

APPENDIX B

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Inspection Report: 50-528/94-19
50-529/94-19
50-530/94-19

Licenses: NPF-41
NPF-51
NPF-74

Licensee: Arizona Public Service Company
P.O. Box 53999
Phoenix, Arizona

Facility Name: Palo Verde Nuclear Generating Station
Units 1, 2, and 3

Inspection At: Palo Verde Site, Maricopa County, Arizona

Inspection Conducted: May 23-27, 1994

Inspector: Arthur D. McQueen, Emergency Preparedness Analyst

Approved: Blaine Murray
Blaine Murray, Chief, Reactor Inspection Branch

6/13/94
Date

Inspection Summary

Areas Inspected (Units 1, 2, and 3): Routine, announced inspection of the emergency preparedness program; including Emergency Detection and Classification, Protective Action Decisionmaking, Knowledge and Performance of Duties, and followup on an unresolved item.

Results (Units 1, 2, and 3):

- The emergency plan and emergency plan implementing procedures included an appropriate emergency classification system and emergency action levels (Section 1.2).
- The capability to properly assess and analyze emergency conditions and make recommendations to protect the public and onsite workers was maintained (Section 2.2).
- An appropriate emergency response training program had been implemented (Section 3.1.1).

9406280016 940621
PDR ADOCK 05000528
G PDR



- Shift supervisors demonstrated their ability to properly classify emergency events and make appropriate protective action recommendations (Sections 3.1.2 and 3.1.3).
- Key emergency decisionmakers and managers understood their emergency authorities and responsibilities (Section 3.2).
- A violation was identified involving the failure of Control Room personnel to declare an unusual event (Section 4.1).
- An unusual event involving a fire was properly reported to NRC, and required notifications were made to state and local agencies (Section 4.2).

Summary of Inspection Findings:

- Unresolved Item 50-529/9409-03 was closed (Section 4.1).
- Violation 50-529/9419-01 was opened (Section 4.1).

Attachment:

- Attachment - Persons Contacted and Exit Meeting



DETAILS

1 EMERGENCY DETECTION AND CLASSIFICATION (82201)

The inspector reviewed the emergency plan and emergency plan implementing procedures, with particular attention to Emergency Action Levels, to verify that the licensee has a standard emergency classification and action level scheme, the bases of which include facility systems, effluent parameters, and projected offsite doses.

1.1 Discussion

The inspector verified that the emergency plan implementing procedures contained proper emergency action levels. The emergency action levels were based on in-plant conditions, onsite and offsite radiological monitoring results, offsite dose projections, and other factors which could impact on safe shutdown of the plant or the public health and safety. Emergency action levels had been coordinated with and concurred in by state and local agencies and they had been submitted to NRC for review and approval. Emergency plan implementing procedures were reviewed and approved by the licensee prior to distribution and submission to NRC.

The current Palo Verde emergency action levels are based on example initiating conditions in Appendix 1 of NUREG-0654. The licensee submitted a new emergency action level scheme in December 1993 based on example initiating conditions in NUMARC/NESP-007, Revision 2. The licensee indicated that the NUMARC scheme and emergency actions levels would be approved by the end of June 1994. The licensee indicated they are planning and preparing to implement training in this new scheme beginning with the training cycle starting in early July 1994.

The inspector verified that the emergency event classifications in the emergency plan implementing procedures were consistent with those in the emergency plan, met regulatory requirements, and that the classification procedure had provisions for prompt and correct classifications. The licensee had adequate procedures to direct the user to classify emergencies. A sample of these procedures was reviewed and discussed with appropriate personnel to determine that classification information was included.

The inspector verified that there was an individual onsite at all times to function as the Emergency Coordinator. This individual had the authority and responsibility to classify events and initiate emergency actions, including recommending protective measures to offsite officials. Initially, this would be one of the Shift Supervisors of the various units until they are relieved of the role of Emergency Coordinator by an Emergency Coordinator of higher plant or corporate management.

