

Perry 1

3Q/2011 Plant Inspection Findings

Initiating Events

Significance:  Jun 30, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FAILURE TO VERIFY EXPECTED EFFECTS RESULTS IN OVERFLOWING THE AUXILIARY BUILDING SUMP

A finding of very low safety significance and associated NCV of Technical Specification 5.4.1 was self-revealed for the licensee's failure to follow plant procedures. The inspectors determined that the licensee failed to follow a procedure which requires verification of expected effects when operating plant components. This failure led to draining approximately 15,000 gallons of suppression pool water which overflowed the Auxiliary Building sump and caused the spread of contamination to various areas of the Auxiliary Building. The licensee entered the issue into their corrective action program. Immediate actions included securing all sources of water to the Auxiliary Building sump and removing water from the Auxiliary Building.

This performance deficiency was determined to be more than minor because it impacted the Human Performance attribute of the Initiating Events cornerstone, and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding is of very low safety significance because it did not increase the likelihood of a loss of reactor coolant system inventory, degrade the licensee's ability to terminate a leak path or add inventory, or degrade the licensee's ability to recover decay heat removal. The finding was associated with a cross-cutting aspect in the Resources component of the Human Performance cross-cutting area per IMC 0310 (H.2(c)), because the licensee did not provide complete, accurate and up-to-date procedures. Specifically, the procedure to test the residual heat removal waterleg pump did not address the potential to drain the suppression pool to the Auxiliary Building sump.

Inspection Report# : [2011003](#) (*pdf*)

Significance:  Dec 31, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Follow Procedures Results in Unplanned Half Scram

A finding of very low safety significance and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed for a failure to follow plant procedures. Specifically, the licensee failed to perform a "burn-in" on a voltage regulator card, as required by Nuclear Operating Business Practice (NOBP)-ER-3399, Fleet Circuit Card and Power Supply Burn-in Guide, which failed prematurely and resulted in an unexpected half scram. The licensee entered the issue into their corrective action program.

The performance deficiency was determined to be more than minor because the finding impacts the Equipment Performance attribute of the Initiating Events Cornerstone and adversely affects the cornerstone objective to limit the likelihood of those events that could upset plant stability and challenge critical safety functions during power operations. The finding was of very low safety significance because the Phase 3 analysis resulted in a minimal change in core damage frequency. This finding was associated with a cross-cutting aspect in the Resources component of the Human Performance cross-cutting area because the licensee did not use up-to-date work packages to assure nuclear safety. Specifically, the licensee did not update the voltage regulator card replacement work plan to include the new circuit card burn-in procedure requirement. (H.2(c))

Inspection Report# : [2010005](#) (*pdf*)

Significance:  Nov 30, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Unexpected Recirculation Flow Control Valve Runback Due to Inadequate Work Plan

: A finding of very low safety significance and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed for the licensee's failure to have an adequate work plan for replacing voltage regulator cards associated with Average Power Range Monitor (APRM) 'A'. Specifically, the work plan for APRM 'A' did not provide proper guidance to the technicians or operating crew resulting in an unexpected recirculation flow control valve (FCV) runback and subsequent required operator actions. The licensee entered the issue into their corrective action program as condition report (CR) 10-85239. As part of the corrective actions, the licensee plans to place warning placards on the outside of the APRM cabinet doors providing the proper instructions to personnel working in the cabinets.

The finding was determined to be more than minor because the finding was similar to IMC 0612, Appendix E, Example 4.b, and resulted in operator intervention to maintain reactor power stable. In addition, the performance deficiency impacted the Initiating Events Cornerstone attribute of procedures and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," Table 4a, for the Initiating Events cornerstone. While the finding increased the likelihood of a reactor trip, it did not increase the likelihood that mitigation equipment would not be available, and therefore, the inspectors determined the finding to be of very low safety significance. The finding is associated with a cross cutting aspect in the operating experience component of the Problem Identification & Resolution cross-cutting area because the licensee did not implement internal operating experience (OE) into station processes and procedures. Specifically, licensee personnel did not adequately research and identify previous plant experience regarding the impact of de-energizing the power supply to the control circuitry for APRM 'A' on other related systems contributing directly to an unplanned power transient on the reactor (P.2(b)).
Inspection Report# : [2010007](#) (*pdf*)

Mitigating Systems

Significance:  Sep 30, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FAILURE TO CORRECTLY ASSESS RISK DURING 'A' ESW PUMP MAINTENANCE ACTIVITIES

