

Point Beach 2

3Q/2008 Plant Inspection Findings

Initiating Events

Significance:  Jun 30, 2008

Identified By: NRC

Item Type: FIN Finding

Failure to Properly Store or Secure Tornado Missile Hazards in the Protected Area

The inspectors identified a finding of very low safety significance (Green) with no associated violation of regulatory requirements for the licensee's failure to maintain control over the proper storage and placement of materials within the protected area that were classified as tornado hazards per station Procedure PC 99. Specifically, these unsecured items were identified near the Unit 1 and Unit 2 main and auxiliary transformers, as well as the switchyard boundary. Once notified, the licensee entered the issue into its corrective action program and removed or secured the materials appropriately. At the end of the inspection period, the licensee continued to perform a causal evaluation and develop additional long term corrective actions.

The finding is more than minor because if left uncorrected, the loose items would become a more significant safety concern. The finding is of very low safety significance (Green) because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. Additionally, the inspectors determined that the finding had a cross-cutting aspect in the area of problem identification and resolution in that the licensee failed to take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance

Inspection Report# : [2008003](#) (*pdf*)

Significance:  Jun 30, 2008

Identified By: NRC

Item Type: FIN Finding

Failure to Implement Appropriate Design and Configuration Control for the Unit Polar Crane

A self-revealed finding of very low significance (Green) with no associated violation of regulatory requirements was identified for the failure to implement appropriate design and configuration control for the Unit 2 polar crane upgrade project, which resulted in issues associated with reliable operation of the polar crane during the first reactor vessel head lift. Specifically, a lack of configuration control on the crane radio system resulted in a loss of radio communications during the initial reactor vessel head lift over the reactor vessel head stand, which resulted in unreliable crane operation. The licensee implemented remedial corrective actions to address the design issues with the polar crane bridge drive motors which resulted in unavailability at the beginning of the outage and ensured the radio receivers were appropriately configured and installed. The licensee performed a root cause analysis to determine the cause of the design and configuration control issues associated with the polar crane and developed additional corrective actions to address this performance deficiency.

The finding is more than minor because it is associated with the design control attribute of the Initiating Events Cornerstone and affected the cornerstone objective to limit the likelihood of those 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 (Green) because the finding did not meet the criteria for a Phase 2 or Phase 3 Analysis, as specified in IMC 0609 Appendix G, Attachment 1, Checklist 1, "Pressurized Water Reactor Hot Shutdown Operation: Time to Core Boiling < 2 Hours." The inspectors did not identify a cross-cutting aspect associated with this finding.

Inspection Report# : [2008003](#) (*pdf*)

Significance:  Mar 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Take Prompt Corrective Actions for Recurring Cold Weather Issues

The inspectors identified a finding and associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," having very low safety significance (Green) for the licensee's failure to take prompt corrective actions to address recurring cold weather issues in the facade building which again occurred in January 2008. The failure to take prompt corrective actions led to the formation of ice on offsite power and plant equipment cable trays and cabling, which supplied offsite power to both Units' busses. The sheets of ice were also in proximity to the Unit 2 refueling water storage tank level indicators and outlet piping. The licensee initiated condition reports, took immediate corrective actions, and was performing a causal evaluation at the end of the inspection period.

The finding is more than minor because if left uncorrected the finding would become a more significant safety concern in that the formation of ice in the facade building in this case could have affected safety related equipment. Because the ice buildup in the Unit 2 facade was an external factor and transient initiator contributor that did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available, the finding is considered to be of very low safety significance (Green). This finding

has a cross-cutting aspect in the area of problem identification and resolution because the licensee did not take appropriate corrective actions in a timely manner, commensurate with their safety significance and complexity.

Inspection Report# : [2008002](#) (*pdf*)

Significance:  Dec 31, 2007

Identified By: NRC

Item Type: FIN Finding

Failure to Control Loose Materials Classified as Tornado Hazards

The inspectors identified a finding of very low safety significance with no associated violation of regulatory requirements for the licensee's failure to control loose materials in the protected area. Specifically, the inspectors identified materials that were classified as tornado hazards per station procedure PC 99 near the Unit 1 and Unit 2 main and auxiliary transformers and the switchyard boundary. Once notified, the licensee entered the issue into its corrective action program and removed the materials. In addition, a procedure change request was initiated to incorporate tornado hazard walkdowns into the abnormal operating procedure for severe weather response.

The finding is more than minor because if left uncorrected, the loose items would become a more significant safety concern. The finding is of very low safety significance (Green) because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. Additionally, the inspectors determined that the finding had a cross-cutting aspect in the area of problem identification and resolution in that the licensee failed to take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance and complexity (P.1(d)).

Inspection Report# : [2007005](#) (*pdf*)

Mitigating Systems

Significance:  Sep 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

10 CFR 50 , Appendix B, Criterion V NCV for the Failure to have Adequate Maintenance Procedures for Service Water Pump Replacements

. A finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed for the failure to properly rig and install the P-32E service water pump shaft on June 7, 2006. The bent pump shaft subsequently led to high pump vibrations and pump inoperability in excess of Technical Specification Action Condition completion time in February 2008. Specifically, the licensee determined that Routine Maintenance Procedure (RMP), RMP 9216-2, "Service Water Pump Removal, Installation, and Maintenance," lacked adequate installation and rigging instructions to ensure excessive force was not applied to the shaft during installation. As part of its corrective actions, the licensee revised the RMP to include proper installation and rigging instructions.

