

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-528/91-07, 50-529/91-07 and 50-530/91-07

License Nos. NPF-41, NPF-51 and NPF-74

Licensee: Arizona Public Service Company
P. O. Box 53999, Station 9012
Phoenix, Arizona 85836

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

Inspection at: Palo Verde Site, Wintersburg, Arizona

Inspection Dates: March 4 - March 8, 1991

Inspector: *E. M. Qualls*
E. M. Qualls, Reactor Inspector

4/11/91
Date Signed

Approved by: *J. H. Reese*
J. H. Reese, Chief
Safeguards, Emergency Preparedness and Non-
Power Reactor Branch

4/11/91
Date Signed

Summary:

Areas Inspected: Unannounced routine inspection of the status of the Emergency Preparedness Program and follow-up on open items. Inspection procedures 82201, 82207, 82202, and 82701 were covered.

Results: Overall, the licensee's program is adequate in the area of emergency preparedness. No significant weaknesses were identified during this inspection.



DETAILS

1. Persons Contacted

*H. Bieling, Manager, Emergency Planning and Fire Protection
*N. Willsey, Supervisor, Emergency Planning
*T. Barsuk, Lead Site Emergency Planner
M. Koudelka, Emergency Planning Coordinator
J. Taylor, Unit 1 Shift Supervisor
S. Williams, Unit 1 RP Primary Technician
G. Eimar, Unit 2 Shift Supervisor
E. Griswald, Unit 2 RP Lead Technician
T. Hier, Unit 3 RP Lead Technician
B. Wolfe, Sr. E-Plan Coordinator
*R. Rouse, Compliance Supervisor
*D. Larkin, Compliance Engineer
*J. Malik, Sr. E-Plan Coordinator
C. Bolle, Sr. E-Plan Coordinator

In addition, the inspection also included interviews with other members of licensee staff.

*Denotes personnel attending the exit interview.

2. Emergency Detection and Classification (82201)

The inspector reviewed Emergency Plan Implementing Procedure (EPIP), EPIP-02, Emergency Classification. The inspector determined that the Emergency Action Levels (EALs) met the requirements of 10 CFR 50.47(b)(4) and 10 CFR 50, Appendix E, Section IV.B. EPIP-02 incorporates both symptom-based EALs by using a barrier criteria and specific event based EALs for specific events described in NUREG-0654, Revision 1, Appendix 1. The inspector found no examples of an event described in NUREG-0654 which EPIP-02 would have classified differently than the guidance given in the NUREG. The inspector discussed with licensee personnel the possible need to define the terms "the level of plant safety is reduced" and "hostile force" and what exactly "loss of functions" would entail. These terms are used in EPIP-02, Appendix B, Tab 4, and could result in an event not being classified by the Shift Supervisor consistent with the expectations of licensee management. The Emergency Planning Supervisor indicated that discussions with various licensee organizations are progressing to determine a more precise classification. This issue will be reviewed by the inspector in a later inspection (50-528/91-07-01) Open.

The inspector reviewed the letters from State and local officials which indicated that the State and local officials had reviewed the EALs in EPIP-02.

The inspector verified that the EPIPs clearly designate the affected unit shift supervisor (SS) as the person responsible for event classification. The SS is on site at all times and for a multi-unit event the Unit 1 Shift Supervisor is designated as the Emergency Coordinator.



The inspector verified that licensee emergency procedures direct the user to classify a plant event. Plant Procedure 43EP-3ZZ01, Emergency Operations, directs a user to perform a diagnostic when a plant emergency is occurring. The diagnostic diagram directs the user to the event procedure, for example, 43RO-3ZZ07 for a LOCA. The event procedures in Step 1.0 verify that the symptoms match the event and in step 2.0 direct the user to EPIP-02 to classify an event.

The inspector verified that units displayed on the control room radiation computer monitor are identical units to those specified in EPIP-02 for EALs.

3. Dose Calculation and Assessment (82207)

The inspector reviewed EPIP-14, Dose Assessment. EPIP-14 appeared to address the different conditions of release elevation, and whether the release is via a monitored or unmonitored release pathway. A manual method of calculation of projected offsite dose is provided and instructions on the use of the computer model MESORAM which the licensee uses for his calculation are also provided.

The inspector interviewed three personnel trained as Emergency Coordinators. All were knowledgeable about the dose projections and how to convert the dose projections to the proper protective action recommendation (PAR).