A self-revealed finding of very low safety significance and associated Non-Cited Violation (NCV) of 10 CFR 50.65 (a)(4) was apparent in the licensee's failure to accurately assess plant risk during maintenance activities. The inspectors determined that the licensee failed to correctly identify the plant risk condition during maintenance on the 'A' emergency service water (ESW) pump when the pump packing gland follower was replaced following a packing replacement. Specifically, there was a 45 minute period of time that the licensee's declared plant risk was in a GREEN status before the pump was retested and found to be unreliable for long term operations and the plant risk was returned to YELLOW status. The licensee entered the issue associated with their failure to correctly assess the plant risk condition into their corrective action program (CAP).

The performance deficiency was determined to be more than minor because the finding was similar to IMC 0612 Appendix E, Example 7.e, and resulted in actual plant risk being in a higher licensee-established risk category than declared. The finding was of very low safety significance because the risk deficit, or incremental core damage probability deficit (ICDPD) was $< 1E-6$. This finding had a cross-cutting aspect in the area of Human Performance, Decision-Making because the licensee did not use conservative assumptions in decision making nor adopt a requirement to demonstrate that the proposed action is safe in order to proceed. Specifically, the licensee chose to minimize system unavailability time and as a result did not perform the post-maintenance test to verify that the 'A' ESW pump was available prior to lowering declared plant risk. (H.1(b)) (Section 1R13)

Inspection Report# : [2011004](#) (*pdf*)

Significance:  Jul 08, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Emergency Service Water System Piping did not meet ASME Code Requirements (Section 4OA5)

A finding of very low safety significance and an associated non-cited violation of Title 10 of the Code of Federal Regulations (CFR) Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors for failure to perform an adequate evaluation for Emergency Service Water (ESW) system piping. Specifically, the inspectors identified that the licensee had not evaluated all design and licensing basis loads and load combinations in accordance with Seismic Category I and American Society of Mechanical Engineers (ASME) code requirements. The licensee documented the corrective actions in CR10-86678 and CR11-88800.

The inspectors determined that the performance deficiency affected the Mitigating Systems Cornerstone. The inspectors compared this performance deficiency to the minor questions of IMC 0612, Appendix B, "Issue Screening," dated December 24, 2009, and the inspectors determined that this finding was more than minor because, if left uncorrected, the failure to perform an adequate evaluation of the ESW system piping would have the potential to become a more significant safety concern. Absent NRC intervention, the licensee would not have performed the evaluation of the Vertical Cask Transporter (VCT) load in combination with seismic load as well as other design basis loads which would have placed the piping in a potential overstress condition leading to a permanent deformation of the piping where the system would not be able to perform its safety function and it would become a more significant safety concern. Specifically, compliance with Seismic Category I and ASME code requirements was to ensure structural integrity of the ESW piping during a design basis event. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 -- Initial Screening and Characterization of Findings," Table 4a for the Mitigating Systems Cornerstone. The inspectors answered "yes" to the question of is the finding a design qualification deficiency confirmed not to result in loss of operability or functionality in the Mitigating Systems column based on the licensee revising design calculations and initiated modifications where necessary to demonstrate compliance and concluded that the finding was of very low safety-significance (Green). The inspectors identified a Human Performance, Work Practices (H.4.c) cross-cutting aspect associated with this finding. The licensee did not ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety was supported. Specifically, the licensee failed to have effective oversight of design calculation and documentation for demonstrating ASME code compliance of the ESW system piping. [H.4(c)] (Section 4OA5)

Inspection Report# : [2011009](#) (pdf)

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ESTABLISH A PROCEDURE TO OPERATE SAFETY-RELATED EQUIPMENT

The inspectors identified a finding of very low safety significance and associated NCV of Technical Specification 5.4.1.a, for failure to establish a procedure to remove power from the shutdown cooling isolation valves while shutdown cooling was in operation during a plant refueling outage. The inspectors determined that the licensee performed an activity that affected quality without a proper procedure in place. The licensee entered the issue into their corrective action program.

This performance deficiency was determined to be more than minor because it impacted the Procedure Quality attribute of the Mitigating Systems cornerstone, and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). This finding is of very low safety significance because the risk significance was evaluated to have a delta core damage frequency of less than E-6/yr and a delta large early release frequency of less than E-7/yr. This finding was associated with a cross-cutting aspect in the Work Practices component of the Human Performance cross-cutting area per IMC 0310 (H.4(b)) because the licensee did not effectively communicate expectations regarding procedural compliance and personnel following procedures. Specifically, the operators did not question operating safety-related plant equipment without appropriate procedural guidance.