The finding was determined to be more than minor because the finding was associated with the Mitigating Systems Cornerstone attribute of equipment performance, and 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). 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," Tables 3b and 4a for the Mitigating Systems Cornerstone. The inspectors determined that the finding was of very low safety significance (Green) because the finding did not involve a design or qualification deficiency, there was no actual loss of safety function, no single train loss of safety function for greater than the technical specification allowed outage time, and no risk due to external events. The inspectors also determined that the finding has a cross-cutting aspect in the area of human performance, resources component, because licensee procedures were not complete or adequate to ensure that the P-32E pump shaft was rigged and installed without damage to the shaft.

Inspection Report# : [2008004](#) (*pdf*)

Significance:  Jul 25, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Equalizing Charge Voltage Not Bounded by Battery Room Hydrogen Generation Calculation

Green. A finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, ADesign Control,@ was identified by the team for the failure to ensure that the design limit established in a design basis calculation, used to determine SR batteries hydrogen generation rate, bounded the value used in a maintenance procedure for a safety related component. During the inspection, the licensee evaluated and determined that the effect of the higher hydrogen gas generation did not have an impact on the operability of the batteries and the ventilation system.

The finding was greater than minor because the lack of adequate design control process resulted in increase of hydrogen generation levels and in a reasonable doubt of operability of the 125Vdc system. The finding was determined to be of very low significance, because it was a design deficiency that did not result in actual loss of safety function. This finding does not have a cross-cutting aspect because it is not indicative of current performance.

Inspection Report# : [2008009](#) (*pdf*)

G

Significance: Jul 25, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Non-Conservative Design Basis for Primary Auxiliary Building Heat-up

• Green. A finding of very low safety significance and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, ADesign Control,@ was identified by the team for the failure to verify the accuracy of design using alternative or simplified calculational methods or by the performance of a suitable testing program. Specifically, the licensee used non-conservative field test data as a basis for the design temperatures given in the equipment qualification (EQ) manual for components in the Primary Auxiliary Building (PAB), resulting in specified design temperatures for some safety related components that may be as much as approximately 40 oF less than calculated worst case accident condition temperatures. The licensee re-evaluated the consequences of the higher temperatures and concluded the equipment remained operable.

The finding was determined to be more than minor because, if the EQ design temperatures were left uncorrected, this deficiency could lead to inadequately qualified replacement parts or inadequately designed plant modifications in the future. The finding was determined to be of very low significance because, by the end of the inspection, the

licensee was able to show that all affected components were capable of performing their safety related functions under the higher than previously anticipated temperatures. The team did not identify a cross-cutting aspect associated with this finding.

Inspection Report# : [2008009](#) (*pdf*)

G

Significance: Jul 25, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Ability to Transfer Fuel Oil between EDG Fuel Oil Tanks T-175A/B has not been demonstrated by Testing

• Green. A finding of very low safety significance and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, ATest Control,@ was identified by the team for the failure to test the components used for transfer of fuel oil between two underground storage tanks that support EDG operation. Specifically, the licensee has not demonstrated the transfer of fuel between tanks T-175A and T-175B as credited in the Technical Specification (TS) Basis and UFSAR. The licensee entered this issue into its corrective action and prepared to test these components.

This finding was determined to be more than minor because the failure to verify the transfer capability affected the ability to ensure emergency power availability for greater than two days. This finding was screened as very low safety significance because it was a deficiency that did not result in the loss of safety function. This finding does not have a cross-cutting aspect because it was not indicative of current performance.

Inspection Report# : [2008009](#) (*pdf*)

G

Significance: Jul 25, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

RHR Pump Suction Pressure Gages Repeatedly Found To Be Out Of Tolerance

A finding of very low safety significance and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion XII, AControl of Measuring and Test Equipment,@ was identified by the team for the failure to correct a known trend of out of tolerance (OOT) test pressure gauge which were used in a critical In Service Test (IST) Program performance test of the residual heat removal (RHR) pumps for Units 1 and 2. The licensee entered this issue into its corrective action and confirmed operability of the RHR pumps.

The finding was determined to be more than minor because, if left uncorrected, it could become a more significant safety concern. Specifically, since the cause of the high frequency OOT conditions for these pressure gauges has not been identified, it could be assumed that this instrumentation could be out of tolerance in a non-conservative manner. The finding was determined to be of very low significance because the comprehensive IST performance test conducted during the 2008 refueling outage showed that the actual test results were within the acceptable band, thereby confirming that operability and functionality of the RHR pumps had not been lost. This finding has a cross-cutting aspect in the area of Human Performance, Resources because the licensee did not ensure adequate resources were available to minimize long-standing equipment issues. (H.2(a))

Inspection Report# : [2008009](#) (*pdf*)

G

Significance: Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Address Sprinkler Head Obstructions in 'B' Train EDG Rooms

The inspectors identified a finding of very low safety significance (Green) and an associated Non-Cited Violation of License Condition 4.F for the failure to address fire suppression sprinkler head obstructions in the 'B' train emergency diesel generator (EDG) rooms. The inspectors identified that five sprinkler heads were obstructed in the 'B' train EDG rooms. National Fire Protection Association (NFPA) 13-1991, "Installation of Sprinkler Systems" was the applicable standard for sprinkler systems installed in the two rooms. The inspectors determined that failure to address sprinkler head obstructions was contrary to NFPA 13-1991 and was a performance deficiency.

