Davis-Besse
2Q/2006 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2005
Identified By: NRC
Item Type: FIN Finding
FAILURE TO CONTROL LOOSE MATERIAL ADJACENT TO THE SWITCHYARD
A finding of very low safety significance was identified by the inspectors for failure to control loose materials, located immediately adjacent to the switchyard, which could be carried into the switchyard by high winds. Once identified the licensee took action to relocate the material. The issue was more than minor because, if left uncontrolled, the loose items could impact the proper operation of the switchyard and in turn lead to a more significant safety concern. The issue was of very low safety significance because the finding did not contribute to the likelihood of a primary or secondary system loss of coolant accident initiator; the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available; and the finding did not increase the likelihood of a fire or internal or external flooding. The issue was not considered a violation of regulatory requirements because it did not affect safety-related structures, systems, or components.
Inspection Report# : 2005009*(pdf)*

Mitigating Systems

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO EXPAND CODE WELD EXAMINATION SCOPE
The inspectors identified a finding involving a Non-Cited Violation (NCV) violation of 10 CFR 50.55a(g)4 having very low safety significance for failure to expand the scope of weld examinations after identification of a rejectable flaw in the SG 1-2 main steam nozzle-to-shell weld. As a corrective action, the licensee performed the additional weld examination and entered this issue into the corrective action program. This finding is of more than minor significance because it is associated with the Mitigating System 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. Specifically, the failure to perform additional examinations prior to returning the plant to service in April of 2000, placed the plant at an increased risk for operation with undetected cracking which can lead to component failure. This finding is of very low safety significance because the licensee subsequently performed additional magnetic particle examinations during the 2006 refueling outage with no rejectable indications. The inspectors determined that the finding was not suitable for SDP evaluation because the failure to expand the scope did not directly result in degraded or inoperable equipment. Therefore, this finding was reviewed by Regional Management, in accordance with IMC 0612 Section 05.04c, and determined to be of very low safety significance.
Inspection Report# : 2006002*(pdf)*

Significance: G Mar 02, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Non-Conservative Flow Testing Acceptance Criteria for the Number 2 HPI and Number 2 LPI Pumps
The inspectors identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” that was of very low safety significance. Specifically, the flow acceptance curves used for two safety-related pumps, the number 2 High Pressure Injection (HPI) pump and the number 2 Low Pressure Injection (LPI) pump, were incorrect and non-conservative. This issue was entered into the licensee’s corrective action system and the licensee verified that other safety-related pumps were not similarity affected.

The issue was more than minor because it was associated with the Mitigating System cornerstone attribute of “Design Control,” and affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, performing required flow testing of safety related pumps with non-conservative acceptance criteria could allow the pumps to operate during an accident with less than acceptable flows. The finding screened as having very low significance (Green) using IMC 0609, Appendix A, “Significance Determination of Reactor Inspection Findings for the At-Power Situations,” because the inspectors answered “no” to all five questions under the Mitigating Systems Cornerstone column of the Phase 1 worksheet. While the failure to apply conservative test acceptance criteria during flow tests for the HPI and LPI pumps could have eventually caused the pumps to be outside of their acceptable flow rates without it being detected, the licensee verified that the most recent test data for these pumps would have still been acceptable if the correct pump curves had been used.
Inspection Report# : 2006006*(pdf)*

Significance: G Mar 02, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Consider Adverse Ampacity Effects of High Temperature Conditions in the Diesel Fire Pump Room
The inspections identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” that was of very low safety significance, where the licensee had not evaluated and updated the plant cable ampacity calculation to determine the potential consequences of adverse effects to cabling due to higher temperatures in the Diesel Fire Pump Room and other areas in the plant. The issue was entered into the licensee’s corrective action program.

The finding was more than minor because it affected the mitigating system cornerstone attribute of “Design Control” and affected the cornerstone objective of ensuring reliability of systems that respond to initialing events to prevent undesirable consequences. Specifically, the licensee did not account for high temperature conditions that adversely affected the ampacity of cabling supplying power to equipment important to safety. This finding was of very low safety significance, because the inspectors answered “no” to all five questions under the Mitigating Systems Cornerstone column of the Phase 1 worksheet. Specifically, the licensee was able to demonstrate that even though the higher temperatures decreased the ampacity margins for the effected cabling, it did not decrease the margins to the limit where the cabling would fail if called upon to provide power to equipment important to safety.
Inspection Report# : 2006006*(pdf)*

Significance: G Mar 02, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Provide Testing for Boron Precipitation Control Flow Instrumentation
The inspectors identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XI, “Test Control,” that was of very low safety significance. Specifically, after performing modifications to implement a new Boron Precipitation Control method for post-LOCA (Loss of Coolant Accident) operations, the licensee failed to both identify and establish testing for the flow instrumentation that the operators would use post-LOCA to ensure minimum flow for proper boron dilution. This issue was entered into the licensee’s corrective action system.

