Palo Verde 3
2Q/2008 Plant Inspection Findings

Initiating Events

Significance: G Nov 02, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Implementation of Risk Management Actions and Risk Assessments for the Switchyard
Green. The team identified a noncited violation of 10 CFR 50.65(a)(4) for the failure to adequately assess the increase in risk and effectively implement risk mitigation actions for maintenance activities in the switchyard. Specifically, the switchyard was not being protected by controlling access and movement as required and the risk modeling did not include all work being performed. The Unit 1 shift manager and the switchyard coordinator were unaware of the movement of multiple vehicles and pieces of equipment in or near restricted areas and not all maintenance was included in the schedule provided to the switchyard coordinator for risk review. This issue was entered into the licensee's corrective action program as Palo Verde Action Request 3078392.

This finding is greater than minor because the licensee's risk assessment failed to consider maintenance activities that could increase the likelihood of initiating events such as work in the switchyard and failed to effectively manage compensatory measures. Inspection Manual Chapter 0609, "Significance Determination Process," Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," was used to assess the significance. Using data from the licensee's probabilistic risk assessment, a NRC Region IV senior reactor analyst calculated the risk deficit. Based on the magnitude of the calculated risk deficit being less than 1E-6/year, this finding is determined to be of very low safety significance. The cause of this finding has crosscutting aspects associated with work control of the human performance area in that the licensee did not appropriately coordinate switchyard activities incorporating risk insights (H.3.(a)) and did not communicate with each other during activities in which coordination is necessary to assure plant and human performance (H.3.(b)).

Inspection Report# : 2007012 *(pdf)*

Significance: G Oct 02, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Two Examples of a Failure to maintain Control of Transient Combustibles
Green. The team identified a noncited violation of Technical Specification 5.4.1.d for the failure of fire protection personnel to follow Procedure 14DP-0FP33, "Control of Transient Combustibles," Revision 15. Specifically, the team identified that on the 70' elevation of the Auxiliary Building (Radiation Protection Remote Monitoring Station) and in the Unit 3 containment, there were transient combustibles being stored without the proper evaluation and required permits. This issue was entered into the corrective action program as Palo Verde Action Request 3071785.

The finding is considered more than minor because storing unanalyzed material could result in the potential to exceed combustible limits and is associated with an increase in the likelihood of an initiating event. Using Inspection Manual Chapter 0609, "Significance Determination Process," Appendix F, Fire Protection Significance Determination Process," this issue affected the Fire Prevention and Administrative Controls Category. In this case the stored materials required a permit per the licensee's procedure; however, the area was attended, fire detection and suppression was available, and the amounts did not exceed the loading calculation to the point of changing the loading classification. Therefore, this finding is considered of Low Degradation and had very low safety significance. The cause of this finding has crosscutting aspects associated with work practices in the human performance area because (1) the licensee failed to communicate human error prevention techniques such that work activities were performed safely (H.4.(a)), and (2) the licensee did not effectively communicate expectations regarding procedural compliance (H.4.(b)). The cause of this finding is also related to the safety culture component of accountability in that fire protection personnel failed to demonstrate a proper safety focus and reinforce safety principles among their peers (O.1.(c)).

Inspection Report# : 2007012 *(pdf)*

Mitigating Systems

Significance: G Mar 31, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish Preventative Maintenance Procedures for Emergency Diesel Generator Fuel Oil Injection Pump O-Rings
The inspectors identified a non-cited violation of Technical Specification 5.4.1.a for the failure of operations and engineering personnel to establish and implement maintenance procedures for inspection and replacement of items that have a specific lifetime. Specifically, between February 12, 2007 and March 7, 2008, operations and engineering personnel failed to inspect or replace the emergency diesel generators fuel oil injection pump upper O-rings prior to the end of their service life resulting in fuel leakage and increased unavailability and unreliability of Unit 1 Train A, Unit 2 Train B, and Unit 3 Train B emergency diesel generators. This issue was entered into the licensee's corrective action program as Palo Verde Action Request 3143422.

This finding is greater than minor because it is associated with the equipment performance attribute of the mitigating systems cornerstone and affects the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because it did not represent a loss of system safety function, an actual loss of safety function of a single train for greater than its technical specification allowed outage time, or screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event. This finding has a crosscutting aspect in the area of problem identification and resolution associated with operating experience because the licensee failed to use available operating experience, including vendor recommendations, to implement and institutionalize operating experience through changes to station processes, procedures, equipment, and training programs [P.2(b)].

Inspection Report# : 2008002 *(pdf)*

Significance: G Mar 31, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Two Examples of a Failure to Properly Implement the Systematic Troubleshooting Process
The inspectors identified two examples of a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the failure of operations, engineering, and maintenance personnel to follow procedures for troubleshooting failures of safety related components. Specifically, between January 8 and January 13, 2008, operations, engineering, and maintenance personnel failed to incorporate the adequate level of detail into their troubleshooting plans for the Unit 3 auxiliary feedwater trip and throttle Valve AFA HV 0054 when it failed to fully close upon demand from the control room hand switch, and for the Unit 3 log power Channel A when induced noise was present. These issues were entered into the licensee's corrective action program as Palo Verde Action Requests 3120075 and 3118744.

