

Palo Verde 2

Initiating Events

Significance:  Nov 18, 2000

Identified By: Licensee

Item Type: NCV NonCited Violation

Reactor trip caused by a failure to follow an operations procedure

On November 18, 2000, Unit 2 experienced a reactor cut-back resulting from a turbine-generator component fault. Following the reactor cut-back, the reactor operator manually inserted reactivity at a rate sufficient to cause an Auxiliary Variable Over Power Trip. The licensee determined that the reason for the reactor trip was that the load rejection procedure, which required that the reactor be stabilized at > 20% power or < 12% power, was not followed. This was a violation of Technical Specification 5.4.1. [This violation was entered into the licensee's corrective action program as CRDR 2339523. This finding was determined to have a very low risk significance because it was an anticipated transient and all safety related equipment functioned properly.]

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

Mitigating Systems

Significance:  Sep 22, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

Auxiliary feedwater pump became inoperable due to improper operation of a steam trap

Technical Specification 5.4, "Procedures," requires that written procedures be implemented and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Section 3.i of this Regulatory Guide includes instructions for operating the main steam system. Procedure 40OP-9SG01, "Main Steam," Revision 23, provides instructions for critical steam trap blowdown operation. On September 22, 2001, a Unit 2 steam trap isolation valve shut due to loss of control power. [Because of incorrect understanding of the impact of this failure], steam trap blowdown was not performed within the time requirements of Procedure 40OP-9SG01, which resulted in the licensee declaring auxiliary feedwater Pump A inoperable for approximately 4 hours. This was identified in the licensee's corrective action program as CRDR 2425046. This finding is only of very low significance because it only affects the mitigation systems cornerstone and all mitigating systems, including auxiliary feedwater Pump A, were functional.

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

Significance:  Aug 06, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to promptly identify HPSI valve misalignment on condition report/disposition request

10 CFR Part 50, Appendix B, Criterion XVI, Corrective Action requires that conditions adverse to quality be promptly identified and corrected. Procedure 90DP-0IP10, "Condition Reporting," Revision 11, requires that a condition report be written for conditions such as a valve or component misalignment. On October 31, 2000, the operations crew that performed Procedure 73ST-9XI 33, "HPSI Pump and Check Valve Full Flow Test," Revision 19, discovered a valve misalignment and did not document the misalignment in a condition report. This event was discovered during the investigation for CRDR 2332280, "Failure of HPSI Pump Discharge Check Valve 2PSIBV405," and was determined to

have caused a hydraulic transient in the high pressure safety injection system. This finding is described in CRDR 2352119. This finding is of very low safety significance because the hydraulic transient in the high pressure safety injection system did not damage the system.

Inspection Report# : [2001003\(pdf\)](#)

Significance:  Aug 06, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

Failure to prevent recurrence of HPSI check valve failure, a significant condition adverse to quality

10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires that the cause of significant conditions adverse to quality be determined and corrective action be taken to preclude repetition. Contrary to this, the licensee determined that they had not adequately addressed prior Borg-Warner check valve failures that occurred in 1997 and 1998, which were identified as significant conditions adverse to quality. As a result, a repeat failure occurred. Specifically, on October 23, 2000, while PVNGS, Unit 2, was in mode 6, the licensee identified that Unit 2, Train B, high pressure safety injection pump discharge Check Valve 2PSIBV405 had excessive back-leakage. This violation is in the licensee's corrective action program as CRDR 2332280. The issue was determined to be of very low safety significance because the core would have been adequately cooled, during the most severe accidents.

Inspection Report# : [2001003\(pdf\)](#)

Significance:  Mar 31, 2001

Identified By: NRC

Item Type: FIN Finding

Anomalies in testing and test results for essential cooling water heat exchangers leads to ineffective trending

The inspector identified that the licensee was not effectively trending essential cooling water heat exchanger thermal performance. Ineffective heat exchanger performance trending could allow thermal performance to degrade below design bases limits without detection, which is a credible impact on safety. The essential cooling water system is a mitigating system. The finding was of very low safety significance, because the actual cumulative effect of these errors was less than the available thermal performance margin and in all cases, the heat exchangers remained operable.

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

Significance:  Mar 07, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

Auxiliary feedwater pump inoperable due to improper operation of a steam trap

TS 5.4, "Procedures," requires that written procedures be implemented and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Section 3.i of this Regulatory Guide includes instructions for operating the main steam system. Procedure 40OP-9SG01, "Main Steam," Revision 23, provides instructions for operation of steam traps when they are removed from service. On March 7, 2001, Unit 2 Auxiliary Feedwater Pump AFA-P01 was made inoperable for approximately 3.5 hours after Steam Trap SGN-M23 was removed from service and not operated as described in 40OP-9SG01. This finding is described in CRDR 2369601. This finding is of very low safety significance because it did not cause a loss of the auxiliary feedwater safety function.

