Fort Calhoun
1Q/2012 Plant Inspection Findings

Initiating Events

Significance: G Feb 02, 2012
Identified By: NRC
Item Type: VIO Violation
Inadequate Corrective Actions to Ensure Reliability of Raw Water Pump Power Cables
The NRC identified a cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” for failure to take effective corrective action following the initial discovery of water intrusion in cable vault manholes MH-5 and MH-31 in 1998, 2005, 2009, and 2011. Specifically, the licensee failed to take effective corrective action to establish an appropriate monitoring frequency, which took into account variable environmental conditions to mitigate potential common mode failure of raw water 4160 V motor cables in underground ducts and manholes identified during the Component Design Basis Inspection performed in 2009. The violation is being cited because the licensee had failed to restore compliance in a reasonable period following documentation of the issue as a non-cited violation issued December 30, 2009.
The failure to take effective corrective action to ensure the reliability and capability of the safety-related cables powering the raw water pump motors was a performance deficiency. Furthermore, the finding was within the licensee's ability to foresee and correct because the licensee had multiple opportunities to correct the continuing challenge to the safety-related cables and raceways for the raw water system over an extended period. The finding was more than minor because it adversely affected the Mitigating Systems Cornerstone attribute of design control for ensuring the availability, reliability, and capability of systems that respond to Initiating Events to prevent undesirable consequences. The finding is of very low safety significance because it was a design deficiency that did not result in loss of operability or functionality.

This finding has a crosscutting aspect in the decision-making program component of the human performance area because the licensee failed to use conservative assumptions in decision-making and adopt a requirement to demonstrate that the proposed action was safe in order to proceed rather than a requirement to demonstrate that it was unsafe in order to disapprove the action. Specifically, from 2005 until 2011, the licensee chose to postpone installation of proposed water level control corrective actions and failed to appropriately monitor water intrusion into underground ducts and manholes MH-5 and MH-31 for raw water 4160 V motor cables multiple times.
Inspection Report# : 2011006 *(pdf)*

Significance: G Feb 02, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Housekeeping Program Requirements
The NRC identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the failure to properly implement procedural requirements to control transient equipment and materials. Specifically, on November 14, 2011, the team identified loose maintenance carts, improperly stored ladders, excessive transient combustible material, inadequately evaluated scaffolding being stored near safety-related equipment, and a procedure which failed to provide guidance for inspection and removal of foreign material in the spent fuel pool as a result of a non-functional skimmer.
The repeated failures of plant personnel to follow the procedural requirements for the control of transient materials were performance deficiencies. The finding was more than minor because if left uncorrected, the deficiencies could lead to a more significant safety concern. The finding is of very low safety significance because it did not represent a loss of system safety function, did not represent the actual loss of safety function of a single train for greater than its technical specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event.

This finding has a crosscutting aspect in the corrective action program component of the problem identification and

resolution area because the licensee failed to track and trend information from the corrective action program (recurring transient equipment issues) in the aggregate to identify programmatic and common cause problems.
Inspection Report# : 2011006 *(pdf)*

Significance: G Dec 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Procedure Results in a Loss of Reactor Coolant
A self-revealing noncited violation of Fort Calhoun Station Technical Specification 5.8.1 occurred due to the licensee's failure to follow a procedure for placing the reactor coolant system level monitors into service. This failure resulted in the inadvertent draining of approximately 1,800 gallons of reactor coolant to the reactor coolant drain tank. This issue was entered into the licensee's corrective action program as Condition Report 2011-2890.

The inspectors determined that the licensee's failure to follow Procedure OI RC 1A, "RCS Instrumentation Operating Instruction," was a performance deficiency. This was a result of the licensee's failure to properly implement a required procedure, and was within the licensee's ability to foresee and correct and should have been prevented. This performance deficiency was more than minor because it could be reasonably viewed as a precursor to a significant event, i.e., could lead to a complete loss of reactor coolant inventory. The inspectors evaluated this finding using Inspection Manual Chapter 0609, Attachment 4, and determined that this finding is associated with the Initiating Events Cornerstone, specifically the primary system loss-of-coolant accident initiator contributor. Since the finding affected the safety of the reactor during a refueling outage, the inspectors further evaluated the finding using Inspection Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process." Using Attachment 1 of Appendix G, the inspectors determined that a Phase 2 analysis was required because the finding increased the likelihood of a loss of reactor coolant system inventory. A senior reactor analyst determined that the Phase 2 analysis was White, requiring a Phase 3 analysis. The Phase 3 analysis determined that the finding was of very low safety significance (green) because the leak path was small enough to allow sufficient time for operator action. This finding has a cross-cutting aspect in the area of human performance associated with the component of work practices because the licensee failed to communicate human error prevention techniques, such as self- and peer-checking.
Inspection Report# : 2011005 *(pdf)*

