

Waterford 3

Initiating Events



Significance: Oct 17, 2000

Identified By: Self Disclosing

Item Type: FIN Finding

Inadvertent Reactor Coolant System Pressure Transient

With the reactor coolant system in a solid condition, the licensee performed a calibration of the pressurizer pressure wide range channel A instrument. During this calibration, the primary nuclear plant operator observed what he thought to be lowering reactor coolant system pressure based on the instrument being calibrated. He took action to raise pressure which resulted in lifting the low temperature over-pressure protection relief valves which relieved approximately 50 gallons to the containment sump. The operator failed to confirm the apparent pressure condition using other installed instrumentation. A human performance cross-cutting issue was identified involving ineffective communications between control room operators that resulted in the primary nuclear plant operator not being aware of the calibration activity and reliance on a single pressure instrument for pressure control. The inspectors assessed this event using the reactor safety significance determination process. The inspectors found that the event had very low safety significance because the plant systems and components, while challenged, operated as expected and there were multiple sources of reactor coolant system inventory makeup.

Inspection Report# : [2000011\(pdf\)](#)

Mitigating Systems

Significance: N/A Jan 25, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to report condition outside design basis involving main steam isolation valves

In July 1998, the licensee failed to report to the NRC the discovery of a condition outside of the design-basis of the plant, as required by 10 CFR 50.73. After correcting errors in previous analyses, the licensee found that the main steam isolation valves (both Trains A and B) may not have closed during an accident within the design-basis specified time of 4.0 seconds. The closure time could have been as high as 6.1 seconds. Although the licensee determined that no safety limits were challenged, the condition exceeded the design-basis of the plant and should have been reported to the NRC. This was determined to be a violation of 10 CFR 50.73(a)(2)(ii)(B). This nonconforming condition was of low safety significance because new analyses showed that the longer stroke closure time would not have an adverse impact on the results or consequences of all affected accident analyses. Consequently, the violation of 10 CFR 50.73(a)(2)(ii)(B) identified above is categorized at Severity Level IV and is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy. This violation (50-382/0013-01) was entered into the licensee's corrective action program as Condition Report 2001-0171.

Inspection Report# : [2000013\(pdf\)](#)



Significance: Nov 13, 2000

Identified By: Licensee

Item Type: NCV NonCited Violation

Failure to have two operable charging pumps prior to entering Mode 4.

Green. On November 13, 2000, the licensee transitioned from Mode 5 to Mode 4 with the control switch for Charging Pump B in the OFF position rather than in the AUTO position as required. Technical Specification 3.1.2.4 required two operable charging pumps prior to entering Mode 4. Technical Specification 3.0.4 specified that entry into an operational mode shall not be made when the conditions for a limiting condition for operation are not met. This violation is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. This deficiency is documented into the licensee's corrective action program as Condition Report 2000-1515. The issue was assessed using the reactor safety significance determination process. The inspectors found that the issue had very low safety significance because three the charging pump could have been manually started if required.

Inspection Report# : [2001008\(pdf\)](#)



Significance: Sep 28, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to demonstrate the ratings of 3-hour fire barriers.

The licensee failed to ensure through testing or evaluation that the configurations of Penetration Seals IIIA0204 and IIIA0251 were 3-hour fire rated. These penetration seals separated fire areas containing equipment required for safe shutdown. This was identified as a violation of License Condition 2.C.9, with two examples, and is being treated as a Non-Cited Violation consistent with Section VI.A.1 of the NRC Enforcement Policy. The licensee entered this finding into their corrective action program as Condition Report CR-WF3-2000-1153, and the licensee implemented compensatory measures in the affected fire area in accordance with their fire protection program. This finding was of very low safety significance because the ignition frequencies were relatively low, and fire detection and suppression systems were not degraded. The licensee subsequently performed a Generic Letter 86-10 evaluation which qualified these penetration seals.

Inspection Report# : [2000007\(pdf\)](#)



Significance: Sep 27, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to initiate condition reports for emergency lighting battery test failures.

