

Fort Calhoun

Initiating Events



Significance: Dec 01, 2000

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

REPAIRS TO SOCKET WELD ON DISCHARGE PIPING FOR THE CHARGING AND LETDOWN SYSTEM

The inspectors identified a noncited violation for failure to take adequate corrective actions for charging system vibrations which contributed to a leak in the reactor coolant system (10 CFR Part 50, Appendix B, Criterion XVI). The finding was of very low safety significance because operations personnel took prompt action to isolate the leak, all mitigation systems remained operable, and the licensee entered the finding into the corrective action program.

Inspection Report# : [2000010\(pdf\)](#)

Mitigating Systems



Significance: Mar 08, 2002

Identified By: Licensee

Item Type: NCV NonCited Violation

Failure to follow work order

The licensee failed to implement the requirements of a work order during the performance of the containment tendon stressing gallery work. As a result, work order steps were not performed and a fire impairment permit was not obtained. As a result, a fire watch was not established to compensate for an open fire barrier. This was a noncited violation of Technical Specification 5.8.1. This finding was of very low safety significance because no safety equipment was ultimately rendered inoperable as a result of the fire in the containment tendon stressing gallery.

Inspection Report# : [2002006\(pdf\)](#)



Significance: Mar 08, 2002

Identified By: NRC

Item Type: FIN Finding

Failure to implement immediate corrective actions

The licensee failed to implement immediate corrective action to prevent recurrence of opening the containment tendon stressing gallery door without obtaining the required fire impairment. Operations personnel unlocked and opened the containment tendon stressing gallery door three weeks after the fire without obtaining a fire impairment. This finding was of very low safety significance because no safety equipment was declared inoperable as a result of the open door.

Inspection Report# : [2002006\(pdf\)](#)



Significance: Mar 08, 2002

Identified By: Licensee

Item Type: NCV NonCited Violation

Unauthorized modification of drum heater plugs

Licensee personnel performed unauthorized modifications to the plugs of two drum heaters, allowing them to be inserted into underrated outlets and extension cords. These modifications ultimately caused the containment tendon stressing gallery fire. This was a noncited violation of Technical Specification 5.8.1. This finding was of very low safety significance because no safety equipment was rendered inoperable as a result of the fire in the containment tendon stressing gallery.

Inspection Report# : [2002006\(pdf\)](#)



Significance: Mar 08, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate corrective actions for nonload shedding electrical outlets

The licensee failed to implement adequate corrective actions for the control of non-load shedding electrical outlets. As a result, on three separate occasions since December 1999 the licensee placed unapproved and unanalyzed loads on nonload shedding busses. This was a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions." This finding was of very low safety significance because the diesel generator load limit margins were not exceeded and the diesel generators remained operable.

Inspection Report# : [2002006\(pdf\)](#)



Significance: Mar 08, 2002

Identified By: Licensee

Item Type: NCV NonCited Violation

Failure to update a fire protection program procedure

The licensee failed to perform the required updates of a fire protection program implementing procedure. As a result, a fire impairment was not initiated when the containment tendon stressing gallery door was opened. Therefore, a fire watch was not established to compensate for an open fire barrier. This was a noncited violation of Technical Specification 5.8.5. This finding was of very low safety significance because no safety equipment was ultimately rendered inoperable as a result of the fire containment tendon stressing gallery.

Inspection Report# : [2002006\(pdf\)](#)



Significance: Mar 01, 2002

Identified By: NRC

Item Type: FIN Finding

Fire Protection of Diesel-Driven Auxiliary Feedwater Pump

The six fire protection sprinklers in the diesel-driven auxiliary feedwater pump room were located approximately 5 feet below the ceiling and would most likely not actuate until a fire in the room reached a considerable strength. The delay in actuation would result from the need for the hot gas layer to descend to the elevation of the sprinklers, which are normally positioned very close to the ceiling. Because the issue did not involve NRC regulations, a violation was not identified. This finding was of very low safety significance because the diesel-driven pump is not credited in the accident analysis (it is not safety-related, but has high risk significance), sensors in the room would cause a control room alarm, and manual suppression would be available. The licensee entered this issue into its corrective action program as Condition Report 200200498.

Inspection Report# : [2002003\(pdf\)](#)



Significance: Mar 01, 2002

Identified By: NRC

Item Type: FIN Finding

Inventory of Diesel-Driven Auxiliary Feedwater Pump Fuel Oil Day Tank

The fuel oil inventory in the day tank supplying the diesel-driven auxiliary feedwater pump was not being directly verified by the licensee's surveillance program. Instrument drift could result in failure to meet the design intent of maintaining the tank half full to provide a 4-hour run of the pump (which is not safety-related, but has a high risk significance). Because the issue did not involve NRC regulations, a violation was not identified. This finding was of very low safety significance because there was no actual loss of safety function and the diesel engine has a integral generator that can power a transfer pump to replenish the day tank. The licensee entered this issue into its corrective action program as Condition Report 200200496.

