McGuire 1
1Q/2005 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Comply With RCS Leakage Detection TS for Containment Radiation Gaseous Monitors
A non-cited violation of Technical Specification (TS) 3.4.15, Reactor Coolant System (RCS) Leakage Detection Instrumentation, was identified by the inspectors for failing to take actions required for containment radiation gaseous monitors being inoperable. Specifically, the monitors were unable to detect a 1 gpm RCS leak in 1 hour due to current activity concentrations (i.e., < 0.1 percent failed fuel) and TS required Actions B.1 (24-hour containment atmosphere sample) or B.2 (24-hour RCS water inventory balance) were not performed. The finding is greater than minor because the containment particulate and gas channel radiation monitors were not capable of performing the design bases function of alerting control room operators of elevated reactor coolant system unidentified leakage, for an extended period of time. This inoperability resulted in a potential impact on reactor safety and adversely affected the availability and reliability of the barrier integrity equipment performance attribute of the initiating events cornerstone. The finding was of very low safety significance because other methods of reactor coolant system leak detection were available to the licensee and no actual leakage above 1 gpm was indicated through the reactor coolant system water balance surveillance. This issue contained elements of problem identification and resolution, as well as human performance, in that licensee operations and engineering personnel determined the radiation monitors to be operable without consideration of all available information. (Section 1R15)
Inspection Report# : 2005002*(pdf)*

Significance: G Mar 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Have Adequate Surveillance Procedures for RCS Leakage Detection Instrumentation
A non-cited violation of TS 5.4.1.a was identified by the inspectors for failing to establish, implement, and maintain adequate Reactor Coolant System Leakage Detection Instrumentation surveillance procedures for surveillance requirement (SR) 3.4.15.2, channel operational test of containment atmosphere radioactivity monitor; SR 3.4.15.3, channel calibration of containment floor and equipment sump (F&ES) level monitoring system; SR 3.4.15.4, channel calibration of containment atmosphere radioactivity monitor; and SR 3.4.15.5, channel calibration of containment ventilation condensate drain tank (VCDT) level monitor. Procedures for containment radiation particulate and gas monitors had not set the alarms to leakage values equivalent to 1 gallon per minute in 1 hour and had not tested the end device used by the operators to provide alarm indication of potentially excessive reactor coolant system unidentified leakage for multiple containment leakage monitors, including level indication (F&ES and VCDT) and radiation monitors. The finding was greater than minor because the surveillance procedures had not provided assurance that the necessary quality of systems or components were maintained. Consequently, this resulted in a potential impact on reactor safety and adversely affected the availability and reliability of the barrier integrity equipment performance attribute of the initiating events cornerstone. The finding was of very low safety significance because excessive leakage had not existed based on reactor coolant inventory water balances and that the alarm indication functioned properly when tested. This issue contained elements of problem identification and resolution, in that the licensee's operability determination failed to adequately evaluate whether surveillance requirements had been met and actions to determine the "time to alarm" given current RCS activity levels were not prompt. (Section 1R22b.(1))
Inspection Report# : 2005002*(pdf)*

Significance: G Nov 05, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Action for Plant Equipment Issues - Two Examples
The inspectors identified the first example of a non-cited violation of 10 CFR 50 Appendix B, Criterion XVI, Corrective Action, for failure to thoroughly evaluate and take timely corrective actions to resolve a problem with the Instrument Air (VI) supply to the actuator of steam admission valve 2SA-49AB, steam supply from the "B" steam generator to the Unit 2 turbine driven auxiliary feedwater pump (TDCAP). Specifically, following identification of a nitrogen leak into the redundant VI supply for the actuator of steam admission valve 2SA-49AB, the licensee isolated the redundant instrument air supply which backs up the nitrogen supply that maintains the TDCAP steam admission valve in the closed position. Subsequently, high nitrogen usage depleted the available nitrogen and allowed 2SA-49AB to open and inadvertently start the TDCAP. This auxiliary feedwater addition to all four steam generators resulted in an overpower condition and required operator action to mitigate the reactivity event. This finding was considered more than minor because it resulted in an inadvertent TDCAP start which delivered flow to all four steam generators. This caused an over-power condition in the reactor; thereby, affecting the Initiating Events Cornerstone objective by increasing the likelihood of events that upset plant stability. The finding was determined to be of very low safety significance because the operators implemented immediate manual actions to maintain reactor power less than 102% rated thermal power and the TDCAP

was able to perform its design function at all times due to the fail-safe design of the valve actuator to open. (Section 4OA2b.(3).1)