Significance: R Dec 16, 2011
Identified By: NRC
Item Type: AV Apparent Violation
Failure to Ensure the 480 Vac Electrical Power Distribution System Design Requirements were Implemented and Maintained
DRAFT

The failure to ensure that the 480 Vac electrical power distribution system design requirements were properly implemented and maintained through proper maintenance, modification, and design activities led to a catastrophic fire in a switchgear impacting the required safe shutdown capability of the plant. Three self-revealing apparent violations were identified with this performance deficiency:

a. A violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to ensure that design changes were subject to design control measures commensurate with those applied to the original design and that measures were established to assure that applicable regulatory requirements and the design basis for those safety-related structures, systems, and components were correctly translated into specifications, drawings, procedures, and instructions

b. A violation of 10 CFR Part 50, Appendix B, Criterion XVI "Corrective Action," for the failure to establish measures to assure that a significant condition adverse to quality was promptly identified and corrected, and measures taken to preclude repetition

c. A violation of License Condition 3.D, "Fire Protection Program," for the failure to ensure that the electrical protection and physical design of the 480 Vac electrical power distribution system provided the electrical bus

separation required by the fire protection program

Specifically: (1) design reviews and work planning for a modification to install twelve new 480 Vac load center breakers failed to ensure that the cradle adapter assemblies had a low-resistance connection with the switchgear bus bars by establishing a proper fit and requiring low resistance connections; (2) preventive maintenance activities were inadequate to ensure proper cleaning of conductors, proper torquing of bolted conductor and bus bar connections, or adequate inspection for abnormal connection temperatures; and (3) design reviews of the electrical protection and train separation of the 480 Vac electrical power distribution system were inadequate to ensure that a fire in load center 1B4A would not adversely impact operation of redundant safe shutdown equipment in load center 1B3A, as required by the fire protection program. The licensee entered these issues into their corrective action program under numerous condition report numbers, which are described in the body of this report.

The performance deficiency was determined to be more than minor because it affected the Initiating Events Cornerstone and was associated with both the protection against external events attribute (i.e., fire) and the design control attribute. The finding affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Manual Chapter 0609.04, “Phase 1 – Initial Screening and Characterization of Findings,” Table 4a, directed the process to a Phase 3 analysis because the finding increased the likelihood of an external event (fire), and impacted mitigating systems needed to respond to that initiating event. A Phase 3 analysis was completed using the plant-specific Standardized Plant Analysis Risk Model for Fort Calhoun, Revision 8.15, the Individual Plant Evaluation of External Events (IPEEE), and hand calculations. The analysis covered the risk affected by the performance deficiency for postulated fires of any of the remaining nine continuously energized breakers including the potential for multiple fire initiators. Additionally, seismically-induced fires were postulated based on the characteristics of the performance deficiency. Based in the best available information the performance deficiency was preliminarily characterized as a finding of high safety significance (Red). This performance deficiency had a crosscutting aspect in the area of human performance associated with the resources component because the licensee did not ensure that personnel, equipment, procedures, and other resources were adequate to assure nuclear safety. Specifically, the licensee did not ensure that design documentation, procedures, and work packages were adequate to assure that design margins were maintained.

Inspection Report# : 2011014 *(pdf)*

Significance: G Sep 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Incorporate Design Information Into Procedures
The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, Design Control, for failure to incorporate design information into procedures for operation of the component cooling water system for temporary off-normal system conditions during refueling.

The failure to ensure that the minimum flow assumption contained in calculation FC06700 was incorporated in component cooling water operating procedures is a performance deficiency. This was reasonably within the licensee ability to foresee and correct. The performance deficiency is more than minor as it affected the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown, as well as, power operations. Since the finding affects the safety of the reactor during refueling outages, forced outages, and maintenance outages, it was evaluated using Inspection Manual Chapter 0609, Appendix G. The finding did not require quantitative assessment and therefore is of very low safety significance or green. A crosscutting aspect was not assigned as none were reflective of current plant performance.

Inspection Report# : 2011004 *(pdf)*

Significance: G Sep 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to Provide Adequate Procedures to Ensure Leak Before Break Commitment
The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion V for failure to have adequate instructions, procedures, or drawings including appropriate quantitative or qualitative acceptance criteria to ensure they can detect reactor coolant leakage, as required by the Updated Safety Analysis Report, using the containment dew point instrument or containment sump level instruments.

