

## Davis-Besse 2Q/2003 Plant Inspection Findings

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### Initiating Events

**Significance:**  Jun 30, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

#### **FAILURE TO PROPERLY IMPLEMENT SYSTEM PROCEDURES DURING THE FILLING OF THE CIRCULATING WATER SYSTEM**

A self-revealing Non-Cited Violation of Technical Specification 6.8.1.a was identified for failing to properly implement system procedures during the filling of the circulating water system. Since three drain valves were improperly left open during the fill, approximately three inches of water flooded the 565' elevation of the turbine building. The finding is greater than minor because it: (1) involves the configuration control attribute of the Initiating Event Cornerstone; and (2) affects the cornerstone objective of limiting 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 because the event was terminated prior to actual loss of a equipment important to plant safety.

Inspection Report# : [2003015\(pdf\)](#)

**Significance:**  Mar 31, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

#### **FAILURE TO IMPLEMENT PROCEDURES WHICH CONTROLLED THE FABRICATION AND INSTALLATION OF TEMPORARY MODIFICATIONS IN SAFETY RELATED SYSTEMS**

The inspectors identified a non-cited violation of Technical Specification 6.8.1.a, which resulted in the failure of the CAC 2 service water PVC jumper. This failure was a direct result of the licensee not properly controlling the installation of the Poly-vinyl Chloride (PVC) jumper in accordance with the requirements of their "Control of Temporary Modifications" procedure. The inspectors determined that the finding is more than minor because it: (1) involves the configuration control attribute of the Initiating Events cornerstone; and (2) affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. Since the performance issue did not directly affect Core Heat Removal, Inventory Control, Power Availability, Containment Control, or Reactivity Control, the issue was considered to be of very low safety significance.

Inspection Report# : [2003004\(pdf\)](#)

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### Mitigating Systems

**Significance:**  Jun 30, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

### **FAILURE TO PROVIDE ADEQUATE PROCEDURAL GUIDANCE FOR TIGHTENING FASTENERS INTERNAL TO THE HIGH PRESSURE INJECTION PUMP**

A self-revealing Non-Cited Violation of Technical Specification 6.8.1.a was identified for failing to provide adequate procedural guidance for tightening fasteners internal to the high pressure injection pump. As a direct result, five socket head cap screws, located near the discharge of the pump, failed during pump testing. The finding is greater than minor because it: (1) involves the procedure quality attribute of the Mitigating System cornerstone; and (2) affects the cornerstone objective of ensuring the availability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance because no actual loss of a safety function occurred due to the failure of the cap screws.

Inspection Report# : [2003015\(pdf\)](#)

**Significance:**  Jun 30, 2003

Identified By: NRC

Item Type: AV Apparent Violation

### **FAILURE TO EFFECTIELY IMPLEMENT CORRECTIVE ACTIONS FOR DESIGN CONTROL ISSUES RELATED TO DEFICIENT CONTAINMENT COATINGS, UNCONTROLLED FIBROUS MATERIAL AND OTHER DEBRIS**

An Apparent Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the failure to promptly identify and correct significant conditions adverse to quality regarding the implementation of corrective actions for design control issues related to deficient containment coatings, uncontrolled fibrous material and other debris. This impacted the ability of the emergency core cooling system sump to perform its function under certain accident scenarios due to clogging of the sump screen by unqualified coatings, fibrous materials, and various other debris. The issue is more than minor because the failure to implement appropriate corrective actions resulted in an actual loss of safety function of the ECCS system. The significance determination evaluation for this finding is documented in this report.

Inspection Report# : [2003015\(pdf\)](#)

**Significance:**  May 17, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

### **INADVERTENT OPERATION OF DH7A AND DH7B CAUSED BY INADEQUATE SFAS COMPONENT TESTING PROCEDURE**

A Green self-revealing non-cited violation of Technical Specification 6.8.1.a was identified for inadequate component restoration instructions contained in DB-SC-03122, "SFAS Component Testing Procedure," Revision 01. This resulted in the inadvertent operation, on separate occasions, of Borated Water Storage Tank Outlet Valves DH7A and DH7B during Safety Feature Actuation System (SFAS) individual component testing restoration activities for Core Flooding Tank to Sampling System Valve CF1545 and Nitrogen System to Containment Isolation Valve NN236. The finding is more than minor because it could be viewed as a precursor to a more significant event. In other circumstances, the inadvertent opening of the valve could result in a condition adverse to safety, including flooding of the ECCS rooms. In this case, due to the plant configuration, there was no adverse impact on the plant. The finding is of very low safety significance because no actual loss of a safety function occurred.