The inspectors identified a second example of a non-cited violation of 10 CFR 50 Appendix B, Criterion XVI, Corrective Action, for failure to take adequate corrective actions to preclude repetitive issues with spent fuel pool (KF) cooling pump motor bearings. Specifically, repetitive challenges to KF pump motor bearings due to inadequate lubrication issues have resulted in increased unavailability of the pumps due to failures and increased unreliability of the system to meet its intended function. This finding was determined to be more than minor, in that it affected the mitigating system cornerstone objective by affecting the availability and reliability of the KF cooling system to maintain the spent fuel pool within the design limits. The improper venting of the spent fuel cooling pump motor oil level resulted in the repetitive failures of the pump motor. Failure of the pump motor adversely affects the ability to reliably maintain cooling in the spent fuel pool. This issue was determined to be of very low safety significance (Green) due to the availability of a redundant SFP cooling pump and because the allowable temperature limits were not exceeded. (Section 4OA2c.(3).1)
Inspection Report# : 2004008*(pdf)*

Mitigating Systems

Significance: SL-IV Mar 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Report a Condition Prohibited by Technical Specifications
A non-cited violation was identified by the inspectors for failure to report a condition prohibited by Technical Specifications related to past inoperability for main steam isolation valve 1SM-1, as required by 10 CFR 50.73. Based on the very low safety significance of the technical issue, this violation is categorized as a Severity Level IV violation under the NRC Enforcement Policy, Supplement I. (Section 4OA3.1)
Inspection Report# : 2005002*(pdf)*

Significance: G Mar 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Multiple MSIV Inoperability
A non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, was identified by the inspectors for failing to take timely and adequate corrective actions to resolve adverse conditions that resulted in two Unit 1 main steam isolation valves (MSIVs) being inoperable beyond their Technical Specification allowed out-of-service time. The finding is considered greater than minor because it had a direct impact on the MSIVs' ability to perform their safety function, which is to close during a high energy line break or steam generator tube rupture. The finding affects both the Mitigating Systems and Barrier Integrity cornerstones, in that the failure to close impacts the equipment performance (reliability, availability) attribute and containment isolation (minimization of radiological releases) attribute, respectively. Based on the results of the Phase 3 SDP analysis, the finding is considered of very low safety significance. This issue contained elements of problem identification and resolution, as well as human performance, as it involved failures to properly evaluate data and deficiencies associated with the MSIVs; therefore, failing to take prompt corrective action to preclude the valves from becoming inoperable. (Section 4OA5.4)
Inspection Report# : 2005002*(pdf)*

Significance: G Sep 11, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to comply with design control for a design assumption associated with the nuclear service water system
A non-cited violation of 10CFR50, Appendix B, Criterion III was identified by the inspectors for inadequate design control involving an assumption that supported nuclear service water flow following a seismic event. The assumption was that non-seismic condenser circulating water pipe would be available for an extended period of time after a seismic event as the discharge path for nuclear service water train A. Similar to Example 3.a. of Inspection Manual Chapter 0612, this issue is more than minor because it affects the mitigating systems cornerstone objective to ensure reliability of systems that respond to initiating events and associated attributes of design control and protection from external factors (seismic). Following the identification of the issue, the licensee performed a seismic evaluation of the piping and determined that it would sufficiently perform the relied upon minimal service water flow function after a seismic event. Consequently, the issue was determined to be of very low safety significance. (Section 1R15)
Inspection Report# : 2004005*(pdf)*

Significance: SL-IV Sep 11, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to obtain a license amendment prior to implementing an unreviewed safety question associated with the nuclear service water system
The inspectors identified a non-cited violation of 10CFR50.59 for failure to obtain a license amendment prior to implementing a change to plant procedures that involved an unreviewed safety question. The unreviewed safety question dealt with extending the availability of non-seismic condenser circulating water piping to perform a safety-related function following a seismic event. This issue is more than minor

because it would require NRC review prior to implementation. A subsequent engineering evaluation determined that the non-seismic piping would not collapse or kink, and although it may leak, it will provide the necessary minimal service water flow function. Since the technical issue was determined to be of very low safety significance, the regulatory significance was categorized as a Severity Level IV violation. (Section 4OA2b.(1))

Inspection Report# : 2004005*(pdf)*

Significance: SL-IV Sep 11, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to obtain a license amendment prior to implementing a design change to the facility associated with the auxiliary feedwater system
A non-cited violation of 10CFR50.59 was identified by the inspectors for changing the design of the auxiliary feedwater system as described in the Updated Final Safety Analysis Report without performing a safety evaluation or obtaining a Technical Specification change. The change reduced the required number of trains of auxiliary feedwater from three independent trains to two independent trains to safely shutdown the reactor.
This failure to perform a safety evaluation and submit a Technical Specification change is more than minor because it would require an NRC review prior to implementation. Because there was no evidence to indicate that the licensee had used the change the safety significance was determined to be very low. Consequently, the regulatory significance was categorized as a Severity Level IV violation. (Section 4OA2b.(2))
Inspection Report# : 2004005*(pdf)*