Title 10 CFR Part 50, Appendix B, Criterion V states, “Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Contrary to this, the inspectors determined that the licensee’s failure to have adequate instructions, procedures, or drawings including appropriate quantitative or qualitative acceptance criteria to ensure they can detect a one gallon per minute leak in four hours was a performance deficiency. This was within the licensee’s ability to foresee and correct. The performance deficiency is more than minor as it affected the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Since the finding occurred during power operation and included structures, systems, and components where existing Significance Determination Process guidance is not adequate to provide reasonable estimates of the finding significance within the established Significance Determination Process timeliness goal of 90 days, the finding was evaluated using Inspection Manual Chapter 0609, Appendix M, “Significance Determination Process Using Qualitative Criteria.” Using Table 4.1, “Qualitative Decision –Making Attributes for NRC Management Review,” the finding was determined to be of very low safety significance (Green). This finding does not have a crosscutting aspect as the performance characteristic described by a potential crosscutting aspect did not occur within the last three years. Enforcement. Title 10
Inspection Report# : 2011004 *(pdf)*

Mitigating Systems

Significance: N/A Mar 31, 2012
Identified By: NRC
Item Type: VIO Violation
INADEQUATE PROCEDURES TO MITIGATE A DESIGN BASIS FLOOE EVENT
The inspectors identified four examples of a violation of Technical Specification 5.8.1.a, “Procedures,” for failure to establish and maintain procedures to mitigate an external flooding event. The procedural guidance for flooding was inadequate to mitigate the consequences of external flooding. This finding, and its corrective actions, will be managed by the Manual Chapter 0350 Oversight Panel.

This finding was more than minor because it adversely impacted the procedure quality, human performance and protection against external events attributes of the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The significance of this finding is bounded by the significance of a related Yellow finding regarding the ability to mitigate an external flooding event (Inspection Report 05000285/2010008). This finding has a crosscutting aspect in the area of problem identification and resolution, corrective action program, for failure to thoroughly evaluate problems such that the resolutions address causes and extent of conditions. This also includes, for significant problems, conducting effectiveness reviews of corrective actions to ensure that the problems are resolved.

Inspection Report# : 2012002 *(pdf)*

Significance: N/A Mar 31, 2012
Identified By: NRC
Item Type: VIO Violation
FAILURE TO CLASSIFY INTAKE STRUCTURE SLUICE GATES AS SAFETY CLASS III
The inspectors identified a violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for failure of the licensee to classify the six intake structure exterior sluice gates and their motor operators as Safety Class III. This finding, and its corrective actions, will be managed by the Manual Chapter 0350 Oversight Panel.

This finding was more than minor because it adversely impacted the protection against external events attribute of the

Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The significance of this finding is bounded by the significance of a related Yellow finding regarding the ability to mitigate an external flooding event (Inspection Report 05000285/2010008). This finding has a crosscutting aspect in the area of problem identification and resolution, corrective action program, for failure to thoroughly evaluate problems such that the resolutions address causes and extent of conditions. This also includes, for significant problems, conducting effectiveness reviews of corrective actions to ensure that the problems are resolved.

Inspection Report# : 2012002 *(pdf)*

Significance: N/A Mar 31, 2012
Identified By: NRC
Item Type: VIO Violation
FAILURE TO MEET DESIGN BASIS REQUIREMENTS FOR DESIGN BASIS FLOOD EVENT
The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion III, “Design Control,” for failure to meet design basis requirements for protection of the safety related raw water system during a design basis flood for flood levels between 1,010-1,014 feet mean sea level as identified in Updated Safety Analysis Report, Section 9.8, “Raw Water System.” Specifically, the design basis states that water level inside the intake cells can be controlled during a design basis flood by positioning the exterior sluice gates to restrict the inflow into the cells. This finding, and its corrective actions, will be managed by the Manual Chapter 0350 Oversight Panel.

This finding was more than minor because it adversely impacted the equipment performance and protection against external events attributes of the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The significance of this finding is bounded by the significance of a related Yellow finding regarding the ability to mitigate an external flooding event (Inspection Report 05000285/2010008). This finding has a crosscutting aspect in the area of problem identification and resolution, corrective action program, for failure to thoroughly evaluate problems such that the resolutions address causes and extent of conditions.

Inspection Report# : 2012002 *(pdf)*

Significance: G Feb 02, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Promptly Correct Degraded Electrical Insulation on the Component Cooling Water System Motors Cables
The NRC identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” for the licensee’s failure to promptly correct conditions adverse to quality. Specifically, the licensee failed to correct degraded conditions associated with the electrical supply cable insulation for the component cooling water motors originally identified in 2003. In addition, the licensee did not have justification for the temporary repairs made to the cables nor for continued operability.
The failure of the licensee to promptly correct conditions adverse to quality associated with the loss of full qualification of plant components due to degraded electrical supply cable insulation was a performance deficiency. This performance deficiency was more than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding has very low safety significance because it did not represent a loss of system safety function, did not represent the actual loss of safety function of a single train for greater than its technical specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event.