Inspection Report# : [2011003](#) (pdf)

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: FIN Finding

FAILURE TO FOLLOW TECHNICAL SPECIFICATION BASES

The inspectors identified a finding of very low safety significance for failure to follow Technical Specification Limiting Condition for Operations 3.0.2 bases. The inspectors determined that the licensee rendered safety-related plant equipment inoperable and entered TS 3.6.1.3 Condition A for operational convenience. The licensee entered the issue into their corrective action program.

This performance deficiency was determined to be more than minor because it impacted the Configuration Control attribute of the Mitigating Systems cornerstone, and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). This finding is of very low safety significance because it does not increase the likelihood that a loss of decay heat removal, reactor coolant system inventory, or offsite power will occur and does not degrade the ability to terminate a leak path, recover decay heat removal once it is lost, or establish an alternate core cooling path if decay heat removal cannot be re established. This finding was associated with a cross-cutting aspect in the Decision Making component of the Human Performance cross-cutting area per IMC 0310 (H.1(b)) because the licensee did not use conservative assumptions to ensure the proposed action was safe. Specifically, the licensee chose to disable automatic protective features of a plant system while performing “high-risk” activities.

Inspection Report# : [2011003](#) (*pdf*)

Significance:  Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Unacceptable Preconditioning of HPCS Suction and Pump Minimum Flow Valves Prior to ASME Inservice Testing

The inspectors identified a finding of very low safety significance and associated non cited violation of 10 CFR Part 50, Appendix B, Criterion XI, Test Control, for unacceptable preconditioning of the high-pressure core spray (HPCS) suction valves and the HPCS pump minimum flow valve prior to quarterly inservice testing (IST) of the same valves. The inspectors determined that a maintenance delay, which caused a shift in the scheduled performance of the quarterly pump and valve testing of the HPCS system, produced a schedule conflict that resulted in cycling of the HPCS pump suction valves less than 9 hours prior to scheduled quarterly IST of the same valves. The schedule change also caused the HPCS pump minimum flow valve to be cycled less than 26 hours prior to the eventual IST of that valve. The licensee entered the issue into their corrective action program.

The performance deficiency was determined to be more than minor because, if left uncorrected, it could lead to a more significant safety concern. The finding was of very low safety significance because it was not a design/qualification deficiency, did not represent a loss of system safety function, did not result in a loss of function of a single train for greater than its Technical Specification-allowable outage time, did not result in a loss of function of non safety related risk-significant equipment, and was not risk significant due to external events. This finding was associated with a cross-cutting aspect in the Work Control component of the Human Performance cross-cutting area because the licensee did not properly evaluate work week schedule changes with regard to the impact on other scheduled work. Specifically, the licensee did not reschedule work in a manner which prevented preconditioning of the HPCS suction and pump minimum flow valves. (H.3(b))

Inspection Report# : [2010005](#) (*pdf*)

Significance:  Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Unacceptable Preconditioning of HPCS Valve Prior to ASME Inservice Testing

The inspectors identified a finding of very low safety significance and associated non-cited violation of Technical Specification 5.4.1.a, for failure to establish an adequate procedure to test the high-pressure core spray (HPCS) test return valve to the suppression pool. The inspectors determined that the licensee performed a surveillance that cycled the valve prior to performing stroke time testing, which constituted unacceptable preconditioning. The licensee entered the issue into their corrective action program.

The performance deficiency was determined to be more than minor because, if left uncorrected, it could lead to a more significant safety concern. The finding was of very low safety significance because it was not a design/qualification deficiency, did not represent a loss of system safety function, did not result in a loss of function of a single train for greater than its Technical Specification-allowable outage time, did not result in a loss of function of non safety-related risk-significant equipment and was not risk significant due to external events. This finding was associated with a cross-cutting aspect in the Operating Experience component of the Problem Identification and Resolution cross-cutting area because the licensee did not implement industry operating experience into station processes and procedures. Specifically, the licensee did not update or revise the surveillance test to prevent unacceptable preconditioning of the valve. (P.2(b))

Inspection Report# : [2010005](#) (pdf)

Significance:  Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Evaluate System Functionality of Control Room Breathing Air

The inspectors identified a finding of very low safety significance and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to evaluate and maintain functionality assessments for the main control room emergency breathing air system, which is described in the Updated Safety Analysis Report (USAR). The inspectors determined that the leakage rate that existed on the control room breathing air system exceeded the allowed leakage rate for the system to maintain functionality from July through September 2010, as evaluated by a licensee engineering evaluation completed on December 16, 2010. The licensee entered the issue into their corrective action program.