The finding was more than minor because the failure to address sprinkler head obstructions was associated with the Mitigating Systems Cornerstone attribute of Protection Against External Factors (Fire) and affected the cornerstone objective of ensuring the capability of systems that respond to initiating events. Specifically, the identified obstructions to sprinkler heads would affect the sprinkler spray patterns and distribution thereby impacting the sprinkler systems capability to control a fire. In accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," and IMC 0609, Appendix F, "Fire Protection Significance Determination Process," the inspectors considered the finding to represent a moderate degradation of the water based suppression system for both rooms. As such, the inspectors performed a Phase 2 SDP. The inspectors concluded that potential fire scenarios associated with the finding were effectively FDS0 fire scenarios as described in Section 2.2 of IMC 609, Appendix F, and that the issue was of very low safety significance (i.e., Green). The inspectors did not identify a cross-cutting aspect associated with this finding.

Inspection Report# : [2008003](#) (*pdf*)



Significance: Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Adequately Manage Online Risk for Breaker 1A52-16C Work

The inspectors identified a finding of very low safety significance (Green) and an associated Non-Cited Violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," when the licensee failed to adequately manage the risk associated with work on the 480-VAC Breaker 1B52 16C, coincident with a large number of other out-of-service components, which resulted in an unplanned risk condition for Unit 1 without the appropriate risk management actions. Specifically, the licensee incorrectly assumed that planned work on Breaker 1B52 16C did not render the breaker unavailable, and that the breaker was not utilized in Modes 1, 2, or 3. Consequently, the component was not factored into the Safety Monitor online risk model. However, Breaker 1B52 16C was in fact unavailable and also utilized in abnormal operating procedures for Modes 1, 2 and 3. Therefore, unavailability of the breaker was required to have been factored into Safety Monitor with appropriate risk management actions taken. The licensee took corrective actions to perform an apparent cause evaluation that identified the apparent cause of the issue and recommended a number of corrective actions to address the procedural and human performance deficiencies that were identified.

The finding was greater than minor because the finding was based on incorrect assumptions that changed the outcome of the risk assessment. The inspectors evaluated this finding using the Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process" worksheets of Manual Chapter 0609 because the finding is a maintenance risk assessment issue. Flowchart 1, "Assessment of Risk Deficit," requires the inspectors to determine the risk deficit associated with this issue. This finding was determined to be of very low safety significance because the incremental core damage probability deficit was less than 1E 6. The inspectors also determined that the finding has a cross-cutting aspect in the area of human performance. Specifically, the licensee failed to use conservative assumptions in decision-making and adopt a requirement to demonstrate that the proposed action was safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action

Inspection Report# : [2008003](#) (*pdf*)



Significance: Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate procedures for DY-0C Inverter Maintenance

A self-revealing finding of very low safety significance (Green) and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for the failure to have appropriate maintenance procedures and work instructions in place to identify improperly installed components prior to the attempted restoration of the DY-0C white channel instrument inverter. Specifically, the routine maintenance procedure did not contain instructions to check for direct current (DC) grounds following maintenance and prior to restoration, which allowed a ground to go undetected and cause a number of unplanned Technical Specification Action Condition (TSAC) entries as well as the unplanned inoperability of the G 01 and G 02 EDGs and the 2PI 9046 Containment Pressure Indicator. At the end of the inspection period, the licensee continued to perform a causal evaluation and develop additional long term corrective actions.

The finding was more than minor because it is associated with the Procedure Quality attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors evaluated the finding using IMC 0609, Appendix A, Attachment 1, "Significance Determination of Reactor Inspection Findings for At-Power Situations," dated January 10, 2008. The inspectors determined that the finding was of very low safety significance (Green) because the finding did not involve a design or qualification deficiency, there was no actual loss of safety function, no single train loss of safety function for greater than the technical specification (TS) allowed outage time, and no risk due to external events. The inspectors also determined that the finding had a cross-cutting aspect in the area of human performance. Specifically, procedures were not complete or adequate to ensure that installation errors would be detected prior to restoration of the DY-0C

inverter

Inspection Report# : [2008003](#) (pdf)

G

Significance: Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedures for Reduced Inventory with an Intact Reactor Coolant System

The inspectors identified a finding of very low safety significance (Green) and an associated Non-Cited Violation of TS 5.4.1, "Procedures," for the failure to implement operations procedures to remain above the $\frac{3}{4}$ pipe level indications for draining the RCS while in reduced inventory. Specifically, during the second planned orange risk condition of the Unit 2 refueling outage to facilitate removal of the SG nozzle dams, operators drained the RCS below the procedurally required 22 percent level, as indicated by the most conservative reactor vessel level indication. The licensee took immediate corrective actions to address the issue and was performing a causal evaluation and developing corrective actions at the end of the assessment period.