Inspection Report# : [2002003\(pdf\)](#)



Significance: Mar 01, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Corrective Action for Defective Emergency Diesel Generator Air Starting System Air Relay Valves

The licensee failed to take adequate corrective actions following discovery of a degraded emergency diesel generator air start system air relay valve in October 2001 and also failed to take adequate corrective actions following the operational failure of this valve in December 2001. This was identified as a violation of Criterion XVI to Appendix B of 10 CFR Part 50, "Corrective Action." This finding was of very low safety significance since there was no actual loss of safety function (the emergency diesel generator started successfully on its backup air starting system). Because of the low safety significance and the licensee's action to place the issue in their corrective action program (Condition Reports 2001-03772 and 2002-00475), this violation is being treated as a noncited violation in accordance with Section VI.A.1 of the Enforcement Policy (50-285/0203-01).

Inspection Report# : [2002003\(pdf\)](#)

**Significance:** Mar 01, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Design Control of Emergency Diesel Generator Fuel Oil Inventory

The licensee staff had not accounted for several factors determining the diesel fuel oil on hand to meet the Technical Specification 2.7(1)m. requirement of 16,000 gallons of fuel oil in FO-1, the diesel generator fuel oil storage tank, and an additional 8,000 gallons of diesel fuel oil in FO-10, the auxiliary boiler fuel oil storage tank. The basis for the limit was to maintain a 7-day supply of fuel oil. The factors not accounted in the analysis were the effect of specific gravity on the loop uncertainties, the effect of specific gravity on the fuel consumption formula, the effect of the operation of the diesel driven auxiliary feedwater pump, the effect of errors in estimating volumes, and other minor errors. This was identified as a violation of Criterion III of Appendix B to 10 CFR Part 50, "Design Control," which requires that the design basis be correctly translated into the technical specifications. This finding was of very low safety significance as the licensee always maintained additional inventory that would have provided a full 7-day supply of fuel oil, and the safety evaluation report credited the sufficiency of a 6-day supply. Because of the very low safety significance and that the licensee entered this finding into their corrective action program in Condition Reports 200200464, 200200373, and 200200304, this violation is being treated as a noncited violation in accordance with Section VI.A.1 of the Enforcement Policy (50-285/0203-02).

Inspection Report# : [2002003\(pdf\)](#)**Significance:** Mar 01, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedure to Testing Auxiliary Feedwater Pumps

Procedure SE-ST-AFW-3006, "Auxiliary Feedwater Pump FW-10, Steam Isolation Valve and Check Valve Tests," Revision 5, was inadequate. The procedure failed to identify that the motor-driven auxiliary feedwater pump was rendered inoperable during a portion of the test. This was identified as violation of Criterion V to Appendix B of 10 CFR Part 50, "Instruction, Procedures, and Drawings." The finding was of very low safety significance because there was no actual loss of safety function as the turbine-driven pump remained operable and the dedicated operators could be considered to be highly reliable. Because of the very low safety significance, and because the licensee included the item in their corrective action program as Condition Report 200200483, this violation is being treated as a noncited violation in accordance with Section VI.A.1 of the Enforcement Policy (50-285/0203-03).

Inspection Report# : [2002003\(pdf\)](#)**Significance:** Mar 01, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate 10 CFR 50.59 Safety Evaluation Associated with Change to Auxiliary Feedwater Pump Test Procedure

The licensee failed to assess Procedure Change Request 42290 to Procedure SE-ST-AFW-3006, "Auxiliary Feedwater Pump FW-10, Steam Isolation Valve and Check Valve Tests," under the provisions of 10 CFR 50.59, resulting in a failure to comply with Technical Specification 2.5. The use of operator actions to maintain operability was not adequately evaluated. This procedure change should not have been made without prior NRC approval. This was identified as a violation of 10 CFR 50.59(a)(1)(iii). This finding was of very low safety significance because the reliability of the operator actions needed to restore system operability was very high. Because of the very low safety significance, and because the licensee included the item in their corrective action program as Condition Report 200200632, this violation is being treated as a noncited violation in accordance with Section VI.A.1 of the Enforcement Manual (50-285/0203-04) (EA 02-059).

Inspection Report# : [2002003\(pdf\)](#)**Significance:** Jan 14, 2002

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURES AND OBTAIN SHIFT MANAGER APPROVAL PRIOR TO USING AN OPERATOR AID FOR NONEMERGENCY PURPOSES

Technical Specification 5.8.1 requires, in part, that written procedures shall be established, implemented, and maintained. The licensee failed to properly implement Standing Order SO-O-41, "Control of Operator Aids and Emergency Equipment," Revision 85, Step 4.2, which states plant personnel must be given permission from the Shift Manager prior to using any Operator Aids for nonemergency purposes. Specifically, on January 13, 2002, maintenance personnel removed a pry bar necessary for local starting of the turbine-driven auxiliary feedwater pump without obtaining the Shift Manager's permission. Specifically, on January 13, 2002, maintenance personnel removed a pry bar necessary for local starting of the turbine-driven auxiliary feedwater pump without obtaining the shift manager's permission. This issue is more than minor because it had the potential to impact the licensee's ability to locally start the turbine-driven auxiliary pump. This event is described in the licensee's corrective action program as Condition Report 200200111. This finding is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy (50-

285/0106-02). The safety significance of this finding was determined to be very low in that a local start of the turbine-driven auxiliary feedwater pump is a proceduralized action that is only necessary with a loss of offsite power combined with a near-term loss of dc power and a failure of the diesel-driven auxiliary feedwater pump.