Shift Supervisors indicated during interviews that the licensee's emergency action levels were consistent in range, units, and conversion factors with appropriate Control Room instrumentation and that the decisional aids used for event classification in the Control Room, the Technical Support Center, and the Emergency Operations Facility were readily available and were consistent



with the emergency action levels. The inspector observed that decisional aids used for event classification in the Control Room, the Technical Support Center, and the Emergency Operations Facility were readily available and were consistent with the emergency action levels.

1.2 Conclusions

The emergency plan and emergency plan implementing procedures were properly maintained. Procedure changes were properly reviewed, coordinated, and approved prior to distribution.

2 PROTECTIVE ACTION DECISIONMAKING (82202)

The inspector conducted interviews and reviewed the emergency plan and emergency plan implementing procedures to verify that the licensee maintained a 24-hour-a-day capability to assess and analyze emergency conditions and to make recommendations to protect the public and onsite workers.

2.1 Discussion

The inspector verified that the authorities and responsibilities assigned by the licensee to assess the accident and to make recommendations for protective actions were clearly reflected in the emergency plan implementing procedures and were consistent with the emergency plan.

The organizational elements, responsibilities, and authorities in the emergency plan implementing procedures for accident assessment and protective action recommendations were compared with those in the emergency plan with particular attention given to organizational structure, reporting chains, personnel interactions, and staffing. Requirements for the emergency organization were found to be consistent with requirements in 10 CFR 50.47(b)(1) and (2) and 10 CFR Part 50, Appendix E, Section IV.A.

The inspector verified that the criteria and methodology for making offsite protective action recommendation decisions were clearly stated in the implementing procedures. The emergency plan implementing procedures clearly specified a methodology that enables the licensee to make protective action recommendations appropriate for the particular plant conditions. The implementing procedures contain criteria concerning protective actions for nonessential onsite personnel, including evacuation for Site Area Emergencies and General Emergencies. The licensee had the capability to deliver timely protective action recommendations to the appropriate offsite authorities. Specifically:

- The licensee had provisions for reaching offsite officials with the authority and responsibility for protective action decisionmaking on a 24-hour basis. The inspector observed the monthly communications checks (oral and facsimile) at the Emergency Operations Facility with other emergency response facilities and offsite agencies.



- There were procedures to allow offsite protective action recommendations to be made by the licensee within 15 minutes of the determination that an emergency existed.
- The licensee had predetermined criteria for making protective action recommendations on the basis of plant conditions or on projected doses.
- The licensee had taken steps to understand how offsite officials use the licensee's protective action recommendations to make protective action decisions. The licensee's emergency planning staff meets with offsite agency representatives on a regular basis, normally once or twice weekly, to discuss emergency preparedness, notifications, and protective action matters.

2.2 Conclusions

The licensee maintains a 24-hour-a-day capability to assess and analyze emergency conditions and to make recommendations to protect the public and onsite workers.