The issue was more than minor because if it was left uncorrected, the finding would become a more significant safety concern. Had this issue not been detected, the instrument could have fallen well out of tolerance in the future leading to inaccurate readings. During post-LOCA operations, these inaccurate readings could have caused operators to establish insufficient Boron Precipitation Control (BPC) flows. The finding screened as having very low significance (Green) using IMC 0609, Appendix A, “Significance Determination of Reactor Inspection Findings for the At-Power Situations,” because the inspectors answered “no” to all five questions under the Mitigating Systems Cornerstone column of the Phase 1 worksheet. While the lack of calibration procedures for the flow instrumentation would have eventually caused the instrument to read inaccurately, the inspection team identified the problem early enough so that the instrument drift (as provided in the vendor instructions) would not be large enough to cause inaccuracies that would adversely affect BPC flows.
Inspection Report# : 2006006*(pdf)*

Significance: G Sep 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
SCAFFOLDING ERECTED CLOSER TO SAFETY RELATED EQUIPMENT THAN PERMITTED & W/O PROPER DOCUMENTATION OF REVIEWS
A finding of very low safety significance was identified by the inspectors when the licensee failed to properly implement existing procedural guidance for the control of gaps between scaffolding and plant equipment and failed to properly review and document the scaffolding installation. Scaffolding was erected less than one inch from safety-related containment spray instrumentation lines and high pressure injection pump lube oil piping. The scaffolding was constructed in this manner even though there were no physical interferences which necessitated that the scaffolding to be erected with less than the procedurally permitted one inch gap. Additionally, rationale for approval of the configuration was not provided as was procedurally required. Once identified, the licensee took prompt action to review the scaffolding installation and modify the scaffolding to conform to a procedurally allowed configuration. The improperly approved scaffolding was in place approximately eight hours. The finding was more than minor since it was associated with the attributes of protection against external factors and configuration control and affected the mitigating systems' objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding was of very low safety significance because there was no actual loss of function of any of the plant safety-related systems due to the placement of the scaffold. This issue was determined to be a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V. The primary cause of this violation was related to the cross-cutting area of Human Performance because licensee personnel, while having adequate procedural guidance, failed to implement the requirements of that guidance.
Inspection Report# : 2005008*(pdf)*

Significance: G Aug 12, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO INITIATE A CONDITION REPORT FOR CONDITIONS ADVERSE TO QUALITY
The inspectors identified a Green Finding associated with a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to properly implement procedure NOP-LP-2001, "Condition Report Process." The item involved the

failure to initiate condition reports for failures, malfunctions, or deficiencies identified in nuclear safety related equipment. The inspectors identified seven occurrences where licensee personnel failed to initiate a condition report for conditions adverse to quality during the period November 1, 2004, to August 1, 2005. The inspectors determined that the failure to initiate condition reports for the specific examples of conditions adverse to quality was greater than minor because if left uncorrected the issue would become a more significant safety concern involving programmatic and equipment issues. The inspectors determined that the finding was not suitable for SDP evaluation because the failure to initiate the condition reports did not directly result in degraded or inoperable equipment. Therefore, this finding was reviewed by Regional Management, in accordance with IMC 0612 Section 05.04c, and determined to be of very low safety significance.
Inspection Report# : 2005014*(pdf)*

Significance: G Aug 08, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement Plant Modification into Emergency Procedure (Section 4OA4.1)
Green. A Green finding associated with a Non-Cited Violation of Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed for the failure to remove an abandoned equipment load listed in the Emergency Procedure DB-OP-02000 as part of modification MOD 95-0050. As a result, upon implementation of the modification, the licensee failed to identify the component abandoned by the modification was referenced in the plant emergency procedures. On July 20, 2005, the inspectors observed operators perform Job Performance Measure (JPM), 2005 NRC JPM F, in the simulator during the NRC initial license examination. The inspectors noted that the applicants had difficulty completing the required procedural steps because of a delay in reducing the load on the electrical bus.

The inspectors determined that a primary cause of this finding was related to the cross-cutting area of Human Performance because the licensee failed to verify the appropriate emergency procedure revisions were established based on the equipment modification.