Inspection Report# : [2003013\(pdf\)](#)

**Significance:**  May 17, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

### **INADEQUATELY IMPLEMENTATION PROCEDURE NS-MD-01023 (MATERIAL ENGINEERING**

**EVALUATION) DURING THE PROCUREMENT EFFORTS FOR REPLACEMENT SFAS ELAYS**

An NRC identified non-cited violation of 10 CFR 50, Appendix B, Criterion V, was identified for the failure to properly implement procedures required for performing equivalency evaluations for components being replaced in safety related equipment. This resulted in the installation of relays into the Safety Features Actuation System (SFAS) cabinets that were not electrically rated for their specific application. The inspectors concluded that the finding is more than minor because, if left uncorrected the finding would become a more significant safety concern. By procuring and installing relays into the SFAS cabinets that were not electrically rated for that particular application, if left uncorrected, there was no reasonable assurance that the SFAS would have actuated required safety-related components when called upon. This finding is of very low safety significance because no actual loss of a safety function occurred. Even though SFAS was placed in service (shutdown bypass switches taken out of bypass), the impact to plant risk was negligible due to the fact that, at no time when the incorrect relays were installed, was the SFAS required to be operable to support the operating Mode of the plant.

Inspection Report# : [2003013\(pdf\)](#)

**Significance:**  May 17, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO PROPERLY IMPLEMENT WORK INSTRUCTIONS DURING THE REINSTALLATION OF ELECTRICAL CONDUIT AND THE ELECTRICAL TERMINATION OF OPERATING POWER AND INDICATION POWER TO RC4608A AND RC4608B (LOOP 1)**

A self-revealing non-cited violation of Technical Specification 6.8.1.a was identified for the failure to properly implement work instructions during the reinstallation of electrical conduit and the electrical termination of operating power and indication power to Loop 1 Reactor Coolant System High Point Vent Valves RC4608A and RC4608B. This resulted in the electrical power for each valve being swapped. The finding is more than minor because it: (1) involved the configuration control attribute of the Mitigating System cornerstone; and (2) affected the cornerstone objective of ensuring the availability, and capability of systems that respond to initiating events to prevent undesirable consequences.

Inspection Report# : [2003013\(pdf\)](#)

**Significance:**  Apr 11, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO ADEQUATELY VERIFY THE ACCURACY OF ECCS DESIGN CALCULATIONS**

The inspector identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to adequately verify or check the accuracy of certain design calculations. Specifically, one calculation used an incorrect water volume for the core flood tank when determining minimum containment water level and another calculation failed to incorporate head loss terms for several components when determining the available net positive suction head for the low pressure injection and containment spray pumps. The inspector concluded that, if left uncorrected, this finding could have become a more significant safety concern. Specifically, lack of effective measures for verifying and checking the accuracy of design for safety-related structures, systems, or components (SSCs) could result in the failure to identify conditions that could render SSCs incapable of performing their safety function. However, the inspector concluded that this issue did not: (1) result in an increase in reactor coolant system (RCS) temperature or a loss of reactor coolant system inventory; (2) increase the likelihood of a loss of RCS inventory; (3) degrade the ability to terminate a leak path or add RCS inventory when needed; or (4) degrade the licensee's ability to recover decay heat removal once it was lost. Based on the screening criteria of IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process," the inspector determined that this issue did not require a quantitative shutdown risk assessment. Therefore this issue was determined to be of very low risk significance .

Inspection Report# : [2003006\(pdf\)](#)

**Significance:**  Nov 14, 2002

Identified By: NRC

Item Type: FIN Finding

**INADEQUATE IMPLEMENTATION OF THE CORRECTIVE ACTION PROCESS WHICH LED TO NOT IDENTIFYING A POTENTIALLY REPORTABLE ISSUE**

The inspectors identified numerous examples of the improper implementation of the licensee's corrective action program, in regards to evaluating and taking corrective actions for potentially reportable issues associated with the containment air coolers. This was a performance deficiency. This was considered a finding of more than minor safety significance because if left uncorrected it would become a more significant safety concern in that it could adversely impact the NRC in its effort to identify and resolve issues important to public safety. The inspectors determined that the issue was not a violation of regulatory requirements because formal operability and reportability evaluations had not yet been completed.

Inspection Report# : [2002017\(pdf\)](#)

**Significance:**  Nov 13, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

**Non-conservative TS value for 90 percent undervoltage relays**

The inspectors identified a Green finding that is being treated as an additional example of a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, Design Control, associated with assurance that applicable regulatory requirements and the design basis for structures, systems, and components were correctly translated into specifications, drawings, procedures, and instructions. Specifically, the inspectors determined that the TS allowable value for the 4160 VAC, 90-percent Degraded Voltage function as stated in TS Table 3.3-4 was non-conservative. This table established an allowable setpoint value of 3558 Volts for the 90 percent Degraded Voltage Relay at Davis-Besse Nuclear Plant. Licensee calculation C-EE-004.01-049 established an allowable value for Degraded Voltage at 90 percent of the nominal bus voltage of 4160 V, or 3744 V. The calculation determined this value based upon the minimum voltage value that motor operated valves (MOVs) require to successfully operate. Based upon voltage drop analysis of the Davis-Besse electrical distribution system, the calculation determined that 88.5 percent (3682 V) was the minimum acceptable short-term degraded voltage at the safety related 4160 V buses. The calculation allowed for uncertainties and established additional margin for future application against plant modifications and minor changes. Based upon the calculation, the analytical limit was determined to be 3690 V and the resulting allowable value was established as 3744 V