3 KNOWLEDGE AND PERFORMANCE OF DUTIES (82206)

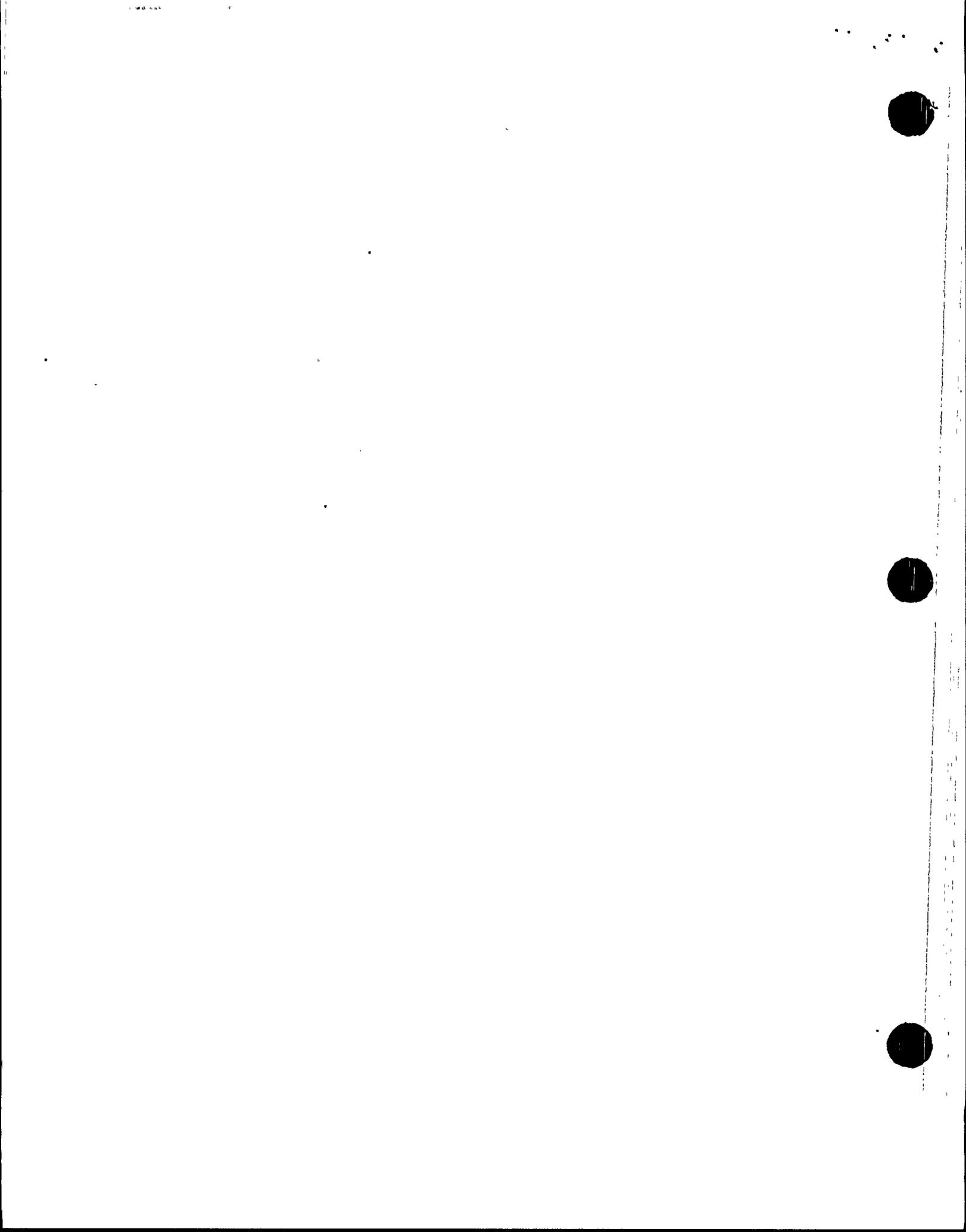
The inspector performed interviews, observed simulator scenarios, inspected training and training records, and conducted tabletop scenario discussions with licensee emergency response organization decisionmakers to verify that emergency response personnel have received training, that they understand their emergency response roles, and that they can perform their assigned functions.

3.1 Discussion

3.1.1 Training Program

The inspector verified that an emergency preparedness and response training program was implemented and maintained as required. The training program was reviewed, including lesson plans, training policies, and training schedules. Insight into the training program was also obtained through interviews with training instructors, administrators, and supervisors. The training program was generally consistent with the guidance of NUREG-0654, Section II.0, and meets the requirements for training found in 10 CFR 50.47(b)(13) and Section IV.F of 10 CFR Part 50, Appendix E.

Selected representative training records indicated the amount and type of training received by key emergency response personnel since the last inspection was appropriate and in accordance with requirements. Training records of selected emergency response personnel, including new personnel and Shift Supervisors, indicated that initial and refresher training had been provided and completed. Each individual record inspected indicated required training was up-to-date.



14 The licensee had made training opportunities available for local offsite support personnel and agencies on at least an annual basis for site orientation and emergency event response. For example, prior to each annual exercise, the licensee conducts a half-day training session with offsite agencies. The most recent of these included participation by U.S. Department of Energy and U.S. Federal Emergency Management Agency representatives. The licensee stated they had also extended the offer to offsite agencies to participate in training activities. Local and state agencies conduct their own specialist training in health physics and standard emergency response techniques.