The finding is more than minor because it is associated with the human performance attribute of the Mitigating Systems Cornerstone and 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). The finding is of very low safety significance (Green) because the finding did not meet the criteria for a Phase 2 or Phase 3 Analysis, as specified in IMC 0609 Appendix G, Attachment 1, Checklist 3, "PWR Cold Shutdown Operation RCS Open and Refueling Cavity Level <23' or RCS Closed and No Inventory in Pressurizer Time to Boiling < 2 hours." The inspectors also determined that the finding has a cross-cutting aspect in the area of human performance. Specifically, the licensee failed to use conservative assumptions in decision-making and adopt a requirement to demonstrate that the proposed action was safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action

Inspection Report# : [2008003](#) (pdf)

G

Significance: Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Maintain RCS within Procedurally Allowed level During Reduced Inventory

The inspectors identified a finding of very low safety significance (Green) and an associated Non-Cited Violation of TS 5.4.1, "Procedures," for the failure to protect all of the safety equipment necessary for safe shutdown while in reduced inventory with the reactor coolant system (RCS) intact. Specifically, the licensee failed to ensure that an auxiliary feedwater source and steam generator (SG) were available for decay heat removal when a reduced inventory condition was entered and the RCS was intact. The licensee's responses to Generic Letter 88-17, "Loss of Decay Heat Removal," indicated that the first drain of the RCS to reduced inventory following shutdown could be accomplished with the RCS intact and reflux cooling (with a SG and auxiliary feedwater source) as an alternate decay heat removal path. The licensee was performing a causal evaluation and developing corrective actions at the end of the assessment period.

The finding is more than minor because it is associated with the human performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance (Green) because the finding did not meet the criteria for a Phase 2 or Phase 3 Analysis, as specified in IMC 0609 Appendix G, Attachment 1, Checklist 3, "Pressurized-Water Reactor (PWR) Cold Shutdown Operation Reactor Coolant System (RCS) Open and Refueling Cavity Level <23' or RCS Closed and No Inventory in Pressurizer Time to Boiling < 2 hours." The inspectors also determined that the finding has a cross-cutting aspect in the area of human performance. Specifically, the licensee failed to ensure that procedures were adequate and accurate to assure nuclear safety

Inspection Report# : [2008003](#) (pdf)

G

Significance: Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Maintenance Procedure for Turbine-Driven Auxiliary Feedwater Pump 2P-29

The inspectors identified a finding of very low safety significance (Green) and a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to ensure that procedures associated with the maintenance of the turbine for the turbine-driven auxiliary feedwater pump were appropriate to the circumstances. Specifically, the licensee's maintenance procedures did not address the following significant issues: 1) proper application of sealant material used on turbine casing joints; 2) proper cure time of sealant material used on turbine casing joints; 3) prescribed methods for tightening of the oil deflector ring set screw was not discussed; and 4) acceptable clearances between the turbine shaft and the inner diameter of the oil deflector ring were not specified. The licensee took immediate corrective actions to address the issue, conducted a root cause evaluation, and developed corrective actions to address the root causes, contributing causes and extent of condition associated with this finding.

The finding was more than minor because it affected the Mitigating Systems attributes of equipment performance availability and reliability, and maintenance procedure quality, as well as the Mitigating Systems Cornerstone objective of ensuring the availability and reliability of systems. The inspectors determined this finding was not a design qualification deficiency resulting in a loss of function per Generic Letter 91-18, did not represent an actual loss of safety function of a system or train of equipment, and was not potentially risk-significant due to a seismic, fire, flooding, or severe weather initiating event. Therefore, the finding was considered to be of very low safety significance (Green).

The primary cause of this finding was related to a cross-cutting aspect in the area of human performance because the licensee failed to ensure that procedures were adequate and accurate to assure nuclear safety

Inspection Report# : [2008003](#) (*pdf*)

Significance:  Dec 31, 2007

Identified By: NRC

Item Type: FIN Finding

Failure to Adequately Assess Operability of Service Water Pump P-32C

A self-revealed finding with no associated violation of regulatory requirements was identified for an inadequate operability evaluation performed in June 2007 for service water pump P-32C. Specifically, the pump failed its inservice test (IST) on high vibrations after approximately six hours of operation, but the operability evaluation had concluded the pump vibrations would not reach the out-of-service limit until after 120 hours of continuous operation. Contributing to the unanticipated early failure was the use of non-conservative decision-making and the use of a non-conservative assumption in the pump's vibration prediction model. The licensee entered this issue into its corrective action program and P-32C was subsequently repaired and returned to service.

The finding is more than minor because it could reasonably be viewed as a precursor to a significant event. The finding is of very low safety significance (Green) because there was no design deficiency, no actual loss of safety function, no single train loss of safety function for greater than the Technical Specification (TS) allowed outage time, and no risk due to external events. Additionally, the inspectors determined that the finding had a cross-cutting aspect in the area of human performance. Specifically, the licensee failed to use conservative assumptions in decision-making affecting operability of safety-related equipment (H.1(b)).

Inspection Report# : [2007005](#) (*pdf*)

Significance:  Dec 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Perform Operability Evaluations for Turbine-Driven Auxiliary Feedwater Pump 2P-29

The inspectors identified a finding of very low safety significance (Green) and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to adequately assess operability of the Unit 2 2P-29 turbine-driven auxiliary feedwater (TDAFW) pump. The licensee failed to implement procedural requirements regarding the immediate assessment of operability on September 24 and September 27, 2007, for the increased water ingress into the turbine outboard bearing housing for the pump following maintenance activities. The licensee took corrective actions, which included performing an operability evaluation on November 1 when the next scheduled test again revealed higher than normal levels of water in the bearing oil. However, the inspectors continued to identify, in the subsequent revisions to the operability determination, that the licensee failed to utilize all the data available to assess pump operability. At the end of the inspection period, the licensee continued to evaluate the causes and corrective actions to address this finding.

