gas treatment system and control center heating, ventilation, and air conditioning system. The licensee failed to perform any replacement preventive maintenance for the component throughout the history of plant operation. The licensee subsequently replaced the failed relay and returned the Division 2 spent fuel pool ventilation exhaust radiation monitor to service. In addition, the licensee initiated a corrective action to create preventive maintenance activities to replace all potentially age degraded auxiliary trip unit relays and to create new preventive maintenance strategies for relays not currently within the scope of its preventive maintenance template.

The finding was of more than minor safety significance because it was associated with the Equipment Performance 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 to prevent undesirable consequences (i.e., core damage). Specifically, the age-related auxiliary trip unit relay failure unnecessarily challenged actuation of engineered safety features and resulted in inoperable safety-related equipment until maintenance was completed to

replace the failed relay. The finding was determined to be a licensee performance deficiency of very low safety significance. Although the issue affected the design or qualification of a mitigating system or component, failure of the auxiliary trip unit relay did not result in the loss of safety function of any safety-related structure, system, or component but instead resulted in invalid actuation of safety features. The inspectors concluded this finding affected the cross-cutting area of problem identification and resolution and the cross cutting aspect of operating experience. Specifically, the licensee did not appropriately evaluate and implement relevant internal and external operating experience to appropriately adjust its preventive maintenance program to replace auxiliary trip unit relays.

Inspection Report# : [2015003](#) (*pdf*)

Significance:  Sep 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Maintain Adequate Procedures to Respond to Thermal-Hydraulic Instabilities

A finding of very low safety significance with an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," was self-revealed on March 19, 2015, when the reactor automatically scrammed due to an automatic reactor scram signal generated from the oscillation power range monitor (OPRM) logic of the reactor protection system. The licensee failed to maintain response procedures appropriate to the circumstances to direct licensed reactor operators to take timely mitigating actions when the reactor was operating in a condition more susceptible to core thermal-hydraulic instability (i.e., high power and low flow conditions) following the loss of a reactor recirculation pump and transition to single loop operation. Corrective actions include procedure revisions to add steps for timely mitigation actions when the reactor is operating in a condition more susceptible to core thermal-hydraulic instability and training of licensed operators.

The finding was of more than minor safety significance 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 to prevent undesirable consequences (i.e., core damage). Specifically, the failure to have procedures appropriate to the circumstances in response to a thermal-hydraulic instability event resulted in untimely operator action that led to an automatic reactor scram. The finding was determined to be a licensee performance deficiency of very low safety significance. The inspectors concluded that because the changes to the abnormal operating procedure were performed in the year 2000 after the OPRM system was installed at the plant and no opportunity reasonably existed since that time to identify and correct it, this issue was not reflective of current licensee performance and no cross-cutting aspect was identified.

Inspection Report# : [2015003](#) (*pdf*)

Barrier Integrity

Significance:  Mar 31, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Test Criteria in SGTS Flow/Heater Operability Surveillance Test

The inspectors identified a finding of very low safety significance with an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criteria V, "Instructions, Procedures, and Drawings." Specifically, the licensee failed to include appropriate quantitative or qualitative acceptance criteria in its surveillance test procedures for fulfilling the monthly Technical Specification surveillance requirement to demonstrate operability of the standby gas treatment system (SGTS). The licensee entered this violation into its corrective action program to evaluate the issue and identify appropriate corrective actions. No immediate operability concern was identified.

The performance deficiency was of more than minor safety significance because it was associated with the procedure quality attribute for the control room and auxiliary building and adversely affected the Barrier Integrity cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, by not providing appropriate acceptance criteria by which the operability of the SGTS trains could be assessed, the ability of the SGTS to collect and treat the design leakage of radionuclides from the primary containment to the secondary containment during an accident could not be assured. The finding was determined to be of very low safety significance because it involved only a degradation of the radiological barrier function provided by the SGTS. The inspectors concluded that because this condition has existed for greater than three years, this issue would not be reflective of current licensee performance and no cross-cutting aspect was identified.