3.1.2 Licensee Simulator Training Scenarios

The inspector observed control room two crews' performance during three simulator training scenarios. In each of the scenarios, the Control Room crew had to respond to emergency conditions. The Shift Supervisor/Emergency Coordinator properly assessed conditions and made appropriate emergency event declarations. Following event declarations, appropriate announcements and notifications were made to initiate onsite protective measures of accountability and assembly.

3.1.3 Interviews and Tabletop Scenarios

The inspector interviewed five Shift Supervisors/Emergency Coordinators and three Assistant Shift Supervisors. Interviews and discussions about training courses with these Shift Supervisors indicated the required training was provided, that it was effective, and that appropriate tests to determine the effectiveness of the training were administered. Discussions were held with selected key personnel, including the eight Shift Supervisors available during inspection, regarding their role in an emergency to verify that they were properly trained and understood their duties, responsibilities, and authorities. They also indicated that they had received training on the licensee's emergency action level scheme and procedures. Tabletop scenarios were used to insure they understood the emergency action level schemes and procedures.

The tabletop scenarios were developed from the site emergency action level indicators and criteria to verify that the Shift Supervisors could effectively use post-TMI indicators for core and containment status. Some scenarios were based on containment monitor readings, subcooling monitor, high-range effluent monitor, pressurized water reactor core exit thermocouples, containment hydrogen monitor, or vessel level. Other tabletop scenarios involved radiation monitor readings at the site boundary, security events, or natural disaster/physical hazard events. The interviews and tabletop scenarios indicated that the Shift Supervisors involved in making offsite protective action recommendations understood the relationship between plant conditions, possible offsite consequences, and the effectiveness of protective measures. The Shift Supervisors/Emergency Coordinators were able to classify each scenario situation appropriately and in a timely manner.

Responses to the scenarios and to questions by the inspector indicated the Shift Supervisors had been trained on the licensee's emergency action level



schemes and procedures and could classify events and formulate protective action recommendations promptly and correctly.

3.1.4 Licensee Drills and Exercises

Drills were conducted on a regular basis. Five drill critiques and reports were reviewed and were found to be appropriate in scope and performance. Recommendations for improvement identified by the licensee's self-assessment reviews were appropriate, and followup actions were implemented.

The Quality Assurance and Monitoring Organization was also active in observing and evaluating drills and exercises. The inspector reviewed 19 Quality Assurance and Monitoring Reports pertaining to observations during emergency exercises and drills. Areas observed by the monitors included Emergency Operations Facility operations, Technical Support Center operations, Operations Support Center operations, Satellite Technical Support Center operations, dose assessment and projection, communications with offsite monitoring teams, security actions during a drill, emergency response facilities communications, assessment and classification of emergency events, personnel assembly and accountability, protective action decisionmaking, notifications, and use of emergency procedures. Three of the reports indicated unsatisfactory findings which required corrective actions. Other monitoring report findings indicated areas for improvement.

3.2 Conclusions

The interviews, simulator scenarios, and tabletop scenarios indicated that emergency response key personnel understood their responsibilities, and they demonstrated appropriate responses to questions and scenarios conditions.

4 ONSITE FOLLOWUP OF EVENTS AT OPERATING POWER REACTORS (93702)

Two licensee events were reviewed during the inspection wherein the licensee had declared unusual events since the last emergency preparedness inspection at the site.

4.1 Event Number 1

On May 3, 1994, the licensee telephonically notified the NRC Headquarters Operations Officer that an unusual event had occurred at the site on March 12, 1994, at about 2:45 p.m. (MST). This was a late report, and the licensee indicated an Unusual Event should have been declared at the time of the event due to the manual start of a third charging pump to recover pressurizer level while drawing the bubble (NRC Event No. 26773).

The event was reviewed by the Resident Inspector's staff (NRC Inspection Report 50-529/94-09). The March 12, 1994 event involved operations personnel that inadvertently drained approximately 28,000 gallons of the Reactor Coolant System inventory and Reactor Coolant System makeup water to the refueling water tank through an open low pressure safety injection recirculation valve while the plant was in Mode 5, and they were attempting to draw a pressurizer bubble and raise Reactor Coolant System pressure. The low pressure safety



injection recirculation valve had been mistakenly left open during engineering safety features actuation system testing on March 11, 1994.