Inspection Report# : [2001003\(pdf\)](#)

Significance:  Feb 22, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to promptly identify and correct an inadequate HPSI system venting procedure

A non-cited violation was identified when the licensee failed to promptly identify and correct an inadequate

surveillance procedure that was used to periodically vent the high pressure safety injection (HPSI) system. The procedure failed to include guidance for conducting HPSI system venting and the acceptance criteria to ensure successful venting. This failure resulted in inadequate HPSI system venting since February 1997. This was a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI. This violation was entered into the licensee's corrective action program as CRDR 2316659. The underlying technical issue, an inadequate surveillance procedure, was assessed by the significance determination process and determined to have very low safety significance because the high pressure safety injection system remained operable.

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



Significance: Dec 08, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

Unit 2 Train B DC Equipment Room Cooler Isolation Valve Found Closed or Partially Closed

The outlet isolation valve to the Train B DC equipment room cooler was found by licensee personnel to be fully closed on two occasions and partially closed on a third occasion within an 8-week period (August 25 through October 25, 1998). The failure to identify the condition on August 25, 1998, as a significant adverse condition; to identify the root cause and to take corrective actions to prevent recurrence was identified as a violation of Criterion XVI of Appendix B to 10 CFR Part 50. The finding was of very low significance because all mitigation systems remained operable, barrier integrity was not challenged, and the license entered the finding into the corrective action program (Section 1R21.3.b)

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

Barrier Integrity

Emergency Preparedness



Significance: Sep 26, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to periodically test the ability to meet minimum emergency response facility staffing response times during off-hours.

IR 05000528-02-04, IR 05000529-02-04, IR 05000530-02-04, IR 72-44/02-02; Arizona Public Service Company; 6/23/02 - 9/21/02; Palo Verde Nuclear Generating Station, Units 1, 2, and 3; Emergency Response Organization Augmentation Testing and Access Control. A noncited violation of very low safety significance was identified for failure to periodically test the ability to meet minimum emergency response facility staffing response times during off-hours. Off-hours exercises are only conducted once every 6 years, and off-hours quarterly pager and autodialer tests conducted over the past year were only functional tests that did not establish response times to the emergency facilities. Failure to adequately test the ability to meet minimum emergency response facility staffing response times during off-hours is a violation of 10 CFR 50.54(q), which requires that a licensee follow their emergency plans. Section 8.1.3, "Drills," of the Emergency Plan states that drills for the emergency organization are conducted periodically throughout the year to test response timing and emergency equipment and to ensure members of the Emergency Response Organization are familiar with their duties. Section 5.1.2.2 of Emergency Plan Implementing Procedure 08 requires that quarterly pager and autodialer testing be conducted to demonstrate minimum staffing response capability for the emergency facilities. Minimum staffing is defined in Table 1 of the Emergency Plan and includes positions and response times during normal and off-hours for each emergency facility. Contrary to the above, drills for the emergency response organization have not tested off-hours response timing periodically throughout the year. The last off-hours facility activation drill was conducted in 1999, and off-hours pager and autodialer tests conducted each quarter did not demonstrate response timing. The finding was determined to be a performance deficiency associated

with emergency response organization augmentation testing. The finding was evaluated to be more than minor using the Emergency Preparedness Significance Determination Process because it affects the emergency preparedness cornerstone objective in that inadequate testing of the augmentation function can fail to identify problems in staffing the emergency facilities in a timely manner. The finding was evaluated as having very low safety significance (Green), since it was a failure of a regulatory requirement but not a failure to meet an emergency planning standard. This finding is in the licensee's corrective action process as Condition Report/Disposition Request 2532635 and is being treated as a noncited violation (50-528/02-04-01; 50-529/02-04-01; 50-530/02-04-01) in accordance with Section VI.A of the NRC Enforcement Policy (Section 1EP3).

Inspection Report# : [2002004\(pdf\)](#)

Occupational Radiation Safety

Significance:  Feb 22, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to conduct adequate radiation surveys

Three examples of a failure to conduct adequate radiological surveys. On December 21, 1999, radiological surveys failed to detect changing radiological conditions at the "B" concentrate monitor tank. On May 4, 2000, radiological surveys failed to detect changing radiological conditions at the "B" LPSI pump cyclone separator and changing radiological conditions following a drain down of the spent fuel transfer canal. As a result, radiological area postings and controls for these areas were inappropriate. These three examples of inadequate radiological surveys were a violation of 10 CFR Part 20.1501. This violation was entered into the licensee's corrective action program as CRDRs 113251, 117874 and 117970. These findings were determined to have very low risk significance because there was no overexposure or substantial potential for an overexposure and the ability to assess radiation doses was not compromised.

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

Public Radiation Safety

Physical Protection

Significance:  Sep 26, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to mark a portion of a document as containing Safeguards information.

