Arizona Public Service Company
P.O. BOX 53999 • PHOENIX, ARIZONA 85072-3999

102-01383-WFC/TDS/TRB
August 28, 1989 29 AM 9:10

WILLIAM F. CONWAY
EXECUTIVE VICE PRESIDENT
NUCLEAR

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Reference: (a) Letter from R. A. Scarano, Director, Division of Radiation Safety and Safeguards, NRC to W. F. Conway, Executive Vice President Nuclear, Arizona Public Service dated July 28, 1989

(b) Letter from A. Chaffee, Deputy Director, Division of Reactor Safety and Projects, NRC to W. F. Conway, Executive Vice President Nuclear, Arizona Public Service dated August 11, 1989

Dear Sir:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Docket No. STN 50-528 (License No. NPF-41)
STN 50-529 (License No. NPF-51)
STN-50-530 (License No. NPF-74)
Reply to Notice of Violation - 528/89-24-03
File: 89-070-026

This letter is provided in response to the routine inspection conducted by Messrs. M. Cillis, G. Cicotte, and L. Carson from June 5-15, 1989, June 26-30, 1989, and a telephone conversation on July 5, 1989. Based upon the results of the inspection, a violation of NRC requirements was identified. The violation is discussed in Appendix A of reference (a). A restatement of the violation and PVNGS's response are provided in Appendix A and Attachment 1, respectively, to this letter.

Reference (a) expresses concern with respect to the lack of timeliness with which corrective actions are taken in addressing self-identified problems. The point is emphasized in paragraph 2.G of the report where it is noted that the Incident Investigation Report (IIR), which detailed the results of an investigation of the failure to control sealed sources, was submitted for approval on May 8, 1989, but that, as of June 30, 1989, the IIR had not been distributed to the licensee's staff and the corrective actions recommended in the IIR had not been initiated. I fully agree that there was an inordinate delay in the review and approval of the IIR. Such a delay is not acceptable and steps have been taken to assure a more timely review of IIR's and initiation of corrective actions. These actions are described in the following paragraphs.

The Incident Investigation Procedure has been revised and was approved on August 23, 1989. The changes to this procedure will result in a more timely method of conducting, documenting, and disseminating investigation results and assist in expediting the implementation of recommended corrective actions. The revision streamlines the investigative process for Category 3 investigations while retaining the current depth of investigation. This is being done by simplifying the format requirements and eliminating redundant reviews while maintaining the thoroughness of the investigation and reviews. Additionally, the responsibility for the actual scheduling and implementation of the recommended corrective actions has been assigned specifically to the responsible directors.

Additionally, corrective actions resulting from incident investigations are being segregated into separate categories, one for each director's area of responsibility. This will enable management to immediately identify specific responsibilities for each director and effectively track the resolution of the actions. Executive management has also directed that for the current backlog of actions resulting from incident investigations the responsible director will have 90 days, upon assignment of the actions, to disposition all items assigned to him. Further, executive management has established a goal to achieve resolution of incident investigation action items within 120 days of the incident occurrence. A periodic report of the status of these actions will be provided to executive management. In order to ensure that the entire scope of this issue is fully understood and that the corrective actions are sufficiently comprehensive, an evaluation is currently being conducted. The results of that evaluation and any additional corrective actions will be provided in response to reference (b).

Reference (a) also discusses procedural weaknesses, failure to comply with procedures, inadequate review of surveillance test results, and inattention to detail referring to paragraph 5 of the inspection report. As previously discussed with the NRC staff, findings such as those identified by the NRC inspectors are considered unacceptable and indicate a failure to meet the established expectations. Based upon the inspectors' observations, it is apparent that the latitude permitted within the procedural controls contributed to or directly caused the documented findings. Therefore, in addition to the corrective actions previously committed to and documented in the inspection report, PVNGS has revised procedure 73AC-9ZZ04, "Surveillance Testing", providing more explicit guidance for the documentation and review of surveillance tests.

I recognize that improved procedural guidance is only one step in upgrading the overall performance of individuals. The most important aspect is that each individual fully understands management's expectations, his individual responsibilities for them, and is committed to meeting his responsibilities. I have recently issued my expectations to each employee. In order to reinforce my expectations, I have prepared an additional memorandum which discusses the observations documented in the inspection report and clearly identifies how the examples are direct indications that my expectations are

not being met.

