

## South Texas 1

### 2Q/2005 Plant Inspection Findings

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## Initiating Events

**Significance:**  May 12, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inadequate Procedures Result in Relief Valve Openings During the Performance of Surveillance Tests**

Green. The inspectors identified a noncited violation of Technical Specification 6.8.1.a and Regulatory Guide 1.33, Appendix A, Item 8.b.(1).i, "Emergency Core Cooling Tests," for inadequate procedures that resulted in a letdown pressure relief valve opening during the performance of Plant Surveillance Procedure OPSP03-RH-0009, "Residual Heat Removal System Valve Operability Test," Revision 5, on March 16, 2004, and again during performance of preventive maintenance procedure PM IC-2-89001568 on May 2, 2005. This finding was a performance deficiency because it had the actual impact of lifting a relief valve and therefore is associated with an increase in the likelihood of an initiating event. The finding was of greater than minor significance since it was associated with the cornerstone attribute of Initiating Events and affected the associated cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. The finding was only of very low safety significance because, assuming worst case degradation, the lifted relief valve would not have resulted in exceeding the technical specification limit for identified reactor coolant system leakage. This issue also involved problem identification and resolution crosscutting aspects in the area of prioritization and evaluation. Additionally, the event had cross-cutting aspects in the area of human performance related to procedural adequacy and equipment knowledge.

Inspection Report# : [2005003\(pdf\)](#)

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## Mitigating Systems

**Significance:**  Jun 24, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

### **Reactor Coolant Leakage Detection System Calibration**

Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, associated with the licensee's failure to assure that applicable regulatory requirements and the design basis for the containment radiation gas monitors were correctly translated into the reactor containment building radiation monitor setpoints. This deficiency resulted in the radiation monitors being incapable of performing the design basis function to detect a one gallon per minute reactor coolant system leak within one hour in accordance with the licensee's commitment to Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems." This finding was a performance deficiency because the reactor containment building radiation monitor was not capable of performing the design basis function for an extended period of time. The finding was of greater than minor significance because the failure to alarm by the containment radiation monitor resulted in potential impact on reactor safety and adversely affected the reactor coolant leakage performance attribute of the Barrier Integrity cornerstone. The finding was only of very low safety significance because other methods of reactor coolant system leak detection were available to the licensee and operators responded to the trending in the volume control tank level and then noted the rising trend recorded by the particulate radiation monitor. The failure of the radiation monitor to alarm within one hour did not contribute to an increase in core damage sequences when evaluated using the Significance Determination Process Phase 2 worksheets.

Inspection Report# : [2005003\(pdf\)](#)

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**Significance:**  Feb 28, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

### **Essential Chiller 2C Failure to Start.**

A self-revealing noncited violation of Technical Specification 3.7.14 was reviewed for Essential Chiller 22C being inoperable for longer than the allowed seven days without required actions being performed. The licensee reported the event on Licensee Event Report 0500499/2005-002. The failure to maintain Essential Chiller 22C operable in accordance with Technical Specification 3.7.14 is a performance deficiency. The finding was determined to be greater than minor because it affected the equipment performance attribute of the Reactor Safety Mitigating System Cornerstone. Additionally, the finding was associated with the operability, availability and reliability of the essential chiller. During a Phase 1 screening of the Significance Determination Process, the finding was determined to require a Phase 2 evaluation because it represented actual loss of safety function of a single train for greater than its Technical Specification Allowed Outage Time. After processing through Phase

2, the violation was determined to be of very low safety significance (Green) because the other two trains were operable  
Inspection Report# : [2005002\(pdf\)](#)

**G**

**Significance:** Jan 04, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

**Failure to Initiate a Condition Report When A Degrading Trend was Identified.**

A self-revealing noncited violation of 10 CFR Part50, Appendix B, Criterion XVI was reviewed for several failures of the licensee's problem identification and resolution program to identify and evaluate, and promptly correct a degraded bearing condition and lube water flow problem on Essential Cooling Water Pump 1B. The licensee identified abnormal essential cooling water pump lube water flow conditions and suspected pump bearing damage, conditions adverse to quality, but the licensee's corrective measures were not prompt to evaluate the impact on continued operation. In some cases the licensee did not initiate a condition report. The failure to document and evaluate adverse conditions in the Corrective Action Program is a performance deficiency because the licensee is expected to follow quality related procedures. This issue was greater than minor because it affected the equipment performance attribute of the Mitigating Systems Cornerstone. The finding had very low safety significance (Green) because the affected equipment remained functional. This issue involved problem identification and resolution crosscutting aspects associated with identifying and evaluating conditions adverse to quality.

