

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-528/84-26 (IE-V-636)
Docket No. 50-528 License No. CPPR-141
Licensee: Arizona Public Service Company
P. O. Box 21666
Phoenix, Arizona 85836
Facility Name: Palo Verde Nuclear Generating Station - Unit 1
Inspection at: Palo Verde Site - Wintersburg, Arizona
Inspection conducted: July 16-20, 1984

Inspectors: G. M. Temple 8/3/84
G. M. Temple, Emergency Preparedness Technician Date Signed
NRC Team Leader

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M. D. Schuster, Chief, Security Licensing and Date Signed
Emergency Preparedness Section

Summary:

Inspection on July 16-20, 1984 (Report No. 50-528/84-26)

Areas Inspected: An announced, follow-up inspection of open items and improvement items identified during the emergency preparedness preoperational inspection of April 11-22, 1983, observation of the emergency preparedness exercise on May 11, 1983 and the follow-up inspection of January 16-20, 1984. The inspection involved about 185 hours of onsite time by four NRC inspectors and one contractor team member.

Results: No significant deficiencies or violations of NRC requirements were identified.

DETAILS

1. Persons Contacted

A. Licensee Personnel

J. Allen, Manager, Operations
G. Anderson, I&C Systems Engineer
O. Bankston, Computer Engineer
T. Barsuk, Engineer III, Site Emergency Planning
R. Bernier, Supervisor, Operations Support
B. Cederquist, Manager, Chemical Services
*G. Clyde, Operations Licensing Engineer
V. Elish, General Training Instructor
S. Eklund, Engineer III, Site Emergency Planning
*S. Frost, Supervisor, Operations Licensing
R. Gouge, Shift Supervisor - Unit 1
T. Green, Supervisor, Training Support Services
N. Helman, Senior Specialist, I&C
F. Hicks, Manager, Training
*D. Karner, Assistant V.P., Nuclear Production
M. Lantz, Supervisor, Radiological Protection Support
D. Nichols, Supervisor, General Training
*R. Page, Manager, Emergency Planning and Preparedness
G. Perkins, Manager, Radiological Services
*B. Quinn, Manager, Nuclear Licensing
*A. Ramey, Supervisor, Quality Systems
*C. Russo, Manager, Quality Audits/Monitoring
J. Sarver, Health Physicist, Emergency Planning and Preparedness
J. Sims, Engineer III, Site Emergency Planning
*E. Sterling, Supervisor, Compliance Control
V. Sutherland, Meteorologist
*E. Van Brunt, Jr., V.P., Nuclear Production
P. Wiley, Supervisor, License Training
*D. Yows, Supervisor, Site Emergency Planning

B. Contractor Personnel

M. Millard, Principal Startup Engineer, Volt Information Services

2. Licensee Action on Previously Identified Items

(Open) Open Item (83-14-04): The present emergency plan (Revision 3) and staff augmentation capability were not consistent with Table B-1 of NUREG-0654, Revision 1. The status of this item has not changed in that the applicant has committed to augmenting the emergency organization initially at 30 minutes and fully (staffed and operational) within 90 minutes after declaring an alert or higher level emergency. The applicant has used a 90 minute augmentation period rather than 60 minutes as shown in Table B-1. The applicant has been corresponding with the NRC Emergency Preparedness Branch (EPB) in order to reach an agreeable resolution of this matter. Additionally, a meeting with EPB personnel has been scheduled for the week of July 30, 1984. This issue will be discussed at that meeting. In order to resolve this matter, the

applicant will have to submit an acceptable justification for using 90 minutes, rather than 60 minutes, or the emergency plan will have to be changed such that it is consistent with Table B-1. Until NRC Headquarters and applicant personnel resolve this issue, this item will remain open.

(Closed) Open Item (83-14-06): The implementing procedures for the Corporate Emergency Center (CEC) had not been submitted to NRC as required by Section V of Appendix E to 10 CFR Part 50. A new implementing procedure, EPIP-57, has been generated to address the operations of the CEC. This new procedure, which has received the necessary reviews and approvals, will be distributed to holders of controlled copies and the NRC within the next week. This item is considered to be closed.