This finding is greater than minor because it is associated with the equipment performance attribute of the mitigating systems cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because it did not represent a loss of system safety function, an actual loss of safety function of a single train for greater than its technical specification allowed outage time, or screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event. Both examples have a crosscutting aspect in the area of human performance associated with decision making because the licensee did not obtain appropriate interdisciplinary input and reviews on safety significant or risk significant decisions [H.1(a)].

Inspection Report# : 2008002 *(pdf)*

Significance: G Mar 31, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Maintain Adequate Staffing Levels Results in Heavy Use of Overtime to Maintain Adequate Shift Coverage
The inspectors identified a non-cited violation of Technical Specification 5.2.2.d involving the routine use of excessive overtime for operations personnel that performed safety-related functions. Specifically, between January 1 and December 31, 2007, operations personnel routinely used excessive overtime. This issue was entered into the licensee's corrective action program as Condition Report/Disposition Request 3112231.

The finding is greater than minor because if left uncorrected the finding would become a more significant safety concern in that the routine use of excessive work hours increases the likelihood of operator errors. Using the IMC 0609, "Significance Determination Process," Appendix M, the finding is determined to have very low safety significance because there was no recent instances where findings of low to moderate (White) or greater significance were attributed to the increased use of overtime by operating personnel. The finding has a crosscutting aspect in the area of human performance associated with resources because the licensee failed to maintain sufficient qualified operations personnel to maintain working hours within guidelines without the excessive use of overtime [H.2(b)].

Inspection Report# : 2008002 *(pdf)*

Significance: G Mar 31, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Properly Implement Corrective Action Process for Potential Operability Issues with the Class 1E 125 V DC System
The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of engineering personnel to ensure that potentially nonconforming conditions associated with the Class 1E 125 Vdc system were reviewed for operability. Specifically, between September 29, 2007 and March 7, 2008, engineering personnel failed to ensure all relevant information was reviewed for operability when it was determined that vendor recommended preventative maintenance tasks were not being performed on the Class 1E 125 Vdc system. This issue was entered into the licensee's corrective action program as Palo Verde Action Request 3144707.

This finding is greater than minor because it is associated with the equipment performance attribute of the mitigating systems cornerstone and affects the cornerstone objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because it did not represent a loss of system safety function, an actual loss of safety function of a single train for greater than its technical specification allowed outage time, or screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event. This finding has a crosscutting aspect in the area of human performance associated with decision making because safety significant decisions were not verified to validate underlying assumptions and identify unintended consequences [H.1(b)].

Inspection Report# : 2008002 *(pdf)*

Significance: G Oct 26, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Eight Examples of the Failure to Implement the operability Determination Process
Green. The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," with eight examples for the failure of the licensee to adequately evaluate degraded and unanalyzed conditions to support operability decision making between May 2006 and October 26, 2007. The team noted a significant number of weak or non-existent operability evaluations of degraded conditions affecting safety-related equipment. There was a lack of understanding of the need to assess operability for some conditions adverse to

quality and a lack of knowledge or skills necessary to conduct quality operability assessments. The examples of the violation involved two instances of conditions adverse to quality documented in databases outside of the corrective action program, missile hazards near the essential spray pond, two issues effecting essential cooling water system heat exchangers, 480V and 4160V motor terminations, oil leaks on the emergency diesel generators, and high lead content in a Unit 3 low pressure safety injection pump. Each of the individual technical issues was entered into the licensee's corrective action program.

These examples associated with this finding are greater than minor because they were associated with the mitigating systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the examples associated with this finding are determined to have very low safety significance since they only affected the mitigating systems cornerstone and did not represent a loss of system safety function. The causes of the examples of this finding have crosscutting aspects associated with decision making of the human performance area in that operations and engineering personnel (1) did not make safety significant decisions using a systematic process (H.1.(a)), and (2) failed to use conservative assumptions for operability decision-making when evaluating degraded and nonconforming conditions (H.1.(b)). The causes of the examples of this finding also have crosscutting aspects associated with evaluation and corrective action of the problem identification and resolution area in that licensee personnel (1) did not assess conditions adverse to quality for impacts to the operability of safety- related equipment (P.1.(c), and (2) did not address safety issues in a timely manner P.1.(d)). The causes of the examples of this finding also related to the safety culture component of accountability in that workers and managers failed to demonstrate a proper safety focus and reinforce safety principles (O.1.(b) and O.1.(c)).

Inspection Report# : 2007012 *(pdf)*

Significance: G Oct 25, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish maintenance Rule Goals for the Safety Injection System
Green. The team identified a noncited violation of 10 CFR 50.65, for the failure of engineering personnel to establish goals and monitor the performance of the safety injection system. Specifically, on March 22, 2007, engineering personnel failed to establish goals to properly monitor system performance, or provide a technical justification to demonstrate that monitoring under 10 CFR 50.65(a)(1) was not required for the safety injection system following the system changing status from 10 CFR 50.65(a)(2) to 10 CFR 50.65(a)(1). This issue was entered into the corrective action program as Palo Verde Action Requests 3074255 and 3076699.

This finding is greater than minor because it was associated with the mitigating systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Using the Inspection Manual Chapter 0609, "Significant Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance since there was no loss of safety function. The cause of this finding has crosscutting aspects associated with (1) corrective actions of the problem identification and resolution area in that engineering personnel failed to take appropriate actions to address safety issues and adverse trends in a timely manner (P.1.(d)) and self assessment of the problem identification and resolution area in that engineering personnel did not perform self assessments that were comprehensive, objective, and self critical (P.3.(a)).

