July 7, 2004

Palo Verde AIT

Issue and Followup Item List

draft

Information in this record was deleted in accordance with the Freedom of Information Act, exemptions 2
FOIA- 2004-0207

Focus Area	Potential Issues/Apparent Cause	Publish	Tracking	Recommendations for Followup Team
Off-site Power Systems	Reliability of 230kV protective relays *1. The redundency of the protective relay scheme has been improved by APS.* *2. APS has indicated that OC protection would be installed on their 230kV transformers.* *3. Modifications to included double trip coils on the WW and Devers breakers is being considered.*	Public	URI	1. Verify that over current protection installed on Arizona Power System transformers connected to Palo Verde 500kV systems. 2. Verify that breakers in West Wing and Devers have been modified to include dual trip coils.
	Independence of 500kV transmission *1. Hassayampa negative sequence protective relaying was removed by APS*	Public	N/A	No action needed
U2, Train "A" Emergency Diesel Generator Failure	Apparent cause of EDG failure was failure of diode in exciter rectifier circuit. [OK] Resulted in loss of power to Train "A" ESF busses. Note: Diode failed after ~65 hours of service.	Public	URI	1. Review licensee determination of root and contributing cause(s). 2. Review licensee's extent of condition analysis. 3. Verify that licensee's corrective actions are consistent with industry operating experience for these types of diodes.

Ex2

Ex 2

Focus Area	Potential Issues/Apparent Cause	Publish	Tracking	Recommendations for Followup Team
Emergency Response Organization Challenges	Problems were identified with the emergency notification of state and local officials.	Public	URI	1. Review licensee determination of root and contributing cause(s). 2. Review licensee's extent of condition analysis. 3. Assess licensee corrective actions. 4. Determine if a finding or violation occurred and assess significance.
	Problems were identified with the ability to develop protective action recommendations following a LOOP.	Public	URI	1. Review licensee determination of root and contributing cause(s). 2. Review licensee's extent of condition analysis. 3. Assess licensee corrective actions. 4. Determine if a finding or violation occurred and assess significance.
	Problems were identified with the implementation of emergency response organization notification of an event.	Public	URI	1. Review licensee determination of root and contributing cause(s). 2. Review licensee's extent of condition analysis. 3. Assess licensee corrective actions. 4. Determine if a finding or violation occurred and assess significance.

Ex2

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				Ex2
U1, Atmospheric Dump Valve 185 Failure	Apparent cause was internal control air leakage allowing valve to drift close on low demand signals. [OK] Minor operator distraction during event. Note: Licensee still troubleshooting	Public	URI	1. Review licensee determination of root and contributing cause(s) 2. Review licensee's extent of condition analysis 3. Verify licensee's corrective actions consistent with industry operating experience for AOVs
U1, Letdown Heat Exchanger Isolation Failure	Apparent cause was poor design control, inadequate training on design modification, and inadequate procedures. [OK] Moderate operator distraction during event.	Public	URI	1. Review adequacy of temporary modification. 2. Review adequacy of training. 3. Review adequacy of procedures.

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U3, Response to Loss-of-Offsite Power	Bypass valve control system caused a Unit 3 main steam isolation. The licensee declared apparent cause as control system "anomaly." The teams review found potential design issues.	Public	URI	1. Review the electrical characteristics of the U3 event. Focus particularly on how the control cabinets are powered and what role the D-11 static switch had on the controls. 2. Review licensee determination of cause and corrective actions 3. Determine if a design control violation occurred 4. Compare control system design to analyses assumptions. 5. Review extent of condition. 6. Assess significance
	Given the actual plant conditions, the team could not explain why U3 responded differently than U1 and U2. The licensee noted that the generator excitation current on the U3 generator responded differently than expected and plans on conducting an evaluation of the exciter control system. This may explain both the VOPT and the bypass valve control cabinet anomaly.	Public	URI	1. Review licensee determination of root and contributing cause(s). 2. Review licensee's extent of condition analysis. 3. Determine if a finding or violation occurred and assess significance.
U3, Reactor Coolant Pump Lift Oil Pump Breaker Thermal Overloads	Reactor coolant pump lube oil lift pump circuit breaker thermal overloads are only set 0.1 amp above normal running current. This results in increased probability of breaker tripping and operator distraction during plant recovery.	Public	URI	1. Review design of thermal overload protection of RCP lube oil pump breakers. 2. Assess significance of delay on plant recovery.