The finding is more than minor because, if left uncorrected, the failure to properly assess operability would result in the TDAFW pump being degraded, and possibly inoperable for more than the allowed outage time in accordance with TSs with no action being taken. The finding is of very low safety significance (Green) because the inadequate operability determination did not result in exceeding the allowed outage time of TSs before action was taken. Additionally, the inspectors determined that the finding had a cross-cutting aspect in the area of human performance. Specifically, the licensee failed to use conservative assumptions in decision-making affecting operability of safety-related equipment (H.1(b)).

Inspection Report# : [2007005](#) (*pdf*)

Significance:  Dec 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Have Adequate Procedures for the Refueling Water Storage Tank

A self-revealed finding and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," were identified for the failure to have adequate procedures to allow operators to properly set the thermostat of the Unit 2 refueling water storage tank (RWST) heaters and to ensure the RWST was recirculated frequently enough for the temperature indicator to accurately measure bulk temperature. On September 18, 2007, the Unit 2 RWST was found to be at 105 °F. This temperature exceeded the TS-maximum allowable limit of 100 °F (97 °F parametric) and could not be restored to acceptable limits before the eight-hour TS action statement expired. As a result, a shutdown of Unit 2 was commenced. At 20 percent power, a return to full power began after the RWST temperature was restored to within acceptable limits. It was later identified that the undesired heat-up was caused by the incorrect setting of the controlling thermostat for the RWST heaters.

The finding is more than minor because it is associated with the procedure quality and human performance attributes of the Mitigating Systems Cornerstone and 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). The finding is of very low safety significance (Green) because the elevated temperature of the RWST and subsequent shutdown sequence did not contribute to both the likelihood of a reactor trip and the

likelihood that mitigation equipment or functions would not be available. Additionally, the inspectors determined that the finding had a cross-cutting aspect in the area of human performance. Specifically, human error prevention techniques were not utilized prior to and during the thermostat setting task and personnel proceeded in the face of uncertainty and unexpected circumstances (H.4(a)).

Inspection Report# : [2007005](#) (*pdf*)

G

Significance: Dec 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Perform Adequate Post-Maintenance Testing for the Turbine-Driven Auxiliary Feedwater Pumps

The inspectors identified a finding of very low safety significance and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to conduct adequate post-maintenance testing of the Unit 1 1P-29 turbine-driven auxiliary feedwater (TDAFW) pump following a ten-year overhaul of the turbine in May 2007. Specifically, the ten-year overhaul maintenance included bearing replacement, but the TDAFW pump was not run long enough during testing for bearing temperature to stabilize. The appropriate post-maintenance test would have detected that the bearing temperatures were rising and required evaluation prior to declaring the TDAFW pump operable. The licensee entered the issue into its corrective action program and took immediate corrective actions. Additionally, the licensee initiated changes to the inadequate procedures.

The finding is more than minor because, if left uncorrected, the issue would have become a more significant safety concern. The inspectors determined this finding was not a design qualification deficiency resulting in a loss of function per NRC Generic Letter 91-18, did not represent an actual loss of safety function of a system or train of equipment, and was not potentially risk-significant due to a seismic, fire, flooding, or severe weather initiating event. Therefore, the finding is considered to be of very low safety significance (Green). Additionally, the inspectors determined that the finding had a cross-cutting aspect in the area of human performance. Specifically, the licensee failed to ensure that procedures were adequate and accurate to assure nuclear safety (H.2(c)).

Inspection Report# : [2007005](#) (*pdf*)

G

Significance: Dec 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Adequately Evaluate a Condition Adverse to Quality Associated with Turbine-Driven Auxiliary Feedwater Pump 2P-29

The inspectors identified a finding of very low safety significance and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to implement prompt corrective actions for the degraded oil conditions initially identified with the Unit 2 2P-29 turbine-driven auxiliary feedwater (TDAFW) pump on September 24, 2007, following maintenance. Following an additional oil sample with favorable results, the licensee incorrectly concluded, due to confirmational biases, that the high water content of the first oil sample was an expected condition. The licensee wrote a condition report, but it was closed with no actions taken. In November 2007, the licensee identified that a significant degraded oil condition existed with the pump. The licensee entered the issue into its corrective action program and took immediate corrective actions, including rebuilding the pump turbine. The licensee continued to evaluate the causes and corrective actions to address this finding at the end of the inspection period.

The finding is more than minor because it could reasonably be viewed as a precursor to a significant event. Specifically, the failure to correct the cause of the oil degradation in a timely manner in September 2007 could have resulted in the failure of the 2P-29 TDAFW pump. The finding is of very low safety significance (Green) because there was no design deficiency, no actual loss of safety function, no single train loss of safety function for greater than the TS allowed outage time, and no risk due to external events. Additionally, the inspectors determined that the finding had a cross-cutting area aspect in the area of problem identification and resolution. Specifically, the licensee failed to thoroughly evaluate the problem with water ingress into the oil, such that a resolution addressed the cause and extent of condition (P.1(c)).