The licensee failed to initiate corrective action reports to document and evaluate failures of emergency lighting batteries to pass the 8-hour discharge tests. The team determined that five maintenance action items documented emergency lighting batteries that failed their 8-hour discharge tests. However, the failures were not entered into the licensee's corrective action program, as required by procedure. This was identified as a violation of Technical Specification 6.8.1.f. This violation is being treated as a Non-Cited Violation, consistent with Section VI.A of the NRC Enforcement Policy. The licensee entered this finding into their corrective action program as Condition Report CR-WF3-2000-1141 This finding was of very low safety significance because the batteries would have provided lighting for a certain amount of time and handheld lights would be available, if required.

Inspection Report# : [2000007\(pdf\)](#)



Significance: Sep 18, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to maintain in effect a 1-hour rated fire barrier between redundant trains of equipment necessary to achieve and maintain safe shutdown.

In Fire Area RAB-2 (heating and ventilation mechanical room), it was determined that equipment required for safe shutdown of the plant following a fire were not separated by 1-hour fire barriers. Specifically, several cables for the redundant Train A/B of the chilled water system had either missing or damaged 1-hour fire wrap. This was identified as a violation of Operating License Condition 2.C.9, and is being treated as a Non-Cited Violation consistent with Section VI.A of the NRC Enforcement Policy. The licensee entered this finding into their corrective action program as Condition Report CR-WF3-2000-1088, and the licensee implemented compensatory measures in the affected fire area in accordance with their fire protection program. This finding was of very low safety significance because the ignition frequency was relatively low, fire suppression and detection systems were not degraded, and actions were available to ensure a safe shutdown path in Fire Area RAB-2.

Inspection Report# : [2000007\(pdf\)](#)



Significance: Sep 14, 2000

Identified By: Licensee

Item Type: NCV NonCited Violation

Failure to Correct an Out-Of-Tolerance Core Protection Calculator Channel Reactor Trip Condition

Green. On September 14, 2000, the licensee identified that the requirements of Technical Specification 3.3.1 for an inoperable Core Protection Calculator Channel B were not met. The data taken during the surveillance indicated that the low departure from nucleate boiling reactor trip signal was out-of-tolerance. The licensee failed to recognize this condition and returned the channel to operable status. This condition had the effect of delaying this trip signal such that it would not have been generated when required. This violation is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. This deficiency was entered in the licensee's corrective action program as Condition Report 2000-1074. The issue was assessed using the reactor safety significance determination process. The inspectors found that the issue had very low safety significance because three other core protection calculator channels were operable and capable of generating the required low departure from nucleate boiling reactor trip signal.

Inspection Report# : [2001008\(pdf\)](#)



Significance: Aug 23, 2000

Identified By: Licensee

Item Type: NCV NonCited Violation

Failure to meet the requirements of Technical Specification 3.3.3.1

The licensee removed Component Cooling Water System Radiation Monitor AB from service to perform maintenance and calibration. With this equipment out of service, Technical Specification 3.3.3.1 requires that samples be taken every 8 hours to detect a potential reactor coolant system to component cooling water system leak at the reactor coolant pump seal water heat exchangers. The licensee entered the technical specification

but did not adequately take samples once per 8 hours as required by Action 28. The chosen sample point, allowed by procedure, was located on a dead leg and did not adequately compensate for the inoperable radiation monitor. This violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy and is in the licensee's corrective action program as Condition Report 2000-0988. This issue was assessed using the reactor safety significance determination process. The inspectors found that the issue had very low safety significance because a subsequent sample showed no abnormal conditions in the component cooling water system and other radiation monitoring instruments in that system were available to detect an abnormal condition although on a delayed basis.

