

South Texas 2

Initiating Events



Significance: May 07, 2000

Identified By: Self Disclosing

Item Type: FIN Finding

Power transient during maintenance activity due to inadequate balance of plant calibration procedure.

An uncontrolled power increase from full power occurred in Unit 2 while calibrating a deaerator level instrument in the steam plant. The procedure, which was normally performed when the plant was shutdown, did not alert the technicians to the effects of performing the procedure while at power. Operator action terminated the power increase at a peak of 103.7 percent and restored power below 100 percent within 3 minutes. This issue was characterized as a "green" finding using the significance determination process. It was of very low risk significance due to the brief duration of the transient and no thermohydraulic limits were exceeded.

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



Significance: Feb 07, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

Inadequate Procedure for Switching Offsite Power Transformers Leads to Manual Trip

On February 7, 2001, Unit 2 operators improperly executed an attempt to transfer a pair of 13.8KV buses from one offsite power transformer to another, de-energizing the buses. One train of engineered safety feature (ESF) equipment lost power and was reenergized from its standby diesel generator. Operators manually tripped the reactor in response to loss of power to Reactor Coolant Pump 2A. The event was caused by operator error, lack of procedure guidance, time pressure to satisfy breaker interlocks, improper communications, and lack of supervision. Failure to provide adequate procedural steps to transfer offsite power sources was a violation of Technical Specification 6.8.1 and Regulatory Guide 1.33. This violation is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy and is in the licensee's corrective action program as Condition Report 01-2270. This issue had a credible impact on safety and could be viewed as a precursor to a more significant event. The errors removed the preferred offsite power from Train A safety equipment, challenging the ESF diesel and reducing the reliability of accident mitigation equipment in that train. The safety significance of this human performance related event was determined to be very low because all mitigation equipment remained available.

Inspection Report# : [2000014\(pdf\)](#)

Mitigating Systems



Significance: Sep 29, 2000

Identified By: Licensee

Item Type: NCV NonCited Violation

Workers Left a Tool In Containment Recirculation Sump Following Work. Maintenance Procedure Had Inadequate Foreign Material Controls

The licensee found a tool in the Train B containment recirculation sump inside both debris screens in Unit 2. The tool was left behind during preventive maintenance inside the sump almost eight months earlier. The licensee determined that the maintenance instructions did not provide adequate foreign material control instructions, which was a violation of 10 CFR 50, Appendix B, Criterion V. This violation is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy. The safety significance of this issue was very low due to this tool being considered too heavy to be ingested during containment recirculation conditions, however, the potential for other more bouyant objects being left inside the sump was credible due to poor administrative controls and worker practices. A subsequent review determined that proper foreign material exclusion controls were only used in about half the maintenance jobs performed in similar sumps during the previous two years. An object ingested from this sump could affect the containment spray pump or either safety injection pump of the associated train.

Inspection Report# : [2000012\(pdf\)](#)



Significance: Aug 29, 2000

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Criterion III violation for failure to maintain Breaker E2C1 configuration in accordance with its design basis.

When a 480V safety bus feeder breaker unexpectedly tripped, the licensee determined that the breaker had been installed for 10 months with the overcurrent trip setpoint too low to fulfill the breaker's function of supplying safety related loads on Bus E2C1. This was determined to be a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because the station's procedures did not control the configuration of replacement breakers to ensure that the design basis of the breaker was satisfied. This violation is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy. The issue was placed into the licensee's problem identification and resolution program as Condition Report 00-13689. The safety significance of this finding was very low because the licensee had the ability to restore power to all critical loads in a prompt manner using existing procedures and training.

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

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Significance: Apr 18, 2000

Identified By: Licensee

Item Type: FIN Finding

Incomplete impact review of outage work tagout resulted in declaring a train of equipment inoperable in the operating unit.

Unit 1 operators did not thoroughly determine the impact of a tagout to deenergize an electrical panel before authorizing the tags. This caused an unexpected loss of a portion of the instrument air system that impacted safety cooling water systems for both units. Operators in Unit 2, which was operating at full power, responded to the resulting low intake bay level in the Train C essential cooling water system by declaring the train, and thus all supported equipment, inoperable. This issue was characterized as a "green" finding using the significance determination process. It was determined to have very low risk significance because the remaining two trains of ESF equipment were sufficient to maintain mitigating system capability.