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	Reactor coolant pump starting procedures do not caution operators on potential thermal overload trip if pumps are operated for an extended duration.	Public	URI	1. Review design control aspects of modifications to the thermal overload protection of RCP lube oil pump breakers. 2. Determine if design control or procedure violation occurred.
U3, Low Pressure Safety Injection System In-leakage	Operators were required to manually implement low pressure safety injection system depressurization procedures to prevent over-pressurization. Operator distraction. Licensee apparent cause involved a thermal and hydraulic phenomena that caused the leakage. [Not OK] Most likely apparent cause was mechanical misalignment of Borg-Warner check valves.	Public	URI	1. Review licensee determination of root and contributing cause(s). 2. Review licensee's extent of condition analysis. 3. Determine if a finding or violation occurred focusing particularly on the effectiveness of Borg-Warner corrective actions from past issues. 4. Focus on whether the licensee is adequately assuring check-valve operability. 5. Focus on adequacy of check-valve as-found testing and what the results of as-found testing imply about operability. 6. Assess significance.
General Electric Magna Blast Breakers	Two GE Magna Blast breakers failed to operate upon demand during plant recovery. The licensee's apparent cause was that the breakers "were not cycled often enough." [Not OK] NRC raised issues associated with licensee's apparent cause and planned review.	Public	URI	1. Review licensee determination of root and contributing cause(s). 2. Review licensee's extent of condition analysis. 3. Assess licensee corrective actions. 4. Review licensee's use of industry operating experience for GE Magna Blast breakers. 5. Assess whether the issues identified involved any human performance or PI&R aspects. 6. Determine if a finding or violation occurred and assess significance.

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Auxiliary Feedwater System	During plant recovery, U1 experienced thermally induced vibration of the feedwater piping.	Public	URI	1. Review licensee determination of root and contributing cause(s). 2. Review licensee's extent of condition analysis. 3. Assess licensee corrective actions. 4. Determine if a finding or violation occurred and assess significance.
	Emergency procedures which direct a main steam isolation do not caution operators on the fact that the MSIS isolated TDAFW steam drains. The emergency procedures do not result in the implementation of manual drain processes to ensure TDAFW operability.	Public	URI	1. Review design control aspects of the TDAFW manual drains. 2. Determine if a design control or inadequate procedure violation exists. 3. Assess whether the issues identified involved any human performance or PI&R aspects.
	Following the 1990 TDAFW overspeed trip, the licensee directed corrective actions that included procedure revisions and the use of manual drains to ensure operability.	Public	URI	1. Review design control aspects of the TDAFW manual drains. 2. Determine if a design control or inadequate procedure violation exists. 3. Assess whether the issues identified involved any human performance or PI&R aspects. 4. Assess the adequacy of previous corrective actions.
	Assess licensee management emergency response effectiveness in directing the equipment needed to manually drain the TDAFW steam traps away from U2 (the unit with one ESF bus denergized).	Public	URI	1. Review licensee determination of root and contributing cause(s). 2. Review licensee's extent of condition analysis. 3. Assess significance.

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Use of Plant Technical Specifications	Inspectors noted that the licensee did not enter TS LCO's until EOP's directed a review of LCO status. This occurred very late into EOP implementation. In addition, when the LCO was entered, the time clock started when directed in the EOPs. This resulted in LCO entry hours after the condition occurred. If the practice continued, the inspectors were concerned that some TS LCO Action Statements could not be implemented when necessary.	Public	URI	1. Evaluate potential Conduct of Operations and TS violations for the event: a. TDAFW operability b. U2 EDG operability c. U2 Train "A" Battery Charger d. U3 Low Pressure Safety Injection 2. Assess significance.
Technical Support Center Emergency Diesel Generator Trip	Licensee electrician failed to return test switch to the normal position following a test run six-days prior to the event.	Public	URI	1. Review licensee determination of root and contributing cause(s). 2. Review licensee's extent of condition analysis. 3. Assess licensee corrective actions. 4. Determine if a finding or violation occurred and assess significance.
U2 Train "E" Positive Displacement Charging Pump Trip	The team found that the actions of the Control Room Supervisor not to be in accordance with the requirements of the emergency operating procedure for the plant conditions at the time. did not follow EOP.	Public	URI	1. Review licensee determination of root and contributing cause(s). 2. Review licensee's extent of condition analysis. 3. Assess licensee corrective actions. 4. Determine if a finding or violation occurred and assess significance.

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	The team found that the auxiliary operator did not implement Appendix 10, Step 1 of emergency operating Procedure 40EP-9EO10. Instead of requesting a radiation protection person to accompany him, the operator went to the radiologically controlled area access to perform a routine entry.	Public	URI	1. Review licensee determination of root and contributing cause(s). 2. Review licensee's extent of condition analysis. 3. Assess licensee corrective actions. 4. Determine if a finding or violation occurred and assess significance.
	The team found that the auxiliary operator did not properly implement emergency operating Procedure 40EP-9EO10 as required.	Public	URI	1. Review licensee determination of root and contributing cause(s). 2. Review licensee's extent of condition analysis. 3. Assess licensee corrective actions. 4. Determine if a finding or violation occurred and assess significance.

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