Inspection Report# : [2007005](#) (*pdf*)

G

Significance: Dec 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Provide Adequate Guidance to Ensure the Operability of the Main Steam System During a Steam Generator Tube Rupture

The inspectors identified a Non-Cited Violation (NCV) of Technical Specification 5.4, "Procedures," for the failure to have adequate procedures to ensure the continued operation of the steam dumps to the condenser to maintain a Reactor Coolant System (RCS) cooldown during a Steam Generator Tube Rupture (SGTR) event. Specifically, the procedures permitted the operators to lock in a Safety Injection (SI) signal and then reset SI more than once, which could cause an automatic closure of the Main Steam Isolation Valves (MSIVs) and a loss of steam dump to the condenser, which could result in a delay in terminating the Primary-To-Secondary Leakage. The licensee has initiated procedure change requests to the SGTR emergency operating procedures as a corrective action for this finding.

This finding was more than minor because it was associated with the attribute of procedure quality, which affected the mitigating systems cornerstone objective of ensuring the availability and reliability of the Main Steam (MS) system to respond to initiating events to prevent undesirable consequences. Steam dump to the condenser is the preferred means of cooling the RCS during a SGTR because it minimizes

radiological releases, conserves feedwater, and provides the most rapid cooldown capability. The finding is of very low safety significance based on the results of the SDP Phase 1 screening worksheet. The inspectors concluded that this finding was cross-cutting in the area of human performance, resources (H.2(c)), in that the licensee failed to have complete, accurate, and up-to-date procedures for the response to a SGTR event. This item was described in NRC Inspection Report 2007301, dated August 21, 2007, as Item Numbers 05000266/2007301-01 and 05000301/2007301-01.

Inspection Report# : [2007005](#) (*pdf*)

G

Significance: Dec 14, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Incorrect Factor of Safety Specified in Design Evaluation of Unit 1 SGBD HX Platform

The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," that was of very low safety significance involving a calculation that designed the Unit 1 Steam Generator Blowdown (SGBD) Heat Exchanger (HX) Platform to withstand a load from a postulated pipe whip of the condensate return line resulting from a High-Energy Line Break (HELB). The load from a postulated pipe whip applied to the platform was evaluated in calculation PBNP-994-10-S01, "SGBD HX Platform Mod. For Addition of Pipe Rupture Restraint for Condensate Return Line" which was approved on April 28, 2007. As a result of this calculation, the design function of the Unit 1 SGBD HX Platform was revised to hold and maintain the steam generator blowdown heat exchangers and condensate return line in position and assure that the platform did not fall onto the safety related Refueling Water Storage Tank (RWST) during a safe shutdown earthquake and a HELB simultaneously. Specifically, the licensee failed to correctly use the original design anchor bolt safety factor in the supporting calculation. This issue was entered into the licensee's corrective action program as condition report CAP 1118144.

The issue was more than minor because the calculation error would be expected to necessitate extensive calculation rework and possibly a modification in order to demonstrate that the platform meets design acceptance limits commensurate with those applied to original design. The finding screened as having very low safety significance (Green) because the inspectors answered "yes" to question 1 under the Mitigating Systems Cornerstone column of the Phase 1 worksheet. Specifically, the platform remained "operable but degraded". The cause of the finding was related to the cross-cutting element in Human Performance, Work Practices because the licensee did not ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported (item H.4(c) of IMC 0305). The licensee had failed to correctly use the original design anchor bolt safety factor in all three revisions of the design basis calculation.

Inspection Report# : [2007007](#) (*pdf*)

Barrier Integrity

G

Significance: Sep 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

10 CFR 50, Appendix B Criterion V NCV for the Failure to Follow Procedures for Use of the Containment Hatch Doors

A finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self revealed for the failure to follow system operating procedure requirements to visually inspect and remove debris from the Unit 1 lower containment airlock door sealing surface upon exit from the airlock, which resulted in the failure of the airlock to meet its post maintenance testing acceptance criteria on September 9, 2008. As part of its corrective actions, the licensee reinforced with the hatch operators the procedural requirements.

The finding was determined to be more than minor because the finding was associated with the Barrier Integrity Cornerstone attribute of human performance and affected the cornerstone objective of providing reasonable assurance that physical design barriers, such as containment, protect the public from radionuclide releases caused by accidents or events. 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 Barrier Integrity Cornerstone. The inspectors determined that the finding was of very low safety significance because all of the questions in the containment barrier column of Table 4a were answered NO. The inspectors also determined that this finding has a cross-cutting aspect in the area of human performance, work practices component, because personnel did not follow procedures.

Inspection Report# : [2008004](#) (*pdf*)

G

Significance: Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Maintain Control of Containment Penetration Status

The inspectors identified a finding of very low safety significance (Green) and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to maintain adequate control over the status of containment penetrations

during the Unit 2 core reload evolution. Specifically, the licensee failed to adequately track the open and closed status of two isolation valves, such that, an unexpected pathway from containment to the atmosphere existed. The containment closure checklist indicated that the valves were closed and secured; however, they were in fact open during a period of fuel movement inside containment. At the end of the inspection period, the licensee continued to perform a causal evaluation and develop additional long term corrective actions.