Inspection Report# : [2005002\(pdf\)](#)

**G**

**Significance:** Nov 04, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

**Inadequate Maintenance Procedure for the Essential Chiller's Oil Pump**

A self-revealing, noncited violation of 10CFR 50, Appendix B, Criterion V was documented due to an inadequate maintenance procedure that resulted in chiller operation with a misaligned oil pump. The misalignment caused unplanned chiller outages, which rendered it inoperable. The chillers provide water for temperature control of safe shutdown equipment rooms. This finding included cross-cutting aspects for prior missed opportunities to identify the inadequate procedure. Based on the results of a Significance Determination Process (SDP) using Manual Chapter (MC) 0609, Appendix A1, Phase 1 work sheet, this finding was determined to have very low safety significance. The finding was not a design or qualification deficiency of safety related equipment, did not result in a loss of a safety function, did not result in a loss of a safety function of a single train for greater than its allowed Technical Specification outage time, and screened out for external events. The failure to have an adequate maintenance procedure for the essential chiller's oil pump is a violation of 10 CFR 50, Appendix B, Criterion V.

Inspection Report# : [2004011\(pdf\)](#)

**G**

**Significance:** Nov 04, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

**Two Failures to take Timely Corrective Action to REplace Defective Relays**

The licensee did not promptly replace Potter & Brumfield relays with known manufacturing flaws that impacted both single stack and double stack relays manufactured before 1990. After being alerted to a manufacturing flaw through 10 CFR Part 21 reports and an information notice and after a double stack relay failed because of this manufacturing flaw, the licensee failed to promptly replace the single coil stack Potter & Brumfield relays installed at the facility. In 2004, a single coil stack relay failed, which again affected the operability of an essential chiller. The licensee then decided to replace all the essential chiller normally energized Potter & Brumfield relays manufactured before 1990. The licensee did not promptly replace Potter & Brumfield relays, which had exceeded their service life. During a repair in 2003, the licensee identified that all of the essential chiller 22R Potter & Brumfield relays had exceeded their service life. While the licensee planned to replace outdated relays, their corrective actions were not prompt and in 2004, another chiller's 22R relay failed, which again affected the operation of an essential chiller. Based on the results of a Significance Determination Process (SDP) using Manual Chapter (MC) 0609, Appendix A1, Phase 1 work sheet, this finding was determined to have very low safety significance. The finding was not a design or qualification deficiency of safety related equipment, did not result in a loss of a safety function, did not result in a loss of a safety function of a single train for greater than its allowed Technical Specification outage time, and screened out for external events. Title 10 of the Code of Federal Regulations (CFR), Part 50, Appendix B, Criterion XVI, requires that conditions adverse to quality causes be promptly corrected. The licensee failed to take timely corrective actions to replace the defective Potter and Brumfield relays and 22R relays.

Inspection Report# : [2004011\(pdf\)](#)

**G**

**Significance:** Sep 09, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Use Authorized Document to Perform Quality Related Work**

A Green noncited violation of 10 CFR Part 50, Appendix B, Criteria V, was identified regarding a failure of maintenance personnel to obtain an authorized work document containing instructions, procedures, or drawings, prior to performing maintenance on the fuel pump metering rods of emergency diesel Generator 21. Without authorized work documents issued there were no instructions or procedures available and no quantitative or qualitative acceptance criteria established. The operability of emergency diesel Generator 21 immediately following the

maintenance was indeterminate. However, after learning of the unauthorized maintenance, the licensee successfully completed operability testing of the diesel. The failure to obtain an authorized work document containing instructions, procedures, or drawings prior to performing maintenance on an emergency diesel generator is a performance deficiency. The finding was determined to be greater than minor because it affected the equipment performance attribute of the reactor safety mitigating system cornerstone and the finding was associated with the operability, availability, and reliability of the emergency diesel generator. Using Phase 1 of the Significance Determination Process, the finding was determined to screen as Green because the finding was not a design or qualification deficiency, it did not represent the loss of a safety function, and it did not screen as potentially risk significant due to a seismic, flooding, or severe weather event .

Inspection Report# : [2004005\(pdf\)](#)

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**Significance:** Jul 07, 2004

Identified By: NRC

Item Type: FIN Finding

**Fire safe shutdown analysis did not account for the impact of reactor coolant seal leakage.**

A Green finding was identified associated with Fire Safe Shutdown Analysis because the licensee had not accounted for the impact of expected reactor coolant pump seal leakage. The licensee's Fire Safe Shutdown Analysis credited charging borated water for maintaining both reactivity control and reactor coolant inventory control functions. However, in a number of fire areas charging was procedurally stopped to avoid damaging the charging pumps as a result of a spurious closing of either of the motor-operated volume control tank suction valves. The Operator Action List directed establishing charging within 2 hours. The inspector determined that there was no analytical basis for allowing charging to be secured this long. Because the licensee was able to re-perform the safe shutdown analyses and demonstrate that the plant could meet its fire safe shutdown design without charging or seal injection for 2 hours, no violation of NRC requirements existed. This issue was determined to be more than minor because it was similar to Example 3.i of Manual Chapter 0612, Appendix E in that the Fire Safe Shutdown Analysis had to be re-performed to assure that the acceptance criteria were met. This issue affected the Mitigating Systems Cornerstone because it related to the availability of charging when it was required to mitigate the effects of a fire. This issue was determined to have very low safety significance because it involved a design deficiency confirmed not to result in a loss of function.