Inspection Report# : 2007012 *(pdf)*

Significance: G Oct 10, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Six Examples of a Failure to Implement the Corrective Action Program Requirements
Green. The team identified a noncited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," with six examples for the failure of the licensee to identify, evaluate, or correct conditions adverse to quality between 1988 and October 10, 2007. The corrective actions implemented by the licensee to address the substantive human performance and problem identification and resolution crosscutting issues were ineffective in sustaining performance improvement as noted by licensee self assessments, external industry reviews, and NRC inspections. The team also

identified several examples of poor and inconsistent implementation of corrective action program behaviors. The examples of the violation involved not entering the use of unqualified tape in containment in the corrective action process, evaluating the condition, or taking timely actions to remove the tape from all three units; not identifying, evaluating, or implementing timely corrective actions associated with operating experience applicable to the auxiliary feedwater pump trip and throttle valve; not implementing timely corrective actions for water intrusion and flooding of underground manholes and cable vaults; inadequate evaluation for nonconforming Target Rock reed switches; not evaluating and correcting a degraded condition with post accident monitoring instrument chart recorders, and not correcting a degraded/nonconforming condition associated with 3 inch Borg-Warner check valves. Each of the individual technical issues was entered into the licensee's corrective action program.

The examples associated with this finding are greater than minor because they were associated with the mitigating systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the examples associated with this finding are determined to have very low safety significance since they only affected the mitigating systems cornerstone and did not represent a loss of system safety function. The causes of the examples of this finding have crosscutting aspects associated with decision making of the human performance area in that operations and engineering personnel failed to use conservative assumptions for operability decision-making when evaluating degraded and nonconforming conditions (H.1.(b)). The causes of the examples of this finding have crosscutting aspects associated with (1) corrective actions of the problem identification and resolution area because the licensee failed to evaluate previous issues such that resolutions addressed all conditions affecting operability (P.1.(c)), (2) operating experience of the problem identification and resolution area in that engineering personnel failed to ensure implementation and institutionalization of operating experience through changes to station processes, procedures, equipment, and training programs (P.2.(b)), and (3) self assessment of the problem identification and resolution area in that the licensee did not follow their benchmarking and self assessment guide to ensure findings were evaluated in their corrective action program (P.3.(c)). The causes of the examples of this finding also related to the safety culture component of accountability in that workforce and management personnel failed to demonstrate a proper safety focus and reinforce safety principles (O.1.(b) and O.1.(c)).

Inspection Report# : 2007012 *(pdf)*

Significance: G Oct 10, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Evaluate Performance Monitoring Criteria for the Auxiliary Feedwater System
Green. The team identified a noncited violation of 10 CFR 50.65(a)(2) for the failure of maintenance rule and engineering personnel to demonstrate that the performance or condition of structures, systems, or components was being effectively controlled through appropriate preventive maintenance to ensure systems or components remained capable of performing their intended function. Specifically, between April and October 2007, an inadequate evaluation of maintenance rule performance criteria was performed and, even though the Unit 2 auxiliary feedwater Train A had exceeded its maintenance rule 10 CFR 50.65(a)(2) performance criteria, no goal setting and monitoring was performed as required by 10 CFR 50.65(a)(1) of the maintenance rule. This issue was entered into the corrective action program as Palo Verde Action Request 3075907.

This finding is greater than minor because it was associated with the mitigating systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance since it only affected the mitigating systems cornerstone and did not represent a loss of system safety function. The cause of this finding has crosscutting aspects associated with self assessments of the problem identification and resolution area in that maintenance rule and engineering personnel failed to perform self assessments that were comprehensive, appropriately objective, and self-critical (P.3.(a)). The cause of this finding has crosscutting aspects associated with decision-making of the human performance area in that engineering personnel failed to make safety-significant or risk-significant decisions using a systematic process (H.1.(a)). The cause of this finding is also related to the safety culture component of accountability in that management did not reinforce safety standards and display behaviors that reflected safety as an overriding priority (O.1.(b)).

Inspection Report# : 2007012 *(pdf)*

Significance: G Oct 04, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement Adequate Design Controls for Condensate Storage Tank Temperature
Green. The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," with for the failure to translate design basis requirements into procedures to ensure the plant is operated within its design basis. Specifically, between 1985 and October 2007, the maximum condensate storage tank temperature requirements did not include the effect of recirculated hot condensate water from the main condenser. The issue was entered into the corrective action program as 3073243.

The examples associated with this finding are greater than minor because they were associated with the mitigating systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the examples associated with this finding are determined to have very low safety significance since they only affected the mitigating systems cornerstone and did not represent a loss of system safety function. The causes of the examples of this finding have crosscutting aspects associated with corrective action of the problem identification and resolution area in that engineering personnel did not assess conditions adverse to quality for impacts to the operability of safety related equipment (P.1.(c)).

Inspection Report# : 2007012 *(pdf)*

Significance: G Oct 03, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow procedures for Temporary Shielding Installation
Green. The team identified a noncited violation of Technical Specification 5.4.1.a for the failure of radiation protection personnel to follow procedures for installing temporary shielding at the 87 foot elevation of the auxiliary building west penetration room. Specifically, temporary shielding (Package A-87-10) was installed in direct contact and across the Train A low pressure safety injection pressure instrument sensing line. However, a piping stress analysis was not performed as required by Procedure 75RP-9RP25, “Temporary Shielding,” Revision 9. This issue was entered into the corrective action program as Palo Verde Action Requests 3071468 and 3072224.