Inspection Report# : [2001006\(pdf\)](#)



Significance: Apr 13, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO UPDATE A SURVEILLANCE PROCEDURE FOLLOWING VALVE CONFIGURATION CHANGES

A noncited violation of 10 CFR 50 Appendix B, Criterion VI occurred when the licensee failed to ensure a surveillance procedure was properly updated following valve configuration changes to the containment spray system. Failing to incorporate these changes into the surveillance procedure resulted in a valve alignment that inadvertently gravity drained 6-inches of water from the refueling cavity into the safety injection refueling water tank on April 13, 2001. Core reload was in progress at the time of discovery.

Approximately 8000 gallons of water were transferred out of the refueling cavity. The finding was more than minor because it had an actual impact on safety in that the refueling cavity was being drained while core reload was in progress. The event was of very low safety significance because although the refueling cavity was being drained, the loss of water from the cavity was stopped prior to cavity level decreasing below the water level control band. Because the finding is of very low safety significance, and the finding was entered into the licensee's corrective action program as Condition Report Number 2001011421, this finding is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy.

Inspection Report# : [2001002\(pdf\)](#)



Significance: Mar 31, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

DIESEL LOADING AND WELD RECEPTACLES CORRECTIVE ACTIONS

The inspectors identified a noncited violation for failure to take adequate corrective actions to prevent the use of nonload shed welding receptacles without a proper evaluation (10 CFR Part 50, Criterion XVI). The finding was of very low safety significance because the diesel generator load limit margins were not exceeded, the welding receptacles had adequate fault protection, and the diesel generators remained operable.

Inspection Report# : [2000011\(pdf\)](#)



Significance: Mar 31, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

COMPONENT COOLING WATER VALVE CORRECTIVE ACTIONS

The inspectors identified a noncited violation for failure to take adequate action to correct a valve actuator deficiency. The corrective action did not to ensure that component cooling water inlet isolation valves would fully open on demand for all plant conditions (10 CFR Part 50, Criterion XVI). The finding was of very low safety significance because the deficiencies were corrected prior to significant system degradation, and the system was only vulnerable to the deficiency for very brief periods of time during the operating cycle.

Inspection Report# : [2000011\(pdf\)](#)

Significance: N/A Oct 10, 2000

Identified By: Licensee

Item Type: NCV NonCited Violation

DIESEL GENERATOR DESIGN CONTROL

Licensee identified NCV. 10 CFR Part 50, Appendix B, Criterion III, Design Control, requires that measures be established to ensure verifying and checking of the adequacy of the design. On October 10, 2000, the licensee discovered that missing clamps on seismically supported electrical conduits above a safety-related cable tray on Diesel Generator 1 could have caused the loss of direct current control power to Diesel Generator 1, rendering it inoperable. This is described in the licensee's corrective action program as Condition Report 200001904.

Inspection Report# : [2000009\(pdf\)](#)



Significance: Jul 19, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

inadvertent Manual Start aof the Diesel Driven Auxiliary Feedwater Pump

The inspectors determined that a licensed operator failed to properly implement an operating instruction, resulting in an unplanned start of an auxiliary feedwater pump and a reactivity transient. The operator action of inadvertently starting the wrong pump resulted

in cold feedwater being supplied to the steam generators causing an unplanned reactivity addition. The pump was secured in approximately 10 seconds. Starting the wrong pump caused reactor power to exceed steady state licensed thermal power of 1500 MWTH for approximately 7.5 minutes with the highest recorded value being 1500.6 MWTH. No Technical Specification or thermal limits were exceeded. This issue was characterized as having very low safety significance based upon the significance determination process review for the event.

Inspection Report# : [2000007\(pdf\)](#)



Significance: Jul 01, 2000

Identified By: NRC

Item Type: FIN Finding

Low Pressure Safety Injection in Unanalyzed Condition because of the Potential for Voiding

In 1997, the licensee identified that safety injection tank leakage had the potential to cause voiding in the low pressure safety injection system header from nitrogen precipitation (LER 50-285/97-017-01). This could have resulted in water hammer and subsequent system inoperability during the injection phase of a loss of coolant accident should it occur coincident with a loss of offsite power. The NRC staff evaluated the condition using the reactor safety significance determination process. The potential water hammer would have the highest probability of occurring during the initial injection phase of a large break loss of coolant accident concurrent with a loss of offsite power. This resulted in a very low risk significance based on the very low likelihood of initiating event occurrence.

Inspection Report# : [2000006\(pdf\)](#)



Significance: Apr 10, 2000

Identified By: NRC

Item Type: FIN Finding

Instrument Air Check Valve Failed Accumulator Drop Test

During the refueling outage, Instrument Air Check Valve IA-HCV-386-C failed its accumulator drop test. The accumulator drop test ensures that the Safety Injection Refueling Water Tank Recirculation Valves HCV-385 and HCV-386 could be maintained closed in the event of a loss of instrument air, concurrent with a recirculation actuation. The NRC staff determined this issue had low risk significance because Instrument Air Check Valves HCV-385 and -386 are in series, are always tested at the same time, and have never failed simultaneously. At the time of the HCV-386 failure, technicians tested HCV-385 with satisfactory results.