Inspection Report# : [2002014\(pdf\)](#)

**Significance:**  Nov 13, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

**No analytical basis for the setpoint to swap service water system discharge path**

The inspectors identified a Green finding that is being treated as an additional example of a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with assurance that applicable regulatory requirements and the design basis for structures, systems, and components were correctly translated into specifications, drawings, procedures, and instructions when licensee personnel could not find an analytical basis for the setpoint to swap service water system discharge path. The service water system discharges into one of four paths. Two of these paths (cooling tower makeup and the collection box) were not seismically qualified and provisions were made in the design of the system to automatically divert flow to the seismically qualified discharge lines (intake forebay and intake structure) in the event of obstruction of one of the non-seismic lines. The setpoint for the swapover is 50 psig. The inspectors asked licensee personnel for the calculational bases for this setpoint. Licensee personnel could not locate an

analysis. Not having an analytical basis is of concern for two reasons. First, the plant could have experienced a seismic event which did not fully obstruct the discharge path for service water such that pressure would have been slightly less than the 50 psig setpoint and flow would have been choked down. This extent of flow reduction should have previously been evaluated to demonstrate the ability of the service water system to provide sufficient cooling capability to survive a safe shutdown earthquake. Second, a passive failure causing a similar flow reduction as above could have gone undetected during an event which required design service water flow and design service water flow would not have been demonstrated to be available. A suitable analysis which demonstrates acceptability in these conditions was needed. The inspectors determined that the failure to have an analysis which demonstrates acceptability of conditions with service water discharge header pressure elevated higher than normal and up to the swapover setpoint could affect the design function of the service water system

Inspection Report# : [2002014\(pdf\)](#)

G

**Significance:** Nov 13, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate corrective actions related to SW pump discharge check valve acceptance criteria**

The inspectors identified a Green, Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI when licensee personnel failed to take proper corrective action to correctly change the acceptance criterion for the inservice full flow test for the service water pump discharge check valves to a proper value when it was determined to be non-conservative. The ASME Code requires check valves to be tested to either the full open position or to the position required to perform their safety function. Prior to 2002, licensee personnel were testing the service water pump discharge check valves for their inservice test for the forward flow direction with an acceptance criterion which required system flow to exceed 9300 gpm to pass the test. An internal audit by Quality Assurance personnel noted that this acceptance criterion was non-conservative. As a result, the acceptance criterion was changed to 10,000 gpm in February 2002. The inspectors questioned licensee personnel about the basis for the acceptance criterion since in the USAR a design flow of 10,250 gpm was specified. Licensee personnel acknowledged the discrepancy and initiated condition report CR 02-07657 to address it. The explanation was that when licensee personnel made the initial change to the acceptance criterion for flow, they had not taken all available information into account when choosing the new setpoint. The inspectors determined that the failure to choose a proper acceptance criterion for the inservice full flow test for the service water pump discharge check valves could lead licensee personnel to accept test results which would not ensure that the check valve was capable of passing its safety function flow.

Inspection Report# : [2002014\(pdf\)](#)

G

**Significance:** Nov 13, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

**Non-conservative relay setpoint calculation for the 59 percent undervoltage relays**

The inspectors identified a Green finding that is being treated as an additional example of a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with assurance that applicable regulatory requirements and the design basis for structures, systems, and components were correctly translated into specifications, drawings, procedures, and instructions. Specifically, the inspectors identified that uncertainties associated with the 59 percent Undervoltage Relay TS allowable setpoint value were non-conservative. Based upon the as-left values and the tolerance band used in the calibration procedures for the relays, this allowed the relays to be calibrated to an upper band that, with the true uncertainties taken into account, allowed the TS upper setpoint to be exceeded.