This finding is greater than minor because it was associated with the mitigating systems cornerstone attribute of configuration control and affected the cornerstone objective to ensure the availability and capability of systems to respond to initiating events. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, this finding is determined to be of very low safety significance because the condition did not result in an actual loss of safety function, and did not screen as risk significant or contribute to external event initiated core damage sequences since it did not involve a loss or degradation of equipment designed to mitigate a seismic event. This finding has crosscutting aspects associated with the work practices component of the human performance area because the licensee did not effectively use human error prevention techniques such as self checking and proper documentation of activities for the shielding installation (H.4.(a)).

Inspection Report# : 2007012 *(pdf)*

Significance: G Oct 02, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Installation of Fire Sprinklers
Green. The team identified a noncited violation of License Condition 2.C(6) for the failure to install sprinkler heads in accordance with the fire protection program. Specifically, on October 2, 2007, the team identified several upright fire sprinkler heads in the auxiliary building that were incorrectly installed in a downward orientation. This issue was entered into the corrective action program as Palo Verde Action Request 3073824.

This finding is greater than minor because it was associated with the mitigating systems cornerstone attribute of external factors and affected the cornerstone objective of ensuring the availability and reliability of systems that

respond to initiating events to prevent undesirable consequences. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to require additional evaluation under Inspection Manual Chapter 0609, Appendix F, “Fire Protection SDP,” because it was associated with the suppression element of defense-in-depth. Since the installed configuration of the sprinkler heads represented a low degradation of the fire suppression system, in accordance with Section 1.3.1, of Inspection Manual Chapter 0609, Appendix F, the issue was determined to have very low safety significance.

Inspection Report# : 2007012 *(pdf)*

Significance: G Oct 02, 2007
Identified By: NRC
Item Type: FIN Finding
Failure to Install Emergency Lighting in Containment Prior to Work Commencement
Green. The team identified a finding for the failure of maintenance personnel to install emergency lighting in containment in support of the refueling outage per repetitive maintenance work Order 2935399 and work Instruction WSL 24436. As a result, work began in the Unit 3 containment with no emergency lighting installed and no egress contingency plan for a loss of containment lighting. This issue was entered into the corrective action program as Palo Verde Action Request 3070783.

This finding is considered more than minor because if left uncorrected, a failure to install emergency lighting could hamper emergency response activities in the containment or complicate emergency egress from the containment. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Appendix M, “Significance Determination Process Using Qualitative Criteria,” the finding is determined to be of very low safety significance because emergency lighting was necessary for personnel safety and personnel were expected to carry flashlights when responding to events. The cause of the finding has crosscutting aspects associated with work control of the human performance area in that maintenance personnel failed to properly plan the emergency lighting installation work by incorporating contingencies in case the work was not completed in the appropriate timeframe (H.3.(a)). The cause of this finding is also related to the safety culture component of accountability in that management personnel failed to reinforce safety standards and display behavior that reflected safety as an overriding priority (O.1.(b)).

Inspection Report# : 2007012 *(pdf)*

Significance: G Oct 02, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Maintain Configuration Control of Pressurizer Instrument Condensing Pot Support Brackets
Green. The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the failure of maintenance and engineering personnel to maintain proper configuration of the support brackets for the pressurizer condensate pots in accordance with design drawings. Specifically, on October 2, 2007, the team identified that the support bracket U-bolts were not tight against the condensate pot piping, jam nuts were not installed on the U-bolts, and jacking bolts were not in full contact with the pressurizer vessel. The support brackets minimize lateral motion during a seismic event. This issue was entered into the corrective action program as Palo Verde Action Requests PVAR 3070805 and 3075704.

This finding is greater than minor because it was associated with the mitigating systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance since it only affected the mitigating systems cornerstone and did not represent a loss of system safety function. This finding has crosscutting aspects associated with the work practices component of the human performance area because maintenance personnel did not effectively use human error prevention techniques such as self checking and proper documentation of activities for the installation of the support bracket (H.4.(a)).

Inspection Report# : 2007012 *(pdf)*

Significance: G Aug 17, 2007

Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate procedure for safe shutdown from outside the control room
Green. The team identified a noncited violation of License Conditions 2.C.(7), 2.F and 2.C.(6) for Units 1, 2, and 3, respectively. Specifically, procedures required by 10 CFR Part 50, Appendix R, Section III.G.3 and III.L.3 had deficiencies that might impact the ability to complete a number of time-critical steps required to safely shutdown the facility following a fire in the control room. This was because the licensee failed to provide a number of tools necessary to complete the procedure as written. The team determined that, although operators did not use the equipment during time-critical steps, the lack of tools could negatively impact the ability to accomplish subsequent time-critical steps.

