Fort Calhoun
1Q/2005 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Control Transient Combustible Materials that Exceeded the Fire Load limit for an Area
A noncited violation of Technical Specification 5.8.1.c, Fire Protection Program Implementation, was identified for the failure follow the fire protection program after exceeding the transient combustibles limit in Room 59. The licensee did not evaluate and establish compensatory measures prior to storing transient combustibles in Room 59 as required by Procedure SO-G-91, "Control and Transportation of Combustible Materials," Revision 20.

This finding was more than minor since it was associated with the protection against external factors attribute of the mitigating systems cornerstone. Using the Significance Determination Process, Manual Chapter 0609, Appendix F, the finding was determined to be in the Fire Prevention and Administrative Controls category because it affected the administrative controls used in fire prevention. The degradation rating of the finding was low. This was based on the materials being stored in a room with no heat source and the materials did not contain combustible liquids or were not self heating. The finding was characterized under the significance determination process as having very low safety significance (Green) since the degradation rating was low. Based on previous opportunities for personnel to recognize this condition, a human performance aspect was identified for this finding. This condition has been entered into the licensee's corrective action program.
Inspection Report# : 2005002*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Abnormal Operating Procedure for High Winds Onsite
A noncited violation of Technical Specification 5.8.1 was identified as a result of Procedure AOP-01, "Acts of Nature," Revision 15, not requiring a visual inspection of the plant and site for structural damage following high winds. As a result, damage to the bus bars from House Service Power Transformer T1A-3 to a safety-related 4 kV bus occurred when a piece of the turbine building facade that was blown off during high winds went unnoticed for approximately 12 hours.

This finding was more than minor since it was associated with the protection against external factors attribute of the initiating events cornerstone. Using the significance determination process, the finding was characterized as having very low safety significance since it did not contribute to a loss-of-coolant accident, contribute to a reactor trip with a loss of mitigating equipment, nor increase the likelihood of fire or flooding and off-site power remained available.
Inspection Report# : 2004003*(pdf)*

Mitigating Systems

Significance: G Mar 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to ensure that fire barriers protecting saftey-related areas were functional
A noncited violation of Technical Specification 5.8.1.c, Fire Protection Program Implementation, was identified for the failure to implement procedures to ensure that fire barriers protecting safety-related areas were functional. Specifically, between Rooms 1 and 58, and between Rooms 1 and 30, openings existed in a barrier that would have allowed flame propagation between two respective fire areas.

This finding was more than minor since it was associated with the protection against external factors attribute of the mitigating systems cornerstone. Since the finding occurred while shutdown, Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process, is not applicable for determining the significance of the issue. Regional management determined that the finding was of very low significance (Green). The finding was evaluated considering Manual Chapter 0609, Appendix F as a bounding case and was used as guidance to determine the significance of the finding. The finding was determined to be in the fire confinement category because the fire barrier separated one fire area from another. The inspectors assigned a moderate degradation rating since there was defense-in-depth and no potential damage targets in the exposed fire area that were unique from those in the exposing fire area. The inspectors, using a deterministic process and

the guidance of the Phase 1 qualitative screening check, characterized the finding as having very low safety significance (Green) since the distance between safety-related components would protect the equipment in the exposed fire area. This condition has been entered into the licensee's corrective action program.
Inspection Report# : 2005002*(pdf)*

Significance: G Mar 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to translate design basis of the turbine driven auxillary feedwater pump into procedures
A noncited violation of 10 CFR Part 50, Appendix B, Criterion III, was identified based on the licensee's failure to translate design basis information into specification drawings, procedures, and instructions. Specifically, the licensee failed to maintain design control of the turbine-driven auxiliary feedwater pump to ensure turbine casing condensate drains would function during accident conditions involving loss of condenser vacuum.

The performance deficiency was a failure to translate the design basis of the plant to maintain the function of the auxiliary feedwater system during a loss of offsite power or other event causing a loss of condenser vacuum. This finding was more than minor because it was similar to Example 3.a of Appendix E in Inspection Manual Chapter 0612. The issue screened out as a Green finding because it was a design or qualification deficiency that was confirmed not to result in a loss of function as defined by NRC Generic Letter 91-18. Based on previous opportunities to recognize and correct this condition, a problem identification and resolution aspect was identified for this finding. This condition has been entered into the licensee's corrective action program.
Inspection Report# : 2005002*(pdf)*

Significance: G Mar 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to include quantitative acceptance criteria for containment protective coatings inspection
A noncited violation of 10 CFR Part 50, Appendix B, Criterion V, was identified based on the licensee's procedures not including appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. Specifically, the containment protective coatings procedure did not contain appropriate criteria to inspect the condition of safety-related coatings.