Inspection Report# : [2002014\(pdf\)](#)

G

**Significance:** Nov 13, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

**Service Water surveillance test did not use worst case values**

The inspectors identified that the service water train valve test did not appear to demonstrate that worst-case post-accident conditions were bounded. Based on the team's questions, the licensee issued CR 02-07781 which provided a detailed discussion of the shortcomings of the procedure which included lack of trending, failure to declare the valve(s) inoperable

Inspection Report# : [2002014\(pdf\)](#)



**Significance:** Sep 30, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO DEVELOP AND USE PROCEDURES APPROPRIATE TO THE CIRCUMSTANCES WHEN ERECTING SCAFFOLDING IN THE EMERGENCY DIESEL GENERATOR ROOMS**

A finding of very low safety significance was identified in that the licensee had no procedural guidance to control the construction of scaffolding in a manner that would assure proper operation of ventilation for safety related equipment. During a post maintenance emergency diesel generator run on July 25, 2002, the EDG 2 Trouble Alarm was received due to high room temperature. Licensee investigation concluded that the scaffolding in the room restricted air circulation and produced the high temperature condition. The finding was more than minor because if left uncorrected, the lack of procedural guidance could impede the proper operation of ventilation systems for safety related equipment when the plant is not operating in Mode 6. The inspectors concluded that licensee procedure DB-MS-01637, "Scaffolding Erection and Removal," Revision 5, was not appropriate to the circumstances in that the procedure failed to consider the impact of scaffolding erection on ventilation system heat removal capability. The finding was of very low safety significance because there was no fuel in the reactor pressure vessel and no fuel movement was in progress. This was determined to be a Severity Level IV NCV of 10 CFR 50 Appendix B, Criterion V.

Inspection Report# : [2002010\(pdf\)](#)

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## Barrier Integrity



**Significance:** Jun 30, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO PERFORM WORK IN ACCORDANCE WITH APPROVED MAINTENANCE PROCEDURES DURING THE INSTALLATION OF REACTOR COOLANT PUMP MECHANICAL SEAL RTDs**

A self-revealing Non-Cited Violation of Technical Specification 6.8.1.a was identified for failing to perform work in accordance with approved maintenance procedures during the installation of reactor coolant pump mechanical seal RTDs. As a direct result, the RTD tubing nuts were not installed to a sufficient tightness to provide a leak tight joint at normal operating pressure. The finding is greater than minor because if left uncorrected, it would become a more significant safety concern. Investigation by the licensee revealed that the RTD tubing nuts were not installed to a sufficient tightness to provide a leak tight joint at normal operating pressure. The finding is of very low safety significance because the current operational Mode does not challenge the integrity of the RTD mechanical joints.

Inspection Report# : [2003015\(pdf\)](#)



**Significance:** Nov 13, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to perform TS surveillance requirement for HPI pump following maintenance**

The inspectors identified a Non-Cited Violation (NCV) of Technical Specification surveillance requirement 4.2.5.H, associated with failure to re-verify High Pressure Injection pump flow following modifications that could alter system flow characteristics. The inspectors' review of the HPI pump surveillances, design basis calculation, and the TS requirements determined that TS 4.5.2 H had not been implemented. The TS required verification that the HPI pump is capable of delivering a total of 750 gpm at 400 pounds per square inch gage (psig) at the Reactor Coolant System (RCS) nozzle "...following completions of modifications to the HPI ... subsystems that alter the subsystem flow characteristics..." Calculations and surveillance test procedures address flow rates of about 400 gpm (HPI pump flow test region). Thus, there were no tests or calculations to demonstrate that the HPI pumps complied with TS requirements. The inspectors questioned the licensee about this discrepancy. The licensee stated that the HPI self-assessment conducted in parallel with the team's inspection also identified this issue This finding was determined to be more than minor because it affected the mitigation systems cornerstone objective. This finding screened as Green in the SDP phase 1, since this issue was not an actual loss of a safety function. Because the finding was of very low safety significance, and was captured in the licensee's corrective action system this finding is being treated as an NCV consistent with Section VI.A.1 of the NRC Enforcement Policy (Section 1R21.3).

Inspection Report# : [2002014\(pdf\)](#)



**Significance:** Nov 13, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate blowdown provisions for CAC backup air accumulators**

The inspectors identified an example of a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, associated with inadequate blowdown provisions for Containment Air Cooler (CAC) backup air accumulators. This finding screened as Green in the SDP phase 1, since this issue did not represent an actual open pathway affecting the physical integrity of reactor containment. Because the finding was of very low safety significance, and was captured in the licensee's corrective action system, this finding is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy

Inspection Report# : [2002014\(pdf\)](#)



**Significance:** Nov 13, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

**Lack of a design basis analysis for containment isolation valve backup air supplies**

The inspectors identified an example of a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, associated with the lack of a design basis analysis for containment isolation valve backup air supply accumulators. This finding screened as Green in the SDP phase 1, since this issue did not represent an actual open pathway in the physical integrity of reactor containment. Because the finding was of very low safety significance, and was captured in the licensee's corrective action system this finding is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy

Inspection Report# : [2002014\(pdf\)](#)