The finding was more than minor because the failure to maintain the accuracy of the containment closure checklist affected the Barrier Integrity Cornerstone attribute of Configuration Control and affected the cornerstone objective of providing reasonable assurance that physical design barriers, such as containment, protect the public from radionuclide releases caused by accidents. Specifically, in the event of a fuel handling accident inside containment, the unknown position of these two vent valves could have resulted in the inability to restore containment closure in a timely manor. In accordance with IMC 0609, App G, "Shutdown Operations Significance Determination Process," the inspectors determined that the finding was of very low safety significance (Green) because at the time that the open pathway existed, the fuel being reloaded into the core had not recently (within the previous 65 hours) been irradiated in a critical core, and because of the relatively small diameter of the pathway. Additionally, the inspectors determined that the finding had a cross-cutting aspect in the area of human performance in that the licensee failed to use conservative assumptions in decision making

Inspection Report# : [2008003](#) (*pdf*)

G

Significance: Mar 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Take Prompt Corrective Actions for Conditions Adverse to Quality Associated with the PAB Crane

The inspectors identified a finding of very low safety significance (Green) and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to implement prompt corrective actions for the degraded conditions initially identified with the single failure proof primary auxiliary building crane by maintenance personnel on January 17, 2008. As a result, on March 4, while a new fuel storage canister was being lowered in a laydown area after traversing the width of the spent fuel pool, the crane failed to the safe position with the load suspended approximately one foot off the floor. In a review of work order and corrective action history, the inspectors determined that all of the degraded conditions from January were not corrected during maintenance on February 21. The licensee entered the issue into its corrective action program and took immediate corrective actions, including repair of the crane. The licensee continued to evaluate the causes and corrective actions to address this finding at the end of the inspection period.

The finding is more than minor because it could reasonably be viewed as a precursor to a significant event. Specifically, the failure to correct the degraded condition of the primary auxiliary building crane resulted in the failure of the single failure proof crane while in use to move loads over the spent fuel pool. The finding affected the Barrier Integrity Cornerstone and is of very low safety significance (Green) because this spent fuel pool issue did not result in the loss of spent fuel pool cooling, did not result in damage to fuel clad integrity in the spent fuel pool, and did not result in a loss of spent fuel pool inventory. This finding has a cross cutting aspect in the area of problem identification and resolution because the licensee did not take appropriate corrective actions in a timely manner, commensurate with their safety significance and complexity.

Inspection Report# : [2008002](#) (*pdf*)

G

Significance: Mar 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Piping Anchor Design not in Conformance with Design Basis Code Requirements

The inspectors identified a finding of very low safety significance (Green) and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to evaluate service water piping to pipe anchor integral welded attachments in conformance with the design requirements of the design basis American Society of Mechanical Engineers Boiler and Pressure Vessel Code. The licensee entered this issue into its corrective action program.

This finding is more than minor because it's associated with the design control attribute of the Barrier Integrity Cornerstone and affected the cornerstone objective to maintain the structural integrity of the service water system, structures, and components and the operational capability of the containment fan coolers. The finding was of very low safety significance (Green) based on a Phase 1 screening in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," and Appendix H, "Containment Integrity Significance Determination Process," because pressurized water reactor containment fan coolers impact late containment failure and source terms, but not large early release frequency. There was not a cross-cutting aspect to this finding.

Inspection Report# : [2008002](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

G

Significance: Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Perform Adequate Total Effective Dose Equivalent ALARA Evaluations

The inspectors identified a finding of very low safety significance and an associated Non-Cited Violation of 10 CFR 20.1501 for the failure to perform an adequate survey (evaluation) to determine the use of respiratory protection equipment and/or engineering controls so as to maintain the total effective dose equivalent (TEDE) As-Low-As-Is-Reasonably-Achievable (ALARA). Specifically, TEDE ALARA evaluations completed in April 2008 prior to SG maintenance and maintenance support activities did not adequately assess the planned use of engineering controls to reduce the concentration of radioactive material in air. As a result, respirators were specified to be used when not warranted. As corrective actions, the licensee planned to reevaluate its TEDE ALARA evaluations for pending SG work activities, planned to develop a procedure specific to the performance of these evaluations, and was considering the need for supervisory or health physics staff review of these evaluations. The licensee entered the issue into its corrective action program as action request (AR) 01125284.

The finding is more than minor because it impacted the program and process attribute of the Occupational Radiation Safety Cornerstone and potentially affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that not performing adequate evaluations to determine the use of respiratory protection equipment consistent with the engineering controls for the work would result in additional dose to workers. The finding was determined to be of very low safety significance because it was not an ALARA planning issue, there was no overexposure nor potential for overexposure, and the licensee's ability to assess dose was not compromised. The finding was determined to have a cross-cutting aspect in the resource component of the Human Performance area, because procedures were not adequate to ensure that TEDE ALARA evaluations were performed properly
Inspection Report# : [2008003](#) (*pdf*)

Public Radiation Safety

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

Significance: SL-IV Jul 25, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Perform a 10 CFR 50.59 Evaluation for Changes to SI System Valve Back-Seating Procedures

• Severity Level IV. The inspectors identified a Severity Level IV NCV, having very low safety significance, of 10 CFR 50.59, AChanges, Tests, and Experiments@, for the licensee=s failure to provide documented basis for determining that changes to procedures did not require prior NRC approval. Specifically, the licensee incorrectly concluded that a 10 CFR 50.59 screening was not required when procedures were revised to eliminate the practice of back-seating normally open gate/globe valves even though the UFSAR stated that normally open gate/globe valves in the Safety Injection (SI) system are back-seated to limit valve stem leakage.

The finding was determined to be more than minor because the team could not reasonably determine that the change to the plant procedure which had removed a barrier to release radioactivity into the PAB would not have ultimately required NRC prior approval. The finding was determined to be of very low safety significance because it only represented a degradation of the radiological barrier function provided for the auxiliary building. This finding has a cross-cutting aspect in the area of Human Performance, Decision Making, because during performance of the 10 CFR 50.59 applicability determination for a procedural change, in March 2008, the licensee made an inappropriate decision by failing to require a screen or full 50.59 evaluation. (H.1.(a)).