Inspection Report# : [2000010\(pdf\)](#)

Significance: N/A Aug 01, 2000

Identified By: NRC

Item Type: FIN Finding

USQ involving automatic resequencing of nonsafety loads to Class 1E bus (Closes URI 9915-01)

During a previous inspection, the NRC inspectors identified an unresolved item involving a potential violation of 10 CFR 50.59 concerning the automatic resequencing of nonsafety loads to the Class 1E bus following a diesel generator start. The Updated Final Safety Analysis Report indicated that nonsafety loads were only reintroduced manually under administrative controls. This issue was determined to be a violation of 10 CFR 50.59 and constituted an unreviewed safety question. However, it was determined that this issue would not be a violation under the revised 10 CFR 50.59 rule, currently scheduled to be effective January 2001. This judgement is based on the conclusion that the change did not represent more than a minimal increase in the probability of a malfunction of equipment important to safety. Therefore, in accordance with Section 8.1.3 of the NRC Enforcement Manual (NUGEG/BR-0195, Revision 3), enforcement discretion was exercised after consultation with the Office of Enforcement pursuant to Section VII.B.6 of the NRC Enforcement Policy and a violation was not issued (EA-99-220). The inspectors found that the issue had very little safety significance because the nonsafety loads had at least single breaker protection and were not ordinarily vulnerable to faulted conditions.

Inspection Report# : [2000008\(pdf\)](#)



Significance: G Jul 21, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to initiate a condition report upon discovery of a condition adverse to quality

The inspectors identified during a review of Permanent Plant Modification ER-W3-99-0857-00-00 and previous test records that Shutdown Cooling Header Thermal Relief Valve S-404A failed its bench test and exceeded its design set point by greater than 22 percent on October 6, 1995. The licensee reset Valve SI-405A to within design limits, however, the licensee failed to initiate a condition report for this condition adverse to quality to identify the root cause and apparent condition that may have existed on other relief valves. The failure to initiate a condition report upon discovery of this condition adverse to quality was a violation of 10 CFR Part 50, Appendix B, Criterion XVI and Site Procedure W2.501, "Corrective Action." This violation is being treated as a Non Cited Violation in accordance with Section VI.A of the NRC Enforcement Policy and is in the licensee's corrective action program as Condition Report CR-WF3-2000-0822. This issue was characterized as a "green" finding using the significance determination process. It was determined to have a very low risk significance because even though the as-found relief valve pressure set point exceeded its design set point, sufficient margin existed to maintain the integrity of the piping protected by the valve. The licensee re-set the valve at the time of discovery to its design set point, and the licensee has since tested the valve and found the as-found set point satisfactory.

Inspection Report# : [2000008\(pdf\)](#)



Significance: G Jul 12, 2000

Identified By: Licensee

Item Type: NCV NonCited Violation

Failure to enter appropriate Technical Specification requirements - three examples

Three examples of failure to enter the appropriate Technical Specification Limiting Condition for Operation were identified. These examples included the plant stack wide range gas monitor, Containment Isolation Valve CS-129A, and the fuel handling building crane. The plant stack wide range gas monitor and Valve CS-129A were rendered inoperable to perform maintenance and the fuel handling building crane failed a surveillance test. In each case, the components should have been declared inoperable and the provisions of the applicable Technical Specification should have been entered. The licensee failed to take these actions. Operations Procedure OP-100-014, "Technical Specification and Technical Requirements Compliance," describes the requirements to enter the appropriate Technical Specification action if a component is unable to perform its intended safety function due to surveillance or maintenance. The failure to enter the appropriate Technical Specification actions was a violation of OP-100-014. This violation is being treated as a noncited violation and is in the corrective action program as Condition Reports 2000-0765, -0777, and -0785. The inspectors assessed this issue using the reactor safety significance determination process. The inspectors found that the issue had very low risk significance because the provisions of the applicable Technical Specification actions were met by default in each case.