This finding affected the Mitigating Systems cornerstone and was considered more than minor because it affected the Procedure Quality attribute of the cornerstone. Specifically appropriate quantitative acceptance criteria was not provided to ensure that representative areas were selected for review within the coatings program. The finding was characterized under the significance determination process as having very low safety significance because the as-found reactor vessel head paint condition did not challenge the debris loading assumptions of the containment sumps and no actual loss of safety function occurred. Based on previous opportunities to recognize and correct this condition, a problem identification and resolution aspect was identified for this finding. This condition has been entered into the licensee's corrective action program.
Inspection Report# : 2005002*(pdf)*

Significance: G Oct 08, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Potential COmpromise of Scenario Requalification Examinations
The inspectors identified a non-cited violation of 10 CFR 55.49 because the simulator was left connected to the local area network-based emergency response facility while scenario requalification examinations were being conducted. This resulted in the potential that the integrity of the scenario requailfication examinations could be compromised.

This finding is greater than minor because a compromise of the integrity of the annual requalification examinations could lead to operators (who would normally have failed the examination) with deficient knowledge and skills to remain on shift. Allowing operators with deficient knowledge and skills to remain on shift increases the likelihood that a human performance error could initiate a reactor safety event or inhibit the appropriate mitigating response to such an event. The finding is of very low safety significance because the potential for examination compromise was extremely low.
Inspection Report# : 2004005*(pdf)*

Significance: W Aug 18, 2004
Identified By: NRC
Item Type: VIO Violation
Emergency Diesel Generator 2 Inoperable in Excess of Technical Specifications due to Failed Fuse
A violation of 10 CFR Part 50, Appendix 6, Criterion XVI, was identified for the failure to ensure that conditions adverse to quality, such as failures, malfunctions, etc., are promptly identified and corrected. Specifically, on July 21, 2004, during surveillance testing of Emergency Diesel Generator 2, the licensee failed to promptly identify and correct a failure of Fuse 2FU in the emergency diesel generator excitation

circuit. The failure to identify and correct this condition resulted in Emergency Diesel Generator 2 being inoperable from July 21 to August 19, 2004, a period of 29 days, exceeding Technical Specification 2.7 allowed outage time of 7 days during any month when the reactor coolant system temperature was greater than 300°F.

This finding was considered more than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone in that the licensee failed to promptly identify and correct a failed fuse in the Emergency Diesel Generator 2 excitation circuit that left the emergency diesel generator inoperable for a period of 29 days. The finding was characterized under the significance determination process as having low to moderate safety significance because Emergency Diesel Generator 2 was unavailable to respond upon demand for a loss of off-site power and would have been unable to perform its mitigating system function.
Inspection Report# : 2005010*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failing to Ensure that Fire Barriers Protecting Safety-Related Areas Were Functional
A noncited violation of Technical Specification 5.8.1.c, Fire Protection Program Implementation, was identified for the failure to implement procedures to ensure that fire barriers protecting safety-related areas were functional. Specifically, between Rooms 62 and 69, gaps and openings existed in a barrier (a hinged metal plate) due to missing angle irons that would have allowed flame propagation between two fire areas.

This finding was more than minor since it was associated with the protection against external factors attribute of the mitigating systems cornerstone. Using the Significance Determination Process, Manual Chapter 0609, Appendix F, the finding was determined to be in the Fire Confinement category because the fire barrier separated one fire area from another. A moderate degradation rating was assigned because there was defense-in-depth and more than a 20-foot separation between the degraded barrier and safety-related equipment. Performing the Phase 1 qualitative screening check, the finding was characterized as having very low safety significance since all potential damage targets in the exposed fire area were provided with passive fire barrier protection with no more than a moderate degradation that would provide a minimum of 20 minutes of fire endurance.
Inspection Report# : 2004003*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Povide Fire Protection Features for Components Important to Achieve and Maintain Cold Shutdown
A noncited violation of 10 CFR Part 50, Appendix R, was identified as a result of not providing fire protection features for structures, systems, and components important to achieve and maintain cold shutdown or having the capability of repairing these components within 72 hours. Specifically, the licensee did not provide proper cable separation nor the necessary fire protection features for the raw water pump cabling in Manhole 5. In addition, the licensee did not have a procedure and materials available to repair the cabling within 72 hours.