Inspection Report# : [2016001](#) (*pdf*)

Significance: G Sep 30, 2015

Identified By: Self-Revealing

Item Type: FIN Finding

Failure to Adequately Assess Plant Impact for Post-Maintenance Testing on RBHVAC

A finding of very low safety significance was self-revealed on July 7, 2015, during post maintenance testing of the Reactor Building heating, ventilation, and air conditioning (RBHVAC) system when reverse rotation of the center exhaust fan pressurized secondary containment due to reversed electrical leads. Personnel responsible for oversight and execution of the post-maintenance test of the RBHVAC center exhaust fan did not appropriately consider the possibility and adverse effects of prolonged reverse rotation after performing a revision to the work order. As a result, a normal post-installation test activity (i.e., "bump-check" for rotation) was deviated from and produced unintended consequences, (i.e., a momentary degradation of secondary containment). No violation of regulatory requirements was identified because the RBHVAC system fans were not safety-related equipment. This issue was determined to be a finding. The licensee's corrective actions for this event include revising the maintenance procedure to clarify work instructions when visible verification of rotation cannot be completed and an operational check is required for flow characteristics, and providing required reading to all operations shift personnel, electrical planners, and maintenance personnel to clarify the difference between a rotational check and an operational check and any potential impact.

The finding was of more than minor safety significance because it was associated with the Human Performance attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the failure to assess the plant impact from potential prolonged reverse rotation of the center RBHVAC exhaust fan during a post-maintenance test had a direct effect on the licensee's ability to maintain the safety function of secondary containment. The finding was determined to be a licensee performance deficiency of very low safety significance because it represented only a degradation of the radiological barrier function provided by the reactor building. The inspectors concluded this finding affected the cross cutting area of human performance and the cross-cutting aspect of consistent process, the licensee did not utilize a consistent, systematic approach when the request was made to change the post-maintenance test from a rotational check to an operational check.

Inspection Report# : [2015003](#) (*pdf*)

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:  Jun 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Control the Work Hours of Covered Workers

The inspectors identified a finding of very low safety significance with an associated NCV of 10 CFR 26.205(c) and (d). The licensee failed to schedule and control the work hours of two maintenance craftsmen performing work covered under 10 CFR 26.4(a) by not ensuring the individuals had, at a minimum, a 34 hour break in any 9 day period as required by §26.205(d)(2)(ii). The licensee entered this violation into its corrective action program for evaluation and identification of appropriate corrective actions.

The finding was of more than minor safety significance because a failure to schedule and control the work hours of workers performing covered work, if left uncorrected, would become a more significant safety concern since it could reasonably result in human performance errors due to fatigue that could result in plant transients and/or affect the function of safety related systems or components. The finding was determined to be a licensee performance deficiency of very low safety significance based on a qualitative evaluation of the potential consequences of the performance issue since there were no human performance related incidents attributed to the two maintenance craftsmen while they were not in compliance with the work hour limits. The inspectors concluded this finding affected the cross cutting area of problem identification and resolution and the cross-cutting aspect of evaluation. The licensee did not thoroughly evaluate the problem after it was identified and reached an incorrect conclusion because it failed to sufficiently understand the regulatory requirements and the basis for its decisions that contributed to the non-compliance with the §26.205 work hour requirements.

Inspection Report# : [2016002](#) (*pdf*)

Significance:  Mar 31, 2016

Identified By: NRC

Item Type: FIN Finding

Failure to Follow Apparent Cause Evaluation Procedure

The inspectors identified a finding of very low safety significance for the licensee's failure to implement its procedure standards when performing an apparent cause evaluation for a condition adverse to quality. Specifically, the

inspectors determined that the licensee did not adequately develop the direct and apparent cause of the problem in the evaluation, did not correctly assess the impact of relevant internal and external operating experience, and did not identify appropriate corrective actions to address management behaviors that resulted in the problem. No violation of regulatory requirements was identified because the scope of issues evaluated by the licensee's procedure standards for performing the apparent cause evaluation was not limited to safety-related structures, systems, and components.

The performance deficiency was of more than minor safety significance because it would have the potential to lead to a more significant safety concern if left uncorrected. Specifically, the failure to adequately perform apparent cause evaluations could result in ineffective corrective actions for conditions adverse to quality and safety. The finding was determined to be of very low safety significance based on a qualitative evaluation of the potential consequences of the performance issue. The inspectors considered the three examples evaluated in the licensee's apparent cause evaluation and found the significance of each performance issue was not greater than very low safety significance. The inspectors concluded this finding affected the cross cutting aspect of evaluation in the problem identification and resolution area. The licensee did not adequately evaluate the problem to ensure corrective actions would address the causes and extent of conditions commensurate with safety significance. Specifically, the apparent cause evaluation failed to identify and understand the basis for management decisions that contributed to the problem; therefore, corrective actions to address appropriate changes in management behaviors were not developed.

Inspection Report# : [2016001](#) (*pdf*)

Last modified : August 29, 2016