In summary, I believe that the actions described in this letter and the attached response, in conjunction with my personal commitment to hold responsible individuals accountable for meeting my expectations, will ensure not only effective but timely corrective action. If you should have any questions regarding this response, please contact me.

Very truly yours,

W. F. Conway

WFC/TDS/TRB/kj

Attachments

cc: J. B. Martin
T. J. Polich
T. L. Chan
M. J. Davis
E. E. Van Brunt, Jr.
A. C. Gehr

APPENDIX A

Notice of Violation

Arizona Public Service Company
Palo Verde Nuclear Generating Station
Units 1, 2, and 3

Docket Nos. 50-528, 50-529, 50-530
License Nos. NPF-41, NPF-51 and NPF-74

During an NRC inspection conducted June 5-15 and June 26-30, 1989, and in telephone conversations on July 5, 1989, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (1988), as modified by 53 Fed. Reg. 40019 (October 13, 1988), the violation is listed below:

A. Technical Specification 6.11.1 requires procedures for personnel radiation protection to be prepared consistent with the requirements of 10 CFR Part 20 and to be approved, maintained and adhered to for all operations involving personnel radiation exposure.

Licensee Procedure 75RP-9XC08, Leak Testing and Inventory of Radioactive Sources, and licensee Procedure 75AC-9RP05, Source Control provide in part that the Central RP Group and Unit RP Groups shall inventory on a semi-annual basis all non-exempt quantity sources in their custody, respectively, and that the inventory shall physically account for all such sources.

Procedure 75AC-9RP05, Source Control, requires in part that the Central RP Group and the Unit Radiation Protection Groups enter into their

Source Tracking Systems a record of each non-exempt quantity source.

This procedure further requires that all sources or source containers shall be labeled with a durable, clearly visible label which shall include at least the trefoil, source i.d. number, the words "Caution Radioactive Material," the isotope or isotopes, and the activity of each isotope.

Contrary to the above, as of June 28, 1989:

1. Neither the Central Radiation Protection nor the Unit Radiation Protection Groups' Source Tracking System records included non-exempt quantities of Americium-241. At least 31 non-exempt Am-241 sealed sources were located in each of the three Units, and 37 non-exempt Am-241 sealed sources were located in the site warehouse.

2. Neither the Central Radiation Protection Groups nor the Unit Radiation Protection Groups conducted required semi-annual inventories of non-exempt Am-241 sources that were in their custody.

3. At least eight non-exempt Am-241 sources in Units 2 and 3 had illegible labels. Another source was found to have a label that was completely obstructed by a metal bracket.

Attachment 1

Reply to Notice of Violation 528/89-24-03

I. REASON FOR VIOLATION

On March 30, 1989 a Radwaste technician at the Dry Active Waste Processing and Storage (DAWPS) Facility discovered a high range detector in a CONEX box from Unit 2 designated for radioactive waste. In response to this discovery, an Incident Investigation was initiated on March 30, 1989. The summary results of that investigation are presented in the following paragraphs.

On April 26, 1984, a high range detector (S/N #22707) for RU-151, Unit 1 Primary Coolant Monitor 'B', was received from Kaman Instrumentation Corporation. The detector is an ion chamber detector whose design incorporates a small "keep alive" radiation source to maintain a minimum constant signal from the detector. The isotope utilized in this detector, as well as 30 other RMS channels in each Unit (total of 31 similar detectors required for each Unit) is Am-241 in the amount of 80 nanocuries (range for all detectors is 80-150 nanocuries); this amount is in excess of the exempt quantity limit set forth in 10 CFR 30.15(a)(9)(iii) of 50 nanocuries (0.05 microcuries). An initial receipt survey for the detector was performed in accordance with procedure 75RP-9ZZ56, "Receipt of Radioactive Material," by the Radioactive Waste Support Group and the material was identified as a

radioactive source. The Radiation Protection Support Calibration Facility, the organization responsible for source control in 1984, was notified of the receipt of the radioactive source by the Radioactive Waste Support group. These actions were documented on the Radioactive Source Receipt Record. A Calibration Facility technician then examined the shipment and inappropriately determined the detector to be an exempt quantity.