After reviewing the event with the licensee, the resident inspectors subsequently identified that the licensee's emergency plan implementing procedures stated that an event in Mode 5 involving a Reactor Coolant System leak rate greater than 44 gpm be considered an Unusual Event (Emergency Plan Implementing Procedure 02, Revision 12, Appendix B, Table 2). The inspector noted that the licensee had not declared an Unusual Event. The resident inspectors discussed the event with the licensee at the next inspection exit interview, indicating that the apparent failure to classify the event when the emergency action level conditions were met and recognized, appeared inconsistent with the licensee's Emergency Plan Implementing Procedure EPIP-02. The licensee indicated the issue was being evaluated (Condition Reporting and Disposition Report CRDR 240110 initiated March 13, 1994). Pending completion of the licensee evaluation, the event was identified by the resident inspectors as an unresolved item for further review (URI 529/9409-03).

The inspector reviewed the issues indicated as unresolved during this inspection. The event was discussed with licensee's representatives on May 25, 1994. The licensee acknowledged that an Unusual Event should have been declared when it was realized that water was leaving the intended system. The licensee had established that on March 12, 1994, at about 5 p.m. (MST), a second charging pump was manually started with pressurizer level at about 52 percent. At approximately 8 p.m. (MST), a third charging pump was started, as procedurally required after pressurizer level had decreased to 42 percent. Two charging pumps were nearly twice the 44 gpm leak rate criterion for Mode 5 contained in the emergency action level, and the third charging pump increased the amount to about three times the emergency action level criterion.

The event, as it occurred and, as subsequently evaluated, indicates a violation of Technical Specification 6.8.1 which requires implementation of procedures which are required to implement the emergency plan. The Palo Verde Emergency Plan at Table 5.1-1, "Example Emergency Action Levels (EALs)," identifies as criterion for a Notification of an Unusual Event, "RCS leak rate greater than 44 gpm in Modes 5-6." In implementing this requirement, Emergency Plan Implementing Procedure EPIP-02 at Tab 2, Appendix B, establishes this same criterion, "RCS leak rate greater than 44 gpm (Modes 5-6)." Emergency Plan Implementing Procedure EPIP-02 requires at Section 4.3.1 that, "When plant conditions are such that emergency plan implementation is required, the Shift Supervisor/Emergency Coordinator shall Classify the event using the appropriate appendix" Section 4.3.1 further notes, "Events shall be classified as soon as possible in order to allow for prompt notification of Offsite Authorities. Prompt notification means within 15 minutes from the time at which Operators recognized events have occurred which make declaration of an emergency classification appropriate."

In this event, the classification and notifications were not timely. The licensee's report of this event to the NRC Headquarters Operations Officer indicated that, "Unit performance evaluation completed on March 19, 1994, determined that based on Emergency Procedure '02' an unusual event should have



been declared when the third charging pump was started to maintain level." The required notification to the NRC Headquarters Operations Officer was not made until May 3, 1994. The licensee confirmed that offsite agencies had been notified of the event by the emergency planning staff shortly after the notification to the NRC Headquarters Operations Officer.

The licensee indicated at the May 25 meeting with NRC inspectors that three corrective actions had been identified and initiated.

- A letter was prepared for all Shift Supervisors, Subject: Failure to Consider and Classify An Event, from the Director of Operations. The letter reviewed this event and emphasized the failure at the time of the event to "evaluate this incident with emergency action levels in mind" and indicating that "a classification at the NUE (Notification of Unusual Event) level would have been appropriate." The letter stresses that, "As Emergency Coordinators and observers of the 'Big Picture,' EAL evaluations need to be a top priority. This can only be accomplished with continuous Emergency Plan Implementing Procedure EPIP-02 evaluations against Unit activities or unexpected events." A copy of the correspondence dated May 27, 1994, was provided to the inspector.
- Training in the NUMARC emergency action level scheme for the site is being prepared for immediate training of emergency response personnel and for immediate implementation upon approval by the NRC (Section 1.1).
- The Manager, Operations Training, indicated at the exit interview that training "Lessons Learned" regarding this and similar events had been added to the Operations Training program.