Inspection Report# : [2000008\(pdf\)](#)



Significance: G Jul 10, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate post maintenance testing and ineffective corrective actions for replacement of control switch knobs

Three examples of inadequate maintenance were identified for main control board switch knob replacement. The switches were associated with a containment isolation valve, a boric acid makeup pump recirculation valve, and a boric acid makeup pump. The knobs were replaced incorrectly, which introduced a push-to-trip or a push-to-actuate feature that was not in the original design. In addition, the knob replacement activity for the containment isolation valve resulted in damage to the switch assembly itself. Inadequate post maintenance testing failed to identify these conditions. This event is a repeat of two similar events identified in 1999. Corrective actions taken following the 1999 events failed to prevent reoccurrence. The failure to establish effective corrective actions to prevent reoccurrence of improperly installed control switch knobs was a violation of 10 CFR Part 50, Appendix B, Criterion XVI. This violation is being treated as a noncited violation and is in the corrective action program as Condition Report 2000-0770. The inspectors assessed this issue using the reactor safety significance determination process. The inspectors found that the issue had very low risk significance because the valves downstream of the containment isolation valve were closed and the boric acid system components would have gone to their safe condition if a safety injection actuation signal is generated.

Inspection Report# : [2000008\(pdf\)](#)



Significance: Jul 01, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to ensure fire extinguishers remained within their current hydrostatic test dates

The inspectors identified discrepancies in the portable fire extinguisher monthly inspection process. Discrepancies included inconsistencies between the fire extinguisher list and the corresponding maps of fire extinguisher locations, expired hydrostatic test dates on fire extinguishers, and lack of training for personnel performing the monthly inspections. A total of 35 fire extinguishers with expired or unknown hydrostatic test performance dates were identified. Technical Specification 6.8.1.f, "Fire Protection Program Implementation," required that fire protection procedures shall be implemented. Procedure MM-007-010, "Fire Extinguisher Inspection and Extinguisher Replacement," described the requirements for fire extinguisher inspections. This failure to ensure that fire extinguishers were within their current hydrostatic test date was a violation of Technical Specification 6.8.1.f. This violation is being treated as a noncited violation and is in the corrective action program as Condition Reports 2000-0504 and 2000-0530. The inspectors assessed this issue using the reactor safety significance determination process. The inspectors found that the issue had very low risk significance because the overall condition of portable fire extinguishers was considered adequate, although degraded.

Inspection Report# : [2000005\(pdf\)](#)



Significance: Jul 01, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to establish adequate post-maintenance test procedures for Charging Pump AB

The inspectors identified that the specified postmaintenance tests conducted following corrective maintenance on Charging Pump AB were not adequate to identify incorrectly performed maintenance. Specifically, inadequate maintenance resulted in oil seals installed incorrectly and low oil pressure. These conditions were not identified during postmaintenance testing and resulted in the equipment being out of service for a longer period of time than was necessary. This failure to establish adequate postmaintenance test procedures was a violation of 10 CFR Part 50, Appendix B, Criterion V. This violation is being treated as a noncited violation and is in the corrective action program as Condition Report 2000-0679. The inspectors assessed this issue using the reactor safety significance determination process. The finding had very low risk significance. Since Charging Pumps A and B were always available, both trains of the chemical and volume control system remained operable.

Inspection Report# : [2000005\(pdf\)](#)



Significance: Dec 29, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate corrective actions to repair deficiencies in Safety Injection Check Valve SI-142A

A noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI (Corrective Actions), was identified for inadequate corrective measures taken for an issue identified during a previous outage. Low-Pressure Safety Injection Pump A became vapor bound during the performance of a surveillance test due to the presence of nitrogen in the system. The likely source of the gas was identified as nitrogen saturated water from Safety Injection Tank 2B through leaking Safety Injection System Check Valve SI-142A. This valve had exhibited chronic problems and was identified as leaking past its seat prior to Refueling Outage 10 in the Fall of 2000, but repairs were not performed. The violation is more than minor because it had a credible impact on safety. Low-Pressure Safety Injection Pump A became vapor bound during a surveillance test as a result of nitrogen gas in the discharge line. In addition, this condition contributed to voiding in the respective shutdown cooling line. This violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy and is in the licensee's corrective action program as Condition Reports 2001-1295, -1296, and -1348. The finding represents a problem identification and resolution issue where the licensee's corrective actions for Safety Injection System Check Valve SI-142A were not adequate to prevent a nitrogen void formation in Low-Pressure Coolant Injection Train A piping. This issue was assessed using the reactor safety significance determination process. The inspectors found that the issue had very low safety significance. The Low-Pressure Safety Injection System Train A discharge line void conditions could have existed for a maximum of 9 days and the actual conditions experienced would not have resulted in Low-Pressure Safety Injection Pump A vapor binding while Train A was in the standby condition. No damage to Train A was observed as a result of operating the pump with the discharge piping not completely filled with water. The actual vapor binding of the pump occurred as a result of the train configuration for a surveillance test. Low-Pressure Safety Injection Train B