IR 05000528-02-04, IR 05000529-02-04, IR 05000530-02-04, IR 72-44/02-02; Arizona Public Service Company; 6/23/02 - 9/21/02; Palo Verde Nuclear Generating Station, Units 1, 2, and 3; Emergency Response Organization Augmentation Testing and Access Control. A noncited violation of very low safety significance was identified for failure to mark a portion of a document as containing Safeguards information. On September 18, 2001, pursuant to 10 CFR 50.90, the licensee submitted to NRC Headquarters a change to its physical security plan. A portion (page) of this plan change included the size (number) of the armed response force used to defend all three units at Palo Verde and was not marked as containing "Safeguards Information." 10 CFR 73.21 requires, in part, that information regarding the size (number) of responding security forces be marked "Safeguards Information" in a conspicuous manner to indicate the presence of protected information. Following identification of this issue, the licensee withdrew all copies of this physical security plan change. The failure to conspicuously mark a portion of a document as "Safeguards Information"

was determined to be a performance deficiency. The finding was evaluated to be more than minor because it affects a physical protection cornerstone objective and if left uncorrected it would become a more significant safety concern. Using the Physical Protection Significance Determination Process, the inspector determined the violation had very low safety significance because there were not more than two similar findings in four calendar quarters. Because of the very low safety significance (Green) and because the licensee included the finding in their corrective action program as Condition Report/Disposition Request 2433526, this finding is being treated as a noncited violation (50-528/02-04-02; 50-529/02-04-02; 50-530/02-04-02) in accordance with Section VI.A of the NRC Enforcement Policy (Section 3PP2).
Inspection Report# : [2002004\(pdf\)](#)



Significance: Sep 26, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to mark a drawing as containing Safeguards information.

IR 05000528-02-04, IR 05000529-02-04, IR 05000530-02-04, IR 72-44/02-02; Arizona Public Service Company; 6/23/02 - 9/21/02; Palo Verde Nuclear Generating Station, Units 1, 2, and 3; Emergency Response Organization Augmentation Testing and Access Control. A noncited violation of very low safety significance was identified for failure to mark a drawing as containing Safeguards information. On June 27, 2002, the licensee maintained Drawing TY-GL-002 (sheet 1 of 1), which contained an overview block diagram of the Palo Verde new North Access Facility and the new Independent Spent Fuel Storage Installation (ISFSI) and was not marked as containing "Safeguards Information." 10 CFR 73.21 requires, in part, that information regarding the site-specific drawings that substantially represent the final design features of the physical protection system be marked "Safeguards Information" in a conspicuous manner to indicate the presence of protected information. Following identification of this issue, the licensee ensured that all copies of the drawing were properly marked. The failure to conspicuously mark the drawing as "Safeguards Information" was determined to be a performance deficiency. The finding was evaluated to be more than minor because it affects a physical protection cornerstone objective and if left uncorrected it would become a more significant safety concern. Using the Physical Protection Significance Determination Process, the inspector determined the violation had very low safety significance because there were not more than two similar findings in four calendar quarters. Because of the very low safety significance (Green) and because the licensee included the finding in their corrective action program as Condition Report/Disposition Request 2533054, this finding is being treated as a noncited violation (50-528/02-04-03; 50-529/02-04-03; 50-530/02-04-03) in accordance with Section VI.A of the NRC Enforcement Policy (Section 3PP2).

Inspection Report# : [2002004\(pdf\)](#)



Significance: Nov 29, 2000

Identified By: Licensee

Item Type: NCV NonCited Violation

Failure to properly secure safeguards information.

10 CFR 73.21(d)(2) states that, while safeguards information is unattended, the information shall be stored in a locked security storage container. Procedure 20DP-OSK43, Revision 4, paragraph 3.8.3, states that, while unattended, materials containing safeguards information shall be stored in an approved, locked safeguards storage container. Contrary to the above requirements, on July 28, 2000, the licensee left a safeguards safe unlocked outside the protected area. This condition was identified by the licensee and corrective actions were specified in Condition Report/Disposition Request 2308078. This condition was reported in LER 50-528;-529;-530/2000-S01-00. This issue was determined to be of very low safety significance (Green) by the significance determination process because there were not greater than two similar findings in the last four quarters.

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

Miscellaneous

Significance: N/A Mar 19, 2002

Identified By: NRC

Item Type: FIN Finding

Identification and resolution of problems.

The licensee was generally effective at identifying problems and placing them into the corrective action program. The licensee effectively used risk information in prioritizing the extent of evaluation of individual problems and the schedule for implementation of corrective actions. The licensee effectively prioritized and evaluated issues with few exceptions. One exception involved a final operability evaluation which concluded that the main steam and feedwater isolation system actuation circuitry was operable took approximately 5 months to complete. Another example involved a failure to fully determine the extent of a condition associated with Borg-Warner check valve failures which resulted in additional failures. Corrective actions, when specified, were implemented in a timely manner. Based on interviews conducted during this inspection, workers at the site felt free to input safety issues into the problem identification and resolution program (Section 4OA2).

Inspection Report# : [2002005\(pdf\)](#)

Significance: N/A Feb 22, 2001

Identified By: NRC

Item Type: FIN Finding

Identification and resolution of problems was effective

The licensee was effective at identifying problems and putting them into the corrective action program. The licensee's effectiveness at problem identification 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 effectively used risk information in prioritizing the extent of evaluation of individual problems and the schedule for implementation of corrective actions. Corrective actions, when specified, were generally implemented in a timely manner. However, there was one instance that is discussed below, where the licensee did not promptly identify and correct an inadequate procedure. Licensee audits and assessments were effective. 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 (Sections 4OA2.1b;2b;3b;4b).

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

Last modified : December 02, 2002