Inspection Report# : [2004003\(pdf\)](#)

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## Barrier Integrity

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**Significance:** May 19, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

**Unit 1 Exceeding Licensed Thermal Power Limits**

Green. A self revealing noncited violation of License Condition 2.C(1) of Facility Operating License NPF-76 was identified. License Condition 2.C(1) of Facility Operating License NPF-76 requires, in part, that South Texas Project Unit 1 operate at reactor core power levels not in excess of 3,853 megawatts thermal. It was determined that the reactor thermal output instruments provided non-conservative data to the reactor power calculation. This resulted in the 8-hour power average routinely being in excess of the licensed thermal power limit of 3,853 megawatts thermal between April 15 and May 19, 2005. This finding was a performance deficiency because the facility was not operated in accordance with the conditions of the South Texas Project license. The finding was more than minor because it was associated with the Barrier Integrity cornerstone and the protection of the fuel cladding barrier attribute. The finding was only of very low safety significance because the small increase in power above the licensed limit could be accommodated by the available margins in the safety analysis, and therefore did not significantly degrade plant safety. This issue involved problem identification and resolution crosscutting aspects associated with identifying and evaluating conditions adverse to quality.

Inspection Report# : [2005003\(pdf\)](#)

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## Emergency Preparedness

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## Occupational Radiation Safety

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**Significance:** Sep 02, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

**Failure to use a proper high radiation area radiation work permit.**

A self-revealing noncited violation of Technical Specification 6.12.1 was reviewed because a worker entered a high radiation area without proper radiation work permit authorization. On July 28, 2004, an individual received an electronic personal dosimeter alarm after entering a high radiation area in Pipe Penetration Room 211. The radiation work permit used by the individual did not allow entry into such areas. The finding was entered into the licensee's corrective action program. The failure to have proper radiation work permit authorization prior to entering a high radiation area is a performance deficiency. This finding is greater than minor because it is associated with the Occupational Radiation Safety Program and Process attribute and affected the cornerstone objective, which is to ensure adequate protection of the worker health and safety from exposure to radiation. Using the Occupational Radiation Safety Significance Determination Process, the inspector determined that the finding was of very low safety significance because it did not involve (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. In addition, this finding had a crosscutting aspect associated with human performance.

Inspection Report# : [2004004\(pdf\)](#)

**G**

**Significance:** Sep 02, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to perform a radiological survey.**

The inspector identified a noncited violation of 10 CFR 20.1501(a) because a radiological survey was not performed before work commenced. On April 4, 2004, the Unit 2 reactor head was lifted to a 15 - 20-inch hold point during a shift change. Once the hold point was reached, workers began staging stud hole cover equipment near the reactor head flange before a survey was taken to determine the radiological conditions. Immediate corrective actions were to suspend the work activity, move the workers to a low dose area, perform the survey, and inform the workers of the current radiological conditions. In addition, the finding was entered into the licensee's corrective action program. The failure to perform a radiological survey before commencing work activity is a performance deficiency. This finding is greater than minor because it is associated with the Occupational Radiation Safety Program and Process attribute and affected the cornerstone objective, which is to ensure adequate protection of the worker health and safety from exposure to radiation. Using the Occupational Radiation Safety Significance Determination Process, the inspector determined that the finding was of very low safety significance because it did not involve (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. In addition, this finding had cross-cutting aspects associated with human performance and problem identification and resolution.

Inspection Report# : [2004004\(pdf\)](#)

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## Public Radiation Safety

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## Physical Protection

[Physical Protection](#) information not publicly available.

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## Miscellaneous

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**Significance:** Jun 23, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Refer an Employee to the Employee Assistance Program**

Green. The inspector identified a noncited violation of 10 CFR parts 26.20 and 26.27 (b)(1), and South Texas Project Policy 502. Specifically, an individual whose fitness was in question, was allowed to return to duty prior to determining whether he was fit to safely and competently perform his job function. The licensee initiated a corrective action document to address this failure. This finding is greater than minor because it affects the Physical Protection cornerstone attribute associated with Access Authorization Systems. When this finding is processed through the interim physical protection significance determination process, it was determined to be a finding of very low significance because although there was no malevolent act and there were no greater than two similar findings in four quarters. This finding had cross-cutting aspects associated with human performance, because of the licensee's failure to follow their procedures.

Inspection Report# : [2005003\(pdf\)](#)

**Significance:** N/A Nov 04, 2004

Identified By: NRC

Item Type: FIN Finding

**Identification and Resolution of Problems**

The licensee's processes to identify, prioritize, evaluate, and correct problems have improved during the last six to nine months. The processes were generally effective; thresholds for identifying issues were low and, in most cases, corrective actions were adequate to address conditions adverse to quality. However, the team noted that, due to the lack of aggressive problem identification and resolution in the past, two vital plant components experienced several failures. The components were the essential chillers and Class 1E inverters. The team also identified that the licensee undertook extensive corrective actions earlier in 2004 to address these failures. The team concluded that a positive safety-conscience work environment exists at the South Texas Project. The team determined that employees feel free to raise safety concerns to their supervision, the employee concerns program, and the NRC.

Inspection Report# : [2004011\(pdf\)](#)

Last modified : August 24, 2005