**Significance:** Aug 09, 2002

Identified By: NRC

Item Type: FIN Finding

**FAILURE TO PROPERLY IMPLEMENT THE BORIC ACID CONTROL AND THE CORRECTIVE**

**ACTION PROGRAMS (EA 03-025)**

The performance deficiency was the licensee's failure to properly implement the boric acid control and the corrective action programs, which allowed reactor coolant system pressure boundary leakage to occur undetected for a prolonged period of time resulting in reactor pressure vessel head degradation and control rod drive nozzle circumferential cracking. The performance deficiency resulted in an increase in the risk of reactor core damage through a loss of coolant accident caused by either a rupture in the exposed cladding in the reactor pressure vessel head cavity or a control rod drive mechanism nozzle ejection due to a circumferential crack. The result of NRC's significance analysis of the as-found reactor pressure vessel head cavity and potential for larger cavity growth indicate that the significance is in the Red range (change in core damage frequency > 10<sup>-4</sup> per reactor-year). The result of NRC's significance analysis of the as-found circumferential crack and potential for crack growth indicate that the significance is in the Yellow to Red range (change in core damage frequency in the range of low 10<sup>-5</sup> to low 10<sup>-4</sup> per reactor-year). Consequently, the NRC has determined that the performance deficiency resulting in the reactor pressure vessel head degradation and control rod drive mechanism nozzle cracking has high safety significance in the Red range.

Inspection Report# : [2003016\(pdf\)](#)

**Significance:** TBD Aug 09, 2002

Identified By: NRC

Item Type: AV Apparent Violation

**REACTOR OPERATION WITH PRESSURE BOUNDARY LEAKAGE**

The inspectors identified an apparent violation of Technical Specification Limiting Condition for Operation for Reactor Coolant System Operational Leakage, paragraph 3.4.6.2, for operation of the plant with pressure boundary leakage from through-wall cracks in the reactor coolant system. The activities that resulted in this apparent violation are related to activities that resulted in the Red finding for the performance deficiency associated with the licensee's failure to properly implement the boric acid control and the corrective action programs (Inspection Report 50-346/2003-16). The significance for this apparent violation will be based on several factors including the results of the ongoing investigation by the NRC's Office of Investigations. The number and nature of the apparent violations in Inspection Report 50-346/2003-16 could change based on further NRC review. This apparent violation was originally discussed as Unresolved Item 50-346/2002-08-01 dated October 2, 2002.

Inspection Report# : [2003016\(pdf\)](#)

**Significance:** TBD Aug 09, 2002

Identified By: NRC

Item Type: AV Apparent Violation

**INADEQUATE BORIC ACID CORROSION CONTROL PROGRAM PROCEDURE**

The inspectors identified an apparent violation involving deficiencies in the licensee's Boric Acid Corrosion Control procedure, NG-EN-00324. This finding is more than minor because the corrosion of the reactor head and the resulting cavity represented a significant loss of the design basis barrier integrity. The activities that resulted in this apparent violation are related to activities that resulted in the Red finding for the performance deficiency associated with the licensee's failure to properly implement the boric acid control and the corrective action programs (Inspection Report 50-346/2003-16). The significance for this apparent violation will be based on several factors including the results of the ongoing investigation by the NRC's Office of Investigations. The number and nature of the apparent violations in Inspection Report 50-346/2003-16 could change based on further NRC review. This apparent violation was originally discussed as Unresolved Item 50-346/2002-08-07 dated October 2, 2002.

Inspection Report# : [2003016\(pdf\)](#)

**Significance:** TBD Aug 09, 2002

Identified By: NRC

Item Type: AV Apparent Violation

**CONTAINMENT AIR COOLER BORIC ACID DEPOSITS**

The inspectors identified an apparent violation involving failure to take adequate corrective action for recurrent accumulations of boric acid on containment air cooler (CAC) fins. These accumulations resulted in reduced heat

removal capability and reduced air flow through the cooler which was indicated by decreasing plenum pressure. This finding is more than minor because the corrosion of the reactor head and the resulting cavity represented a significant loss of the design basis barrier integrity. The activities that resulted in this apparent violation are related to activities that resulted in the Red finding for the performance deficiency associated with the licensee's failure to properly implement the boric acid control and the corrective action programs (Inspection Report 50-346/2003-16). The significance for this apparent violation will be based on several factors including the results of the ongoing investigation by the NRC's Office of Investigations. The number and nature of the apparent violations in Inspection Report 50-346/2003-16 could change based on further NRC review. This apparent violation was originally discussed as Unresolved Item 50-346/2002-08-03 dated October 2, 2002.