This deficiency was more than minor because the finding is associated with the Protection Against External Factors attribute of the Mitigating Systems Cornerstone since it could affect the the availability, reliability, and capability of systems that respond to a fire events to prevent undesirable consequences. Using the guidance of Manual Chapter 0609, Appendix F, Attachment 2, the deficiency was determined to have a low degradation rating because it involved a procedural deficiency that was compensated by operator experience/familiarity, and revised calculations demonstrated that there was sufficient time margin available to complete the actions. Based on this, the finding screened as having very low safety significance (Green) during a Phase 1 significance determination. This finding had cross-cutting aspects in the area of human performance because the licensee failed to ensure that personnel, equipment, procedures, and other resources were available and adequate to assure nuclear safety. Specifically, the licensee did not ensure that adequate emergency equipment was available to support procedure completion. (H.2(d)).
Inspection Report# : 2007008 *(pdf)*

Significance: W Nov 30, 2006
Identified By: NRC
Item Type: VIO Violation
FAILURE TO ESTABLISH APPROPRIATE INSTRUCTIONS
The team identified an apparent violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” states, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Specifically, between July 25 and September 22, 2006, activities affecting quality were not prescribed by documented instructions appropriate to the circumstances. Specifically, the licensee failed to develop appropriate instructions or procedures for corrective maintenance activities on the Unit 3, Train A Emergency Diesel Generator K-1 relay. This resulted in the emergency diesel generator being inoperable between September 4 and September 22, 2006. The cause of this finding is related to the crosscutting element of human performance associated with resources in that the licensee failed to develop and implement appropriate work instructions prior to performing corrective maintenance activities on an emergency diesel generator K-1 relay.

The NRC assessed this finding through Phase 3 of the Significance Determination Process and made a preliminary determination that it is an issue with low to moderate safety significance.

After considering the information developed during the inspection, the NRC has concluded that the inspection finding is appropriately characterized as White (i.e., an issue with low to moderate increased importance to safety). On February 21, 2007, a final significance determination letter was issued which characterized VIO 050000530/2006012-01 and VIO 050000530/2006012-02 as a single White SDP finding. These violations will be inspected within the scope of a supplemental 95001 inspection
Inspection Report# : 2006012 *(pdf)*

Significance: W Nov 30, 2006
Identified By: NRC
Item Type: VIO Violation
FAILURE TO IDENTIFY AND CORRECT A CONDITION ADVERSE TO QUALITY
The team identified an apparent violation of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” states, in part, that for significant conditions adverse to quality, measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition. Specifically, on July 26, 2006, the licensee failed to assure that the cause of a significant condition adverse to quality was determined and that corrective action was taken to preclude repetition. Specifically, the licensee did not identify and correct the cause of the erratic Unit 3, Train A

Emergency Diesel Generator K-1 relay operation prior to installation of the relay on July 26, 2006. This resulted in the emergency diesel generator being inoperable between September 4 and September 22, 2006. The cause of this finding is related to the crosscutting element of problem identification and resolution in that the failure to fully evaluate and implement adequate corrective maintenance actions for the Unit 3 Train A emergency diesel generator resulted in the emergency diesel generator being inoperable for 18 days.

The NRC assessed this finding through Phase 3 of the Significance Determination Process and made a preliminary determination that it is an issue with low to moderate safety significance.

After considering the information developed during the inspection, the NRC has concluded that the inspection finding is appropriately characterized as White (i.e., an issue with low to moderate increased importance to safety). On February 21, 2007, a final significance determination letter was issued which characterized VIO 050000530/2006012-01 and VIO 050000530/2006012-02 as a single White SDP finding. These violations will be inspected within the scope of a supplemental 95001 inspection

Inspection Report# : 2006012 *(pdf)*

Significance: N/A Sep 30, 2006
Identified By: NRC
Item Type: FIN Finding
SUMMARY FINDING. 95002 TEAMS ASSESSMENT OF IR 2004-14 (YELLOW) 10 CFR PART 50, APPENDIX B, CRITERION III, VIOLATION
The NRC performed a followup supplemental inspection to assess the licensee's corrective actions associated with a Yellow design control finding involving the potential for air entrainment into the emergency core cooling system. The team concluded that the technical issues specifically associated with the voided emergency core cooling system piping have been addressed. However, the Yellow finding will remain open because the licensee did not implement effective corrective actions for all of the causes associated with the Yellow finding. Specifically, the licensee's actions to improve questioning attitude, technical rigor, and technical review were not fully effective. Also, the implementation of performance measures and metrics to monitor the effectiveness of corrective actions associated with the Yellow finding were not adequate to assess effectiveness. This performance issue was previously characterized as a 10 CFR Part 50, Appendix B, Criterion III, violation having substantial safety significance (Yellow), and was originally identified in NRC Inspection Report 05000528; 05000529; 05000530/2004014.

The licensee's corrective actions taken in response to the root causes and related programmatic concerns involving questioning attitude, technical rigor, and technical review have not been completely effective. Specifically, following implementation of corrective actions between September 2005 and March 2006, the licensee: (1) continued to conduct inadequate technical reviews of emerging issues; (2) did not routinely question the validity of engineering assumptions used to support operability decisions; (3) did not consistently implement a qualify, validate, and verify process; and (4) did not consistently notify operations personnel of immediate operability concerns.

The team concluded that adequate qualitative or quantitative measures for determining the effectiveness of the corrective actions to prevent recurrence have not been established. For example, not all relevant performance data was considered when performance monitoring measures were developed to assess the effectiveness of corrective actions. When the pertinent data was considered, or otherwise clarified, the performance measures suggested declining rather than improving performance in some areas.