Unresolved Item 529/9409-03 is closed with this report, and the failure to classify an event meeting an emergency action level criterion and make prompt notifications is identified as a violation (VIO 529/9419-01).

The inspector determined during this that appropriate corrective actions had been implemented should preclude recurrence of this type event.

4.2 Event No. 2

On May 18, 1994, the licensee telephonically notified the NRC Headquarters Operations Officer that an Unusual Event had been declared due to a fire (NRC Event No. 27271). A security guard reported the fire to the Control Room at about 6:40 p.m. (MST). The fire was in the plant North Yard area and consisted of plastic and plywood. The fire was extinguished at about 6:45 p.m. (MST) by a security guard with a portable fire extinguisher. The Unusual Event was declared and terminated at 6:48 p.m. (MST). The declaration was based on a review of the fire scene by a fire team advisor and the shift supervisor. They determined that the fire had burned for more than 10 minutes, thus meeting the Unusual Event emergency action criterion, "Fire within the Protected Area boundary lasting longer than 10 minutes"



4.3 Conclusions

A review of these events and documentation pertaining thereto indicated that the event classification appeared appropriate for both events. In the first event (Section 4.1), a violation was identified as a failure to appropriately classify an emergency event which met the criterion of an approved emergency action level. In the case of the fire event (Section 4.2), timely notifications were made to the county, State of Arizona, and NRC in accordance with approved procedures.



ATTACHMENT

1 PERSONS CONTACTED

1.1 Licensee Personnel

- *T. Barsuk, Emergency Planning Onsite Supervisor
- *H. Bieling, Manager, Emergency Planning
- *C. Bolle, Sr., Emergency Planning Coordinator
- K. Cardillo, Assistant Shift Supervisor, Administrative
- *G. Cerkas, Emergency Planning Consultant, Emergency Planning
- D. Coxon, Shift Supervisor, Unit 1
- *R. Duncan, Emergency Planning Offsite Coordinator
- V. Elish, Emergency Training Instructor
- W. Finnerty, Simulator Trainer, Operations Training
- *L. Fitzrandolph, Emergency Planning Coordinator, Emergency Planning
- *R. Flood, Plant Manager, Unit 2
- *F. Gowers, Site Representative, El Paso Electric
- B. Grabo, Supervisor, Nuclear Regulatory Affairs
- *R. Horton, Auditor, Quality Assurance and Monitoring
- *M. Hypse, Manager, Plant Electrical Engineering
- G. Eimer, Shift Supervisor, Unit 2
- *A. Krainik, Manager, Nuclear Affairs
- *J. McDowell, Sr. Monitor, Quality Assurance and Monitoring
- *R. Middleton, Supervisor, Unit 2 Operations
- S. Mills, Emergency Planning Coordinator
- *T. Mitchell, System Engineer, Site Mechanical Engineering
- *G. Mobbs, Sr. Monitor, Nuclear Assurance
- *J. Napier, Sr. Engineer, Nuclear Regulatory Affairs
- *R. Nunez, Manager, Operations Training
- M. Sanchez, Assistant Shift Supervisor, Unit 3
- L. Speight, Shift Supervisor, Administrative
- D. Strey, Assistant Shift Supervisor, Unit 2
- *J. Velotta, Director, Training
- D. White, Shift Supervisor, Unit 3
- *B. Whitney, Auditor, Nuclear Assurance
- *P. Wiley, Manager, Unit 2 Operations
- *B. Wolfe, Emergency Planning Offsite Supervisor
- S. Zerkel, Shift Supervisor, Unit 1

1.2 NRC Personnel

- *A. McDougall, Resident Inspector

The inspector also held discussions with and observed the actions of other members of the licensee's station and corporate emergency preparedness, administrative, operations, and technical staff during the course of the inspection.

*Denotes those present at the exit interview



2 EXIT MEETING

An exit meeting was conducted on May 27, 1994. During this meeting, the inspector reviewed the scope and findings of the inspection as presented in this report. The inspector's findings were reviewed and, in particular, the violation identified (Section 4.1). The licensee identified apparently appropriate corrective actions already taken and planned to preclude recurrence of the event (Section 4.1). The licensee did not identify as proprietary any of the materials provided to, or reviewed by, the inspector during the inspection.