The performance deficiency was determined to be more than minor because it is similar to example 4.d of IMC 0612, Appendix E, Examples of Minor Issues, and would significantly impact the operators' ability to shutdown the reactor from the main control room using the breathing air system. In addition, the performance deficiency impacts the Equipment Performance attribute of the Mitigating Systems Cornerstone and adversely affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance because it was not a design/qualification deficiency, did not represent a loss of system safety function, did not result in a loss of function of a single train for greater than its Technical Specification allowable outage time, did not result in a loss of function of non safety related risk-significant equipment and was not risk-significant due to external events. This finding was associated with a cross-cutting aspect in the Resources component of the Human Performance cross-cutting area because the licensee did not maintain a system described in the USAR in a condition that would allow it to meet its described function. Specifically, operators would not be able to remain in the main control room using breathing air for the required time prescribed by the system description in the USAR due to excessive leakage from a system relief valve. (H.2(d))

Inspection Report# : [2010005](#) (pdf)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance:  Sep 30, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FAILURE TO VERIFY RADIOLOGICAL CONDITIONS PRIOR TO ENTERING HIGH RADIATION AREAS

The inspectors reviewed a self-revealed finding of very low safety significance and an associated NCV of Technical Specification 5.7.1 for the failure of workers to comply with established radiological protective measures as specified for entry into and work within high radiation areas. The issue has been entered into the licensee's corrective action program as condition reports (CR) 11-93976 and CR 11-94374. Corrective actions were implemented to address personal accountability and evaluate the need for procedure improvements.

The inspectors reviewed the guidance in IMC 0612 Appendix E, "Examples of Minor Issues," and determined that the issue was more than minor because the performance deficiency was similar to Example 6(h) in the guidance document. Using IMC 0609 Attachment C for the Occupational Radiation Safety SDP, the inspectors determined that the finding was of very low safety significance because the finding did not involve: (1) As-Low-As-Is-Reasonably-Achievable (ALARA) planning and controls; (2) a radiological overexposure; (3) a substantial potential for an overexposure; and there was no compromised ability to assess dose. The primary cause of this finding was related to the cross-cutting aspect of problem identification and resolution in the component of the corrective action program in that the licensee failed to take the appropriate corrective actions to address safety issues in a timely manner, commensurate with their safety significance and complexity. Specifically, the licensee had previously identified issues with the effectiveness of radiological briefs for access to high radiation areas on four recent occasions. (P.1(d)) (Section 2RS1)

Inspection Report# : [2011004](#) (pdf)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ACCURATELY ASSESS OCCUPATIONAL DOSE

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 20.1201(c) for the failure to accurately assess occupational dose specific to effective dose equivalent (EDE) determinations. The issue has been entered into the licensee's CAP as CR 11-02336. Corrective actions included a review of applicable guidance and revisions to applicable procedures.

The inspectors reviewed the guidance in IMC 0612 and determined that the finding was more than minor because it was associated with the program and process attribute of occupational radiation safety cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that inaccurate radiation monitoring affects the licensee's ability to control and limit radiation exposures. Using IMC 0609 Attachment C for the Occupational Radiation Safety SDP, the inspectors determined that the finding was of very low safety-significance because the finding did not involve: (1) ALARA planning and controls; (2) a radiological overexposure; (3) a substantial potential for an overexposure; and there was no compromised ability to assess dose. The primary cause of this finding was related to the cross-cutting aspect of human performance in the component of resources. Specifically, licensee did not provide complete and accurate procedures to the radiation safety staff. (H.2 (c)) (Section 2RS4)

Inspection Report# : [2011004](#) (pdf)

Significance: SL-IV Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROVIDE COMPLETE AND ACCURATE INFORMATION

The inspectors identified a NCV of 10 CFR 50.9(a), "Completeness and Accuracy of Information," that occurred when the licensee failed to report an Occupational Radiation Safety Performance Indicator (PI) occurrence to reflect an individual entering on April 22, 2011, a locked high radiation area in the drywell under vessel area without the appropriate radiological controls in place. The issue was entered into the licensee's CAP as CR 11-00473. Corrective actions included the licensee submitting corrected occupational radiation safety PI data to the NRC.