The team also concluded that the licensee had not completed adequate reviews of the effectiveness of corrective actions prior to their notifying the NRC of their readiness for inspection of the Yellow finding. Specifically, several assessments were completed after the requested dated of the inspection (June 2006). Several of the assessments noted that insufficient progress in resolving some of the root and contributing causes had been made. Additionally, a standard guideline for metrics was not issued and implemented until July 2006.

Inspection Report# : 2006010 *(pdf)*

Significance: G Mar 16, 2005
Identified By: NRC
Item Type: FIN Finding
FAILURE TO TRACK CONTROL ROOM DISCREPANCIES

The inspectors identified a finding for the failure to follow administrative guidelines provided to operations personnel for identifying, documenting, and tracking main control room deficiencies. Specifically, approximately 75 control room instrument and control room meter face plates in Units 1, 2, and 3 were degraded and were not individually tracked in the control room discrepancy log. Furthermore, discrepancy labels containing the control room discrepancy log number and description of the discrepancy were not placed adjacent to or as close as possible to each affected device. This issue was entered into the corrective action program as Condition Report/Disposition Request 2782501.

The finding is determined to be greater than minor because if left uncorrected, it could become a more significant safety concern in that the condition could cause an operator to take an inappropriate action based on expected plant response or conversely cause an operator not to take action when action is required. The senior reactor analyst determined that this finding was not appropriate to be evaluated using the significance determination process since this finding was associated with multiple human performance actions. Based on management review, the finding is determined to have very low safety significance because it only affected the mitigating systems cornerstone, and there was no adverse impact to plant equipment.

Inspection Report# : 2005002 *(pdf)*

Significance: Y Dec 09, 2004
Identified By: NRC
Item Type: VIO Violation
FAILURE TO MAINTAIN DESIGN CONTROL OF CONTAINMENT SUMP RECIRCULATION PIPING
The team identified an apparent violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to establish measures to assure design basis information was translated into specifications, drawings, procedures, and instructions. Specifically, the licensee failed to maintain the safety injection sump suction piping full of water in accordance with the Updated Final Safety Analysis Report. This nonconformance had the potential to significantly affect the available net positive suction head described in the Updated Final Safety Analysis Report for the high pressure safety injection and containment spray pumps, since the analysis assumed the piping would be maintained full of water.
{Note: Finding remains open - IP 95002 results pending 12/16/2005}

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and adversely affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. The NRC assessed this finding through Phase 3 of the Significance Determination Process and made a preliminary determination that the issue had substantial safety significance (Yellow). After considering the information developed during the inspection and the results of testing sponsored by the licensee, the NRC has concluded that this inspection finding is appropriately characterized as Yellow. The final Significance Determination Process letter was issued on April 8, 2005. This issue was inspected within the scope of a Supplemental 95002 Inspection in August - September 2005.

{NOTE: Yellow finding remains open because the corrective actions taken in response to the root causes and related programmatic concerns involving questioning attitude, technical rigor, and operability determinations have not been fully effective. - IP 95002 Supplemental Inspection completed December 2005, IR 05000528/20050112, 05000529/20050112 and 05000530/2005012, IP 95002 Followup Supplemental Inspection completed August 2006, IR 05000528/2006010, 05000529/2006010 and 05000530/2006010}
Inspection Report# : 2004014 *(pdf)*

Barrier Integrity

Significance: G Mar 31, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Procedures Resulted in Water Transfer from the Spent Fuel Pool
A self revealing non-cited violation of Technical Specification 5.4.1.a was identified for the failure of operations personnel to follow procedures. Specifically, on January 13, 2008, operations personnel failed to properly implement

Procedure 40OP 9PC06, "Fuel Pool Cleanup and Transfer," Revision 41, for operating the pool cooling cleanup system, resulting in pool cooling cleanup Filter PCN F01B bypass Valve PCN V061 being improperly aligned. This resulted in the inadvertent transfer of 300 gallons of spent fuel pool water to the refueling water tank. This issue was entered into the licensee's corrective action program as Condition Report/Disposition Request 3121713.

The finding is greater than minor because it is associated with the configuration control and human performance attributes of the barrier integrity cornerstone and affects the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because the finding did not result in loss of cooling to the spent fuel pool; the finding did not result from fuel handling errors that caused damage to the fuel clad integrity or a dropped assembly; and the finding did not result in a loss of spent fuel pool inventory greater than ten percent of the spent fuel pool volume. This finding has a crosscutting aspect in the area of human performance associated with work practices because the licensee failed to use adequate human error prevention techniques, such as pre job briefings, to ensure that the pool cooling cleanup system activity was performed safely [H.4(a)].

Inspection Report# : 2008002 *(pdf)*

Significance: G Dec 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
INADEQUAT DESIGN CONTROLS FOR REFUELING MACHINE
The inspectors identified two examples of a noncited violation of 10 CFR Part 50, Criterion III, "Design Control," for the failure of engineering personnel to ensure that the design bases of the refueling machine were adequately translated into specifications, drawings, procedures, or instructions. Specifically, for the first example, between October 27, 2006, and October 25, 2007, the licensee inappropriately changed the facility as noted in the Updated Final Safety Analysis Report when a modification to the refueling machine introduced a single failure that could result in a failure of both the underload and overload protection features. This change resulted in more than a minimal increase in the consequences of a malfunction, in that the force limits on a fuel assembly grid strap could be exceeded. For the second example, between initial construction and December 5, 2007, procedures and instructions did not limit the stall torque of the hoist motor for the refueling machine. These issues were entered into the corrective action program as Condition Report/Disposition Requests 3030759 and 3068656.