This finding was more than minor since it was associated with the protection against external factors attribute of the mitigating systems cornerstone. Using the Significance Determination Process, Manual Chapter 0609, Appendix F, the finding was determined to be in the Cold Shutdown category since the raw water pumps are needed to achieve and maintain cold shutdown. A moderate degradation rating was assigned because the concrete partition separating the trains would provide some fire protection. Performing the Phase 1 qualitative screening check, the finding was characterized as having a very low safety significance since it only affected the ability to reach and maintain cold shutdown conditions (Section 1R05.1b2).
Inspection Report# : 2004003*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Provide Compensatory Measures When Blocking a Fire Hose Station
A noncited violation of Technical Specification 5.8.1.c, Fire Protection Program Implementation, was identified for the failure to implement compensatory measures when access to Fire Hose Station FP-7G was blocked by a safety barricade erected to support maintenance. The licensee did not stage a hose of equivalent capacity to service the unprotected areas from an operable hose station.

This finding was more than minor since it was associated with the protection against external factors attribute of the mitigating systems cornerstone. Using the Significance Determination Process, Manual Chapter 0609, Appendix F, the finding was determined to be in the Fixed Fire Protection Systems category since it affected the manual fixed fire suppression system. The degradation rating of the finding was high because the hose station was not usable. The finding was characterized as having a very low safety significance since it only affected the ability to reach and maintain cold shutdown conditions. This finding had crosscutting aspects associated with human performance.
Inspection Report# : 2004003*(pdf)*

Significance: G Jun 30, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Maintenance Personnel Failed to Follow Documented Instructions
A noncited violation of Technical Specification 5.8.1 was identified as a result of maintenance personnel failing to follow documented instructions. These actions caused a control room air conditioning unit to become inoperable while the other unit was already removed from service.

This finding was considered more than minor since it was associated with the equipment performance attribute of the mitigating systems cornerstone. The loss of the control room air conditioning unit will result in an increase in control room temperature and affect the performance of safety-related equipment in the control room. Using the significance determination process, the finding was characterized as having a very low safety significance because operators restarted the control room air conditioning equipment within approximately 10 minutes of the loss of control room cooling and the control room did not heatup significantly; therefore, all control room equipment remained operable. This finding had crosscutting aspects associated with human performance.
Inspection Report# : 2004003*(pdf)*

Significance: G May 14, 2004
Identified By: NRC
Item Type: FIN Finding
Failure to Determine the Extent of Pitting in Component Cooling Water Components and Correct the Causal Factors
A finding was identified for untimely actions to determine the extent of condition and correct the causal factors for heat exchanger tube pitting in the component cooling water system. The licensee had tentatively attributed the cause of pitting observed in Raw Water/Component Cooling Water Heat Exchangers AC-1A and A-1B tubes (on the component cooling water side) to microbiologically induced corrosion in a 1996 root cause assessment. Since 1996, the licensee had not obtained evidence in the form of biological samples to either support or refute that microbiologically induced corrosion was active in the component cooling water system, determined whether the condition existed in other components in the system, nor taken actions to arrest pitting. In particular, Shutdown Cooling Heat Exchangers AC-4A and AC-4B had material and environmental susceptibilities to microbiologically induced corrosion and had not been inspected in over 20 years to determine the condition of the tubes. This issue has been entered into the licensee's corrective action program under Condition Reports 200401758 and 200401768. This finding was not considered a violation because it could not be determined whether pitting was occurring in unmonitored components. The licensee scheduled inspections of the three most significant heat exchangers for the next refueling outage to address this concern.

This issue was more than minor because, if left uncorrected, the pitting could become a through-wall leak, which would be a more significant safety concern. The finding affected the mitigating systems cornerstone. The finding was determined to have very low safety significance in a Phase 1 screening because this issue represented a deficiency that had not resulted in a loss of function.
Inspection Report# : 2004003*(pdf)*

Significance: G May 14, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Procedures to Address an Inadequate Technical Specification
A noncited violation of 10 CFR Part 50, Appendix B, Criterion V, was identified for failure to follow procedures to address an inadequate Technical Specification. The inspectors identified two examples where Technical Specification 2.4 was inadequate to assure that the heat removal safety function of the raw water and component cooling water systems was maintained. In 1996, engineering identified that certain river level and/or temperature conditions, in combination with equipment outages permitted by Technical Specification action statements, could result in inadequate heat removal capability during design basis events. In one case, the licensee failed to perform an assessment of the limitations on operability and the adequacy of Technical Specifications to assure those functions, as required by Procedure NOD-QP-31, "Operability Determinations and Safety Analysis for Operability," Revision 20, and Criterion V. Had this procedure been correctly followed, the licensee should have recognized that a Technical Specification change was required. The other example did not involve a violation but did require a change to the Technical Specification. This issue was entered into the licensee's corrective action program under Condition Reports 200401754 and 200401761.