(Open) Open Item (83-14-14): The Control Room (CR), Technical Support Center (TSC), Operations Support Center (OSC) and Emergency Operations Facility (EOF) had not been completed and the required equipment installed. The CR, TSC, OSC and EOF were visited during this inspection and, with the exception of minor construction in the TSC, the facilities appear to be constructionally complete. However, due to a recently submitted design change, further modification is expected in the TSC to install remote alarms and indicators associated with the Radiological Monitoring System (RMS). Prior to being considered fully operational, the following systems will have to be completely installed and validated for operation: (1) Emergency Response Facility Data Acquisition and Display System (ERFDADS) - Readouts for this system will be located in the CR, TSC and EOF (this system was still being tested and software modifications were in progress), (2) Safety Parameters Display System (SPDS) - This system will be available as part of ERFDADS (testing of this system was in progress), (3) Chemical and Radiological Acquisition Computer System (CRACS) - Installation was not complete and testing was ongoing, (4) (RMS) - Awaiting installation changes in the TSC (previously mentioned) and EOF and (5) Habitability System - This system, which includes recirculating air and HEPA filters for the EOF, was not completely installed and operational. The applicant has committed to complete facilities and operational instrumentation by fuel load, as evidenced by their letter of April 14, 1983. This item is still open.

(Open) Open Item (83-14-17): The offsite, backup laboratory had not been fully equipped, licensed and appropriate procedures had not been prepared. The status of this item has been changed to the extent that Revision 3 of the Emergency Plan (EP) states that one of the unaffected units will provide backup laboratory support in the event of an emergency. Arizona State University (ASU) will respond as the offsite, backup laboratory only if habitability of the unaffected unit's laboratory were a problem. The equipment has been installed at ASU and procedures for diluting, packaging and transporting samples have been developed. Since provisions for diluting samples have been established, the need for the license amendment for ASU has been eliminated. Prior to closing this item, it will have to be determined whether the Unit 1 Operating License (OL) will cover the use of the Unit 2 laboratory for purposes of analyzing accident samples. The by-product license currently in effect for the site allows for the receipt and use of relatively low

level, calibration sources. The NRC Project Manager has been contacted in order to resolve this matter. This item is still open.

(Open) Open Item (83-14-22): The non-radiation monitors had not been installed, operationally checked and calibrated. The only non-radiation monitors under review are the meteorological equipment and the seismic instrumentation. With respect to the seismic instrumentation, all of the accelerometers have been installed, leaving only one switch and triggering device to be installed. This instrumentation was expected to be installed the week of July 23, 1984. Procedures for testing the seismic instrumentation had been developed and were expected to complete the review process by August 10, 1984. Calibration and testing are scheduled to begin after final approval of the procedures. Contractor personnel reported that calibration and testing would take approximately 30 days. The meteorological equipment has been covered under a separate heading. This item is still open.

(Open) Open Item (83-14-25): The meteorological data acquisition system had not been installed and tested. The meteorological data acquisition system is part of ERFDADS and was demonstrated during this inspection. Although applicant personnel were able to display meteorological data, some software problems were experienced. Applicant personnel have identified and demonstrated a problem with the one hour averaging capability and have not determined whether the problem exists with the 15 minute averaging. Additionally, the display indicated a questionable status for certain meteorological parameters. Design changes intended to resolve these problems have been developed and were awaiting approval and authorization. This item is still considered to be open.

(Open) Open Item (83-14-32): The card reader system, used for accountability of personnel during an emergency, was not operational. The status of this item has not changed. The applicant stated that they still intend to conduct an accountability and evacuation drill prior to fuel load. This item is still considered to be open.

3. Items for Improving the Emergency Preparedness Program

This inspection included an examination of the applicant's actions with respect to the Improvement Items which remained unaddressed subsequent to the January 1984 follow-up inspection. (See Section 3 of Report Number 50-528/84-01, dated February 13, 1984).

(Closed) Improvement Item (83-14-45): Section 5.2 of Inspection Report Number 50-528/83-14 should be examined and appropriate changes made to the procedures. At the conclusion of the January 1984 follow-up inspection, only 5.2e, 5.2f (first three sentences only), 5.2h, and 5.2k remained open. Subsequently, 5.2e and 5.2k were deleted from 83-14-45 and addressed separately as items 84-01-02 and 84-01-03. Therefore, 83-14-45 remained open only with respect to paragraphs 5.2f and 5.2h.

EPIP-18 (Revision 2 dated May 30, 1984) properly reflects the 75 REM lifesaving action exposure limit. The same change has been made in EPIP-25. Action on 5.2f is complete.

EPIP-19 (Revision 2) no longer refers to EPIP-15. EPIP-20 no longer cites the 2mR evacuation criteria. Action on 5.2h is complete.

This item is closed.

(Closed) Improvement Item (83-14-46): Review EPIP-02, Emergency Classification, and compare the Emergency Action Levels (EALs) to the criteria in Appendix 1 of NUREG-0654. Status of this improvement item has not changed with respect to statements made in Section 3 of Report Number 50-528/84-01. In connection with the Emergency Preparedness Branch's evaluation of the Emergency Plan, they have initiated a special study of Section 5.0, Emergency Conditions. This special study includes an evaluation of EPIP-02. Therefore, this item is considered closed.