Inspection Report# : [2000002\(pdf\)](#)



Significance: Apr 10, 2000

Identified By: NRC

Item Type: FIN Finding

Portable Heater Loads not Accounted for in Emergency Diesel Loading

During a design engineering review, the licensee determined that two portable heater loads rated at 13.5 kW each were being supplied from a 480 volt Motor Control Center MCC-3C2, which does not load shed. The NRC staff determined that this issue had low risk significance. The increased loading caused by the heaters did not significantly increase the risk of overloading the diesel generators and the diesel generators remained operable.

Inspection Report# : [2000002\(pdf\)](#)



Significance: Mar 10, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

Two examples of a noncited violation of License Condition E to the FCS operating license for failure to maintain in effect all provisions of the NRC-approved fire protection program in Fire Area 32.

The team identified two examples of a noncited violation of the Fort Calhoun Station operating license, to maintain in effect all conditions of the NRC-approved fire protection program as described in the Updated Safety Analysis Report and as approved in NRC safety evaluation reports. The licensee does not consider the configuration of either the power or control cables to be outside their design basis; therefore, does not agree that these violations of the Fort Calhoun Station operating license occurred. These violations were entered into the licensee's corrective action program as Condition Report 200000207. (1) The licensee failed to maintain 10 feet of horizontal separation between power cables associated with redundant equipment necessary for achieving and maintaining hot shutdown conditions, as described in their exemption request of January 9, 1985, and, which the NRC used as a basis for granting an exemption from 10 CFR Part 50, Appendix R, Section III.G.2 on July 3, 1985. Specifically, the team identified cable trays in Fire Area 32, which contained power cables associated with redundant safe shutdown equipment that were separated horizontally by 3 feet 3 inches. This is one example of a noncited violation of License Condition E. This issue was evaluated using the significance determination process, and was determined to be within the licensee response band. (2) The licensee failed to meet the requirements of 10 CFR Part 50, Appendix R, Section III.G.2, to ensure that at least one train of redundant equipment necessary for achieving and maintaining hot shutdown conditions remains free of fire damage. Specifically, the team identified two locations

within Fire Area 32, where cable trays containing safe shutdown control cables did not meet the requirements of 10 CFR Part 50, Appendix R, Section III.G.2, to provide either 20 feet of horizontal separation or to enclose one redundant train in a 1-hour rated fire wrap. This is another example of a noncited violation of License Condition E. This issue was evaluated using the significance determination process, and was determined to be within the licensee response band.

Inspection Report# : [2000001\(pdf\)](#)



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\(pdf\)](#)



Significance: Oct 27, 1999

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO INDEPENDENTLY VERIFY VALVE POSITION OF THE UPPER SPENT FUEL POOL SUCTION VALVE AC-186

Green. An operator failed to properly align the upper spent fuel pool cooling suction valve. The resultant loss of cooling had only minor consequences. The issue was characterized as having low safety significance. The failure to provide a suction source for cooling of the spent fuel pool had the potential to result in a release of radioactivity due to loss of cooling to the spent fuel. Due to operator attentiveness and prompt action, however, no increase in radiation and only a slight increase in spent fuel pool temperature (4 F) resulted. Failure to independently verify the valve position is being treated as a noncited violation of Technical Specification 5.8.1, consistent with the interim enforcement policy for pilot plants.

Inspection Report# : [1999013\(pdf\)](#)

Barrier Integrity

Significance: N/A Apr 04, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

WELDING AND WELDING MATERIALS WERE NOT PROPERLY CONTROLLED

The licensee's program for the control of welding and welding material used during ASME Code Section XI repair and replacement activities was not being implemented in accordance with procedure (10 CFR Part 50, Criterion V). This issue was characterized as a cross-cutting issue with no color assigned. The finding was of very low safety significance because no instance of actual use of incorrect welding material was identified.

Inspection Report# : [2001002\(pdf\)](#)

Emergency Preparedness



Significance: Jul 11, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

Three examples of failure to follow procedures

The inspector identified three occasions when radiation protection personnel failed to follow procedures during the filling of emergency response self-contained breathing apparatuses. The first occurrence was the use of expired test tubes to determine the water vapor and carbon monoxide concentrations of respirator air. The second occurrence was the failure to properly set the air flow

rate prior to the water vapor test. The third occurrence was the failure to use current revision test tube instructions for sampling oil mist concentration. The failure to follow procedures is a violation of Technical Specification 5.8.1. These occurrences are being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Reports 2001-2377, 2001-2387, and 2001-2425. The safety significance of this violation was determined to be very low by the Emergency Preparedness Significance Determination Process. The failure to adequately test the air quality of respirator air has a credible impact on safety and is a failure to meet a regulatory requirement. However, there was no failure to meet an emergency planning standard or risk significant planning standard.

Inspection Report# : [2001004\(pdf\)](#)

Significance: N/A Aug 19, 2000

Identified By: NRC

Item Type: FIN Finding

Records were not maintained for some siren evaluations performed by siren technicians.