Although simulated as part of an NRC operator license examination, the issue was more than minor because the finding was associated with the configuration control attribute of the Mitigating Systems cornerstone and adversely impacted the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the finding using IMC 0609, Appendix A, Phase 1 Screening, "Secondary Core Decay Heat Removal Degraded." The inspectors also determined that the finding was of very low safety significance because even though the establishment of feedwater flow to the Once Through Steam Generator (OTSG) was delayed, the applicants did complete the task as assigned and would have been able to start the Motor Driven Feedwater Pump (MDFP). The licensee took prompt action to enter the item into their corrective action process. (Section 4OA4)

Inspection Report# : 2005301*(pdf)*

Significance: G Jan 07, 2004
Identified By: NRC
Item Type: VIO Violation
Failure to Take Corrective Actions for a Previous NCV Concerning SW Discharge Path Swapover Setpoints
The team identified a Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." Specifically, the licensee failed to provide a basis for the setpoint to swap the service water system discharge path. This issue was previously identified as a Non-Cited Violation in Inspection Report 05000346/2002014 and the corrective actions taken by the licensee failed to correct the originally identified condition. The primary cause of this violation was related to the cross-cutting areas of problem identification and resolution and human performance, because the licensee did not recognize that the corrective actions taken needed to restore compliance with the identified violation of NRC requirements.

The issue was determined to be more than minor because the licensee had not corrected a previous violation and was relying on non-safety-related equipment to perform a safety function under design bases conditions. Because the issue was previously determined to be of very low safety significance, NRC management concluded that the violation could be categorized as having very low safety significance. (Section 4OA3(3)b.11)
Inspection Report# : 2003010*(pdf)*

Significance: G Jan 07, 2004
Identified By: NRC
Item Type: VIO Violation
Failure to Take Corrective Actions for a Previous NCV Concerning SW Pump Discharge Check Valve Acceptance Criteria
The team identified a Cited Violation of Technical Specifications Section 4.05a and 10 CFR 50.55a. Specifically, the licensee failed to ensure that the service water discharge check valve was tested in accordance with the American Society of Mechanical Engineers Code. The primary cause of this violation was related to the cross-cutting areas of problem identification and resolution and human performance, because the licensee did not recognize that the corrective actions taken needed to ensure compliance with NRC requirements.

The issue was determined to be more than minor because the inadequate test acceptance criteria allowed the licensee to accept a check valve as performing its intended function at less than full system flow. The issue was of very low safety significance using the Phase 1 of the significance determination process based on the licensee's determination that the system was operable but degraded. (Section 4OA3(3)b.12)

Inspection Report# : 2003010*(pdf)*

Barrier Integrity

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: FIN Finding
UNQUALIFIED EXAMINATION OF A PRESSURIZER SURGE LINE DM WELD
The inspectors identified a finding having very low safety significance for failure to use qualified transducers during ultrasonic examination of a dissimilar metal weld on the pressurizer surge line. As a corrective action, the licensee obtained qualified transducers, repeated the examination, and entered this issue into the corrective action program. This finding is of more than minor significance because it is associated with the Barrier Integrity cornerstone attribute of “Reactor Coolant System Equipment and Barrier Performance,” and affected the cornerstone objective to provide reasonable assurance that physical design barriers (reactor coolant system) protect the public from radionuclide releases caused by accidents or events. Absent NRC intervention, the licensee would have relied on this degraded examination, which would have placed this weld at increased risk for undetected cracking, leakage, or component failure. This finding is of very low safety significance because a qualified examination was subsequently performed with no relevant indications detected. The inspectors determined that the finding was not suitable for SDP evaluation because the failure to use qualified transducers did not directly result in degraded or inoperable equipment. Therefore, this finding was reviewed by Regional Management, in accordance with IMC 0612 Section 05.04c, and determined to be of very low safety significance.
Inspection Report# : 2006002*(pdf)*

Significance: G Dec 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
INADEQUATE DESIGN CONTROL DURING MODIFICATION OF THE CONTAINMENT HYDROGEN ANALYZER MOISTURE TRAP DRAINAGE SYSTEM
A Green self-revealing non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion III, was identified for the licensee (1) failing to fully understand the actual system configuration during and after a system modification, (2) installing incorrect solenoid valves in the system during the engineering change implementation, and (3) not performing adequate post modification testing to verify system functionality prior to returning the channel 1 and channel 2 Containment Gas Analyzers to service. The failure resulted in the plant being operated in Mode 1 and Mode 2 with two hydrogen analyzers inoperable in excess of the allowed Technical Specification outage time. The licensee restored the Analyzers to an operable status and entered the issue into the corrective action program for resolution. The finding is greater than minor because it: (1) involved the configuration control attribute of the Barrier Integrity Cornerstone; and (2) affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. This finding is unrelated to structures, systems and components that are needed to prevent accidents from leading to core damage. The inspectors used Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Appendix H, Containment SDP to evaluate this finding. Based on this evaluation, the finding has very low safety significance. The cause of the finding is related to the cross-cutting area of human performance.
Inspection Report# : 2005009*(pdf)*