On March 24, 1986, an I&C technician removed the high range detector (S/N #22707) from Radiation Monitor RU-151, during the conduct of routine maintenance. Attempts were made to decontaminate the detector in preparation for shipping the unit to the manufacturer. These attempts were unsuccessful and RP personnel were informed. It is assumed that the detector was placed in the CONEX box to be disposed of with other contaminated material. On March 30, 1989, a contract Rad Waste technician at Dry Active Waste Processing and Storage (DAWPS) Facility discovered the detector in a CONEX box from Unit 2 designated for radioactive waste. Unit 2 RP was notified at 1000, on March 30, 1989, of the discovery of the detector. Unit 2 RP recovered the detector and transported it to the Central RP Calibration Facility for disposal per the requirements of 75AC-9RP05, "Source Control."

As a result of the determination in 1984 made by the Calibration Facility technician that the source was an exempt quantity, the detector was not entered into the Source Tracking System, and therefore, the

requirements for accountability and special handling were not implemented. Also, because of the misclassification there was no documentation which would substantiate that the required source labeling had been verified.

To ensure that the detectors are labeled in accordance with procedural requirements, detector S/N #22707, new detectors stored in the warehouse, and accessible installed detectors were examined for correct labeling. The detectors reviewed were labeled "CAUTION RADIOACTIVE MATERIAL," and listed the isotope (Am-241), amount (generally, 80-150 nanocuries), and the date of activity determination. The labeling contained on the detectors examined was in accordance with the approved station requirements contained in procedure 75RP-9ZZ61, "Radioactive Material Storage and Control."

However, detector cans were identified that had labels that contained information that could not be read. Additionally, installed detectors were identified that had the radioactive material label partially or largely obscured by the detector mounting bracket. In these cases, the detectors were relabeled.

The root cause of this event is attributed to the failure of the Radiation Protection Calibration Support personnel to correctly identify upon initial receipt in 1984 that the subject RMS detectors

contained non-exempt quantities of Am-241, and, as such, required accountability, special handling, and clearly visible labeling. The persistence of this problem for an extended period of time is attributed to inadequate knowledge of the requirements for exempt and non-exempt sources by personnel who were responsible for various aspects of source accountability. Further, it was determined that responsible PVNGS personnel were unaware that, regardless of whether the detectors containing the Am-241 were exempt or non-exempt, the detectors could not be disposed of as radioactive waste. Procedures in place for receipt of radioactive material at the time of this event required that personnel refer to the Code of Federal Regulations to determine what constitutes exempt or non-exempt sources. Based upon the investigation results, there is no indication that the Code of Federal Regulations was used to determine source status which was contrary to the approved procedure. The initial failure to properly classify the detectors resulted in the subsequent documented procedural violations discussed in this notice.

II. CORRECTIVE ACTIONS TAKEN AND RESULTS ACHIEVED

RMS detector S/N #22707 was recovered by the Central Radiation Protection Calibration Facility and retained for proper handling/disposition. Central Radiation Protection Calibration Facility personnel; 1) initiated a physical inspection of the warehouse, units,

and rework facility to establish the current inventory of SQ detectors containing sources; 2) entered the detectors on hand into the Source Tracking System (STS); and 3) assured that the sources contained in detectors at the warehouse were under positive control of the Central Radiation Protection Calibration Facility to preclude further improper handling or disposition. Additionally, RMS detectors were examined to ensure the labeling of detectors containing sources was in accordance with station procedures and federal requirements. Identified deficiencies have been corrected.

On July 6, 1989, the Plant Director issued a memo to the Unit Plant Managers, Unit and Central Maintenance Managers, Unit Radiation Protection Managers, and Unit and Central Maintenance I&C Supervisors that specifically advised them of the requirements to handle, account for, and ensure proper disposition of SQ system detectors containing radioactive sources.

A change has been initiated to 76AC-0RW01, "Receipt, Storage, and Shipment of Radioactive Material," to require specific notification of Central Radiation Protection Calibration Facility personnel upon receipt of any radioactive material to ensure initial determination of accountability and handling requirements. This change is expected to be implemented by September 15, 1989. As an interim measure, a memo has been issued by the Site RPM which requires the additional notifications.