Inspection Report# : [2003016\(pdf\)](#)

**Significance: TBD** Aug 09, 2002

Identified By: NRC

Item Type: AV Apparent Violation

### **REACTOR VESSEL HEAD BORIC ACID DEPOSITS**

The inspectors identified an apparent violation involving failure to take adequate corrective action for a continuing buildup of boric acid deposits on the reactor head. This finding is more than minor because the corrosion of the reactor head and the resulting cavity represented a significant loss of the design basis barrier integrity. The activities that resulted in this apparent violation are related to activities that resulted in the Red finding for the performance deficiency associated with the licensee's failure to properly implement the boric acid control and the corrective action programs (Inspection Report 50-346/2003-16). The significance for this apparent violation will be based on several factors including the results of the ongoing investigation by the NRC's Office of Investigations. The number and nature of the apparent violations in Inspection Report 50-346/2003-16 could change based on further NRC review. This apparent violation was originally discussed as Unresolved Item 50-346/2002-08-02 dated October 2, 2002.

Inspection Report# : [2003016\(pdf\)](#)

**Significance: TBD** Aug 09, 2002

Identified By: NRC

Item Type: AV Apparent Violation

### **SERVICE STRUCTURE MODIFICATION DELAY**

The inspectors identified an apparent violation involving the failure to follow the corrective action procedure and take timely corrective action for a condition adverse to quality, in that the licensee failed to implement a modification to permit complete inspection and cleaning of the reactor vessel head and CRDM nozzles. This finding is more than minor because the corrosion of the reactor head and the resulting cavity represented a significant loss of the design basis barrier integrity. The activities that resulted in this apparent violation are related to activities that resulted in the Red finding for the performance deficiency associated with the licensee's failure to properly implement the boric acid control and the corrective action programs (Inspection Report 50-346/2003-16). The significance for this apparent violation will be based on several factors including the results of the ongoing investigation by the NRC's Office of Investigations. The number and nature of the apparent violations in Inspection Report 50-346/2003-16 could change based on further NRC review. This apparent violation was originally discussed as Unresolved Item 50-346/2002-08-05 dated October 2, 2002.

Inspection Report# : [2003016\(pdf\)](#)

**Significance: TBD** Aug 09, 2002

Identified By: NRC

Item Type: AV Apparent Violation

### **FAILURE TO FOLLOW CORRECTIVE ACTION PROGRAM PROCEDURE**

The inspectors identified an apparent violation involving two examples of failure to follow the station's corrective action program procedure. This finding is more than minor because the corrosion of the reactor head and the resulting cavity represented a significant loss of the design basis barrier integrity. The activities that resulted in this apparent violation are related to activities that resulted in the Red finding for the performance deficiency associated with the

licensee's failure to properly implement the boric acid control and the corrective action programs (Inspection Report 50-346/2003-16). The significance for this apparent violation will be based on several factors including the results of the ongoing investigation by the NRC's Office of Investigations. The number and nature of the apparent violations in Inspection Report 50-346/2003-16 could change based on further NRC review. This apparent violation was originally discussed as Unresolved Item 50-346/2002-08-09 dated October 2, 2002.

Inspection Report# : [2003016\(pdf\)](#)

**Significance: TBD** Aug 09, 2002

Identified By: NRC

Item Type: AV Apparent Violation

#### **REACTOR COOLANT SYSTEM UNIDENTIFIED LEAKAGE TREND**

The inspectors identified a finding involving failure to complete an identified corrective action for an adverse trend in RCS unidentified leakage. This finding is more than minor because the corrosion of the reactor head and the resulting cavity represented a significant loss of the design basis barrier integrity. The activities that resulted in this apparent violation are related to activities that resulted in the Red finding for the performance deficiency associated with the licensee's failure to properly implement the boric acid control and the corrective action programs (Inspection Report 50-346/2003-16). The significance for this apparent violation will be based on several factors including the results of the ongoing investigation by the NRC's Office of Investigations. The number and nature of the apparent violations in Inspection Report 50-346/2003-16 could change based on further NRC review. This apparent violation was originally discussed as Unresolved Item 50-346/2002-08-06 dated October 2, 2002.

Inspection Report# : [2003016\(pdf\)](#)

**Significance: TBD** Aug 09, 2002

Identified By: NRC

Item Type: AV Apparent Violation

#### **FAILURE TO FOLLOW BORIC ACID CORROSION CONTROL PROGRAM PROCEDURE**

The inspectors identified an apparent violation involving multiple examples of failure to follow the boric acid corrosion control procedure. This finding is more than minor because the corrosion of the reactor head and the resulting cavity represented a significant loss of the design basis barrier integrity. The activities that resulted in this apparent violation are related to activities that resulted in the Red finding for the performance deficiency associated with the licensee's failure to properly implement the boric acid control and the corrective action programs (Inspection Report 50-346/2003-16). The significance for this apparent violation will be based on several factors including the results of the ongoing investigation by the NRC's Office of Investigations. The number and nature of the apparent violations in Inspection Report 50-346/2003-16 could change based on further NRC review. This apparent violation was originally discussed as Unresolved Item 50-346/2002-08-08 dated October 2, 2002.