Significance: N/A Aug 09, 2002
Identified By: NRC
Item Type: VIO Violation
I.A - Operating with Reactor Coolant Pressure Boundary Leakage
Technical Specification 3.4.6.2.a, Amendment 220, dated April 14, 1998, requires, in part, that the licensee shall limit reactor coolant system leakage to "No PRESSURE BOUNDARY LEAKAGE" during Modes 1 through 4.

Contrary to the above, between May 18, 2000, and February 16, 2002, the licensee started up and operated the plant in Modes 1 through 4 with reactor coolant system pressure boundary leakage, i.e. control rod drive penetration leakage. Specifically, the licensee returned the plant to operation following the 2000 refueling outages without fully characterizing and eliminating reactor coolant system pressure boundary leakage on the reactor pressure vessel head as evidenced by significant boric acid deposits on the reactor pressure vessel head at the start and end of the outage and by the development of new and extensive boric acid deposits on reactor containment equipment during the operation cycle.

This is a violation associated with a RED SDP finding. Civil Penalty - $5,000,000 (EA-05-071)
Inspection Report# : 2005013*(pdf)*
Inspection Report# : 2005012*(pdf)*

Significance: SL-I Aug 09, 2002
Identified By: NRC
Item Type: VIO Violation
I.B.1 & 2 - Information Included in (1) CR 2000-1037 and (2) WO 00-001846-000 was not complete and accurate in all material respects.
10 CFR 50.9 requires that information provided to the Commission by a licensee or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the licensee shall be complete and accurate in all material respects.

10 CFR 50, Appendix B, Criterion XVI requires, in part, that for significant conditions adverse to quality, the cause of the condition and the corrective actions taken to preclude repetition shall be documented.

10 CFR 50, Appendix B, Criterion XVII, requires, in part, that the licensee shall maintain sufficient records to furnish evidence of activities affecting quality and that those records shall include monitoring of work performance.

Condition Report (CR) 2000-1037, closed May 1, 2000, documented corrective actions for the presence of boric acid on the reactor pressure vessel head, a significant condition adverse to quality, that included: "Accumulated boron deposited between the reactor head and the thermal insulation was removed during the cleaning process performed under W.O. [Work Order] 00-001846-000. No boric acid induced damage to the head surface was noted during the subsequent inspection."

Work Order 00-001846-000, "Clean Boron Accumulation from Top of Reactor Head and Top of Insulation," dated April 25, 2000, required the licensee staff to "clean boron accumulation from top of reactor head and on top of insulation." The Work Order Log, included as Page Four of the completed Work Order, documented that the, "work [was] performed without deviation" and was signed by the System Engineer on April 25, 2000.

Contrary to the above,

1 - The information included in CR 2000-1037 relative to the completed corrective actions and the subsequent inspection results were not complete and accurate in all material respects. Specifically, the licensee did not remove the accumulated boron deposits from all areas between the reactor head and the thermal insulation and did not conduct subsequent inspections of the entire reactor head. Instead, the licensee removed accumulated boric acid deposits from a portion of the reactor vessel head and conducted subsequent inspections for those portions of the reactor vessel head where the boric acid deposits had been removed.

2 - The Work Order Log, included as Page Four of completed Work Order 00-001846-000, a record required by Commission regulations to furnish evidence of activities affecting quality, contained information that was not accurate in all material respects. Specifically, the Work Order Log indicated that boron accumulation was cleaned from the top of the reactor head and on top of the insulation, without deviation, when, in fact, boric acid deposits were left on the head after the cleaning was completed on April 25, 2000.

This is a Severity Level I violation (Supplement VII). Civil Penalty $110,000 (EA-05-068)
Inspection Report# : 2005012*(pdf)*
Inspection Report# : 2005013*(pdf)*

Significance: SL-II Aug 09, 2002
Identified By: NRC
Item Type: VIO Violation
I.C. 1 & 2 & 3 - Failure to determine the cause of a signficant condition adverse to quality involving three examples of identified boric acid leakage.
10 CFR 50, Appendix B, Criterion XVI, requires, in part, that licensees shall establish measures to ensure that conditions adverse to quality such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances are promptly identified and corrected. For significant conditions adverse to quality, the licensee shall establish measures to ensure that the cause of the condition is determined and that corrective actions are taken to preclude repetition.