The finding is greater than minor because it would become a more significant safety concern if left uncorrected in that refueling equipment malfunctions could result in damaged fuel. Manual Chapter 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," was used since the Significance Determination Process methods and tools were not adequate to determine the significance of the finding. This finding affects the barrier integrity cornerstone and is determined to have very low safety significance by NRC management review because it was a deficiency that did not result in the actual degradation of fuel.
Inspection Report# : 2007005 *(pdf)*

Significance: G Oct 02, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Incorrect Rigging of Personal Airlock Door
Green. The team identified a noncited violation of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the failure of maintenance personnel to properly rig the Unit 3 100 foot elevation inner personnel airlock door in accordance with engineering drawings. Specifically, the suspended rigging was completed with the inappropriate placement of wire rope slings over two locking pins resulting in an unanalyzed force being applied to the door’s operating mechanism. This issue was entered into the corrective action program as Palo Verde Action Request 3086057.

The finding is greater than minor because it could become a more significant safety concern if left uncorrected in that the applied suspended force on the bronze bushing and the door’s operating mechanism, which were not designed for vertical loading, could degrade the personnel airlock door sealing capability. This finding can not be evaluated by the significance determination process because Inspection Manual Chapter 0609, "Significance Determination Process," Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," and Appendix

G, "Shutdown Operations Significance Determination Process," does not apply to the PAL door for the plant conditions that existed during the event. This finding affects the barrier integrity cornerstone and is determined to be of very low safety significance by NRC management review using the Inspection Manual Chapter 0609, "Significance Determination Process," Appendix M, "Significance Determination Process Using Qualitative Criteria," because it was a deficiency that did not result in the actual breach of the containment barrier. The cause of this finding has crosscutting aspects associated with the work practices aspect of the human performance area in that maintenance personnel failed to provide adequate oversight of work activities (H.4.(c)).

Inspection Report# : 2007012 *(pdf)*

Significance: G Sep 27, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Meet Technical Specification Surveillance Requirement 3.6.6.6
Green. The team identified a noncited violation of Technical Specification Surveillance Requirement 3.6.6.6, for the failure to verify that each containment spray nozzle was unobstructed. Specifically, the last completed surveillance test conducted on each unit, identified that one nozzle in each unit was obstructed and that the nozzles were not retested in accordance with the approved retest requirement. This issue was entered into the corrective action program as Palo Verde Action Requests 3075026, 3075059, 3068647 and, 3048511.

The finding is more than minor because it affected the configuration control attribute of the barrier integrity cornerstone, and affected the associated cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to be of very low safety significance because it did not involve an actual reduction in defense-in-depth for the atmospheric pressure control function of the reactor containment.

Inspection Report# : 2007012 *(pdf)*

Emergency Preparedness

Significance: G Oct 08, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inability to Implement Two Emergency Action Levels
Green. The team identified a Green noncited violation of 10 CFR 50.54(q) and §50.47(b)(4), for the failure of the licensee to be able to implement EAL 3-12 and EAL7-1. Specifically, area radiation Monitor RU-18 could not be utilized in the vicinity of the remote shutdown panels and therefore, the emergency classification could not be declared at the Alert level as required in Procedure EPIP-99. In addition, the licensee improperly overclassified EAL 7-1 as an Alert when presented conditions warranting a classification of a Notification of Unusual Event. Specifically, the licensee did not develop a procedure to enable personnel to differentiate between an aircraft and an airliner and therefore, the proper emergency classifications could not be consistently determined. This finding was entered into the licensee’s corrective action program as Condition Report Disposition Requests 3071570, 3071572, and 3085175.

The team determined that the inability to implement EALs was a performance deficiency. The finding was more than minor because it was associated with the Emergency Preparedness attribute of procedure quality and could affect the cornerstone objective associated with the licensee’s ability to correctly classify an emergency condition which would affect the licensee’s ability to implement adequate measures to protect the health and safety of the public. Using the Manual Chapter 0609, "Significance Determination Process," Appendix B, “Emergency Preparedness SDP,” the finding was determined to have very low safety significance because the licensee would be unable to declare one EAL at the Alert and one EAL at the Notification of Unusual Event level. The cause of this finding had crosscutting aspects associated with the corrective action of the PI&R area in that the licensee had previous opportunities to identify the deficiencies (P.1.(a)).

Inspection Report# : 2007012 *(pdf)*

Significance: G Sep 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO IDENTIFY AND CRITIQUE AN EVENT CLASSIFICATION WEAKNESS
The inspectors identified a noncited violation of 10 CFR 50.54(q) for failure of the emergency planning organization's emergency exercise critique process to identify for correction an emergency plan weakness associated with a risk significant planning standard. Specifically, during the critique of the Emergency Preparedness portion of the August 22, 2007, Force-On-Force exercise, the licensee failed to identify for correction an event classification weakness. The weakness occurred during the exercise when the shift manager did not recognize a credible security threat notification was made to the facility. As a result, the shift manager did not declare a Notice of Unusual Event as required by EPIP-99, Appendix A, "Emergency Actions Levels - EAL 7-1." This issue was entered into the licensee's corrective action program as Condition Report/Disposition Request 3056153.