Inspection Report# : [2003016\(pdf\)](#)

**Significance: TBD** Aug 09, 2002

Identified By: NRC

Item Type: AV Apparent Violation

#### **RADIATION ELEMENT FILTERS**

The inspectors identified an apparent violation involving failure to take adequate corrective action for repeated clogging of radiation element filters although a sample of the filter deposits revealed iron oxides, radionuclides, and primary chemistry. This finding is more than minor because the corrosion of the reactor head and the resulting cavity represented a significant loss of the design basis barrier integrity. The activities that resulted in this apparent violation are related to activities that resulted in the Red finding for the performance deficiency associated with the licensee's failure to properly implement the boric acid control and the corrective action programs (Inspection Report 50-346/2003-16). The significance for this apparent violation will be based on several factors including the results of the ongoing investigation by the NRC's Office of Investigations. The number and nature of the apparent violations in Inspection Report 50-346/2003-16 could change based on further NRC review. This apparent violation was originally discussed as Unresolved Item 50-346/2002-08-04 dated October 2, 2002.

Inspection Report# : [2003016\(pdf\)](#)

**Significance:** TBD Aug 09, 2002

Identified By: NRC

Item Type: AV Apparent Violation

### **COMPLETENESS AND ACCURACY OF INFORMATION**

The inspectors identified an apparent violation of 10 CFR 50.9 involving multiple examples of information provided to the Commission or required by the Commission's regulations to be maintained by the licensee that were not complete and accurate. Completeness and accuracy in the documents associated with this issue would have provided an earlier alert to licensee staff and the USNRC about the problems with control rod drive mechanism nozzle leakage or may have caused the USNRC to establish a different regulatory position concerning the urgency of inspections for the reactor pressure vessel head. The activities that resulted in this apparent violation are related to activities that resulted in the Red finding for the performance deficiency associated with the licensee's failure to properly implement the boric acid control and the corrective action programs (Inspection Report 50-346/2003-16). The significance for this apparent violation will be based on several factors including the results of the ongoing investigation by the NRC's Office of Investigations. The number and nature of the apparent violations in Inspection Report 50-346/2003-16 could change based on further NRC review. This apparent violation was originally discussed as Unresolved Item 50-346/2002-08-010 dated October 2, 2002.

Inspection Report# : [2003016\(pdf\)](#)

**Significance:**  Aug 01, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to provide acceptance criteria or requirements to follow the inspection plans**

Green. Inspectors identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," in that, the licensee failed to provide acceptance criteria or requirements to follow the inspection plans used for the extent of condition inspections of systems in containment. This finding was considered to be more than minor because it had the potential to affect the barrier integrity cornerstone (procedure quality attribute). This finding, if left uncorrected, could have become a more significant safety concern in that, lack of acceptance criteria and plan adherence criteria could have resulted in the failure to detect degraded systems, structures and components within containment. Subsequently, the licensee implemented actions to revise inspection plans and procedures, incorporate acceptance criteria, and reperform the containment inspections. This finding was determined to be of very low risk significance .

Inspection Report# : [2002009\(pdf\)](#)

**Significance:**  Aug 01, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to adequately train personnel that were VT-2 certified**

Green. Inspectors identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," in that, the licensee failed to adequately train personnel for VT-2 certification to perform containment area extent of condition walkdowns. This finding was considered to be more than minor because, if left uncorrected, it could have become a more significant safety concern in that, use of improperly trained personnel could have resulted in the failure to detect degraded systems, structures, and components within containment. Subsequently, the licensee implemented actions to repeat these inspections using personnel trained and certified to a newly developed boric acid and corrosion control inspector training standard. This finding was determined to be of very low risk significance

Inspection Report# : [2002009\(pdf\)](#)

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## Emergency Preparedness

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## Occupational Radiation Safety

**Significance:**  Apr 30, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

### **Locked High Radiation Area access controls.**

Failure to properly control access (use flashing lights as a warning device) to certain locked high radiation areas (LHRAs) that are created adjacent to the fuel transfer chute during movement of irradiated fuel, as required by Technical Specifications.

Inspection Report# : [2003008\(pdf\)](#)

**Significance:**  Dec 28, 2002

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

### **FAILURE TO RESPOND TO DOSIMETER ALARMS**

A finding of very low safety significance was identified through self revealing events. On two separate occasions, workers in containment received dose rate alarms on their electronic dosimeters and did not take the actions required by procedure DB-HP-01901, "Radiation Work Permits" Revision 7, and Radiation Work Permit (RWP) 2002-5571. These documents state that radiation worker response requirements for a dose rate alarm are to place the work in a safe condition, exit the work area, and notify Radiation Protection personnel of the alarm. The finding was more than minor because if left uncorrected workers could receive a greater radiological exposure than was planned for, unnecessary exposure, and could lead to a performance indicator occurrence for unintended dose. The finding was of very low safety significance because the procedure violation was not an As Low As Is Reasonably Achievable issue, did not involve an overexposure, did not involve a substantial potential for an overexposure and did not compromise the licensee's ability to assess dose. The finding was therefore Green. The finding resulted from a violation of Technical Specification 6.8.1 which requires the implementation of radiation protection procedures.