This finding has a crosscutting aspect in the resources component of the human performance area because the licensee failed to minimize long-standing equipment issues by correcting these deficiencies
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Inspection Report# : 2011006 *(pdf)*

Significance: G Feb 02, 2012
Identified By: NRC
Item Type: FIN Finding
Failure to Perform Extent of Condition Evaluation
The NRC identified a finding for failure of the licensee to follow directions of an apparent cause evaluation to perform an extent of condition evaluation. Specifically, following the identification of an inadequate temporary design modification that rendered annunciator CB 20, Panel A18, Window C3 inoperable on July 5, 2011, engineering personnel failed to perform an extent of condition evaluation to identify other annunciator windows rendered inoperable by the design modification.

The failure of engineering personnel to perform an extent of condition evaluation as directed by the apparent cause evaluation for a temporary modification following identification of an unexpected condition was a performance deficiency. The finding is more than minor because the failure to adequately implement the corrective actions associated with the temporary modification's identified deficiencies affects the equipment performance attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective of ensuring availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance because it did not represent a loss of system safety function, did not represent the actual loss of safety function of a single train for greater than its technical specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event.
The finding has a crosscutting aspect in the corrective action program component of the human performance area associated with work practices because engineering personnel failed to follow direction and ensure that an extent of condition review mandated by an apparent cause evaluation was performed.
Inspection Report# : 2011006 *(pdf)*

Significance: G Feb 02, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish Adequate Measures to Maintain Vendor Manual Design Control Information
The NRC identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to establish adequate measures for the selection and review for suitability of application of parts equipment, and processes that are essential to the safety-related function of structures, systems, and components. Specifically, the team identified numerous condition reports involving inadequate implementation of vendor manual information that affected the suitability of application of parts equipment, and processes that are essential to the safety-related function of structures, systems, and component repair and refurbishment activities over an extended period.

The failure to properly maintain design information associated with vendor manuals to ensure information, which affected the suitability of application of parts equipment, and processes, essential to the safety-related function of structures, systems, and component repair and refurbishment activities, was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone, and affected the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, and was therefore a finding. The finding has very low safety significance because it did not represent a loss of system safety function, did not represent the actual loss of safety function of a single train for greater than its technical specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event.

This finding has a crosscutting aspect in the decision making component of the human performance area because the licensee failed to make safety-significant decision using a systemic process which included formally defining the authority and roles for decisions in that the licensee chose not to fill key positions responsible for the program for several years.
Inspection Report# : 2011006 *(pdf)*

Significance: G Feb 02, 2012
Identified By: NRC

Item Type: NCV NonCited Violation
Failure to Implement an Adequate Trending Program
The NRC identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for inadequate procedures that are used to implement the licensee trending program. Specifically, on December 1, 2011, the team identified a deficiency regarding the licensee’s inability to implement adequate procedures for gathering, analyzing, and communicating information related to low-level performance vulnerabilities and repeat occurrences prior to the emergence of more significant events.
The failure to implement adequate procedures to trend conditions adverse to quality is a performance deficiency. The finding affected the Mitigating Systems Cornerstone and was more than minor because if left uncorrected, the deficiency could lead to a more significant safety concern. The finding has very low safety significance because it did not represent a loss of system safety function, did not represent the actual loss of safety function of a single train for greater than its technical specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event.

This finding has a crosscutting aspect in the corrective action program component of the problem identification and resolution area because the licensee failed to thoroughly evaluate problems associated with the trending program such that the resolutions address causes and extent of conditions, as necessary.
Inspection Report# : 2011006 *(pdf)*

Significance: G Dec 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Performance Monitoring Test For Component Cooling Water Heat Exchangers
The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XI, “Test Control,” which requires, in part, that a test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures. Test procedures shall include provisions for assuring that all prerequisites for the given test have been met, that adequate test instrumentation is available and used, and that the test is performed under suitable environmental conditions. Specifically, prior to November 16, 2011, the prerequisite calculated heat loads used to demonstrate validity of the performance testing of component cooling water heat exchanger AC-1A test conditions did not agree to within the expected uncertainty, and ultrasonic flow meters were not calibrated to the appropriate range of test flow conditions. The licensee has entered this violation into their corrective action program as Condition Report 2011-9401.