(Closed) Improvement Item (83-14-47): Procedure EPIP-14A should be reviewed and a determination should be made as to whether it is capable of using post-accident sampling data in calculating release rates. Also, an evaluation should be made to determine whether the procedure can be used to calculate release rates using the normal containment building leak rate. Applicant action on this item consisted of upgrading procedure EPIP-14A. Although the upgraded procedures (EIPs-14A, 14B and 14C) had not completed the review process, the revised procedures have provided for the capability of using the normal containment building leak rate and post-accident sampling data in calculating release rates. This item is considered to be closed.

4. Licensee Action on Items Identified During the Follow-up Inspection

(Open) Open Item (84-01-01): Post-accident grab sampling procedures needed to cross reference the safety precautions related to high activity samples. EPIP-27A has been developed to address safety precautions necessary for collection, handling, transport and analysis of primary coolant, high range gaseous effluent and containment air, post-accident grab samples. EPIP-27A was not in its final form, and upon review, appeared to need some improvement. This item is still open.

(Closed) Open Item (84-01-02): EPIP-16 noted a requirement to notify the Radiological Protection Coordinator (RPC) when inplant readings above 10 R/hr and outside readings above 0.2 mR/hr were detected, however, no basis for providing any significance for these valves was indicated. The requirement to notify the RPC when outside readings of 0.2 mR/hr has been deleted. The 10 R/hr value was reported to be an administrative limit for an exclusion area. In addition, expected exposure rates >10 R/hr are specified for various areas in the plant in the Lessons Learned Implementation Report (LLIR). This item is closed.

(Closed) Open Item (84-01-03): The instrumentation (survey meters) used in EPIP-17 for monitoring airborne radioactive iodine had not been identified, therefore, it was not possible to ascertain whether the instruments provided the capability to detect a minimum of 10^{-7} uCi/cc of activity. EPIP-17 has been changed to reflect a specific instrument (Eberline, Model SAM-2) as the instrument to be used for analyzing airborne radioactive iodine samples in the field. The SAM-2 has the

capability to detect the above mentioned minimum activity.
 Instruction 4.3.1.6 has been deleted from EPIP-17. This item is closed.

(Closed) Open Item (84-01-04): Evacuation requirements contained in EPIP-20 were not cross referenced with EPIP-19, Onsite Evacuation. Rather than cross reference EPIP-20 with EPIP-19, the applicant has modified EPIP-20. EPIP-20 now specifies that if radiation levels at assembly areas exceed 2 mR/hr, the Emergency Coordinator (EC) shall be notified immediately. The EC will then determine whether evacuation is required or desirable. During the review of EPIPs 19 and 20, the inspector noted that vehicle decontamination at offsite re-assembly areas had not been addressed. This matter was discussed with the applicant and was subsequently entered into their internal tracking system as an improvement item. This item is closed.

(Closed) Open Item (84-01-05): Extremity TLDs (finger rings) and conventional TLDs were not available in certain emergency kits. Due to the special nature of the applicant's dosimetry program, conventional TLDs need not be stocked within emergency kits. A job TLD, which can be read by the user at the end of a specific task, is issued along with each "legal" TLD. Instruments for TLD readout appear to be appropriately located. Extremity TLDs have been included in the emergency kits located in the OSC and in the Service Building, the alternate OSC. Revision 3 of EPIP-38 had been changed to reflect the additions made to the emergency kits. This item is closed.

(Closed) Open Item (84-01-06): Concerns had been expressed with respect to the backup capability for dose calculations. Subsequent to the 1/84 follow-up inspection, the applicant has changed their primary and backup methods for performing dose calculations. The applicant currently plans to perform dose calculations using approved procedures and newly acquired IBM Personal Computers (PCs). The IBM PCs are intended to be both the primary and the backup methods for performing dose calculations. PCs are located in the EOF, TSC, Satellite TSC (STSC) and in the Radiation Protection area. This item is closed.

5. Reactor Operator Emergency Plan and Procedure Training

Incident to this inspection was an examination of the applicant's EP and EPIP training of NRC licensed Reactor Operators (RO). Specific areas included in the examination were training requirements (including, content and quality), current status of training and related training records. In order to obtain information, the inspector observed training in progress, conducted interviews and reviewed records. The following is a discussion of each of the aforementioned areas.

- a. EP/EPIP training requirements are described in EPIP-36, Emergency Preparedness Training. Draft revision 2 was reviewed. Although this draft had completed the applicant's review process and was being used, the applicant said the procedure was being withdrawn in order to be reissued as a corporate administrative procedure.