Plant Procedure NG-NA-00702, "Corrective Action Program," Revision 3, defined a significant condition adverse to quality to be a condition, which, if left uncorrected, could have an undesirable effect on plant safety, personal safety, regulatory position, financial liability, or environmental impact.

Contrary to the above, the licensee did not determine the cause of the condition and did not implement corrective actions to preclude repetition of the condition associated with the identification and removal of boric acid on the reactor vessel head, a significant condition adverse to quality, prior to closing the associated condition reports.

Specifically:

1 - On April 27, 2000, the licensee closed CR 2000-0781, "Leakage from CRD [Control Rod Drive] Structure Blocked Visual Exam of Reactor Vessel Head Studs," issued on April 6, 2000, associated with the accumulation of boric acid deposits on the reactor vessel head studs without determining the cause of the deposits, i.e., identifying the source of the reactor coolant system leakage, and without taking corrective actions to preclude recurrence.

2 - On April 27, 2000, the licensee closed CR 2000-0782, "Inspection of Reactor Flange Indicated Boric Acid Leakage From Weep Holes," issued on April 6, 2000, associated with the accumulation of boric acid deposits on the reactor vessel head, without determining the cause of the boric acid deposits, i.e., identifying the source of the reactor coolant system leakage, without removing all of the known boric acid deposits on the reactor pressure vessel head, and without taking corrective actions to prevent recurrence.

3 - On May 1, 2000, the licensee closed CR 2000-1037, "Inspection of Reactor Head Indicated Accumulation of Boron in Area of the CRD [Control Rod Drive] Nozzle Penetration," issued on April 17, 2000, associated with the accumulation of boric acid deposits on the reactor vessel head, without determining the cause of the boric acid deposits, i.e., identifying the source of the reactor coolant system leakage, without removing all of the known boric acid deposits on the reactor vessel head, and without taking corrective actions to prevent recurrence.

This is a Severity Level II violation (Supplement I) Civil Penalty - $110,000 (EA-05-066)
Inspection Report# : 2005013*(pdf)*
Inspection Report# : 2005012*(pdf)*

Significance: SL-II Aug 09, 2002
Identified By: NRC
Item Type: VIO Violation
I.D - Failure to comply with Boric Acid Control procedure in that obstacles were not removed to allow for a complete inspection of the RPV head (failure to implement mod)
10 CFR 50, Appendix B, Criterion V, requires, in part, that activities affecting quality be accomplished in accordance with written procedures.

Davis-Besse Station Procedure NG-EN-00324, "Boric Acid Corrosion Control Program," Revisions 1/C1 and 2, Step 6.3.1, required, in part, that an initial inspection of boric acid buildup shall be performed to determine the "as found" conditions and to document the inspection results. The procedure also required, in Attachment 3, that insulation and other hindrances to direct visual [inspection] be removed as needed to allow detailed inspections of components suspected of leakage.

Potential Condition Adverse to Quality (PCAQ) 96-0551, initiated on April 21, 1996, documented the licensee's inability to comply with some inspections of the reactor pressure vessel head, as required by Procedure NG-EN-00324, and an inability to accurately determine the reactor pressure vessel head "as found" conditions, associated with boric acid deposits on the reactor pressure vessel head, due to the restrictions resulting from the location and size of the inspection ports, "mouse holes." The PCAQ further documented that only 50 to 60 percent of the reactor pressure vessel head could be inspected using the current inspection ports.

Modification 94-0025, initiated on May 27, 1994, and referenced as corrective action for PCAQ 96-0551, directed the completion of modifications to the reactor pressure vessel head service structure inspection ports to permit the inspection and cleaning of 100 percent of the reactor vessel head in accordance with Procedure NG-EN-00324.

Contrary to the above, on May 18, 2000, and at the end of Refueling Outage 12, the licensee failed to remove obstructions, including boric acid deposit buildups, necessary to conduct a detailed inspection of the reactor pressure vessel head and other components that may be suspected of leakage, as required by Plant Procedure NG-EN-00324, "Boric Acid Corrosion Control Program." The licensee's ability to conduct the inspections was significantly limited as a result of its concurrent deferral of the installation of Modification 94-0025, a corrective action for a significant condition adverse to quality documented in PCAQ 96-0551 and associated with the licensee's failure during previous outages to conduct complete inspections and cleaning of boric acid deposits on the reactor pressure vessel head.