The inspectors determined that the failure to perform testing and evaluation of safety-related heat exchangers in accordance with written procedures was a performance deficiency. This finding is more than minor because it adversely affected the Mitigating Systems Cornerstone objective of equipment performance to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Additionally, the finding is more than minor because if left uncorrected it could lead to a more significant safety concern, as the failure to perform appropriate performance monitoring testing of the component cooling water heat exchangers could reasonably result in an unrecognized condition of a system failing to fulfill its safety-related function. Using Inspection Manual Chapter 0609, Attachment 4, "Initial Screening and Characterization of Findings," the finding was determined to be of very low safety significance (Green) because it did not represent a loss of system safety function, nor an actual loss of safety function of a single train, and it did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors determined that this finding had a crosscutting aspect in the area of human performance, work practices, because the licensee did not communicate human error prevention techniques, such as self- and peer-checking and proper documentation of activities.
Inspection Report# : 2011005 *(pdf)*

Significance: G Jun 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Adequately Design a Reactant Coolant Pump Lube Oil Collection System
The inspectors identified a noncited violation of 10 CFR Part 50, Appendix R, Section III.O for the failure to ensure an adequate seismic design of the reactor coolant pumps oil collection system. The licensee used 2-inch copper pipe

with brazed joints in the lube oil collection system. The seismic analysis of the system assumed the use of ASME Section IX during the installation of the system, but no codes or standards were used by the licensee for the brazed joints.

The inspectors determined that the failure to design and install an adequate oil collection system which included provisions for the drain lines to the oil collection tank was a performance deficiency. This finding had a credible impact on safety because the inadequate installation and design of the oil collection systems presented a degradation of a fire confinement component, which had a fire prevention function of not allowing an oil leak. The inspectors determined the finding was more than minor because it impacted the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, and the related attribute of protection against external factors, such as a fire. The inspectors reviewed Inspection Manual Chapter 0609, Appendix F, and determined the finding was of very low safety significance, because of the low degradation rating of the fire confinement category related to the as found condition of the oil collection piping, the extremely low frequency of reactor coolant pump oil leaks, minor actual reactor coolant pump oil leaks during the past operating cycle, and other area fire protection defense-in-depth features such as automatic fire detection, manual suppression capability, and safe shutdown capability from the main control room. This finding involved a legacy issue associated with a modification for original installation; therefore, there were no assigned cross-cutting aspects.

Inspection Report# : 2011003 *(pdf)*

Significance: G Jun 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Scaffolding Procedure
The inspectors identified a noncited violation of Technical Specification 5.8.1.a for failure to follow scaffold specification and construction Procedures SO-M-35 and PED-CSS-12. This led to the licensee declaring a number of emergency core cooling components inoperable and entering technical specification 2.0.1.

The inspectors determined that not following a procedure required by Technical Specification 5.8.1.a was a performance deficiency. The finding was more than minor because if left uncorrected it would have the potential to lead to a more significant safety concern. The licensee routinely failed to perform seismic evaluations of scaffolds erected near safety-related equipment not constructed in accordance with Procedures PED-CSS-12 or SO-M-35 for preconfigured seismic scaffolding. The finding was associated with the Mitigation Systems Cornerstone while the reactor was operating; therefore, Inspection Manual Chapter 0609, Attachment 4 screening checklist was used. The finding was determined to have very low safety significance because it did not involve the total loss of any safety function, and did not contribute to external event initiated core damage accident sequences. The inspectors determined the primary cause of the finding was lack of the licensee's oversight of the scaffolding program. The finding had a crosscutting aspect in the area of human performance, specifically, work practices, in that, the licensee failed to ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety was supported.
Inspection Report# : 2011003 *(pdf)*

Significance: G Jun 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Provide Procedural Guidance to Replace Or Evaluate Age Degraded Components
A self-revealing noncited violation of Fort Calhoun Technical Specification 5.8.1, "Procedures," occurred due to the failure of the licensee to ensure that adequate procedures were available for maintenance which was conducted on the reactor protective systems power supplies. Specifically, there was no procedural guidance to require replacement of power supplies, or an engineering justification for continued operation, once power supplies exceeded their vendor recommended life, and/or showed signs of failure and degradation.

The inspectors determined that the licensee's failure to provide procedural guidance to evaluate and/or replace age-degraded components was a performance deficiency. This was a result of the licensee's failure to properly implement

a required procedure, and was within the licensee's ability to foresee and correct and could have been prevented. This performance deficiency was more than minor because it could be reasonably viewed as a precursor to a significant event, it could lead to a loss of the reactor protective system. The inspectors evaluated this finding using Inspection Manual Chapter 0609, Attachment 4, and determined that this finding was associated with the Mitigating Systems Cornerstone, specifically the primary degraded reactivity control contributor. Because this finding occurred while the unit was operating at full power, the inspectors used Inspection Manual Chapter 0609 to determine its significance. The inspectors determined that the finding represented a qualification deficiency confirmed not to result in a loss of functionality because none of the failures to date prevented a reactor protective systems channel from tripping. Therefore, in accordance with the Phase 1 screening, the finding was of very low risk significance.