No color. The inspector was unable to verify the licensee's determination of alert and notification system reliability because records were not maintained for some siren evaluations performed by siren technicians. Following an initial indication of a failed test siren technicians reviewed computer records and orally reported satisfactory evaluation results via telephone to the emergency preparedness department staff, who hand-corrected original test reports. Siren technicians did not capture available data used in determining that a siren test was successful, in order to establish the accuracy of the oral report. Technicians also did not provide a written record of their determination to emergency preparedness. The licensee was unable to retrieve or reconstruct data that provided the basis for the correction of siren test reports. The licensee entered the issue of incomplete siren test data into its corrective action program as part of Condition Report 2000-1473. This issue was evaluated using the screening process of NRC Inspection Manual Chapter 0609, "Significance Determination Process." By applying the Groups 1, 2, and 3 screening criteria, the inspector determined that the issue did not meet the criteria for entry into the significance determination process because it was not a failure to meet an emergency preparedness planning standard or other regulatory requirement. However, the issue related to the collecting or reporting of performance indicator data. The inspector could not verify the reported alert and notification system reliability performance indicator value from documented test results, because the accuracy of hand-corrections made to test data could not be verified. The ability to verify performance indicator data impacts the NRC's ability to perform its regulatory function under the revised reactor oversight program. Therefore, the issue was determined to be a finding of no color.

Inspection Report# : [2000007\(pdf\)](#)

Significance: N/A Nov 13, 1999

Identified By: NRC

Item Type: FIN Finding

Incorrect Performance Indicator Data Reported for Drill and Exercise Performance

The licensee reported an incorrect value for the Drill and Exercise Performance indicator because the screening criteria for evaluating protective action recommendation opportunities were not defined and subject to interpretation. The inspector found that, in two instances, the licensee incorrectly reported successful protective action recommendation opportunities. In both cases, emergency response organization staff provided dose projections to the emergency director but did not transmit them to the offsite agencies. The licensee subsequently modified the screening criteria to count only those opportunities that resulted in recommended offsite protective actions. The modified criteria decreased the percent value of the performance indicator value but did not change the color determined earlier (white). The licensee initiated Condition Report 199901961 to develop a guideline for performance indicator determination (Section 4OA2).

Inspection Report# : [1999013\(pdf\)](#)

Occupational Radiation Safety

Significance:  Feb 15, 2002

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO HAVE AN ADEQUATE PROCEDURE FOR CLEANUP OF THE SAFETY INJECTION REFUELING WATER TANK

A noncited violation of Technical Specification 5.8.1 occurred when the licensee failed to establish written procedures appropriate to the circumstances. The licensee's inadequate safety injection refueling water tank procedure did not contain precautions indicating that alignment in accordance with the cleanup procedure was not compatible with the resin transfer or dewatering of the spent resin storage tank. Specifically, on February 15, 2002, operations personnel were lining up to dewater the spent resin storage tank when they cross-connected the system cleaning up the safety water injection refueling water tank. This caused water from the safety water injection refueling water tank to be pumped into the spent resin storage tank, overfilling the tank and pushing resin into attached systems. The issue was more than minor, because not having an adequate procedure for cleanup of the safety injection refueling water tank is viewed as a precursor to a significant event if the resin intrusion had been allowed to continue for a longer period of time. Also, this occurrence had the potential to involve a worker's unplanned dose if radiological conditions had been significantly greater. This finding is being treated as a noncited violation consistent with Section VI.A of the Enforcement Policy (50-285/0106-01). This finding was entered into the licensee's corrective action program as Condition Report 200200379. The safety significance of this finding was determined to be very low by the Occupational Radiation Safety Significance Determination Process because

there was no overexposure or substantial potential for an overexposure, and the ability to assess dose was not compromised.

Inspection Report# : [2001006\(pdf\)](#)



Significance: Oct 19, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE AND EXIT RCA AFTER ELECTRONIC DOSIMETER ALARMED

Green. Technical Specifications 5.8.1 requires the implementation of procedures listed in Regulatory Guide 1.33, Appendix A. Standing Order SO-G-101, "Radiation Worker Practices," Revision 17, requires individuals to exit the radiological controlled area immediately if a self-reading dosimeter alarms for any reason. On August 10, 2001, two individuals failed to follow procedural guidance when they failed to exit the radiological controlled area after receiving dose and dose rate alarms. This resulted in the individuals receiving higher than planned doses. This occurrence was documented in the licensee's corrective action program by Condition Report 200102659. This is being treated as a noncited violation. The safety significance of this finding was determined by use of the Occupational Radiation Safety Significance Determination Process to be very low because there was no actual overexposure or substantial potential for overexposure.

Inspection Report# : [2001005\(pdf\)](#)



Significance: Apr 06, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO SURVEY AND EVALUATE THE MAGNITUDE AND EXTENT OF RADIATION LEVELS

10 CFR 20.1501(a) states, in part, that each licensee shall make or cause to be made surveys that are reasonable under the circumstances to evaluate the magnitude and extent of radiation levels. On March 18, 2001, two workers in containment on the 1013 foot elevation, received electronic dosimeter high dose rate alarms. A radiation protection follow up survey of the area, found that general area dose rates were greater than 100 mr/hr, as described in the licensee's corrective action program (Condition Report 2001-00669).

Inspection Report# : [2001002\(pdf\)](#)



Significance: Apr 06, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROVIDE POSITIVE CONTROL OVER ACTIVITIES WITHIN A RESTRICTED HIGH RADIATION AREA

Technical Specification 5.11.1.c states, in part, that any individual or group of individuals permitted to enter such areas (restricted high radiation areas) shall be provided with an individual qualified in radiation protection procedures, and this individual shall be responsible for providing positive control over the activities within the area. On March 26, 2001, an individual conducting an inspection of the secondary side of Steam Generator B received an unintended exposure of 274 mrem above the electronic dosimeter dose alarm setpoint, as described in the licensee's corrective action program (Condition Report 2001-00933).