Inspection Report# : [2002019\(pdf\)](#)

**Significance:**  Dec 13, 2002

Identified By: NRC

Item Type: VIO Violation

### **Failure to Take Timely and Suitable Measurements of Radioactive Material Which Led to a Compromised Ability to Assess Dose.**

The licensee failed to take timely and suitable measurements of radioactive material in the air, in workers' bodies, or excreted from the workers during and following the nozzle dam installations. The failure of the licensee to obtain and properly analyze representative air samples during the work activity and/or adequately conduct bioassay measurements so as to characterize the radiological intake is a violation of 10 CFR 20.1204. This issue has low to moderate safety significance (White) and represented a performance deficiency because the failure to determine the transuranic isotopes present in the steam generator prior to the job, to adequately determine the quantity of radionuclides in the workers' bodies until over 200 days after the event, and the failure to obtain representative air samples in the workers' breathing

zones all contributed to the compromised ability to assess dose.

Inspection Report# : [2002016\(pdf\)](#)



**Significance:** Dec 13, 2002

Identified By: NRC

Item Type: VIO Violation

### **Failure to Conduct an Adequate Radiological Evaluation Which Led to a Substantial Potential for Overexposure**

The licensee failed to conduct an adequate evaluation of the radiological hazards which led to inadequate job controls for steam generator nozzle dam installation. The failure to adequately evaluate the potential radiological hazards associated with nozzle dam installations is a violation of 10 CFR 20.1501, which requires licensees to conduct adequate evaluations to ensure compliance with the occupational exposure limits of 10 CFR 20.1201. This issue had low to moderate safety significance (White) and represented a performance deficiency because the licensee had several indicators of potentially degraded radiological conditions and had opportunities to identify and evaluate the radiological hazards present in the steam generator environment but failed to adequately do so prior to worker entries.

The failure to conduct an adequate evaluation resulted in a substantial potential for an overexposure.

Inspection Report# : [2002016\(pdf\)](#)

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## **Public Radiation Safety**



**Significance:** Dec 13, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to perform Adequate Surveys and Control Licensed Radioactive Material**

The licensee failed to conduct adequate surveys of the workers following their internal and external contamination during the steam generator nozzle dam installation job. The failure to perform adequate surveys of the workers is a violation of 10 CFR 20.1501 which requires licensees to conduct adequate evaluations to ensure compliance with the requirements for the control of licensed radioactive material as defined in 10 CFR 20.1802. This issue has been determined to have very low safety significance (Green). The issue represented a performance deficiency because the licensee had several opportunities to conduct adequate surveys of the workers prior to releasing them from the site. The failure to conduct an adequate evaluation resulted in the uncontrolled transport of radioactive material offsite and into the public domain.

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

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## **Physical Protection**

## **Miscellaneous**



**Significance:** Nov 14, 2002

Identified By: NRC

Item Type: FIN Finding

**10 CFR 50.70(b)(4) DEFICIENCY**

The inspectors observed a licensee employee warning two other licensee employees about the presence of NRC inspectors. This was a licensee performance deficiency in that 10 CFR 50.70(b)(4) requires, in part, that "the arrival and presence of the NRC inspector is not announced or otherwise communicated by its employees or contractors to other persons at the facility unless specifically requested by the NRC inspector." This was considered a finding of more than minor safety significance because if left uncorrected, it would become a more significant safety concern in that the NRC's ability to carry out its statutory mission would be impeded. The inspectors determined that this issue was not a violation of 10 CFR 50.70(b)(4) because the warning by the licensee employee was not widespread nor a significant intentional violation of the rule per the 10 CFR Part 50 Statement of Considerations. The inspectors concluded that this was a finding of very low safety significance (Green) that was not suited for analysis by the significance determination process.

Inspection Report# : [2002017\(pdf\)](#)

**Significance: SL-IV** Dec 31, 2001

Identified By: NRC

Item Type: VIO Violation

**SL IV VIOLATION OF 10 CFR 50.7**

The NRC concluded that a security officer was discriminated against for engaging in protected activities within the scope of 10 CFR 50.7, "Employee Protection." A security supervisor subjected the officer to a fact-finding meeting on January 12, 2001, and placed a copy of the documentation from the meeting in the security officer's personnel file. The NRC determined that these actions were taken, at least in part, as a result of the security officer engaging in protected activity when he identified and documented in the condition report the potential security department training deficiency. The NRC issued a Notice of Violation by letter dated December 20, 2001, requiring a response by the licensee (VIO 50-346/01-15-01).

Inspection Report# : [2001015\(pdf\)](#)

Last modified : September 04, 2003