remained unaffected by this event (Section 1R22).

Inspection Report# : [2001007\(pdf\)](#)

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Significance: Jul 30, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Degraded Chiller Control Circuit due to Inadequate Modification

Essential Chiller AB failed to function as required when it automatically tripped on high compressor temperature and high compressor motor temperature. The cause of the failure was identified as a degraded bearing temperature module. During troubleshooting, it was identified that the module was not properly grounded. Prior to this failure, the chiller had been modified to reroute selected wires to increase chiller reliability. Part of this modification included relocating this ground which resulted in the module degradation and subsequent chiller failure. This was identified as a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." This violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy and is in the licensee's corrective action program as Condition Report 2001-0900. This issue was assessed using the reactor safety significance determination process. The inspectors found that the issue had very low safety significance because the essential chill water system remained available based on essential chiller Trains A and B had not been modified and the system was capable of performing its safety function (Section 1R17).

Inspection Report# : [2001006\(pdf\)](#)

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Significance: Jul 18, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Postmaintenance Test for Dry Cooling Tower 2 Sump Pump A

The licensee failed to specify an adequate postmaintenance test for Dry Cooling Tower 2 replacement Sump Pump A. This pump was replaced under a maintenance action item that stated that the pump required replacement due to a degraded flow condition. The work package did not specify a flow test of the replacement pump to ensure that the originally identified deficiency had been corrected as required by Technical Specification 6.8.1, Appendix A of Regulatory Guide 1.33, Revision 2, and the licensee's Station Administrative Procedure UNT-005-020, "Post Maintenance Testing," Revision 3, Step 5.1.1. This violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy and is in the licensee's corrective action program as Condition Report 2001-0819. This issue was assessed using the reactor safety significance determination process. The inspectors found that the issue had very low safety significance because the pump was ultimately demonstrated to be operable and a second motor-driven sump pump and a diesel-driven sump pump remained operable and able to perform the safety function of maintaining the dry cooling tower sump and prevent flooding of electrical equipment (Section 1R19).

Inspection Report# : [2001006\(pdf\)](#)

Barrier Integrity

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Significance: Jan 28, 2001

Identified By: Licensee

Item Type: FIN Finding

Resolution of Failed Inside and Outside Containment Isolation Valves

The inside and outside containment isolation valves in the primary sampling system failed to stroke to the closed position following completion of a pressurizer degassing operation. Maintenance on both valves had been performed during the last scheduled refueling outage, which introduced a common mode failure mechanism in the same containment penetration. The initial response to these failures was not timely and focused on the valve actuators rather than the actual cause of the failure, which was thermal binding of the valve internals. This issue was entered in the licensee's corrective action program as Condition Report 2001-118. This issue was assessed using the reactor safety significance determination process. The inspectors found that the issue had very low safety significance because the containment penetration was small in diameter (1/2-inch) and the licensee successfully isolated the penetration manually as required by Technical Specifications.