This finding is greater than minor because it is associated with the Emergency Response Organization Performance attribute of the Emergency Preparedness Cornerstone and affects the cornerstone objective to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. In accordance with Manual Chapter 0609, "Significance Determination Process," Appendix B, Emergency Preparedness Significance Determination Process, this finding is determined to have very low safety significance because, although it was a failure to comply with NRC requirements, it did not involve the risk-significant aspects of a planning standard as defined in Manual Chapter 0609, Appendix B, Section 2.0; and was not a planning standard functional failure because the critique failure occurred in a small scale drill with limited emergency response organization participation and evaluation. This finding has a crosscutting aspect in the area of problem identification and resolution associated with corrective action program because the threshold for identifying issues was not sufficiently low. Specifically, the emergency planning evaluator did not recognize the shift manager's failure to make the Notice of Unusual Event classification during the Force-On-Force exercise. Therefore, the exercise critique did not identify and correct the event classification deficiency as required (P.1(a)).
Inspection Report# : 2007004 *(pdf)*

Occupational Radiation Safety

Significance: G Dec 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO POST AND CONTROL A HIGH RADIATION AREA
The inspectors reviewed two examples of a self-revealing, noncited violation of Technical Specification 5.7.1 resulting from a failure to control a high radiation area. Specifically, the first example occurred on February 14, 2007, while preparing to perform a remote inspection and boric acid wash down of Unit 2 Letdown Ion Exchange Vessel CHN-D01A, a worker received a dose rate alarm of 141 mr/hr on his electronic dosimeter when he removed the shielded plug from the survey/inspection port. The second example occurred on October 24, 2007, while performing decontamination on Valve SIE-614 using a vacuum in the Unit 3 containment two workers received separate electronic dosimeter alarms of 81 mr/hr and 123 mr/hr approximately 20 minutes apart. The issues were entered into the corrective action program as Condition Report/Disposition Request 2970612 and 3081978.

This finding is greater than minor because it is associated with the occupational radiation safety program and process attribute and affected the cornerstone objective, in that the failure to post and control a high radiation area had the potential to increase personnel dose. This occurrence involved individual workers' unplanned, unintended dose that resulted from actions or conditions contrary to licensee procedures, radiation work permit, and technical specifications, therefore this finding was evaluated using the Occupational Radiation Safety Significance Determination Process. The inspectors determined that this finding was of very low safety significance because it did not involve: (1) an ALARA planning or work control issue, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. This finding involved crosscutting aspect in the area of human performance, work control component, in that the work planning did not appropriately plan work activities by

incorporating risk insights and job site conditions.
Inspection Report# : 2007005 *(pdf)*

Significance: G Dec 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO FOLLOW PROCEDURAL GUIDANCE AND RADIATION WORK INSTRUCTIONS
The inspectors identified a noncited violation of Technical Specification 5.4.1 resulting from a failure to follow radiation exposure permit instructions. Specifically, while touring the Unit 3 containment on October 23, 2007, the inspectors questioned six individuals at the pressurizer cubicle on the 120' level. The individuals stated they left their job site and proceeded to a new job site without informing radiation protection and receiving a radiological brief of the conditions at the new job site. The workers were coached by the licensee and the issue was entered into the corrective action program as Palo Verde Action Request 3081935.

This finding is greater than minor because it is associated with the occupational radiation safety program and process attribute and affected the cornerstone objective, in that the non compliance to a radiation exposure permit instructions had the potential to increase personnel dose. Using the Occupational Radiation Safety Significance Determination Process, the inspectors determined that this finding was of very low safety significance because it did not involve: (1) an ALARA planning or work control issue; (2) an overexposure; (3) a substantial potential for overexposure; or (4) an impaired ability to assess dose. This finding involved crosscutting in the area of human performance, work practices component, in that the workers did not use human error prevention techniques such as adequate self and peer checking to appropriately evaluate work conditions.(H.4.(a))
Inspection Report# : 2007005 *(pdf)*

Significance: G Oct 03, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Briefings of Radiological Conditions
Green. The team identified a noncited violation of 10 CFR 19.12, “Instructions to Workers,” for the failure of radiation protection personnel to provide adequate information regarding radiological conditions and precautions to minimize exposure during pre-job briefs. Specifically, on October 1 and 3, 2007, radiation protection personnel did not adequately inform workers of radiological conditions and precautions to minimize exposure during radiological briefings. This issue was entered into the corrective action program as Palo Verde Action Request 3070507 and 3071940.

The finding is greater than minor because if left uncorrected it would become a more significant safety concern in that the failure to inform workers of radiological conditions could result in unintended exposures. The finding affected the occupational radiation safety cornerstone and is determined to be of very low safety significance because it was not an as low as is reasonably achievable issue, there was not an overexposure or substantial potential for an overexposure, and the ability to assess dose was not compromised. The cause of this finding has crosscutting aspects associated with decision making in the human performance area in that radiation protection personnel failed to communicate decisions, and the basis for decisions, to personnel who had a need to know the information (H.1.(c)). This finding also has a safety culture component aspect of accountability in that radiation protection personnel did not demonstrate a proper safety focus or reinforce safety principles among peers when conducting pre-job briefings (O.1.(c)).

Inspection Report# : 2007012 *(pdf)*

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings

pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : August 29, 2008