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

Significance: TBD Dec 29, 2001

Identified By: NRC

Item Type: AV Apparent Violation

Two procedures which were inappropriate to the circumstances resulted in Essential Cooling Water Pump 1C failure

The Train 1C essential cooling water pump failed during a postmaintenance test following maintenance on the pump. Bearing lubricating water channels were found to be blocked by foreign material introduced during the maintenance work. Additionally, operators failed to recognize the inadequate lubricating water flow and continued to run the pump for 10 minutes before it failed. The inspectors concluded that the operating and maintenance procedures were inappropriate to the circumstances. The maintenance procedures for rebuilding the pump did not adequately ensure that the appropriate cleanliness requirements were implemented during the work, and the portion of the operating procedure used to fill and vent the system following maintenance did not correctly incorporate vendor manual information to ensure timely verification of adequate cooling water flow. This was determined to be an apparent violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings."

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

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Significance: Dec 21, 2001

Identified By: NRC

Item Type: FIN Finding

Following An Event In Which Minnows Clogged ECW Train 1C, The Licensee Was Slow to Identify and Implement Effective Actions From A Safety Perspective

Following an event in which Train C of the Unit 1 essential cooling water system was rendered inoperable because the discharge strainer in Train 1C clogged with small fish, the licensee was slow to identify and implement actions which would have effectively prevented recurrence. Specifically, no effective barriers were identified which would have prevented a buildup of fish in an idle train suction bay during a rapid drop in temperature in the essential cooling pond similar to that which occurred during the event. The initial corrective actions did not assure that the licensee would have effectively monitored for an increase in the fish population and did not include any specific steps to prevent a train from being rendered inoperable if an increase was detected. The licensee added actions to chlorinate idle intake bays at least daily, improve monitoring, and identify a response plan if a buildup of fish was detected. The inspectors concluded that this provided a reasonable barrier to fish population increases in the bays, even during a period of cold weather.

Inspection Report# : [2001010\(pdf\)](#)

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Significance: Dec 06, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

Lack of Corrective Action

The team determined that the licensee failed to identify the need for and implement corrective action to address the degraded condition of Steam Generator Power-Operated Relief Valves, 2MSPV7411, 2MSPV7431, and 2MSPV7441 for a period of four weeks, until prompted by the inspection team. The licensee's corrective action program did not promptly evaluate the out-of-specification condition of the electrohydraulic fluid for the steam generator power operated relief valves. Analysis results received in early November for oil samples drawn in late October 2001 were not reviewed and assessed by the licensee's engineering staff until December 6, 2001, when questioned by the inspection team. Three sample results exceeded

the licensee's criteria. This was a violation of Criterion XVI of Appendix B to 10CFR50, Corrective Action, which requires that conditions adverse to quality be promptly identified and corrected.

Inspection Report# : [2001004\(pdf\)](#)



Significance: Dec 06, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Assure Adequate Design

The measures established by the licensee to assure that the current design would support the safety analysis were not adequate. The team identified a failure to verify the adequacy of the plant design in both units to support the current safety analysis for a loss of normal feedwater event. The failure of the A Train Emergency Diesel Generator with a loss of offsite power could result in the loss of two of the four auxiliary feedwater pumps. The safety analysis for loss of normal feedwater assumes that three pumps will be available. The Train D (Turbine-Driven) Pump cannot be assumed to be available as the essential power for the Train D pump room cooling is supplied from Train A essential power which also supplies the Train A (Electric-Driven) pump. This was identified as a violation of Criterion III of Appendix B to 10 CFR Part 50.

Inspection Report# : [2001004\(pdf\)](#)

Significance: N/A Nov 20, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to satisfy procedure prerequisite leads to inadvertent filling of ESF diesel fuel oil storage tank without verifying satisfactory chemistry

Operators failed to recognize that two routine evolutions using the fuel oil storage and transfer system conflicted because they did not properly verify that the prerequisites were satisfied. When an attempt was made to add fuel oil to the technical support center diesel day tank, the fuel oil storage tank (FOST) for standby diesel generator (SDG) 12 was filled instead. Failure to satisfy prerequisites for 0POP02-FO-0001 was a violation of Technical Specification 6.8.1 and Regulatory Guide 1.33. This violation constitutes an additional example of a previously identified violation (NCV 499/2001005-02) and is not being cited individually.

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



Significance: Sep 18, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

Load Sequencer Maintenance Resulted in De-energized ESF Bus and Inoperable Auxiliary Feedwater Train

The licensee did not recognize that performing maintenance on the Train 1C engineered safety features (ESF) load sequencer rendered Auxiliary Feedwater (AFW) Pump 1C inoperable. A defective new part was not bench-tested, and caused a load shed and deenergized an ESF bus when the load sequencer was energized for testing. The bus had to be manually reenergized because the associated standby diesel generator was out of service. A noncited violation was identified for Work Order 212619, a procedure required by Technical Specification 6.8.1 and Regulatory Guide 1.33, which was inappropriate to the circumstances. This issue was in the licensee's corrective action program under Condition Report 01-14840.