To ensure that no other detector sources at PVNGS have been inappropriately classified as exempt, a review of receipt records and the Source Tracking System has been performed for all sources. No additional deficiencies other than those with the Am-241 sources were identified during the review.

III. CORRECTIVE ACTIONS WHICH WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

To ensure that no sources have been inadvertently disposed of as radioactive waste, a detailed review of receipt records and work history is currently in process. Should the review determine that a source was inadvertently disposed of, applicable reporting requirements will be followed. This review is expected to be completed by September 5, 1989.

Radiation Protection personnel responsible for source receipt, accountability, handling, and disposal, and I&C personnel responsible for RMS maintenance will be familiarized with this event through required reading of the PVNGS Incident Investigation Report that addresses the events discussed in this violation. The review of the subject investigation is expected to be completed by September 1, 1989.

Station procedures that deal with various aspects of source receipt, accountability, handling, and disposal will be revised to reflect a specific position with responsibility for all determinations involving radioactive sources, regardless of the quantities. These procedure

changes, as well as other changes to Radiation Protection procedures required by the PVNGS Incident Investigation Report, are expected to be completed by September 30, 1989.

Maintenance Procedures and repetitive maintenance tasks will be reviewed and those tasks where it is anticipated that an affected RMS detector could be replaced or physically manipulated will be revised to reflect appropriate points of contact for disposition of the detector source and necessary precautions to prevent damaging or obscuring of detector radioactive material labels. The review and implementation of the required changes are expected to be completed by October 15, 1989. As an interim measure a directive has been issued to the work control managers requiring that the Central Radiation Protection Calibration Facility be notified anytime a work order involves the removal of an item containing radioactive sources regardless of quantity to ensure appropriate instructions have been included.

In order to ensure the proper precautions are addressed in corrective maintenance work orders, this response will be required reading for each work planner. A copy of the response will be provided to each individual by September 1, 1989.

Responsible Radiation Protection personnel will be trained in the proper handling and control of sources. This training will be completed by October 15, 1989. In order to ensure continued compliance in this area

this topic will be added to the continuing training program.

IV. DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Accessible RMS detectors were examined for proper labeling during a walkdown conducted by Central Radiation Protection Calibration Facility personnel. Based upon the walkdown the initial source accountability was established and existing labeling deficiencies were corrected. However, detectors are located inside the Unit 2 containment. Those detectors located inside the containment of Unit 2, which is currently at power, have not been verified. Initial accountability for those detectors and subsequent entry into the STS was based upon a review of the monitors' work history. Visual verification of the monitors will be conducted at the next opportunity that the reactor is subcritical or during the Unit 2 refueling outage whichever operational mode occurs first. In accordance with the source control program, these detectors will be inventoried on a semi-annual basis.

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AUTH.NAME AUTHOR AFFILIATION
CONWAY,W.F. Arizona Public Service Co. (formerly Arizona Nuclear Power
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WFC/TDS/TRB/kj

Attachments

cc: J. B. Martin
T. J. Polich
T. L. Chan
M. J. Davis
E. E. Van Brunt, Jr.
A. C. Gehr

APPENDIX A

Notice of Violation

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Units 1, 2, and 3

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Attachment 1

Reply to Notice of Violation 528/89-24-03

I. REASON FOR VIOLATION

On March 30, 1989 a Radwaste technician at the Dry Active Waste Processing and Storage (DAWPS) Facility discovered a high range detector in a CONEX box from Unit 2 designated for radioactive waste. In response to this discovery, an Incident Investigation was initiated on March 30, 1989. The summary results of that investigation are presented in the following paragraphs.

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As a result of the determination in 1984 made by the Calibration Facility technician that the source was an exempt quantity, the detector was not entered into the Source Tracking System, and therefore, the

requirements for accountability and special handling were not implemented. Also, because of the misclassification there was no documentation which would substantiate that the required source labeling had been verified.