Violations of 10 CFR 50.9 that potentially impede or impact the regulatory process are dispositioned using traditional enforcement. The inspectors concluded that the licensee had reasonable opportunity to foresee and correct the inaccurate information prior to the initial information being submitted to the NRC. This violation is characterized as a

Severity Level (SL) IV violation because it is similar to Example 6.9.d.11 of the NRC Enforcement Policy, and is consistent with Section 2.2.1.c, in that the violation impacted the regulatory process. The violation was not repetitive or willful. The significance of the performance deficiency associated with the under vessel entry was previously reviewed by the inspectors and dispositioned in IR 05000440/2011013. As such, no ROP finding and no cross-cutting aspect was assigned in this report. (Section 40A1)

The associated performance deficiency is tracked as item 2011-013-02.

Inspection Report# : [2011004](#) (*pdf*)

Significance: **G** May 25, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Insufficient detail in work instructions when retracting a Source Range Monitor. (Section 40A5.6)

The NRC identified a finding of very low safety significance and a non-cited violation (NCV) of regulatory requirements contained in TS 5.4. "Procedures." Specifically, the licensee had insufficient detail in its instructions to workers, to ensure that the SRM-C cable take-up cartridge was installed correctly. Additionally, the workers failed to follow procedure in removing a nominal nine feet of excess SRM detector cable. The licensee entered this issue into its corrective action program (CAP) as CR 11-93247.

The inspectors reviewed the guidance in IMC 0612, Appendix E, "Examples of Minor Issues," and did not identify any examples similar to the performance deficiency. However, in accordance with IMC 0612, the inspectors determined that the performance deficiency was more than minor because if left uncorrected the performance deficiency had the potential to lead to a more significant safety concern. Therefore, the performance deficiency was a finding. The finding did not involve ALARA, did not involve an overexposure or a substantial potential for an overexposure, and did not compromise the licensee's ability to access dose. Consequently, the inspectors concluded that the finding was of very low safety significance (Green). The finding was also a non-cited violation (NCV) of regulatory requirements contained in Technical Specification 5.4. "Procedures." The finding had a cross-cutting aspect in the area of human performance related to the cross-cutting component of work practices, in that, work instructions lacked sufficient detail to ensure appropriate radiological controls were in place and the licensee did not ensure that personnel followed procedures (H.4. b). (Section 40A5.6)

Inspection Report# : [2011013](#) (*pdf*)

Significance: **W** May 25, 2011

Identified By: NRC

Item Type: VIO Violation

The Licensee Failed to Appropriately Identify and Assess the Radiological Hazards when retracting a Source Range Monitor. (Section 40A5.7)

The NRC identified a finding and three apparent violations of NRC requirements associated with the removal of a source range monitor from the reactor vessel. Specifically, the inspectors identified an apparent violation of Title 10 of the Code of Federal Regulations (CFR) part 20.1501 "Surveys and Monitoring," because licensee failed to appropriately evaluate and assess the radiological hazards associated with retracting a source range monitor from the reactor vessel. The inspectors also identified examples of apparent violations of Technical Specifications requirements 5.4. "Procedures" and 5.7. "High Radiation Area" associated with this finding. Following this event, the licensee instituted several corrective actions including procuring a new shielded retrieval and transport cask, retracting the source range monitor (SRM) detector and cable into the cask from the carousel instead of the sub-pile room floor, and implementing changes to plant procedures and the plant planning process to more effectively control this work. Additionally, a root cause evaluation was initiated under condition report (CR) 11-932471.

The inspectors reviewed the guidance in NRC Inspection Manual Chapter (IMC) 0612, Appendix E, "Examples of Minor Issues," and did not identify any examples similar to the performance deficiency. However, in accordance with IMC 0612, the inspectors determined that the performance deficiency was more than minor because it could be viewed as a precursor to a significant event. Therefore, the performance deficiency was a finding. The finding did not involve "as low as reasonably achievable" (ALARA) planning or work controls and there was no overexposure. However, the inspectors determined that a substantial potential for an overexposure did exist, in that, it was fortuitous that the resulting exposure did not exceed the limits of 10 CFR Part 20. The event did not occur in a very high

radiation area, nor was the licensee's ability to access dose compromised. Consequently, the inspectors concluded that the finding was preliminarily determined to be of White safety significance. The finding had a cross-cutting aspect in the area of human performance related to the cross-cutting component of decision making, in that, the licensee did not use conservative assumptions when developing the work package and authorizing the work for the removal of SRM-C (H.1.b). (Section 4OA5.7)