The inspector verified that each shift had a least one person trained and able to calculate a projected offsite release. This person is usually the lead RP technician on each shift for the unit. The inspector interviewed three lead RP technicians. They appeared knowledgeable about calculating a projected offsite dose. The inspector requested that two of these work a problem on the Standby Technical Support Center (STSC) computer for a projected steam generator tube rupture; assuming, 100% failed fuel and a release through the steam dump valves. Both were proficient in the use of the MESOREM program and using the computer. One failed to use EPIP-14 and failed to deduct 1.5 mrem/hr from the mainsteam line radiation monitor reading when entering data into the computer, resulting in an unnecessarily high projected dose rate. Under some conditions, the failure to deduct the 1.5 mrem/hr could result in the licensee making unnecessary PARs. The inspector noted that the procedural step in EPIP-14 which specified that 1.5 mrem be deducted was a long complex step and that there was no prompt in the computer program to remind the operator that it was necessary to deduct this reading. Licensee personnel said that they would simplify the procedural step and investigate a means to ensure that the 1.5 mrem would be deducted consistently. This item will be reviewed at a later inspection (50-528/81-07-02) open.

The inspector verified that licensee personnel had operable ERFDADs displays and MESOREM programmed computers in the Unit 1 and 2 STSCs and in the EOF. The inspector identified no deficiencies in dose assessment equipment when compared to Emergency Plan specifications.



A comparison on the licensee's MESOREM results with the computer dose projection model used by the NRC, RASCAL, will be conducted during the annual exercise (50-528/91-07-03) Open.

4. Protective Action Decision Making (82202)

The inspector reviewed licensee procedures EPIP-02, Emergency Classification, EPIP-03, Notification of Unusual Event Implementing Actions, EPIP-04, Alert, Site Area, and General Emergency Implementing Actions, EPIP-11, TSC/STSC Activation, EPIP-12, OSC Activation, EPIP-13, EOF Activation, EPIP-14 Dose Assessment, and EPIP-15, Protective Action Guidelines. The inspector verified that on-shift emergency response responsibilities are clearly defined, that adequate staffing is available at all times and that the responsibilities of the Emergency Coordinator (EC) to make Protective Action Recommendations (PARs) to off-site agencies are clear. The inspector verified that licensee PARs are based on both projected doses and on EPIP-02 EALs, which are based on both plant conditions and an actual offsite release rates. The inspector verified that these procedures also require evacuation of non-essential personnel.

The inspector verified, through discussions with licensee staff and by procedural review, that the licensee has provisions and equipment available to reach offsite officials with the authority and responsibility for protective action decision making on a 24-hour basis. The inspector verified that the offsite officials, in the State "Fixed Nuclear Facility Emergency Response Plan" have predetermined criteria for making protective action decisions based on criteria consistent with those used by the licensee. The inspector also verified that there is a procedure requiring PARs be made to off-site officials with 15 minutes of an emergency event classification.

The inspector reviewed a copy of the training provided to offsite agencies by the licensee and verified that the licensee trains on the need for taking protective measures before a core melt occurs and on the relationship between reactor conditions, offsite consequences and the effectiveness of protective measures.

The inspector interviewed two shift supervisors and an Assistant Plant Manager. These personnel are designated as potential emergency coordinators responsible for making PARs. They were knowledgeable of the procedural requirements and the need for promptly making PARs. They each indicated to the inspector that they would not hesitate to make the PAR required for a plant emergency classification.

During the procedural review the inspector noted minor typographical differences between the PARs given in EPIP 04, Appendix C and in EPIP-15. These were corrected during the inspection.

5. Tour of Emergency Response Facilities (82701)

During the course of the inspection the inspector toured the OSC, TSC, STSC (Units 1 and 2) and the EOF. All equipment inspected appeared to be well maintained and in calibration. Communication and computer equipment

was operational. The facilities were located as defined in the Emergency Plan. The following items were noted in the TSC area.

- a) A cabinet labeled "TSC Emergency Kit", which had a plastic seal on it, had the seal broken.
- b) The TSC was being used as office space on a daily basis. It appeared to the inspector that the TSC outer support areas had become cluttered with books, boxes, which could hinder prompt and effective TSC activation. This item will be reviewed at a later inspection (50-528/91-07-04) Open.
- c) The Uninterruptable Power Supply (UPS) battery for the ERFDADs computer network had been out of service since August 1990. In a loss of offsite power this battery provides 15 minutes of power for ERFDADs while the TSC emergency diesel generator starts and supplies power. Without the battery power to the computer could be interrupted requiring re-initializing of the computer software. This process would leave the ERFDADs computers unavailable during the first half hour or so of the loss of power event when it would be useful as a tool for the operators and responding emergency staff. The ERFDADs computer is also the means by which the control room operators normally receive meteorological data. The loss of ERFDADs would also require sending an I&C technician to the meteorological (MET) tower for data. According to plant personnel this would take about 15 minutes which would delay subsequent offsite dose calculations, event classifications and PARs by about 15 minutes. Licensee personnel, subsequent to the inspection, told the inspection that an identical battery was unavailable and that on March 15, 1991 an Engineering Evaluation Request, EER, was issued to build a new rack for a new battery. This item will be reviewed at a later inspection (50-528/91-07-05) Open.

6. Exit Meeting

An exit meeting was held on March 8, 1991 with members of the licensee staff. The items listed in this report were discussed at that time.