Training requirements have been identified as a function of the individual's functional or emergency position. Training

requirements, with respect to subject matter, appear to be appropriate for each of the functional/emergency positions. Training quality appears to be satisfactory with an effective testing process.

Examination of this area identified two improvements that could be made. First, the requalification interval has not been specifically defined and second, requirements for requalification have not been documented. Both of these items were discussed with the applicant.

- b. Review of the current status of training resulted in the following data. Training was complete and current for the six Shift Supervisors. Four of six Assistant Shift Supervisors had completed training and were current. Seven of twelve ROs were qualified. A majority of the unqualified incumbents mentioned above had received the full initial training, but were considered unqualified because of a lack of timely requalification.
- c. Training records maintained by the instructor begin with the source documents (attendance records and examinations). This information is then transferred to a central computer file. Supervisors have access to an alphabetical listing of the information contained in the central file. Such information is necessary for them to fulfill their responsibility to assure their personnel are adequately trained/retrained.

Applicant personnel had recognized the limitations of the training records in their current form. A computerized tracking system has been developed and testing is expected to be completed later this year. The new system will provide an improved record keeping capability as well as better availability of the information.

6. APS Organizational Structure

As a result of recent staffing changes, the APS Organization was reviewed during this inspection. Specific changes to the organization included the establishment of an Assistant Vice President of Nuclear Production. The person filling this position will function as the Emergency Operations Director (EOD) in an emergency. The Director, Nuclear Operations will continue to function as the Emergency Coordinator (EC), reporting to the EOD. The Assistant Vice President, Nuclear Production, is currently acting as the Director, Technical Services. This is considered to be a temporary situation. The Emergency Planning and Preparedness (EP&P) group reports directly to the Director, Technical Services. The EP&P group has been restructured to include Site Emergency Planning. Additionally, the position of Manager, Administration and Technical Services, has been eliminated from the corporate structure. Responsibilities associated with that position have been distributed amongst the current organization. These changes have been in effect since May 17, 1984. The current organization is considered to be the operational organization with changes occurring only as a result of natural events.

7. Emergency Preparedness Related Items

This inspection also included a review of two other items of interest related to the applicant's Emergency Preparedness Program, the status of the applicant's siren system and the location of the high range, containment dome monitors.

- a. The applicant's siren system has been completely installed and tested. The system is capable of operation, however, some improvements are currently in progress. As an example, modifications to greatly reduce the possibility of inadvertent siren activation are being performed. An administrative decision has been made to keep the system in an inoperable mode until the plant becomes operational. No problems were identified during this review.
- b. The containment dome monitors were observed with respect to meeting the criteria stated in NUREG-0737. Since both containment monitors appear to view a significant portion of containment atmosphere, this requirement appears to be satisfied.

Dose assessment procedures, which incorporate readings from the dome monitors, were examined as part of this review. Applicant personnel were reminded that for purposes of calculating source term, readings from the monitors should be used in a conservative manner.

8. Exit Interview

At the conclusion of the inspection, the Team Leader and other members of the inspection team met with those persons identified in paragraph 1. The scope of the inspection and the findings presented in paragraphs 3 through 7 were discussed. The discussion of the inspection findings included the following additional comments.

- a. With respect to Open Items 83-14-14 and 83-14-22, applicant personnel were informed that attempts would be made to close these items in conjunction with the EP Exercise scheduled for September 1984.
- b. During the discussion of Open Item 83-14-17, the Team Leader noted that an evaluation of the Unit 2 lab would have to be performed by NRC Health Physics personnel if the Unit 2 lab is to be considered as the backup lab. The Team Leader proposed to alert the Region V Health Physics staff of this matter, upon return to the Regional Office.
- c. Discussion of Improvement Item 83-14-47 included a caution to the applicant concerning the application of EPIP-14A. The procedure noted an intent to use calculated containment building release rates rather than measured leak rates. Applicant personnel stated that since the calculated value is greater than the measured value, they had elected to use the conservative, calculated release rate.

- d. Closure of Open Item 84-01-03 was based upon receipt of the noted instrumentation during the first week of August 1984. Applicant personnel agreed to internally track the receipt of this instrumentation and inform NRC personnel if the instrumentation was not delivered in a timely manner. The applicant was also informed that EPIP-38, Emergency Equipment and Supplies Inventory, should be revised to include the new instrumentation. Applicant personnel also agreed to track this item.

- e. Based on the fact that modifications were being made to the dose assessment and post-accident sampling procedures, the applicant was informed that NRC would continue to have interest in these areas. The applicant was advised that the Emergency Response Facilities Appraisal, scheduled for the future, would include a detailed evaluation of their dose assessment program.