Final SDP Issued on August 28, 2011 (ml112371689) - with revised violation text as follows:

A. Title 10 of the Code of Federal Regulations (10 CFR) Part 20 Subpart F – Surveys and Monitoring Section 20.1501 requires, in part, that licensees make surveys that may be necessary to comply with the regulations in Part 20 and are reasonable under the circumstances to evaluate the magnitude and extent of radiation levels and the potential radiological hazards. Pursuant to 10 CFR 20.1003, survey means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal or presence of radioactive material or other sources of radiation.

Contrary to the above, as of April 21, 2011, the licensee failed to make surveys to evaluate the potential radiological hazards incident to work activity to assure compliance with 10 CFR 20.1201, which limits the occupational dose to individual adults. Specifically, the licensee did not perform an evaluation of the potential radiological hazards associated with the work activity prior to authorizing removal of an irradiated in-core source range monitor (SRM).

B. Technical Specification 5.7.1.b states, in part, that entry into high and locked high radiation areas be made after the dose rate levels in the area have been established and personnel are made aware of them.

Contrary to the above, on April 21, 2011, the licensee permitted entry into a high radiation area without establishing the dose rate levels in the area and without personnel being made aware of the dose rates. Specifically, the licensee did not perform a complete radiological characterization of the SRM (a radiological source of unknown magnitude), which was being pulled toward the work area and toward the workers' escape path. Consequently, the licensee did not inform the workers of the potential dose rate levels associated with their entry into the high radiation area.

C. Technical Specification 5.4.1 requires that written procedures be established, implemented, and maintained covering the activities in Regulatory Guide 1.33, Revision 2, Appendix A, dated February 1978.

Regulatory Guide 1.33, Revision 2, Appendix A Section 7 addresses, in part, procedures for control of radioactivity for limiting personnel exposure. Section 7.e(1) addresses procedures for access control to radiation areas including a radiation work permits system and Section 7.e(9) addresses procedures for implementation of an as low as is reasonably achievable (ALARA) program.

The licensee established Procedure HPI-C0015, Revision 00, "Radiological Controls for Highly Radioactive and Irradiated Components or Materials," to control highly radioactive objects and materials removed from the reactor vessel.

The licensee established Procedure NOP-OP-4107, Revision 05, "Radiation Work Permit," in part, for implementation of an ALARA program. Step 4.3.2.3 of this procedure states, in part, that ALARA plans are developed with sufficient detail on what requirements, considerations and actions are to be ALARA for the work activity.

Contrary to the above, as of April 21, 2011, the licensee:

a. Failed to establish a procedure that addressed access control to all radiation areas. Specifically, Procedure HPI-C0015 only addressed work activities on the refueling floor and did not address access control to the undervessel radiation area or control of highly radioactive objects and materials removed from the reactor vessel through the undervessel area.

b. Failed to implement Procedure NOP-OP-4107, in that the ALARA plan for work on the SRM lacked sufficient detail about the requirements, consideration, and actions to ensure that the work activity was performed in an ALARA manner. Specifically, the ALARA plan did not ensure that the work activity to retract the irradiated SRM-C contained

steps to ensure that the ambient radiation field in the work area in the carousel and sub-pile room areas was being controlled and that the worker actions were in accordance with ALARA considerations.

A. Title 10 of the Code of Federal Regulations (10 CFR) Part 20 Subpart F – Surveys and Monitoring Section 20.1501 requires, in part, that licensees make surveys that may be necessary to comply with the regulations in Part 20 and are reasonable under the circumstances to evaluate the magnitude and extent of radiation levels and the potential radiological hazards. Pursuant to 10 CFR 20.1003, survey means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal or presence of radioactive material or other sources of radiation.

Contrary to the above, as of April 21, 2011, the licensee failed to make surveys to evaluate the potential radiological hazards incident to work activity to assure compliance with 10 CFR 20.1201, which limits the occupational dose to individual adults. Specifically, the licensee did not perform an evaluation of the potential radiological hazards associated with the work activity prior to authorizing removal of an irradiated in-core source range monitor (SRM).