Inspection Report# : [2001002\(pdf\)](#)



Significance: Nov 17, 2000

Identified By: NRC

Item Type: FIN Finding

JOB DOSE EXCEEDED PROJECTED ALARA ESTIMATES

During the review of the licensee's Refueling Outage 18 exposure estimates and exposure performance data, the inspector identified that Radiation Work Permit 99-2507 (Reactor Head Work in High Radiation Areas) total person-rem exceeded budgeted person-rem by greater than 50 percent (10.9 verses 6.5 Rem). Post-job Evaluation Package 99-16 documented the reasons for the additional exposure. From a review of Package 99-16, the inspector noted two performance issues that caused additional exposure: (1) workers were in the reactor cavity an additional hour because the individual reading the containment polar crane hook load cell did not know how to properly read the load cell, and (2) electrical maintenance workers had turnover communication problems which caused rework. This issue is in the licensee's corrective action program as Condition Report 2000-2211. This issue was determined to have very low safety significance, because the actual job dose was less than 25 person-rem, and there was only one occurrence.

Inspection Report# : [2000009\(pdf\)](#)



Significance: Oct 15, 2000

Identified By: Licensee

Item Type: NCV NonCited Violation

UNCONTROLLED HIGH RADIATION AREA

Technical Specification 5.11.1 requires each high radiation area (as defined in 10 CFR 20.1601) in which the intensity of radiation is 1000 mrem/hr or less to be barricaded and conspicuously posted as a high radiation area and entrance thereto be controlled by required issuance of a radiation work permit. A high radiation area in Room 59 was not barricaded and posted as a high radiation area for approximately 36 hours. After shutdown cooling was initiated on October 15, 2000, dose rates exceeded the threshold of a high radiation area. This item was documented in the licensee's corrective action program in Condition Report 2000-1989.

Inspection Report#: [2000009\(pdf\)](#)

Significance: N/A Jun 01, 2000

Identified By: NRC

Item Type: FIN Finding

The licensee implemented extensive and thorough corrective actions associated with the "white" occupational exposure control effectiveness performance indicator.

This supplemental inspection was performed to assess the licensee's evaluation associated with the "white" occupational exposure control effectiveness performance indicator. This performance issue was characterized as having low to moderate risk significance ("white") during the quarterly reporting process. The licensee conducted a comprehensive evaluation of the above performance indicator and associated events. The licensee identified the following generic causes: (1) lack of station ownership of the radiation protection program; (2) lack of preplanning for restricted high radiation area access control; (3) inconsistent management expectations, interpretation, and implementation of procedural requirements for restricted high radiation area access control; and (4) human performance issues pertaining to restricted high radiation area entry control and lock verification. Corrective actions associated with the above performance indicator were extensive and thorough.

Inspection Report#: [2000005\(pdf\)](#)



Significance: G Jun 01, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Lock a Restricted High Radiation Area to Prevent Unauthorized Entry

On November 4, 1999, an engineer escorted by a radiation protection technician entered "A" steam generator bay, a posted restricted high radiation area, and failed to properly secure the restricted high radiation area door behind them to prevent unauthorized entry. General radiation levels in "A" steam generator bay were as high as 2000 mrem per hour. Technical Specification 5.11.2 requires, in part, each area with general radiation levels greater than 1000 mrem per hour to be locked to prevent unauthorized entry into such areas. The failure to lock the "A" steam generator bay restricted high radiation area door to prevent unauthorized entry is a violation of Technical Specification 5.11.2. The licensee documented this issue in its corrective action process as Condition Report 1999-2452. This noncited violation was characterized as a "green" finding using the occupational radiation safety significance determination process. The violation had very low safety significance, because there were no instances of an overexposure event.

Inspection Report#: [2000005\(pdf\)](#)



Significance: G May 16, 2000

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW RADIATION WORK PERMIT REQUIREMENTS

Technical Specification 5.8.1 requires procedures for the radiation work permit system. Section 3.4.3.D of Procedure RPP, "Radiation Protection Plan," Revision 16, states, in part, that an individual must comply with the requirements on a valid radiation work permit. On May 16, 2000, two radiation workers did not follow the radiological controls listed on Radiation Work Permit 00-1024, as described in the licensee's corrective action program, reference Condition Report 2000-0975.

Inspection Report#: [2000009\(pdf\)](#)



Significance: G Nov 04, 1999

Identified By: NRC

Item Type: NCV NonCited Violation

VIOLATION OF TECHNICAL SPECIFICATION 5.11.1/FAILURE TO PERFORM ALARA REVIEWS

Green. Two examples of failures to perform ALARA reviews were identified. The first example was identified after the NRC observed inconsistencies in the use of engineering controls and respiratory protection equipment. The first example involved the failure of ALARA planners to review the need for engineering controls or respiratory protection equipment during certain quality control inspections. The second example involved the failure of ALARA planners to review dose reduction methods associated with outage activities that exceeded their estimated dose totals. These findings were examples of a violation of Technical Specification 5.11.1, which requires that procedures for personnel radiation protection be prepared consistent with the requirements of 10 CFR Part 20 and be approved, maintained, and adhered to for all operations involving personnel radiation exposure. The failure to perform ALARA reviews could result in unplanned personnel radiation dose, if appropriate dose saving measures were not identified and implemented. However, because the incidents did not result in overexposures or have a significant potential to cause overexposures in these examples, the Occupational Radiation Safety Significance Determination Process indicated that both violation examples

had a very low risk significance. This violation is being treated as non-cited violations, consistent with the Interim Enforcement Policy for pilot plants. This violation is in the licensee's corrective action program as Condition Reports 199902241 and 199902258.