This finding was more than minor because, if left uncorrected, this condition could result in a loss of the heat removal function. The finding affected the mitigating systems cornerstone. The finding was determined to have very low safety significance in a Phase 1 screening because this issue represented a design deficiency that had not resulted in a known loss of function.
Inspection Report# : 2004003*(pdf)*

Significance: G Mar 10, 2000
Identified By: NRC
Item Type: AV Apparent Violation
APPARENT VIOLATION OF 10 CFR PART 50, APPENDIX R, SECTION III.G.1.a FOR FAILURE TO ENSURE THAT ONE TRAIN OF SYSTEMS IN FIRE AREAS 34B AND 36B REQUIRED FOR SAFE SHUTDOWN IS FREE OF FIRE DAMAGE.

The team identified a condition where the licensee failed to ensure that one train of redundant systems, necessary for achieving and maintaining hot shutdown, located within the same fire area would remain free of fire damage. In particular, the team identified that a fire in Fire Area 34B (upper electrical penetration room) or Fire Area 36B (west switchgear room) could cause the spurious opening of the reactor coolant system head vent valves due to hot shorts. These spurious actuations could open a vent path from the reactor coolant system that exceeds the capacity to makeup to the reactor coolant system, as analyzed in the licensee's safe shutdown analysis. The licensee subsequently identified alternative means of makeup that would mitigate the effects of the event. The licensee disagrees that postulating multiple fire-induced circuit failures is required by NRC regulations or its operating license. This is an apparent violation of 10 CFR Part 50, Appendix R, Section III.G.1.a. This issue was evaluated using the significance determination process, and was determined to be within the licensee response band.
Inspection Report# : 2000001*(pdf)*

Barrier Integrity

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish an Adequate Test Program for the Backup Nitrogen Supply Systems to the Component Cooling Water Inlet and Outlet Valves to the Containment Air Cooling Units
A noncited violation of 10 CFR Part 50, Appendix B, Criterion XI, was identified as a result of the licensee's failure to establish a test program to demonstrate that the backup nitrogen supply systems to the component cooling water inlet and outlet valves to the containment air cooling units would perform satisfactorily. The licensee only performed leak rate testing of the backup nitrogen supply systems with the component cooling water inlet and outlet valves in the closed position and did not leak test the backup nitrogen supply systems with the inlet and outlet valves in the open accident position.

This finding was more than minor since it affected the containment configuration control attribute of the barrier integrity cornerstone. Using Significance Determination Process, Appendix H, and Table 4.1, the finding was characterized as having a very low safety significance because it was determined to have no impact on core damage frequency or large early release frequency. In addition, the licensee does not credit the containment cooling units for pressure control during a loss-of-coolant accident and only credits one of four containment cooling units in the containment pressure analysis for a main steam line break.
Inspection Report# : 2004003*(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Significance: G Mar 31, 2005
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Failure to control a restricted high radiation area per technical specifications 5.11.1 and 5.11.2
A self-revealing, noncited violation was reviewed because the licensee failed to conspicuously post, barricade, lock or guard a restricted high radiation area per Technical Specifications 5.11.1 and 5.11.2. On March 4, 2005, a worker unexpectedly received an electronic dosimeter dose rate alarm when he entered the lower elevation of the Steam Generator A bay area. Subsequently, the licensee found dose rates that measured 1,500 to 2,000 millirem per hour at 30 centimeters in the area of Valve RC-163 and posted and barricaded the area.