To ensure that the detectors are labeled in accordance with procedural requirements, detector S/N #22707, new detectors stored in the warehouse, and accessible installed detectors were examined for correct labeling. The detectors reviewed were labeled "CAUTION RADIOACTIVE MATERIAL," and listed the isotope (Am-241), amount (generally, 80-150 nanocuries), and the date of activity determination. The labeling contained on the detectors examined was in accordance with the approved station requirements contained in procedure 75RP-9ZZ61, "Radioactive Material Storage and Control."

However, detector cans were identified that had labels that contained information that could not be read. Additionally, installed detectors were identified that had the radioactive material label partially or largely obscured by the detector mounting bracket. In these cases, the detectors were relabeled.

The root cause of this event is attributed to the failure of the Radiation Protection Calibration Support personnel to correctly identify upon initial receipt in 1984 that the subject RMS detectors

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II. CORRECTIVE ACTIONS TAKEN AND RESULTS ACHIEVED

RMS detector S/N #22707 was recovered by the Central Radiation Protection Calibration Facility and retained for proper handling/disposition. Central Radiation Protection Calibration Facility personnel; 1) initiated a physical inspection of the warehouse, units,

and rework facility to establish the current inventory of SQ detectors containing sources; 2) entered the detectors on hand into the Source Tracking System (STS); and 3) assured that the sources contained in detectors at the warehouse were under positive control of the Central Radiation Protection Calibration Facility to preclude further improper handling or disposition. Additionally, RMS detectors were examined to ensure the labeling of detectors containing sources was in accordance with station procedures and federal requirements. Identified deficiencies have been corrected.

On July 6, 1989, the Plant Director issued a memo to the Unit Plant Managers, Unit and Central Maintenance Managers, Unit Radiation Protection Managers, and Unit and Central Maintenance I&C Supervisors that specifically advised them of the requirements to handle, account for, and ensure proper disposition of SQ system detectors containing radioactive sources.

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To ensure that no sources have been inadvertently disposed of as radioactive waste, a detailed review of receipt records and work history is currently in process. Should the review determine that a source was inadvertently disposed of, applicable reporting requirements will be followed. This review is expected to be completed by September 5, 1989.

Radiation Protection personnel responsible for source receipt, accountability, handling, and disposal, and I&C personnel responsible for RMS maintenance will be familiarized with this event through required reading of the PVNGS Incident Investigation Report that addresses the events discussed in this violation. The review of the subject investigation is expected to be completed by September 1, 1989.

Station procedures that deal with various aspects of source receipt, accountability, handling, and disposal will be revised to reflect a specific position with responsibility for all determinations involving radioactive sources, regardless of the quantities. These procedure

changes, as well as other changes to Radiation Protection procedures required by the PVNGS Incident Investigation Report, are expected to be completed by September 30, 1989.

Maintenance Procedures and repetitive maintenance tasks will be reviewed and those tasks where it is anticipated that an affected RMS detector could be replaced or physically manipulated will be revised to reflect appropriate points of contact for disposition of the detector source and necessary precautions to prevent damaging or obscuring of detector radioactive material labels. The review and implementation of the required changes are expected to be completed by October 15, 1989. As an interim measure a directive has been issued to the work control managers requiring that the Central Radiation Protection Calibration Facility be notified anytime a work order involves the removal of an item containing radioactive sources regardless of quantity to ensure appropriate instructions have been included.

In order to ensure the proper precautions are addressed in corrective maintenance work orders, this response will be required reading for each work planner. A copy of the response will be provided to each individual by September 1, 1989.

Responsible Radiation Protection personnel will be trained in the proper handling and control of sources. This training will be completed by October 15, 1989. In order to ensure continued compliance in this area

this topic will be added to the continuing training program.

IV. DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Accessible RMS detectors were examined for proper labeling during a walkdown conducted by Central Radiation Protection Calibration Facility personnel. Based upon the walkdown the initial source accountability was established and existing labeling deficiencies were corrected. However, detectors are located inside the Unit 2 containment. Those detectors located inside the containment of Unit 2, which is currently at power, have not been verified. Initial accountability for those detectors and subsequent entry into the STS was based upon a review of the monitors' work history. Visual verification of the monitors will be conducted at the next opportunity that the reactor is subcritical or during the Unit 2 refueling outage whichever operational mode occurs first. In accordance with the source control program, these detectors will be inventoried on a semi-annual basis.