Significance: G Sep 11, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Separation and Protection of Cables Associated With Redundant Trains of Instrumentation Located in the Same Fire Area

A non-cited violation of Unit 1 Operating License Condition 2.C.4 and Unit 2 Operating License Condition 2.C.7 was identified by the inspectors for failure to comply with McGuire's approved fire protection program and 10 CFR Part 50, Appendix R, Section III.G.2. Specifically, Train A and Train B cables for the primary and backup power supplies for all four reactor protection system (RPS) channels were routed in close proximity in Room 803A (Unit 1 Fire Area 15/17) and Room 805A (Unit 2 Fire Area 16/18). The cables did not have adequate protection (i.e., 20-feet separation or fire barriers) to remain free of fire damage in the event of a fire. The licensee entered this issue into its corrective action program. The finding is greater than minor because it is associated with the protection against external factors attribute, and degraded the reactor safety mitigating systems cornerstone objective. The finding degraded the defense-in-depth for fire protection. This finding is of very low safety significance because the likelihood of a fire, in either room 803A or 805A, that would damage all four reactor protection system channels was relatively low due to the small ignition sources and the horizontal distance of the ignition sources from the cables. (Section 4OA5)

Inspection Report# : 2004005*(pdf)*

Significance: G Jun 12, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to update fire strategy plans when a modification removed numerous extinguishers.
The inspectors identified a non-cited violation (NCV) of the operating license condition for fire protection for failing to update fire strategy plans when a modification removed numerous fire extinguishers from plant fire areas that contain safety-related equipment. The non-updated fire strategy plans could decrease the effectiveness of the fire brigade. This finding is greater than minor because it is associated with fire protection equipment availability and degraded the ability to meet the manual suppression Mitigating Systems Cornerstone objective. The finding is of very low safety significance because the areas where the inspectors found extinguishers missing did not have both trains of safe shutdown and the standby shutdown system in the same fire area while utilizing 20 foot separation between trains, hence, the significance of the fire brigade's decreased effectiveness was reduced. (Section 1R05)

The inspectors identified a second example of non-cited violation 05000369,370/2004004-01 which involved inadequate fire strategy plans and was a violation of the license condition for fire protection. The strategy plan for fire area 21, auxiliary building 750 elevation, did not identify that class D combustibles were located in the fire zone and identified that extinguishants were in locations where none existed. The strategy plan for fire area 4, auxiliary building elevation 716, did not list one of the rooms that was in the fire area. The failure to have comprehensive pre-fire strategy plans was considered a degradation for manual fire fighting effectiveness. This finding is more than minor because it affects the mitigating systems cornerstone objectives to ensure capability of features that respond to initiating events and the associated attributes of protection from external factors (including fire), procedure quality, and design control. The licensee's corrective actions for the previous violation have not yet been implemented for these fire areas. The inspectors determined these corrective actions would likely have identified the deficiencies. The finding was determined to be of very low safety significance because it only minimally diminished manual suppression effectiveness without affecting the low fire ignition frequency within the compartments or the previously established safe shutdown strategy for a fully developed fire within the applicable compartments. (Section 1R05 of IR 05000369,370/2004005)
Inspection Report# : 2004004*(pdf)*

Significance: G Jun 12, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Failure to Adequately Correct Configuration Discrepancies for ECCS Sump Valve.
A non-cited violation of 10 CFR 50 Appendix B, Criterion XVI, Corrective Action was identified for failure to take adequate corrective action to resolve a deviation from the as-designed configuration for the B train containment spray suction isolation valve actuator (1NS-1B). The deviation prevented the B train common emergency core cooling system containment sump isolation valve (1NI-184B) for the residual heat removal and containment spray systems from opening when manually actuated from the valve's main control board switch. The self-revealing finding was greater than minor because it affected the availability and reliability of the emergency core cooling system recirculation function for the Mitigating System Cornerstone and the containment spray system for the Barrier Integrity Cornerstone. The finding is of very low safety significance because of the short time interval during which both the automatic function and manual backup function were unavailable, and the availability of a redundant train during this short time interval. (Section 1R22)