This finding is more than minor because it affected the Occupational Radiation Safety cornerstone objective to protect worker health and safety from radiation and radioactive materials. This finding was associated with the cornerstone attribute of Exposure Control and involved unplanned and unintended dose to a worker. The Occupational Radiation Safety Significance Determination Process was used to analyze the significance of the finding, which was determined to be of very low safety significance because it did not involve: (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. This finding also had crosscutting aspects associated with human performance. The radiation protection organization did not inform its technicians about changing radiological conditions in the area of Valve RC-163 due to plant operations and based on historical data. This occurrence was entered into the licensee's corrective action program.
Inspection Report# : 2005002*(pdf)*

Significance: G Mar 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to perform an adequate survey to evaluate radiological hazards per 10 CFR 20.1501
An NRC-Identified, noncited violation of 10 CFR 20.1501(a) was identified because the licensee's radiation protection staff failed to perform an adequate survey to evaluate radiological hazards. Specifically, on March 17, 2005, at approximately 5 a.m. the particulate, iodine, and noble-gas radiation monitor located outside of the main containment hatch alarmed. The radiation monitor indicated increasing airborne radioactivity starting at 3:30 a.m.; however, the licensee did not evaluate the cause of the alarm until 6 a.m. Consequently, 11 workers received unplanned and unintended low-level intakes (less than 5 millirem) of Co-60 because the extent of potential radiological hazards was not fully evaluated.

This finding is more than minor because it affected the Occupational Radiation Safety cornerstone objective to protect worker health and safety from radiation and radioactive materials. This finding was associated with the cornerstone attribute of exposure control and involved unplanned and unintended dose to workers. The Occupational Radiation Safety Significance Determination Process was used to analyze the significance of the finding which was determined to be of very low safety significance because it did not involve: (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. This finding also had crosscutting aspects associated with human performance. The radiation protection organization did not have an effective process for its technicians to evaluate potential radiological hazards associated with alarming airborne radiation monitors. This occurrence was entered into the licensee's corrective action program.
Inspection Report# : 2005002*(pdf)*

Significance: G Oct 08, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Radiation Protection Procdures in Response to Electronic Dosimeter Alarms
The inspectors reviewed a self revealing non-cited violation of Technical Specification 5.8.1.a in which a radiation worker failed to follow radiation protection procedures. Specifically, on September 16, 2004, a radiation worker failed to contact radiation protection personnel when a dose rate alarm was received. This occurrence was entered into the licensee's corrective action program.

The failure to follow radiation protection procedures is a performance deficiency. This finding is greater than minor because it is associated with the occupational radiation safety program and process attribute and affected the cornerstone objective, which is to ensure adequate protection of the worker's health and safety from exposure to radiation. Using the occupational rradiation safety significance determination process, the inspectors determined that the finding was of very low safety significance because it did not involve (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. In addition, this finding had cross-cutting aspects associated with human performance.
Inspection Report# : 2004005*(pdf)*

Significance: G Oct 08, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Radiation Protection Procedural and Radiation Work Permit Requirments
The inspectors identified that ineffective corrective actions led to four examples of a non-cited violation of Technical Specification 5.8.1.a. Specifically, on April 21, 2003; January 5, 2004; February 1, 2004; and August 19, 2004; security personnel failed to log onto an appropriate radiation work permit and obtain a thermoluminescent dosimeter and an electronic alarming dosimeter before entering a posted radiologically controlled area. These occurrences were entered into the licensee's corrective action program.

The failure to follow radiation protection procedural and radiation work permit requirements is a performance deficiency. This finding is greater than minor because it is associated with the occupational radiation safety program and process attribute and affected the cornerstone objective, which is to ensure adequate protection of the worker's health and safety from exposure to radiation. Using the occupational radiation safety significance determination process, the inspectors determined that the finding was of very low safety significance because it did not involve (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. In addition, this finding had cross-cutting aspects associated with human performance and problem identification and resolution.
Inspection Report# : 2004005*(pdf)*

Public Radiation Safety

Significance: G Sep 24, 2004
Identified By: Self Disclosing

Item Type: NCV NonCited Violation
Failure to survey and control radioactive material
The team reviewed a self-revealing, non-cited violation of Technical Specification 5.8.1 that resulted from the licensee's failure to properly survey and control an item contaminated with radioactive material. Fixed contamination on a shackle released from the protected area was measured at approximately 19,000 disintegrations per minute/100 centimeters squared. The finding was entered into the licensee's corrective action program as Condition Report 2003-5480.

The finding was more than minor because it was associated with the cornerstone attribute (material release) and it affected the associated cornerstone objective (to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain). The team used the Public Radiation Safety Significance Determination Process and determined that the finding was of very low safety significance because (1) the finding was a radioactive material control issue (2) it was not a transportation issue, and (3) it did not result in a dose to the public greater than 0.005 rem. This finding also had cross-cutting aspects associated with human performance in that licensee personnel failed to implement the established survey requirements designed to prevent the release of radioactive material.

Inspection Report# : 2004007*(pdf)*

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : June 17, 2005