Inspection Report# : [2000013\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety



Significance: Jun 09, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

Broadleaf control station was not located as described in the Offsite Dose Calculation Manual

During NRC Inspection 50-382/99-19, the inspector determined that a portion of the radiological environmental monitoring program was not implemented as described in the Offsite Dose Calculation Manual. Specifically, the broadleaf control station was not located in the least prevalent wind direction, as described. The finding was identified as an unresolved item, pending licensee review of historical information about the sample location. Since that inspection, the licensee had been unable to justify the change in the broadleaf control station location. Technical Specification 6.8.1.j requires that the Radiological Environmental Monitoring Program be implemented as described in the Offsite Dose Calculation Manual. The Offsite Dose Calculation Manual, Attachment 7.23, required that radiological environmental monitoring program be implemented as required by the Technical Requirements Manual, Table 3.12-1. The Technical Requirements Manual, Table 3.12-1 Section 4c, required that the broadleaf control sample point be located in the least prevalent wind direction. The failure to place the broadleaf control station in the least prevalent wind direction is a violation of Technical Specification 6.8.1.j. This violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy. This violation is in the corrective action program as Condition Report 1999-1004. The inspectors assessed this issue using the public radiation safety significance determination process. The inspectors determined that the deficiency had very low risk significance because there was no specific event or abnormal radioactive release associated with the finding. Additionally, had there been an event, the licensee had other radiological environmental monitoring data, so the licensee had maintained the ability to assess the environmental impact.

Inspection Report# : [2000005\(pdf\)](#)

Physical Protection



Significance: May 24, 2000

Identified By: Licensee

Item Type: NCV NonCited Violation

Inadequate protection of Safeguards Information

Licensee Event Report 00-S02-00 documented a failure to protect safeguards information. The licensee identified that significant safeguards information had been left on the site local area network for over 3 years. Procedure W5.503, "Handling of Safeguard Information," Revision 7, Section 5.15, requires that safeguards information not be processed, produced, or stored on an automatic data processing system that is connected to a local area or wide area network. This failure was identified as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy and is in the licensee's corrective action program as Condition Report 2000-0524. This issue was assessed using the physical protection significance determination process. The inspectors found that the issue had very low risk significance because there were no similar findings in the last 4 quarters.

Inspection Report# : [2000010\(pdf\)](#)

Miscellaneous

Significance: N/A Jun 30, 2000

Identified By: NRC

Item Type: FIN Finding

Identification and Resolution of Problems

The team concluded that the licensee was effective in the identification, resolution, and prevention of problems. However, the team observed that the licensee's monitoring of equipment deficiencies involving degraded, but operable, components and systems, did not track the corrective actions to completion until recently. Further, the condition review group had not consistently considered the need to address degraded, but operable, conditions of safety-related equipment in prioritizing actions. The licensee identified 57 open condition reports that were not identified in the condition report system as involving degraded, but operable equipment. The team reviewed 5 of these open condition reports and found prioritization of the sample was appropriate and that the licensee had determined that the due dates for completion of corrective actions were responsive. Corrective actions, when specified, were implemented in a timely manner. Licensee audits and assessments were effective in identifying areas of improvement and underlying programmatic problems. Based on the interviews conducted during this inspection, workers at the

site felt free to initiate condition reports for safety issues in the licensee's identification and resolution of problems program. The team noted that site personnel clearly understood the importance of this program.

Inspection Report# : [2000006\(pdf\)](#)

Significance: N/A Jun 22, 2001

Identified By: NRC

Item Type: FIN Finding

Identification and Resolution of Problems

The licensee effectively identified problems and entered them into the corrective action program. This was evidenced by the relatively few deficiencies identified by external organizations (including the NRC) that had not been previously identified by the licensee during the review period. The licensee appropriately prioritized, characterized, and evaluated issues that were significant conditions adverse to quality. However, it was noted that human performance was a significant contributor to conditions documented in the corrective action program. The licensee adequately implemented corrective actions commensurate with safety that were generally effective. The licensee acknowledged that effectiveness of corrective actions was an ongoing issue. Licensee audits and assessments critically assessed problem identification and resolution activities and identified needs for improvement, as appropriate. Based on the interviews conducted during this inspection, workers at the site felt free to input safety issues into the corrective action program.

Inspection Report# : [2001008\(pdf\)](#)

Last modified : March 28, 2002