Inspection Report# : [2001005\(pdf\)](#)

Significance: N/A Sep 18, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

Failure to have a required procedure for restoring emergency AC bus power from the normal source.

Failure to have a procedure to energize an emergency AC bus from its normal source of power, a procedure required by Technical Specification 6.8.1 and Regulatory Guide 1.33 (Reference Condition Report 01-14699).

Inspection Report# : [2001005\(pdf\)](#)



Significance: May 29, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to follow procedures resulted in replacing hydraulic oil in steam generator power operated relief valve with out-of-specification oil

The safety significance of this issue was determined to be very low (Green) because the oil was determined to be within limits that support operability of the steam generator power operated relief valve. However, if left uncorrected this issue could become a more significant safety concern and could credibly affect the reliability of safety equipment supplied with oil from this tank. Failure to follow 0PMP04-SG-0007, Revision 10, "Steam Generator PORV Hydraulic Actuator Maintenance," was a violation of Technical Specification 6.8.1, for a Regulatory Guide 1.33 referenced procedure. This violation is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy and is in the licensee's corrective action program as Condition Report 01-9476

Inspection Report# : [2001002\(pdf\)](#)

Significance: N/A May 29, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

Failure to maintain adequate design control for the packing system of a primary isolation valve.

Report The licensee identified a violation for configuration control due to the first isolation valve from the reactor coolant system, in the letdown line, having an inappropriate packing configuration. This manual valve had been changed from a dual packing arrangement with a leakoff line between packing sets to a single packing configuration. However, the single set of packing was above the leakoff line such that the valve had to be backseated to keep reactor coolant from leaking to the reactor coolant drain tank. This issue was an example of inadequate design control, contrary to 10 CFR 50, Appendix B, Criterion III. This violation is being treated as a noncited violation. Reference Condition 01-5556.

Inspection Report# : [2001002\(pdf\)](#)

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Significance: May 10, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate tagging control results in partially draining a safety injection accumulator

The inspectors identified a noncited violation for failure to ensure adequate system alignment was maintained. Following modifications to the safety injection test header, freeze seals were melted without first establishing the correct system alignment. Operators repeatedly vented the system without recognizing that this drained water from the 2C safety injection accumulator until after it was drained below the Technical Specification minimum level. This issue was considered to be a cross-cutting issue for both human performance and problem identification and resolution. Human performance problems, in the form of inadequate communications about and review of isolation boundaries, and limited understanding of the impact of the multiple operations of the same system, were the cause of draining water from the safety injection accumulator. Operators were slow to respond to indications of lowering accumulator level and identify the cause. Further, this issue was under-classified by the licensee for significance, such that no probable cause determination or corrective actions beyond restoring operability were initiated until the inspectors brought the significance of the event to licensee management's attention. As a result, this was also considered to be a finding against the licensee's problem identification and resolution process.

Inspection Report# : [2001002\(pdf\)](#)

Barrier Integrity

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Significance: May 06, 2000

Identified By: Licensee

Item Type: NCV NonCited Violation

Condition outside licensing basis identified and corrected.

During a design review for the replacement steam generators, the licensee identified that both units were outside their licensing basis because both charging pumps restarted automatically upon a loss of offsite power. The safety analysis for loss of offsite power assumed that the charging pumps would not restart upon a loss of power because this condition may result in overfilling the pressurizer. The licensee promptly modified both units to restore the facility to within the license basis. The failure to properly incorporate the licensing basis into the plant as-built design was a violation of 10 CFR Part 50, Appendix B, Criterion III. This violation is being treated as a noncited violation in accordance with Section VI.A of the NRC Enforcement Policy and is in the licensee's corrective action program as Condition Report 00-3229. This violation was characterized as a "green" issue using the significance determination process. It was determined to have very low risk significance because the existing plant configuration (power-operated relief valve capacity) was sufficient to prevent challenging the pressurizer safety valves. To create a loss of reactor coolant system integrity via the power-operated relief valves would require a loss of offsite power, a power-operated relief valve failure, and a power-operated relief valve block valve failure, which is a low probability scenario.

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

Significance: N/A Apr 19, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

A steam generator tube was not inspected under the 100 percent expanded eddy current examination requirement invoked by TS 4.4.5.2.