Inspection Report# : [1999014\(pdf\)](#)



Significance: Nov 04, 1999

Identified By: NRC

Item Type: NCV NonCited Violation

VIOLATION OF 10 CFR 20.1703(a)(3)(iv)/INADEQUATE SELF-CONTAINED BREATHING APPARATUS TRAINING PROCEDURE

Green. A violation of 10 CFR 20.1703(a)(3)(iv) was identified because the licensee's self-contained breathing apparatus training program was incomplete and, therefore, inadequate. Specifically, the procedure used to train non-fire brigade personnel in the use of self-contained breathing apparatuses was inadequate because it did not inform individuals as to the correct method of changing air supply bottles during use. This resulted in some individuals receiving incomplete training in the use of respiratory protection equipment. The violation could result in personnel injury if individuals were inadequately trained and unable to change air supply bottles while in an atmosphere that was immediately dangerous to life or health. However, through use of the Emergency Preparedness Significance Determination Process, the NRC determined the violation had a very low risk significance because it did not involve the failure to implement or meet an emergency preparedness planning standard and there had been no actual event. This violation is being treated as a non-cited violation, consistent with the Interim Enforcement Policy for pilot plants. This violation is in the licensee's corrective action program as Condition Report 199700559.

Inspection Report# : [1999014\(pdf\)](#)



Significance: Oct 22, 1999

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO MEET THE REQUIREMENTS OF TECHNICAL SPECIFICATION 5.3.1

Green. The inspector identified a violation for the failure of a contractor radiation protection technician to meet the minimum qualifications of Technical Specification 5.3.1. Using radiation protection personnel that do not meet the minimum qualifications of Technical Specification 5.3.1 could ultimately result in improper radiation worker job coverage and/or inaccurate radiological assessments of work areas and conditions. In utilizing the significance determination process, this issue was determined to have very low risk significance, because there were no instances of an overexposure event. This violation is being treated as a noncited violation, consistent with Appendix F of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Report 199902232.

Inspection Report# : [1999012\(pdf\)](#)



Significance: Oct 20, 1999

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO INFORM RADIATION WORKERS OF THE RADIOLOGICAL CONDITIONS IN THEIR WORK AREA PRIOR TO START WORK

Green. The inspector identified two examples of a violation of 10 CFR 19.12(a) for the failure to inform radiation workers of the radiological conditions in their work area prior to the start of work. The failure to inform workers of the radiological conditions in their work area could cause the workers to receive unnecessary radiation exposure or become contaminated. In utilizing the significance determination process, these examples were determined to have very low risk significance, because there were no instances of an overexposure event and general area radiation levels were approximately 600 millirems per hour. This violation is being treated as a noncited violation, consistent with Appendix F of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Report 199902241.

Inspection Report# : [1999012\(pdf\)](#)



Significance: Oct 11, 1999

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO LOCK A RESTRICTED HIGH RADIATION AREA TO PREVENT UNAUTHORIZED ENTRY

Green. The licensee identified a violation of Technical Specification 5.11.2 for the failure to lock a restricted high radiation area to prevent an unauthorized entry. The failure to lock a restricted high radiation area could cause a worker to receive an unplanned radiation exposure. In utilizing the significance determination process, this issue was determined to have very low risk significance, because there were no instances of an overexposure event and general area radiation levels were approximately 1500 millirems per hour. This violation is being treated as a noncited violation, consistent with Appendix F of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Report 199902076.

Inspection Report# : [1999012\(pdf\)](#)



Significance: Oct 08, 1999

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO POST A RADIATION AND HIGH RADIATION AREA

Green. The licensee identified two examples of a violation of 10 CFR 20.1902 for the failure to post a radiation and high radiation area. Not posting radiation and high radiation areas could cause a worker to receive an unplanned radiation exposure. In utilizing the significance determination process, this issue was determined to have very low risk significance, because there was not a substantial potential for an overexposure event and general area radiation levels were approximately 200 millirems per hour. This violation is being treated as a noncited violation, consistent with Appendix F of the NRC Enforcement Policy. These examples of a violation are in the licensee's corrective action program as Condition Reports 199902046 and 199902099 (Section 4OA1).

Inspection Report# : [1999012\(pdf\)](#)



Significance: Oct 02, 1999

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW THE REQUIREMENTS OF A RADIATION WORK PERMIT

Green. The licensee identified three examples of a violation of Technical Specification 5.8.1 for the failure to follow the requirements of a radiation work permit. Specifically, the three examples pertained to workers entering posted airborne radioactivity areas using radiation work permits that did not authorize such entries. Not adhering to the requirements of a radiation work permit could cause a worker to receive an unplanned radiological exposure. In utilizing the significance determination process, this issue was determined to have very low risk significance, because there was not a substantial potential for an overexposure event. This violation is being treated as a noncited violation, consistent with Appendix F of the NRC Enforcement Policy. These examples of a violation are in the licensee's corrective action program as Condition Reports 199900951, 199901945, and 199902034.

