

South Texas 1

Initiating Events



Significance: Dec 16, 2000

Identified By: NRC

Item Type: FIN Finding

Licensee Did Not Determine Cause of Calibration Shift Which Contributed to Safety Injection

During a plant trip event, Unit 1 experienced an unexpected drop in reactor coolant system pressure that required an automatic safety injection actuation to restore plant pressure. Troubleshooting identified that both pressurizer spray controllers experienced a calibration shift during the rapid pressure transient that resulted in both spray valves staying open while demanded to close. The inspectors identified that the licensee did not attempt to determine the cause of the simultaneous calibration shift of these high risk components. Instead, these components were recalibrated and placed back in service with a plan to replace them with a different model during the next outage. This was done without evaluating the conditions under which the components might fail again to help quantify the risk of returning the plant to operation. Additionally, a monitoring plan created to verify proper system operation would not have detected the type of failure observed, since it was a sudden failure during a pressure transient. This issue affected the initiating events cornerstone and had a credible impact on safety. It was determined to have very low safety significance because the pressure transient caused by two stuck open spray valves was bounded by the analysis for a stuck open pressurizer power operated relief valve, which was described in Chapter 15 of the Updated Final Safety Analysis Report.

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



Significance: Mar 26, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

I&C Technicians Connect Test Equipment to Wrong Card, Cause Outward Rod Motion

Instrumentation and Controls technicians connected test equipment to the wrong circuit card, causing control rods to automatically move outward one step. This caused a 5 MWth reactor power increase lasting 2 minutes before operators restored power to its previous level. Failure to follow Plant Surveillance Procedure 0PSP02-SI-0931 was a violation of Technical Specification 6.8.1. This violation is being treated as a noncited violation. Reference Condition Report 01-5375.

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

Mitigating Systems



Significance: May 06, 2000

Identified By: NRC

Item Type: FIN Finding

Post-maintenance testing on both channels of Unit 1 Source Range instrumentation did not demonstrate proper operation of the instruments.

The inspectors determined that post-maintenance testing performed following replacement of high voltage power supplies in both source range nuclear instruments in Unit 1 were inappropriate to demonstrate proper instrument performance. The tests specified observing proper indications for existing plant conditions. The tests were signed as completed despite the fact that the core was defueled, which prevented obtaining any instrument response that demonstrated proper operation. This issue was characterized as a "green" finding using the significance determination process. It was determined to have a very low risk significance because the core was defueled and the instruments were determined to have been operable prior to fuel loading.

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



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\(pdf\)](#)

G

Significance: G 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\(pdf\)](#)

G

Significance: G 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\(pdf\)](#)

G

Significance: G 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 OPOP02-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: G 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: G 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 OPMP04-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\(pdf\)](#)



Significance: G 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



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



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 OPGP03-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\(pdf\)](#)

Public Radiation Safety

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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

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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

G

Significance: Dec 30, 2000

Identified By: Licensee

Item Type: NCV NonCited Violation

Three examples of failure to follow procedures when tagging equipment out of service

During a single shift, Unit 1 operators improperly executed three separate tagging instructions. In the first example, the wrong switch was opened, tagged, and verified. In the second example, the wrong train's standby diesel generator was briefly rendered inoperable after the intended diesel was already inoperable. In the third example, an essential cooling water pump breaker was tagged "off," but the control fuses were not placed in the required off position. [This was documented in Condition Reports 00-17211, 00-17214, 00-17282, and 00-17237.] Failure to follow tagging instructions required by Technical Specification 6.8.1.a and Regulatory Guide 1.33 resulted in three examples of a violation, which will not be cited consistent with Section VI.A.1 of the NRC Enforcement Policy. This was determined to be a cross-cutting issue for human performance because the three examples were linked by having a common cause of inattention to detail and lack of self-checking. The safety significance of the wrong train's standby diesel generator being rendered inoperable was very low because it was quickly recognized and corrected. The safety significance of the other two examples was very low because the tagging errors did not affect operable safety equipment, but was more than minor because they were precursors to a more significant event.

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

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