This is a Severity Level II violation (Supplement I) Civil Penalty $110,000 (EA-05-067)
Inspection Report# : 2005013*(pdf)*
Inspection Report# : 2005012*(pdf)*

Significance: SL-I Aug 09, 2002
Identified By: NRC
Item Type: VIO Violation
I.E1 & 2 - Licensee Responses to Bulletin 2001-01 dated (1) September 4, 2001, and (2) October 17, 2001, were materially incomplete and inaccurate.
10 CFR 50.9 requires that information provided to the Commission by a licensee or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the licensee shall be complete and accurate in all material respects.

NRC Bulletin 2001-01, "Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles," required all holders of operating licenses for pressurized water nuclear power reactors to provide information related to the structural integrity of the reactor vessel head penetration (VHP) nozzles for their respective facilities, including the extent of VHP nozzle leakage and cracking that has been found to date, the inspections and repairs that have been undertaken to satisfy applicable regulatory requirements, and the basis for concluding that their plans for future inspections will ensure compliance with applicable regulatory requirements.

Contrary to the above, the licensee, a holder of an operating license for a pressurized water nuclear power reactor, the Davis-Besse Station, provided the Commission responses to Bulletin 2001-01 which included materially inaccurate and incomplete information as follows:

1 - In a September 4, 2001, response to the Bulletin entitled, "Response to Bulletin 2001-01," Serial 2731, the licensee made the following four materially inaccurate and incomplete statements:

(a) The licensee's response to Bulletin Item 1.c, on page 2 of 19, stated: "the minimum gap being at the dome center of the RPV [reactor pressure vessel] head where it is approximately 2 inches, and does not impede a qualified visual inspection."

The licensee's response was materially inaccurate, in that, the statement contradicted statements in the licensee's documents identified as PCAQR 94-0295 and 96-0551, which clearly stated that inspection capability at the top of the reactor vessel head was limited. The limitation was stated to be caused by the restricted access to the area through the service structure "weep holes", the curvature of the reactor pressure vessel head, and by the limited space to manipulate a camera due to the insulation that creates the two inch gap.

(b) The licensee's response to Bulletin Item 1.d, which requested inclusion of a description of any limitations (insulation or other impediments) to accessibility of the bare metal of the reactor pressure vessel head for visual examinations, did not include a description of any limitations.

The licensee's response was materially incomplete in that the response did not mention that accessibility to the bare metal of the reactor pressure vessel head was impeded, during the Eleventh (1998) and the Twelfth (2000) Refueling Outages, by the presence of significant accumulations of boric acid deposits.

(c) The licensee's response to Bulletin Item 1.d, which also requested a discussion of the findings of reactor pressure vessel head inspections, stated that for the Twelfth Refueling Outage (2000), the inspection of the reactor pressure vessel head/nozzles indicated some accumulation of boric acid deposits.

The licensee's response was materially incomplete and inaccurate in that it mischaracterized the accumulation of boric acid on the reactor pressure vessel head and did not mention the evidence of corrosion that was evidenced by the pictures and the video examination of reactor pressure vessel head conditions documented at the beginning and ending of the Twelfth Refueling Outage (2000).

(d) The licensee's response to the Bulletin, on Page 3, stated: "The boric acid deposits were located beneath the leaking flanges with clear evidence of downward flow. No visible evidence of nozzle leakage was detected."

The licensee's response was materially inaccurate in that the boric acid deposits were not all located under leaking flanges and the licensee lacked clear evidence of the absence of downward flow for all nozzles. Specifically, the presence of boric acid deposits was not limited only to the areas beneath the flanges, as implied by that statement. The build-up of boric acid deposits was so significant that the licensee could not inspect all of the nozzles. As a result, the licensee also did not have a basis for stating that no visible evidence of nozzle leakage was detected.

2. In an October 17, 2001, response to the Bulletin entitled, "Supplemental Response to Bulletin 2001-01," Serial 2735, the licensee stated: "In May 1996, during a refueling outage, the RPV [reactor pressure vessel] head was inspected. No leakage was identified, and these results have been recently verified by a re-review of the video tapes obtained from that inspection. The RPV head was mechanically cleaned at the end of the outage. Subsequent inspections of the RPV head in the next two refueling outages (1998 and 2000), also did not identify any leakage in the CRDM [control rod drive mechanism] nozzle-to-head areas that could be inspected. Video tapes taken during these inspections have also been re-reviewed."

