

## Fort Calhoun 2Q/2005 Plant Inspection Findings

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### Initiating Events

**Significance:**  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\(pdf\)](#)

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### Mitigating Systems

**Significance:**  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:**  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 requalification 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.

On July 17, 2005, the NRC completed a supplemental inspection to assess the licensee's evaluation associated with the inoperability of Emergency Diesel Generator 2. This performance issue was previously characterized as having low to moderate risk significance (White) in NRC Inspection Report 05000285/2005010. During this supplemental inspection, performed in accordance with Inspection Procedure 95001, the inspectors determined that the licensee performed a comprehensive evaluation of the inoperable diesel. The licensee's evaluation identified the primary root causes of the performance issue to be premature aging of emergency diesel generators fuses, and a lack of formality and rigor

by the operators in responding to computer generated alarms. The licensee has taken corrective actions to address both root causes as well as other issues identified as contributing causes.

Inspection Report# : [2005010\(pdf\)](#)

Inspection Report# : [2005012\(pdf\)](#)

**Significance:**  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:**  Jun 30, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

**Failure to follow the procedure for transferring fuel in the reactor vessel.**

A noncited violation was identified as a result of the failure of the refueling machine operators to follow the procedure for transferring fuel in the reactor vessel as required by Technical Specification 5.8.1.a. This failure resulted in not identifying that fuel assembly Y019 was improperly seated into core location H17. This finding also had crosscutting aspects associated with human performance in that the operators failed to follow procedures as required.

This finding was more than minor since it is associated with the fuel cladding human performance attribute of the cornerstone. The finding was characterized as having very low safety significance because there was no damage to fuel pins or the fuel assembly.

Inspection Report# : [2005003\(pdf\)](#)

**Significance:**  Jun 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to follow procedures for ensuring qualification of contractor.**

A noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Procedures," was identified because the licensee failed to follow the procedure for ensuring that an outside contractor was properly qualified to perform safety significant activities under Omaha Public Power District's established quality assurance plan. Specifically, the licensee failed to review and approve the R. Brooks and Associates, Inc., eddy-current testing personnel certifications, equipment calibrations and procedures prior to performing work. This finding had human performance crosscutting aspects regarding failure to follow procedures.

The finding was greater than minor because it was associated with the performance attribute of the barrier integrity cornerstone and impacted the cornerstone objective of providing reasonable assurance that physical design barriers, in this case the reactor vessel, protect the public from radionuclide releases caused by accidents or events.

Inspection Report# : [2005003\(pdf\)](#)

**Significance:**  Jun 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to certify nondestructive testing personnel.**

A noncited violation of 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," was identified because the licensee failed to adequately certify their nondestructive testing personnel in accordance with the American Society of Nondestructive Testing, "Standard for Qualification and Certification of Nondestructive Testing Personnel" CP-189-1991. This finding had human performance crosscutting aspects regarding failure to follow nondestructive testing personnel certification procedures.

The finding was greater than minor because it was associated with the performance attribute of the barrier integrity cornerstone and impacted the cornerstone objective of providing reasonable assurance that physical design barriers, in this case the reactor vessel, protect the public from radionuclide releases caused by accidents or events.

Inspection Report# : [2005003\(pdf\)](#)

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## Emergency Preparedness

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## Occupational Radiation Safety

**Significance:**  Jun 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inadequate ventilation procedure resulting in internal contaminations to personnel.**

A non-cited violation of 10 CFR 50 Appendix B, Criterion V was identified based on the licensee's operational procedure for Containment Building ventilation being inadequate. Specifically the procedure that controlled the containment ventilation fans did not state the order to start the supply and exhaust fans. This finding had human performance crosscutting aspects in that the subject procedure was inadequate.

The performance deficiency was an inadequate containment building ventilation system operational procedure. This finding was more than minor because it affected the Occupational Radiation Safety cornerstone objective to protect worker health and safety from radiation and radioactive materials. Specifically, the Plant Facilities/Equipment Attribute of the cornerstone was affected and involved unplanned and unintended dose to workers. The issue screened out as Green 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 condition has been entered into the licensee's corrective action program.

Inspection Report# : [2005003\(pdf\)](#)

**Significance:**  Jun 30, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

### **Failure to comply with a radiation work permit requirement.**

A self revealing noncited violation was reviewed for the failure to comply with a radiation work permit requirement. Specifically on March 3, 2005, a job supervisor and a worker did not notify radiation protection of a tool change, from a band saw to a grinder, as required by the radiation work permit. Contamination levels were as high as 500 milirad per hour per 100 centimeters square. As a result, several individuals participating in the work activity became contaminated and alarmed the personnel contamination monitors upon exiting the Radiologically Controlled Area. Four individuals had low levels of internal contamination. The maximum dose assigned was 37 millirem. This finding had a crosscutting aspect with respect to human performance because the job supervisor or worker did not inform radiation protection before making a change in approved cutting instruments which directly contributed to the finding.

The finding was greater than minor because it was associated with the Occupational Radiation Safety attribute of Program and Process and affected the cornerstone objective. The failure to comply with a radiation work permit requirement resulted in the low-level internal contamination of four workers. The finding 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 was placed into the licensee's corrective action program as Condition Report 2005-0943

Inspection Report# : [2005003\(pdf\)](#)

**Significance:**  Jun 30, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

### **Failure to comply with a Technical Specification required radiation work procedure.**

A self revealing noncited violation was reviewed for the failure to comply with a Technical Specification required radiation work procedure. Specifically on April 7, 2005, an individual performing work in a high radiation area received a dose rate alarm and did not notify radiation protection personnel. This finding had a crosscutting aspect with respect to human performance because the worker did not notify radiation protection personnel of a dose rate alarm in a high radiation area which directly contributed to the finding.

The finding was greater than minor because it was associated with the Occupational Radiation Safety attribute of Program and Process and affects the cornerstone objective. The failure to comply with a radiation work procedure could result in an increase in a personnel dose. The

finding 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 was placed into the licensee's corrective action program as Condition Report 2005-1912

Inspection Report# : [2005003\(pdf\)](#)

**G**

**Significance:** 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\(pdf\)](#)

**G**

**Significance:** 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\(pdf\)](#)

**G**

**Significance:** Oct 08, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Follow Radiation Protection Procedures 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 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.

Inspection Report# : [2004005\(pdf\)](#)



**G****Significance:** Oct 08, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Follow Radiation Protection Procedural and Radiation Work Permit Requirements**

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\(pdf\)](#)

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## Public Radiation Safety

**G****Significance:** 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\(pdf\)](#)

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## Physical Protection

[Physical Protection](#) information not publicly available.

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## Miscellaneous

Last modified : August 24, 2005