(Also numbered as 2011-014-01, but in reality is 2011-013-02)

The associate Traditional Enforcement Item for submitting an inaccurate PI for the associated event is being tracked as item 2011-004-04.

Inspection Report# : [2011013](#) (pdf)

Significance:  Mar 31, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Establish Radiological Conditions in a Locked HRA [i.e., the fuel pool cooling and cleanup (FPCC) Heat Exchanger Room] Prior to Allowing Personnel Access.

A finding of very low safety significance and an associated NCV of Technical Specifications (TS) 5.7.2 was self-revealed following the licensee's failure to adequately identify the radiological conditions in the fuel pool cooling and cleanup (FPCC) heat exchanger room prior to a pre-job brief for work in the room and prior to workers entering the room. Specifically, on November 19, 2010, operators involved in tag out activities for a valve encountered elevated dose rates when they entered an un surveyed area on the back side of the FPCC heat exchanger. At the time the FPCC room was controlled as a locked high radiation area (HRA). While entering the area one of the operators received an electronic dosimeter (ED) dose rate alarm of 1500 mRem/hr. Follow-up surveys determined that the highest dose rate in the area entered was 2000 mrem/hr. As part of the licensee's corrective actions, lessons learned were shared with the radiation protection (RP) staff to address survey and briefing inadequacies. Additional performance management actions were implemented by the station.

The inspectors determined that the licensee's failure to adequately identify the radiological conditions in the room prior to workers entering the work area was a performance deficiency. The inspectors determined that the finding was more than minor because the inspectors identified Example 6(h) of IMC 0612, Appendix E, as similar to the finding; the workers were not made aware of the radiological conditions before entry into the area on the back side of the FPCC heat exchanger. Additionally, the finding impacted the program and process attribute of the Occupational Radiation Safety Cornerstone by adversely affecting the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation in that workers' entry into areas, without knowledge of the radiological conditions, placed them at increased risk for unnecessary radiation exposure. The finding was determined to be of very low safety significance because the performance deficiency was not an as-low-as-reasonably-achievable (ALARA) planning issue, there was no overexposure, nor substantial potential for an overexposure, and the licensee's ability to assess dose was not compromised. The inspectors determined that the cause of this incident involved a cross-cutting component in the human performance area of work practices in that the work crew proceeded in the face of uncertainty when unexpected circumstances were encountered in the FPCC heat exchanger room. [H.4(a)]

Inspection Report# : [2011002](#) (pdf)

Public Radiation Safety

Significance:  Nov 30, 2010

Identified By: NRC

Item Type: FIN Finding

Failure to Follow Procedure when Completing Regulatory Applicability Form for a New WARF, RISB, and OSSC Procedure

A finding of very low safety significance was identified by the inspectors for the licensee's failure to follow procedure NOBP-LP-4003A, FENOC 10 CFR 50.59 User Guidelines, when a new procedure was written and implemented describing the operation of the waste abatement reclamation facility (WARF), radioactive interim storage facility (RISB), and on-site storage and container yard (OSSC). Specifically, the determination that new procedure HPI-K0009, "Operation of the WARF, RISB and OSSC Yard," was a managerial or administrative change and, therefore, the 50.59 process was not applicable, did not comply with the direction provided in Section 1.1 of NOBP-LP-4003A. As a result, the differences in the use of these facilities as specified in Procedure HPI-K0009, with their design basis and USAR descriptions were not identified and evaluated. The licensee has rescinded this procedure until the regulatory evaluation is completed.

The finding was determined to be more than minor because it was associated with the Public Radiation Safety Cornerstone attribute of program/process and adversely affected the cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Appendix D, "Public Radiation Safety," to assess its significance. The inspectors determined that the finding did not involve radioactive material control, there was not a substantial failure to implement the radiological effluent program, and public dose was less than criteria in 10 CFR Part 50, Appendix I, and 10 CFR 20.1301. This finding is associated with a cross-cutting aspect in the resources component of the human performance cross cutting area because the licensee did not ensure complete, accurate, and up-to-date design documentation and procedures are available. Specifically, there were eleven instances where issues related to operating the WARF, RISB, and OSSC outside of their design bases were identified since 2000 and no actions to correct these issues were developed until 2010, when a procedure was issued (H.2(c)).
Inspection Report# : [2010007](#) (*pdf*)

Physical Protection

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

Miscellaneous

Last modified : January 04, 2012