The licensee's response was materially inaccurate, in that: (1) each reactor pressure vessel head control rod drive penetration was not inspected in May 1996, as documented in PCAQR 96-0551, and; (2) the reactor pressure vessel head, including the area around each control rod drive penetration, was not completely cleaned, as noted in PCAQR 98-0649, which was prepared at the start of the Eleventh Refueling Outage (1998), which stated that there were old boric acid deposits on the head.

This is a Severity Level I violation (Supplement VII) Civil Penalty $120,000 (EA-05-072)
Inspection Report# : 2005013*(pdf)*
Inspection Report# : 2005012*(pdf)*

Significance: N/A Aug 09, 2002
Identified By: NRC
Item Type: VIO Violation
II.A 1 & 2 & 3 - Three examples of inadequate corrective actions involving (1) fouling of containmnet air coolers, (2) fourling of containment rad monitors, and (3) increased trend in unident. leakag
10 CFR Part 50, Appendix B, Criterion XVI, requires, in part, that the licensee shall establish measures to ensure that conditions adverse to quality such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances are promptly identified and corrected. Criterion XVI also requires that for significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and that corrective actions are taken to preclude repetition.

Plant Procedure NG-NA-00702, "Corrective Action Program," Revision 3, defined a significant condition adverse to quality to be a condition adverse to quality, which, if left uncorrected, could have an undesirable effect on plant safety, personal safety, regulatory position, financial liability, or environmental impact.

Contrary to the above, the licensee failed to determine the root cause of and take corrective actions to preclude the repetition of:

1. Fouling of containment air cooling fins by boric acid, between June 2000 and February 16, 2002, a significant condition adverse to quality.

2. - Fouling of the containment radiation elements by boric acid and iron oxide, between April 2001, and February 16, 2002, a significant condition adverse to quality, and

3. - An increasing trend in unidentified reactor coolant system leakage, between March 2001, and December 2001, a significant condition adverse to quality.

This is a violation associated with a RED SDP finding (EA-03-025).
Inspection Report# : 2005013*(pdf)*
Inspection Report# : 2005012*(pdf)*

Significance: N/A Aug 09, 2002
Identified By: NRC
Item Type: VIO Violation
II.B - Inadequate Boric Acid Corrosion Control procedure.
10 CFR Part 50, Appendix B, Criterion V, requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings.

Procedure NG-EN-00324, "Boric Acid Corrosion Control Program," Revisions 0 through 2 (effective date October 1, 1999), were classified as a

procedure affecting quality under the licensee's administrative system.

Contrary to the above, between October 1, 1999, and March 6, 2002, Procedure NG-EN-00324, "Boric Acid Corrosion Control Program," Revisions 0 through 2, were not appropriate to the circumstances and contributed to the licensee's failure to detect and address boric acid corrosion of the reactor vessel head, as follows:

1 - The procedure inappropriately focused on bolted and flanged connections in the definition of leakage (Sections 4.2 though 4.4), the definition of reactor coolant system pressure boundary components (Section 4.9), and the identification of investigation locations (Section 6.1) at the expense of identifying the potential for through-wall leakage.

2 - The procedure did not include adequate guidance, specifications, or threshold levels for initiating a "detailed inspection" in order to ensure consistent implementation of Section 6.3.4 of the procedure.

3 - The procedure did not require the identification of and corrective actions to preclude the repetition of boric acid leaks, a significant condition adverse to quality, but instead only required the preparation of a repair tag or work order to facilitate repair of the leak.

4 - The procedure did not define the qualifications and training necessary to permit engineering staff to conduct inspections and evaluations in a consistent manner, including the use of proper inspection techniques, observations, recording of results, and evaluations.

5 - The procedure inappropriately exempted stainless steel or Inconel components from further examination related to boric acid corrosion, unless the examination was during an ASME Section XI test which might require a bolting examination.

6 - The procedure inappropriately did not require the licensee staff to maintain records necessary to demonstrate the proper completion of activities affecting quality.

This is a violation associated with a RED SDP finding (EA-03-025).
Inspection Report# : 2005013*(pdf)*
Inspection Report# : 2005012*(pdf)*

Significance: SL-IV Sep 04, 2001
Identified By: NRC
Item Type: VIO Violation
II.D 1 & 2- Two examples of incomplete and ainaccurate information contained in quality documents, (1) a void request dated 9/12/93, and (2) a QA Audit Report No. AR-00-OUTAG-01.
10 CFR 50.9 requires that information provided to the Commission by a licensee or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the licensee shall be complete and accurate in all material respects.

10 CFR Part 50, Appendix B, Criterion XVII, requires, in part, that the licensee shall maintain sufficient records to furnish evidence of activities affecting quality and that those records shall include audits and those actions taken to correct any deficient conditions.