A violation of Technical Specification 4.4.5.2 was identified for the failure to perform an expanded eddy current examination of all inservice steam generator tubes when the defect threshold was been exceeded. In February 1997, during Refueling Outage 2RE05, the defect threshold was exceeded and the Technical Specification requirement was invoked. On October 16, 1998, during Refueling Outage 2RE06, it was discovered that Tube R02C59 in Unit 2 Steam Generator 2B was inadvertently not examined as required during the previous refueling outage. Thus, the steam generator was operated in this condition for a full cycle in violation of the Technical Specification. During subsequent examination of Tube R02C59, it was determined that no indications or defects existed. This issue was characterized as a No Color finding in accordance with Manual Chapter 0610, in that no Group 2 questions were affirmative and Group 3 questions indicated the issue was greater than minor and was being documented to close a licensee event report. This condition was identified by the licensee and corrective actions were specified in Nonconformance Report NR-THX-98-002, and reported in Licensee Event Report 50-499/1998-003

Inspection Report# : [2001002\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

G**Significance:** Nov 16, 2000

Identified By: Licensee

Item Type: NCV NonCited Violation

Failure to wear required dosimetry when entering a high radiation area

Technical Specification 6.12.1 requires, in part, any individual entering a high radiation area be provided a radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. On October 24, 1999, an individual entered a high radiation area without an alarming dosimeter as described in the licensee's corrective action program, reference CR 99-14992.

Inspection Report# : [2000013\(pdf\)](#)G**Significance:** Nov 16, 2000

Identified By: Licensee

Item Type: NCV NonCited Violation

Failure to follow radiation work permit requirements

Technical Specification 6.8.1 requires procedures for the radiation work permit system. Form 1 of Procedure 0PRP0-ZR-001, "Radiation Work Permits," Revision 8, states, in part, that an individual shall read, understand, and comply with the requirements of the radiation work permit. On November 4, 1999, an individual entered a high radiation area while logged in on a radiation work permit which did not allow entrance into a high radiation area as described in the licensee's corrective action program, reference CR 99-15678.

Inspection Report# : [2000013\(pdf\)](#)G**Significance:** Oct 13, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

Technical Specification 6.8.1 requires procedures for the radiation work permit system.

Technical Specification 6.8.1 requires procedures for the radiation work permit system. Section 4.4 of Procedure 0PGP03-ZR-0051, "Radiological Access and Work Controls," Revision 14, requires radiation workers to review and comply with applicable radiation work permit [requirements]. On February 20 and October 13, 2001, four workers using two different radiation work permits did not comply with the applicable requirements of their permits, as described in the licensee's corrective action program, reference Condition Reports 01-2916 and 01-16500. This violation is being treated as a noncited violation.

Inspection Report# : [2001006\(pdf\)](#)G**Significance:** Mar 16, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to inform workers of the storage of radioactive materials

On March 13-14, 2001, the inspector identified two occasions when radiation protection personnel failed to keep radiation workers informed of the storage of radioactive materials on the 19 foot elevation inside the biological shield-wall of the Unit 2 reactor containment building. 10 CFR Part 19, Section 19.12(a) states, in part, that all individuals who in the course of employment are likely to receive in a year an occupational dose in excess of 100 millirem shall be kept informed of the storage, transfer, or use of radiation and/or radioactive material. The failure to keep radiation workers informed of the storage of radioactive materials is a violation of 10 CFR 19.12(a). These two examples of a violation are being treated as a noncited violation and are in the licensee's corrective action program as Condition Reports 01-4268 and 01-4307. This noncited violation was characterized as a Green finding using the Occupational Radiation Safety Significance Determination Process. This issue was determined to be of very low safety significance because these incidents did not result in an overexposure, or have a substantial potential for an overexposure, and the ability to assess dose was not compromised.

Inspection Report# : [2000014\(pdf\)](#)

G**Significance:** Mar 16, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

Failure to follow radiation work permit requirements

Technical Specification 6.8.1 requires procedures for the radiation work permit system. Section 4.4 of Plant General Procedure OPGP03-ZR-0051, "Radiological Access and Work Controls," Revision 13, states, in part, radiation workers will review and comply with applicable radiation work permit [requirements]. On March 8, 2001, six workers entered a high radiation area using a radiation work permit that did not allow entry into high radiation areas. On March 9, 2001, two workers entered an overhead area in the reactor containment building without contacting health physics personnel as required by their radiation work permit. On March 12, 2001, four workers entered an overhead area in the reactor containment building without contacting health physics personnel as required by their radiation work permit. These events are described in the licensee's corrective action program, reference Condition Reports CR01-3767, CR01-3951, and CR01-4135 (respectively).