Inspection Report# : [2008009](#) (*pdf*)

G

Significance: Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Ensure Completion of New Supervisory Training

The inspectors identified a Non-Cited Violation (NCV) of Confirmatory Order EA 06-178 having very low safety significance (Green) for the licensee's failure to ensure that new employees holding supervisory positions and higher were trained on safety conscious work environment (SCWE) principles within nine months of their hire dates, unless they have had the same or equivalent SCWE training within the previous two years of the hire dates. Specifically, the inspectors identified that four new employees holding supervisory positions for greater than nine months of their hire dates as supervisors, had not received SCWE training, nor the same or equivalent training within the previous two years. At the end of the inspection period, the licensee was performing a causal analysis and developing corrective actions to address the issues identified by the inspectors.

The inspectors concluded that the finding is more than minor because if left uncorrected the finding would become a more significant safety concern. The finding would have been greater than very low significance had an action by the new supervisor resulted in a violation of 10 CFR Part 50.7 against an employee. The finding is not suitable for Significance Determination Process evaluation, but has been reviewed by NRC management and is determined to be a finding of very low safety significance. The inspectors determined that the finding had a cross-cutting area aspect in the area of human performance. Specifically, the licensee failed to ensure that supervisory and management oversight of the Confirmatory Order actions, such that nuclear safety was supported

Inspection Report# : [2008003](#) (*pdf*)



Significance: Jun 30, 2008

Identified By: NRC

Item Type: FIN Finding

Inadequate Corrective Actions to Address Licensee Action Plans

The inspectors identified a finding of very low safety significance (Green) for the failure to take timely and effective corrective actions to address four of the nine nuclear safety culture action plans and the quick hitter plans. Specifically, the licensee developed the action plans and quick hitter plans in response to the Confirmatory Order in the first quarter of 2007, to correct long standing safety culture issues identified by the licensee's comprehensive safety culture assessments conducted in 2004 and 2006. At the end of the inspection period, the licensee was performing a causal analysis and developing corrective actions to address the issues identified by the inspectors.

The finding is more than minor because if left uncorrected the finding would become a more significant safety concern. The finding would have been greater than very low significance had the failure to take corrective actions resulted in a more safety significant issue as a result of the incomplete action plans. The finding is not suitable for Significance Determination Process evaluation, but has been reviewed by NRC management and is determined to be a finding of very low safety significance. The inspectors determined that the finding had a cross-cutting area aspect in the area of problem identification and resolution. Specifically, the licensee failed to take appropriate corrective actions to address safety issues in a timely manner, commensurate with their safety significance and complexity

Inspection Report# : [2008003](#) (*pdf*)

Significance: SL-IV Dec 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate 10 CFR 72.48 Screening to Evaluate Possible Thermal Effects on Fuel Cladding

The inspectors identified a finding of very low safety significance and an associated Non-Cited Violation of 10 CFR 72.48(c)(1) for the licensee's failure to obtain a Certificate of Compliance (CoC) amendment pursuant to 10 CFR 72.244, for changes made in the spent fuel storage cask operating procedures during the 2004 loading campaign as described in the Final Safety Analysis Report. The procedure changes constituted a change in the terms, conditions, or specifications incorporated in the CoC. Although the procedures were contained in the Final Safety Analysis Report, the licensee failed to identify that TS 1.2.17a, "32PT Dry Storage Canister (DSC) Vacuum Drying Duration Limit," was also affected by the procedure change and required prior NRC approval. The licensee implemented corrective actions, which included revising the loading procedure to reflect the sequence described in the FSAR prior to the next cask loading campaign.

This finding is more than minor because it had the potential to impact the NRC's ability to perform its regulatory function, since the licensee failed to receive NRC approval for a change in this licensed activity. The inspectors determined that the finding was not suitable for SDP evaluation because the noncompliance involved 10 CFR Part 72 dry fuel storage activities. Therefore, this finding was reviewed by regional management and dispositioned using traditional enforcement. The finding was determined to be of very low safety significance.

Inspection Report# : [2007005](#) (*pdf*)

Significance: N/A Dec 31, 2006

Identified By: NRC

Item Type: AV Apparent Violation

NRC to Review Items in Confirmatory Order Dated January 3, 2007, for Employment Discrimination Settlement.

In a letter dated January 3, 2007 (ADAMS Accession Number ML063630336), the NRC issued a Confirmatory Order to the licensee as part of a settlement agreement through the NRC's Alternative Dispute Resolution (ADR) process. The NRC investigated an alleged violation of 10 CFR 50.7, "Employee Protection," to determine whether a senior reactor operator was the subject of retaliation for raising a nuclear safety concern in the licensee's corrective action program. This issue was resolved through the NRC's ADR program and will be tracked as Apparent Violation (AV) 05000266/2006013-05; 05000301/2006013-05 pending NRC review of the licensee's completion of items specified in the Confirmatory Order.

NOTE: All of the specific items from this AV are also tracked as ORDER items in RPS/IR.

Inspection Report# : [2006013](#) (*pdf*)

Inspection Report# : [2008003](#) (*pdf*)

Last modified : November 26, 2008