Inspection Report# : 2004004*(pdf)*

Barrier Integrity

Significance: G Jun 12, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish adequate test conditions during surveillance testing of Ice Condenser lower inlet doors, 2 Examples.
The inspectors identified two examples of a non-cited violation of 10 CFR 50, Appendix B, Criterion XI, Test Control for failure to perform adequate surveillance testing on the Ice Condenser lower inlet doors under suitable conditions. The first example involved the failure to control the environmental conditions in the containment during the testing of the lower inlet doors which resulted in obtaining inaccurate data. This finding is more than minor because the failure to establish suitable environmental conditions to obtain accurate door torque data impacts the ability to verify that the lower inlet doors will open at the appropriate limits. Consequently, the mitigating function of the ice condenser to maintain containment integrity in the Barrier Integrity Cornerstone was affected. The finding is considered of very low safety significance because when the plant returned to cold shutdown (one week later) and the licensee conducted a retest under the appropriate accident configuration, all values were found to be within acceptable limits. (Section 1R22)

The second example involved the inappropriate performance of preventative maintenance immediately prior to the lower inlet doors surveillance test which resulted in unacceptable preconditioning. This finding is more than minor because performing preventative maintenance immediately prior to the surveillance test has the potential to mask the as-found condition of the lower inlet doors and results in the inability to verify operability. Consequently, the equipment operability and function objectives of the Barrier Integrity Cornerstone were affected. The finding is of very low safety significance due to the licensee performing an as-found visual inspection of the lower inlet doors at initial cold shutdown and having not found any degraded conditions that would affect lower inlet door operability. (Section 1R22)
Inspection Report# : 2004004*(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Significance: G Mar 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Procedural Guidance for Conducting ISFSI Radiation Surveys
The inspectors identified a non-cited violation of Technical Specification 5.4.1(a) for failure to follow radiation protection procedures used to demonstrate compliance with 10 CFR Parts 20 and 72. Specifically, on August 24, 2004, Independent Spent Fuel Storage Installation (ISFSI) area dose rate surveys were conducted using portable radiation monitoring instrumentation, a RO-20 ion chamber survey meter, which did not cover the lower range of radiation levels expected (i.e., less than 0.05 millirem per hour), for selected boundary trending points. Further, the dose rate values documented (i.e., less than 0.1 mrem/hr) for the subject trending point locations, did not allow verification that the established procedural limits used to demonstrate compliance with 10 CFR Parts 20 and 72 requirements were met. This finding is more than minor in that the failure to accurately monitor and properly evaluate the quarterly dose rate results could prevent identification of unexpected/elevated dose

rates associated with ISFSI operations and is associated with the Program and Process attribute of the Occupational Radiation Safety Cornerstone. The finding affects the cornerstone objective to prevent/minimize radiation exposure to personnel. The issue is of very low safety significance because the procedurally established dose rate limits are based on conservative occupancy factors, and results of proper dose rate surveys conducted prior and subsequent to the subject date were within established dose rate limits. (Section 2OS1)
Inspection Report# : 2005002*(pdf)*

Significance: G Mar 31, 2005
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Failure to Provide Adequate Breathing Air Capacity for Supplied-Air Respiratory Equipment
A self-revealing non-cited violation of 10 CFR 20.1703(e) was identified for use of inadequate in-service breathing air (VB) system equipment to supply 'Delta Suit' respiratory protective equipment. Specifically, on March 25, 2004, available VB system capacity was inadequate to supply adequate air flow to six workers using supplied-air 'Delta Suits' for steam generator (SG) work activities. The finding is more than minor in that it is associated with the Occupational Radiation Safety Cornerstone Plant Equipment and Instrumentation attribute and adversely affects the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radioactive material during routine civilian nuclear reactor operations. The issue is of very low safety significance because the flow monitoring equipment used to identify degraded or failed VB system operations alerted responsible staff. The subject SG workers immediately ceased work activities and exited the work area without any unexpected internal contamination or resultant doses. (Section 2OS3)
Inspection Report# : 2005002*(pdf)*

Significance: G Jun 12, 2004
Identified By: NRC
Item Type: FIN Finding
Failure to implement/use adequate engineering controls to effectively manage the radioactive contamination source term during 1EOC16 steam generator eddy-current testing activities.
The inspectors identified a finding for inadequate implementation of proposed contamination control initiatives for Unit 1 End-of-Cycle 16 refueling outage eddy current test (ECT) activities. The primary control initiative which involved scrubber brushes used to clean particulates from ECT drive and communication cables during their withdrawal from S/G tubes were improperly sized and thus ineffective in minimizing the transfer of radioactive particulate contamination from the S/Gs onto the work platforms. Further, backup contamination control equipment and felt pads were not available until the end of the subject task. The inadequate implementation of the proposed controls resulted in extensive contamination on the S/G platforms resulting in increased general area dose rates. This finding is greater than minor because it adversely affects the source term control attribute of the Occupational Radiation Safety Cornerstone and resulted in the unexpected increase in general area S/G platform dose rates and increased worker exposure. This finding is of very low safety significance because the licensee's three year rolling average collective dose per unit was less than 135 person rem, and all individual worker exposures were closely monitored by the licensee and were within regulatory limits. (Section 2OS2)
Inspection Report# : 2004004*(pdf)*