Inspection Report# : [2000014\(pdf\)](#)

Public Radiation Safety

G**Significance:** Jan 11, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

Failure to list all required radionuclides on shipping papers

49 CFR 173.433 requires that shipping papers list 95 percent of the most abundant radionuclides based on their A2 values (used to determine proper waste classification). On October 21, 1998, Radwaste Shipment 2-98-0035 consisting of 13 containers of surface contaminated objects did not list 95 percent of the most abundant radionuclides contained in the shipment, as described in the licensee's corrective action program, reference Condition Report 99-1913.

Inspection Report# : [2000014\(pdf\)](#)

Physical Protection

G**Significance:** Apr 05, 2000

Identified By: Licensee

Item Type: NCV NonCited Violation

Failure to revoke an individual's unescorted access when an individual was terminated.

The failure to revoke an individual's unescorted access when an individual was terminated and no longer required unescorted access, was a violation of Section 4.1 of the physical security plan and paragraph 8.5 of procedure OPGP09-ZA-0001, Revision 11. This violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Record 00-6209. This closed LER 498;499/2000-S01.00. This noncited violation was characterized as a "green" finding using the physical protection significant determination process. The violation had very low risk significance (green) because there were no more than two similar findings in the last four quarters.

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

Miscellaneous

Significance: N/A Jul 06, 2000

Identified By: NRC

Item Type: FIN Finding

The facility's corrective action program was effective.

The team identified that the licensee was effective at identifying problems and putting them into the corrective action program. The licensee self-identified the significant deficiencies identified during the review period. The licensee effectively prioritized the extent to which individual problems would be evaluated consistent with their safety and risk significance and established schedules for implementation of corrective actions. In most instances, the licensee implemented corrective actions that were timely and effective. However the team observed two isolated cases in which corrective actions were ineffective. The cases involved security access authorization and access control.

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

Significance: N/A Jun 24, 2000

Identified By: NRC

Item Type: FIN Finding

Programmatic controls did not ensure corrective actions were timely.

Inspectors identified that the licensee did not have specific programmatic controls to ensure that corrective actions for degraded or non-conforming conditions were completed within an appropriate time frame. In one example, the licensee delayed correcting a material-related nonconforming condition in a cooling water line to Standby Diesel Generator 21 five times, including the next refueling outage, without formally evaluating the acceptability of the schedule delays. In this case, the licensee was able to adequately justify delaying the work and no specific safety concerns were identified. Because of the programmatic implications, this was determined to be a finding of no color as a cross-cutting issue dealing with problem identification and resolution

Inspection Report# : [2000009\(pdf\)](#)

Significance: N/A Sep 23, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

Reactor Operator assumend duties with inactive license.

Reactor operator assumes control room watch with an inactive license contrary to 10 CFR 55.53 (Reference Condition Report 00-11749).

Inspection Report# : [2001005\(pdf\)](#)



Significance: Sep 10, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Satisfy Procedure Prerequisite Leads to Inadvertent Dilution; The cause was not determined because the event was underclassified.

Operators failed to recognize that two routine evolutions using the chemical and volume control system conflicted. When they attempted to add borated water to the system, only pure water was added, challenging operators to take action to avoid an unintended power increase above 100 percent. The inspectors concluded that the root cause of this event was a failure to recognize that the plant was not in the configuration required by the procedure in use, in part because of a culture that permitted a loose interpretation of what constituted the required system alignment. The licensee's corrective action program underclassified the significance of this event, and as a result did not adequately identify the cause. It was initially treated as minor because operators were able to negate the effect of the error. The inspectors concluded that this should have been treated as a reactivity management event as defined in the licensee's procedures. Failure to follow OPOP02-CV-0001, "Makeup to the Reactor Coolant System," Revision 17, was a violation of Technical Specification 6.8.1 and Regulatory Guide 1.33. This violation is being treated as a noncited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy (Reference Condition Reports 01-14307 and 01-14309).

Inspection Report# : [2001005\(pdf\)](#)

Significance: N/A Jun 14, 2001

Identified By: NRC

Item Type: FIN Finding

Licensee's problem identification and resolution program was effective.

The licensee adequately identified problems and placed them in the corrective action program. Safety significance was appropriately considered in prioritizing the extent to which individual problems would be evaluated and in establishing schedules for implementation of corrective actions. However, the team identified examples where the evaluations were not clearly documented. With minor exceptions, corrective actions were implemented in a timely manner. Corrective actions to prevent recurrence of conditions adverse to quality were effective. Licensee audits and assessments were effective in identifying problems. Based on the interviews conducted during this inspection, workers at the site felt free to input safety issues into the problem identification and resolution program.

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

Last modified : March 28, 2002