Contrary to the above, the following information was not complete or accurate in all material respects for documents required to be maintained or provided to the Commission:

1 - On September 23, 1993, the licensee processed a "Document Void Request" to cancel Modification 90-012 which stated, "Current inspection techniques using high-powered cameras preclude the need for inspection ports, additionally, cleaning of the reactor vessel head during last three outages was completed successfully without requiring access ports." However, the quoted statement was not accurate in all material respects, in that, the licensee left boric acid deposits on the reactor vessel head at the end of both the seventh and eighth refueling outages, the two outages preceding this statement.

2 - Quality Assurance Audit Report AR-00-OUTAG-01, dated July 7, 2000, stated, in part, "Boric Acid Corrosion Control Checklists and Condition Reports were initiated by inspectors when prudent to document and evaluate boric acid accumulation and leaks. Boric acid leakage was adequately classified and corrected when appropriate. Engineering displayed noteworthy persistence in ensuring boric acid accumulation from the reactor head was thoroughly cleaned." However, the audit report was not accurate in all material respects in that the licensee did not: 1) thoroughly clean the reactor head during the outage; 2) did not prepare a boric acid corrosion control checklist for the boric acid left on the head after the cleaning attempt; and 3) identify, properly classify, or correct the boric acid accumulation and leaks.

This is a Severity Level IV violation (Supplement VII) (EA-05-070)
Inspection Report# : 2005012*(pdf)*
Inspection Report# : 2005013*(pdf)*

Significance: SL-III Apr 25, 2000
Identified By: NRC
Item Type: VIO Violation
II.C - Two PCAQs (98-0649 & 98-0767) were closed as completed based on inaccurate informationon.
10 CFR 50.9 requires that information provided to the Commission by a licensee or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the licensee shall be complete and accurate in all material respects.

10 CFR Part 50, Appendix B, Criterion XVII, requires, in part, that the licensee shall maintain sufficient records to furnish evidence of activities

affecting quality and that those records shall include actions taken to correct any deficient conditions.

Contrary to the above, the following information was not complete or accurate in all material respects for documents required to be maintained or provided to the Commission:

1 - Potential Condition Adverse to Quality Report (PCAQR) 98-0649, dated April 18, 1998, contained the following closure statement: "Accumulation of boric acid on the reactor vessel caused by leaking CRDMs [control rod drive mechanisms] has not resulted in any boric acid corrosion. This was identified through inspections following reactor vessel head cleaning in past outages....Additionally, B&W [Babcock & Wilcox] documentation discussing CRDM nozzle cracking further stated that boric acid deposits on the head caused by leaking CRDM flanges would not result in head corrosion." However, the quoted statements were not accurate in all material respects in that the licensee had previously not cleaned all areas of the reactor head of boric acid deposits, had not inspected the base metal under all the deposits to determine whether corrosion was present, and no B&W documentation was available to support the claim that boric acid would not result in head corrosion.

2 - Potential Condition Adverse to Quality Report (PCAQR) 98-0767, dated April 25, 1998, Section 4A, Item F, included the following closure justification, "The boric acid deposits were removed from the head." However, the quoted statement was not accurate in all material respects in that the licensee had not removed all of the boric acid deposits from the head as of the end of the eleventh refueling outage.

This is a Severity Level III violation (Supplement VII) (EA-05-069)
Inspection Report# : 2005012*(pdf)*
Inspection Report# : 2005013*(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Aug 12, 2005
Identified By: NRC
Item Type: FIN Finding
INSPECTORS CONCLUDED THAT IMPLEMENTATION OF LICENSEE'S CAP WAS SAFE FOR CONTINUED OPERATION OF THE PLANT
The inspectors concluded that, in general, problems were properly identified, evaluated, and corrected. The licensee was effective at identifying problems and entering them into the corrective action program (CAP) for resolution. The inspectors identified several examples where condition reports were not submitted as required. The weaknesses identified in the past regarding the trending program have shown improvement. As evidenced by the continued large number of condition reports (CRs) entered annually into the CAP, the licensee maintained a low threshold for identifying problems. Generally, the licensee properly prioritized and examined issues; although several minor problems were noted where lower significance issues were mis-categorized or the investigations lacked thoroughness. The formal root cause evaluations for significant problems were thorough and detailed. Corrective actions specified for problems were generally adequate; although, several minor problems were noted where corrective actions were not complete or comprehensive. The licensee's audits and self-assessments were effective in identifying deficiencies in the CAP and recommendations were appropriately captured.

Inspection Report# : 2005014*(pdf)*

Last modified : August 25, 2006