Significance: G Jun 12, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish proper engineering and monitoring controls during 1EOC16 S/G maintenance activities.
An NRC identified example and a self-revealing example of a non-cited violation (NCV) of Technical Specification (TS) 5.4.1(a) were identified for failure to follow approved radiation protection guidance for Unit 1 (U1) steam generator (S/G) maintenance activities.

NRC identified example: The licensee failed to properly configure ventilation equipment and conduct required radiological analyses for initial airborne particulate samples collected. Failure to properly establish the ventilation system equipment contributed to the uncontrolled dispersion of airborne particulate radiological material within the U1 reactor building. Self-revealing example: The failure to monitor for alpha emitting radionuclides in particulate air samples prevented timely and thorough evaluation of potential radiological hazards for occupational workers. These examples are more than minor because they adversely affect the plant equipment and the program and process attributes of the Occupational Radiation Safety cornerstone. The failure to properly establish the ventilation equipment resulted in unnecessary radionuclide intakes by workers and the failure to conduct particulate air sample alpha analyses impacted the thorough and timely evaluation of potential airborne radiological hazards. The examples were determined to be of low safety significance because subsequent analyses did not identify any significant alpha emitter hazards, workers were monitored for exposures from external radiation fields and from internally deposited radionuclides as appropriate, and no individuals exceeded either internal or external exposure limits. (Section 2OS1)
Inspection Report# : 2004004*(pdf)*

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Nov 05, 2004
Identified By: NRC
Item Type: FIN Finding
PI&R SUMMARY
Overall, the licensee maintained an effective program for the identification and correction of conditions adverse to quality. The licensee was effective at identifying problems at a low threshold and entering them into the Corrective Action Program (CAP). In general, the licensee consistently prioritized issues in accordance with their CAP and routinely performed adequate evaluations that were technically accurate and of sufficient depth. Minor problems were identified related to thoroughness of corrective action program issue documentation. The inspectors considered the licensee's CAP tracking program adequately supported tracking of identified issues, as well as the proposed corrective actions to resolve problems and implement improvement initiatives. The system also supported the ability to perform efficient and productive CAP trending at a variety of plant employee levels.

Formal root cause evaluations for significant conditions adverse to quality were thorough and detailed. Corrective actions developed for lower level root and contributing causes were generally timely, effective, and commensurate with the safety-significance of the issue. Although the licensee incorporated a wide variety of root cause techniques, the use of simplistic root and apparent cause evaluations techniques for lower level Problem Investigation Process reports (PIPs), such as change analysis, could improve the reliability of apparent causes for some lower level issues and provide improved basis for PIP documentation. Several examples were identified where immediate corrective actions were not through or timely, as well as where vendor oversight could have been improved.

The licensee's periodic self-assessments and audits were effective in identifying deficiencies in the CAP and covered all areas of plant performance. Corrective actions for previous performance examples were being actively monitored within self-assessments and audits of the CAP. Overall, the ability to perform critical self-assessments was considered an effective program attribute, especially when identifying repetitive equipment issues. Assessments were also effective in evaluating human performance areas for improvement, which indicated an emphasis on continuous improvement. With few exceptions, reviews of sampled operating experience information were comprehensive. Improved review of operating experience between other sites from the same utility was noted.

Site management was adequately involved in the CAP and focused appropriate attention on significant plant issues. Previous non-compliance issues documented as non-cited violations were properly tracked and resolved via the corrective action program. The results of the last comprehensive corrective action program audit conducted by the licensee were properly entered and dispositioned in the corrective action program. Improvements were seen in the area of trending reviews identifying areas warranting increased management attention and focus. In one specific area of corrective actions for previous containment cleanliness issues, the licensee was not effective in precluding NRC identification of foreign material inadvertently left in the containment.

Based on discussions with plant personnel and the low threshold for items entered in the corrective action program database, the inspectors concluded that workers at the site generally felt free to raise safety concerns to their management and that a safety conscious work environment existed.

Inspection Report# : 2004008*(pdf)*

Last modified : June 17, 2005