Inspection Report# : [1999012\(pdf\)](#)



Significance: Aug 23, 1999

Identified By: NRC

Item Type: NCV NonCited Violation

RADIATION WORKERS FAILED TO IMMEDIATELY LEAVE THE CHARGING PUMP ROOM, DURING PERFORMANCE OF WORK IN THE ROOM, WHEN A NOBLE GAS AREA RADIATION MONITOR WAS ALARMING.

Green. Radiation workers failed to immediately leave the charging pump room, during performance of work in the room, when a noble gas area radiation monitor was alarming. This issue was characterized as having low safety significance based on the significance determination process review for occupational radiation safety. The failure to leave the charging pump room when a noble gas radiation monitor was in alarm could have resulted in an unintended personnel exposure. No overexposure occurred; however, and no significant exposure could have resulted from this event due to the highest sampled airborne radioactive concentration of approximately .1 DAC being well below the required posting of an airborne radiation area of .3 DAC. In addition, the ability to monitor and determine personnel dose was not lost as evidenced by the functioning air monitoring system and whole body counts performed on the workers who failed to exit the charging pump room. The licensee's review of this issue was consistent with the inspector's determination. The inspectors concluded that the workers failed to adhere to the requirement in Section 5.6.1 (c) of Standing Order SO-G-101, "Radiation Worker Practices," Revision 12, to immediately leave the area and notify the control room if an area radiation monitor or continuous air monitor alarms. We are treating this violation as a noncited violation, consistent with the Interim Enforcement Policy for pilot plants. The licensee documented this in their corrective action program as Condition Report 199901594.

Inspection Report# : [1999011\(pdf\)](#)



Significance: Jul 23, 1999

Identified By: NRC

Item Type: FIN Finding

Occupational Radiation Safety-Green; failure to Source Check instrument prior to use.

A radiation protection technician failed to response check a neutron survey meter prior to use during an at power entry into the reactor containment building. Using a survey instrument that was not response checked prior to use could have provided inaccurate information needed to assess radiological conditions. This finding was viewed as an issue which had the potential as an overexposure event. The ability to monitor and assess the workers' dose was never lost. Using the SDP, this issue was determined to have minimal impact on safety. (Section 4OA1).

Inspection Report# : [1999007\(pdf\)](#)

Public Radiation Safety

Physical Protection

Miscellaneous



Significance: Mar 08, 2002

Identified By: NRC

Item Type: FIN Finding

Human performance deficiencies

Several human performance issues were identified during the inspection: 1) personnel performed inappropriate modifications to the heater plugs directly contributed to the cause of the fire; 2) personnel failed twice to implement adequate corrective actions for the control of nonload shedding outlets; 3) personnel failed to implement the requirements of a work order, as a result, a fire impairment was not obtained and an hourly fire watch was not established; 4) personnel failed to update a fire protection program implementing procedure; and, 5) personnel failed to implement immediate corrective actions to prevent recurrence of opening the containment tendon stressing gallery door and not obtaining the required fire impairment. Each of these findings had a potential impact on safety by increasing the frequency of initiating events or affecting the reliability of safety-related equipment. This performance trend is considered a substantive crosscutting issue not captured in the individual issues.

Inspection Report# : [2002006\(pdf\)](#)

Significance: N/A Nov 02, 2001

Identified By: NRC

Item Type: FIN Finding

Licensee's problem identification and resolution program was effective

The licensee identified, evaluated, prioritized, and corrected problems in a timely manner, consistent with risk and safety significance. Licensee audits and assessments critically assessed the licensee's problem identification and resolution activity. During inspection interviews, workers at the site expressed no reservations to input safety issues into the corrective action program.

Inspection Report# : [2001003\(pdf\)](#)

Significance: N/A Jul 01, 2000

Identified By: Licensee

Item Type: NCV NonCited Violation

Failure to Maintain Accurate Information

Licensee employees did not comply with the licensee's program for addressing identified out-of-tolerance conditions in measuring and test equipment used in the performance of safety-related activities. The employees inappropriately backdated signatures on four Defective/Rejected Evaluation Forms to indicate that corrective action to address the out-of-tolerance conditions had been completed within the 30-day period specified by the licensee's program. The licensee's failure to maintain accurate information related to measuring and test equipment used in safety-related activities was identified as a violation of 10 CFR Part 50.9. This willful Severity Level IV violation is being treated as noncited violation (50-285/0006-01), consistent with Section VI.A of the NRC Enforcement Policy. The condition resulting in the violation is in the licensee's corrective action system as Condition Report 199901924, dated September 30, 1999 (EA-00-149).

Inspection Report# : [2000006\(pdf\)](#)

Significance: N/A Jun 07, 2000

Identified By: NRC

Item Type: FIN Finding

Identification and Resolution of Problems

Based on the results of the inspection, there were no findings identified. The team concluded that the facility's corrective action program was effective in the identification, resolution, and prevention of conditions adverse to quality. The team noted that site personnel clearly understood the importance of this program. The limited number of minor exceptions identified by the team were primarily associated with the prioritization and classification of repetitive low level problems in radiation protection practices. However, based on the number and the nature of these exceptions, this did not indicate a performance issue in the licensee's program.

Inspection Report# : [2000004\(pdf\)](#)