This finding had a crosscutting aspect in the area of problem identification and resolution associated with the component of operating experience because the licensee failed to adequately evaluate and communicate relevant internal and external operator experience.
Inspection Report# : 2011003 *(pdf)*

Significance: W Apr 15, 2011
Identified By: NRC
Item Type: VIO Violation
Failure to Correct a Degraded Contactor in the Reactor Protective System
During an NRC inspection conducted from January 17 through April 15, 2011, one violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:
Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition.
Contrary to the above, between November 3, 2008, and June 14, 2010, the licensee failed to assure that the cause of a significant condition adverse to quality was determined and corrective actions were taken to preclude repetition. Specifically, the licensee failed to preclude shading coils from repetitively becoming loose material in the M2 reactor trip contactor. The licensee failed to identify that the loose parts in the trip contactor represented a potential failure of the contactor if they became an obstruction; and therefore, failed to preclude repetition of this significant condition adverse to quality, that subsequently resulted in the contactor failing.
This violation is associated with a White significance determination process finding in the Mitigating Systems Cornerstone.
Inspection Report# : 2011007 *(pdf)*

Significance: Y Jun 21, 2010
Identified By: NRC
Item Type: VIO Violation
Failure to Maintain External Flood Procedures
Yellow. The inspectors identified an apparent violation of Technical Specification 5.8.1.a, "Procedures," for failure to establish and maintain procedures that protect the intake structure and auxiliary building during external flooding events. The inspectors determined that the procedural guidance of GM-RR-AE-1002, "Flood Control Preparedness for Sandbagging," was inadequate because stacking and draping sandbags at a height of four feet over the top of floodgates would be insufficient to protect the vital facilities to 1014 feet mean sea level, as described in Updated Safety Analysis Report and station procedures. The licensee has entered this condition into their corrective action program as Condition Report 2010-2387. As result of this violation, the licensee has implemented a corrective action plan to correct identified deficiencies and ensure site readiness.

This performance deficiency is more than minor because it adversely affected the Mitigating Systems Cornerstone attribute of external events and affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined the finding resulted in the degradation of equipment and functions specifically designed to mitigate a flooding initiating event. In addition, an external flood event would degrade two or more trains of a multi-train safety system. Therefore, the finding was potentially risk significant to flood initiators and a Phase 3 analysis was required. The preliminary change in core

damage frequency was calculated to be 3.1E-5/year indicating that the finding was of substantial safety significance (Yellow). The finding was determined to have a crosscutting aspect in the area of problem identification and resolution, corrective action program, for failure to take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance and complexity. Specifically, from 2003 to 2008, the licensee failed to initiate appropriate corrective actions to ensure regulatory compliance of the external flooding design basis was maintained. [P.1(d)] (Section 4OA5.1)

ERRATA - 10/19/10 issued IR 05000285/2010008-01 to document final significance determination process letter.
Inspection Report# : 2010007 *(pdf)*
Inspection Report# : 2010008 *(pdf)*

Barrier Integrity

Significance: G Sep 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Identify and Correct the Lack of Calibration for the HE-2 Crane Load Weighing System
The inspectors identified a noncited violation of 10 CFR 50 Appendix B Criterion XVI for the failure to identify and correct a condition adverse to quality. Specifically, with regard to the calibration of the load weighing system for the HE-2 crane prior to its use in lifting the spent fuel transfer cask, loaded with spent fuel, out of the spent fuel pool. This issue was entered into the licensee's corrective action program as Condition Report 2009-3186.

The failure by the licensee to promptly identify and correct the condition whereby the HE-2 crane load weighing system had not been calibrated or tested for an extended period of time leading up to its use during the lift of the spent fuel transfer cask on July 7, 2009, is a performance deficiency. The performance deficiency was determined to be more than minor because it adversely impacted the spent fuel pool fuel handling attribute of the Barrier Integrity Cornerstone objective of providing reasonable assurance that physical design barriers (fuel cladding) protect the public from radionuclide releases caused by accidents or events. Specifically, the licensee failed on more than one occasion to identify and correct a condition whereby the load cell for the HE-2 crane was neither calibrated nor tested prior to lifting the spent fuel transfer cask, loaded with spent fuel, out of the spent fuel pool. Using Attachment 4 of Inspection Manual Chapter 0609, the inspectors determined that this finding has a very low safety significance (Green) because it did not result in a fuel handling error that caused damage to fuel clad integrity or a dropped assembly. The finding was not found to be indicative of current plant performance and thus no crosscutting aspect was identified.

Inspection Report# : 2011004 *(pdf)*

Significance: G Jun 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Radiation Work Permit Procedure
Inspectors identified a noncited violation of Technical Specification 5.8.1a for the failure to follow procedural requirements to plan and carry out decontamination work in the spent fuel pool transfer canal. On January 24, 2011, decontamination work was performed in the spent fuel pool transfer canal, using Radiation Work Permit 11-3317. While planning and controlling the work, the licensee failed to follow multiple procedure steps. Specifically, the licensee did not prepare an ALARA planning worksheet as the initial step of generating the radiation work permit, did not document justification for changing the electronic dosimeter set points which were eventually determined to be inappropriate, and did not perform an ALARA briefing before the entries were made into the spent fuel pool transfer canal, which was posted as a restricted locked high radiation area. The inspectors also determined that there were aspects of the procedure that contained vague expectations, which contributed to decisions being made without using the procedure.

The failure to follow a procedure was a performance deficiency. The finding was more than minor because it

negatively impacted the Occupational Radiation Safety Cornerstone's attribute of program and process, in that, by not following the procedure; radiological safety attributes built into the radiation work permit program were circumvented. Using Inspection Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," the inspectors determined that the violation was of very low safety significance because: (1) it was not associated with ALARA planning or work controls, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. This deficiency had a crosscutting aspect in the area of human performance related to work practices. Specifically, the licensee did not communicate human error prevention techniques, such as, holding pre-job briefs, self- and peer- checking, and proper documentation of activities.

Inspection Report# : 2011003 *(pdf)*

Emergency Preparedness

Significance: G Mar 31, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Promptly Recognize and Communicate Siren System Failures
The inspector identified a non-cited violation of 10 CFR 50.54(q)(2) for failure to follow the licensee's emergency plan. Specifically, the licensee did not follow the Radiological Emergency Response Plan, Section E, "Notification Methods and Procedures," Revision 26, which requires offsite warning sirens be activated by radio signal. The licensee did not respond to indications of siren system failure for approximately six hours and did not inform offsite authorities of the need for alternative means to notify the public for three additional hours. This failure has been entered into the licensee's corrective action system as Condition Reports 2012-01435 and 2012 01489.

This finding is more than minor because it affected the facilities and equipment cornerstone attribute (availability of the alert and notification system) and impacted the cornerstone objective of implementing adequate measures to protect public health and safety. This finding was evaluated using the Emergency Preparedness Significance Determination Process and was determined to be of very low safety significance because the planning standard function was not lost or degraded. The function was not degraded because some sirens remained functional in the 0-5 and 5-10 mile areas of the emergency planning zone, and offsite officials could have promptly recognized failed sirens. The finding had a cross-cutting aspect in the work control component of the human performance area because the communications department and control room personnel did not communicate and coordinate as necessary with offsite organizations.

Inspection Report# : 2012002 *(pdf)*

Significance: G Mar 31, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure To Comply With An Emergency Plan Requirement To Notify Offsite Authorities Within 15 Minutes Of An Emergency
The inspectors identified a non-cited violation of 10 CFR 50.54(q) for failure to follow an emergency plan requirement during a declared alert. Specifically, the licensee did not notify the states of Nebraska and Iowa of the emergency within 15 minutes of event declaration as required by Section E, paragraph 2.4, of their emergency plan. This failure has been entered into the licensee's corrective action system as Condition Report 2011-8529.

This finding is more than minor because it affects safety and impacts the cornerstone attributes of emergency response organization performance and actual event response. The finding had a credible impact on the Emergency Preparedness Cornerstone objective because untimely notification to offsite authorities degrades their ability to implement adequate measures to protect the health and safety of the public. The finding is of very low safety significance because it was a problem with implementation of the site emergency plan during an event that did not affect the ability of offsite authorities to respond to the emergency. The finding had a crosscutting aspect in the work

practices (management oversight) component of the human performance area because licensee management did not set performance expectations for event notifications and monitor performance to ensure compliance with emergency plan requirements.

Inspection Report# : 2012002 *(pdf)*

Significance: G Dec 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Licensee Procedure for Making Protective Action Recommendations
The inspectors identified a noncited violation of 10 CFR 50.47(b)(10) for failure to develop and put into place guidelines for the choice of protective actions during an emergency that implemented federal guidance. Specifically, licensee guidance did not implement Regulatory Information Summary 2003-012, in that it allowed the subsequent removal of recommendations to evacuate members of the public during a radiological emergency.

This finding is more than minor because it affected the Emergency Preparedness Cornerstone attributes of emergency response organization performance and procedure quality. The finding had a credible impact on the cornerstone objective because rescinding an existing protective action recommendation can confuse offsite governmental authorities and the public. The finding is of very low safety significance because it was not a functional failure or degraded planning standard function. The finding was not a degraded planning standard function because the licensee's process was capable of producing correct protective action recommendations. This finding has been entered into the licensee's corrective action program as Condition Report 2011-8530.
Inspection Report# : 2011005 *(pdf)*

Occupational Radiation Safety

Significance: G Dec 31, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Follow Radiation Work Permit Instructions
Inspectors reviewed a self-revealing, noncited violation of Technical Specification 5.8.1 for failure to follow procedures requiring workers to comply with radiological work permit instructions. Specifically, two workers changed the work scope for valve FCV-326 from reassembly to rework using abrasive pads without notifying radiation protection personnel. The licensee's corrective action was to counsel the workers on the importance of adhering to the stated work scope and radiation work permit procedures. This issue was entered into the licensee's corrective action program as Condition Reports 2011-3944, 2011-3046, and 2011-9795.

The failure to follow the requirements of the radiation work permit as instructed by radiation protection was a performance deficiency. The finding was more than minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of program and process and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation during routine operations. Using the Occupational Radiation Safety Significance Determination Process, the inspectors determined the finding to have very low safety significance because: (1) it was not associated with ALARA planning or work controls, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. The finding was determined to have a human performance crosscutting aspect associated with work practices, because the licensee failed to ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported.
Inspection Report# : 2011005 *(pdf)*

Public Radiation Safety

Physical Protection

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

Miscellaneous

Significance: G Feb 02, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Correct Identified Corrective Action Program Deficiencies
The team identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions." After identifying deficiencies that constituted a significant condition adverse to quality in the implementation of the corrective action program, the licensee failed to identify the cause and develop corrective actions to preclude repetition.

The licensee's failure to implement corrective actions for an identified root cause in accordance with corrective action program procedures was a performance deficiency. This performance deficiency is more than minor because it is associated with, and adversely affects, the protection-against-external-factors attribute of the initiating events cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding is of very low safety significance because it did not represent a loss of system safety function, did not represent the actual loss of safety function of a single train for greater than its technical specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a crosscutting aspect in the decision-making component of the human performance crosscutting area because the licensee failed to use a systematic process when faced with the uncertain or unexpected situation that deficiencies related to external flood protection also extended into other station activities and could impact overall station performance.
Inspection Report# : 2011006 *(pdf)*

Significance: N/A Feb 02, 2012
Identified By: NRC
Item Type: FIN Finding
Fort Calhoun Station, 2011, Biennial Problem Identification and Resolution Inspection Summary
Overall, the NRC noted deficiencies in all three areas of the problem identification and resolution process. Most significantly, the licensee's own root cause assessment of the external flood protection violation concluded that they had not been effective in ensuring that the associated performance deficiencies were adequately identified, evaluated, and resolved, and that these same performance deficiencies also extended into other station activities and could impact overall station performance – a significant condition adverse to quality. This is a concern because problem identification and resolution is one of the primary reactor oversight process crosscutting areas that the NRC defines as the fundamental performance attribute that extends across all cornerstones of safety. The NRC identified that the licensee failed to correct this condition, identify the cause, and preclude recurrence as required.

The team noted that while the licensee was identifying and placing a large number of adverse conditions into the corrective action process (nearly 21,000 in two and a half years), the associated corrective actions were often narrowly focused and failed to adequately identify the extent of cause and extent of condition, where required. The team also identified that due to the lack of an effective trending program, the licensee failed to identify degrading performance and therefore was unable to take action prior to the manifestation of conditions adverse to quality. Furthermore, the team identified numerous condition reports whose prioritization was inconsistent with the condition described. Examples included inoperable safety related equipment classified as "broke-fix," contrasted with a minor personal injury, which resulted in an extensive root cause analysis. Several workers commented that everything was classified a

priority, and therefore; nothing was a priority. In fact, the licensee classified 65 condition reports as significant conditions adverse to quality during the inspection period, roughly four times the typical number. Additionally, the team found examples of repetitive failures that were indicative of programmatic inadequacies. These examples included the failure to adequately utilize industry operating experience, inadequacies in the implementation of the corrective action program which was narrowly focused on resolving discrete conditions, and limited use of 10 CFR Part 21 reportability issues, which were typically closed without appropriate systematic equipment evaluation considerations.
Inspection Report# : 2011006 *(pdf)*

Last modified : May 29, 2012