U. S. NUCLEAR REGULATORY COMMISSION

EA 90-147

REGION V

Report Nos. 50-528/90-36, 50-529/90-36, 50-530/90-36

Docket Nos. 50-528, 50-529, 50-530

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

Licensee: Arizona Public Service Company
P. O. Box 52034
Phoenix, Arizona 85072-2034

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

Inspection Conducted: July 16 - August 7, 1990

Inspectors: /s/ L. F. Miller
L. F. Miller Jr., Chief, Operations Section

Accompanying Personnel: A. Johnson, Enforcement Officer, Region V

Approved By: /s/ D. F. Kirsch
D. F. Kirsch, Chief, Reactor Projects Branch

Inspection Summary:

Inspection on July 16 - August 7, 1990 (Report Nos. 50-528/90-36, 50-529/90-36 and 50-530/90-36)

During this inspection the following Inspection Procedures were used: 30703 and 92700

Results: Three apparent violations were identified: inaccurate certification of the completion of pre-license medical exams, failure of licensed operators to complete biennial medical exams, and failure to report medical impediments of operators. Multiple examples of each apparent violation were identified.

General Conclusions and Specific Findings:

Significant Safety Matters:

The program to ensure operators and operator license candidates were medically qualified was determined to be ineffective. The administrative tracking program to ensure operators were maintaining watchstanding proficiency was determined to be weak.

Summary of Violations: As Stated Above

Summary of Deviations: None

Open Items Summary: None

DETAILS

1. Persons Contacted

** W. F. Conway, Executive Vice President
** W. C. Marsh, Director, Operations and Maintenance
* ** E. G. Firth, Training Manager
* F. Buckingham, Plant Support Manager
* ** B. E. Ballard, Director, Quality Assurance
* ** K. Byers, Training Project Coordinator
* ** J. Schlomer, Senior Nurse
* G. Clyde, Senior Nuclear Licensing Engineer
** J. N. Bailey, Vice President, Nuclear Safety and Licensing
* ** K. D. Davis, Director, Human Resources
* ** S. Zerkel, Unit 1 Training Coordinator
* D. Ensign, Unit 2 Training Coordinator
* ** R. Fullmer, Manager, Quality Audits and Monitoring
* D. Carnes, Unit 3 Training Coordinator
* J. Baxter, Compliance Engineer
* ** J. Blanton, Supervisor, Safety and Health
* ** W. Rudolph, Operations Training Supervisor
* R. Rouse, Supervisor, Compliance
** P. Wiley, Manager, Operations
** T. Bradish, Manager, Compliance

The inspector also had discussions with other licensee personnel during the inspection.

* Attended the Exit Meeting on July 17, 1990.

** Attended the Exit Meeting on August 7, 1990.

2. Background

On May 14 - 18, 1990, the NRC conducted an inspection (50-528, 50-529, and 50-530/90-16) of the facility's training program. This inspection determined that "there was no methodology present to ensure that [a licensed] operator received a physical examination that conformed to the requirements for operator licensing and renewal." At the Exit Interview for that inspection, the facility committed to review the licensed operator medical records to ensure that all licensed operators had been medically examined at the required frequency.

That facility review was completed and documented by the facility as Incident Investigation Report (IIR) 3-1-90-027 dated July 5, 1990. This report was provided to the inspector during this inspection (i.e. Inspection 90-36). The report indicated that the following errors had occurred:

a. One licensed operator had a disqualifying medical condition.

b. Nine other licensed operators did not have a current two year physical exam as required by 10 CFR 55, at the time of the report.

c. Two other licensed operators never had a complete physical. That is, pre-license medical exams did not include a blood test or EKG, as required by 10 CFR 55, and the individuals had not received a complete physical since their licenses had been issued.

d. 39 licensed operators had current medical examinations, but the dates on which these medical examinations were given were over two years after the previous medical. That is, the current medical examination had been given late.

e. Six other licensed operators had current medical examinations, but their pre-license medical examinations lacked either blood or EKG tests.

The report stated that the 11 licensed operators with late or incomplete medicals at the time of the facility's review were removed from licensed duties until they completed the required medical exam.

Licensee Event Report (LER) 90-09 provided a summary of this information on July 19, 1990.

On July 16-17, 1990, a followup inspection was begun to assess the accuracy and completeness of the report, assess whether any violations of regulatory requirements had occurred, and determine whether any unique restrictions or conditions of the individual operator licenses had been observed.

Inspection of records continued in the Regional Office from July 18 - August 3, 1990. The inspection was concluded onsite on August 6-7, 1990.

3. Review of Medical Records

a. The inspector first reviewed IIR 3-1-90-027 and discussed it with licensee personnel. Representatives of the training, licensing, quality assurance, operations, and medical departments were interviewed. A sample of eleven of the 122 licensed operators' medical records was audited. This sample included five records with no reported deficiencies, two records with late medicals, three records with incomplete medicals, and the record for the operator who was subsequently determined to be medically ineligible.

At the beginning of the inspection, the facility had not performed an independent audit of the medical records. Rather, the IIR had been developed from the review done by the medical department. The department had developed a review abstract for each medical record, and in most cases, these appeared to have been accurately filled out.

The inspector concluded from a review of these abstracts for the eleven records reviewed, that the facility's medical department review had been extensive. However, the diversity of individual medical records and medical examination dates made the review

technically complex, and the medical department reviewers were not trained as auditors. It was apparent from the inspector's sample review, that an independent audit, done to predefined audit standards, and written acceptance criteria, had not been performed.

At the Exit Interview held on July 17, 1990, a facility representative committed the facility to perform such an audit within three to four weeks, and to advise the NRC of any further significant discrepancies which were identified. Subsequently, a licensee representative advised the inspector that no significant discrepancies had been identified by this audit.

The inspector reviewed this audit, Quality Monitoring Report 90-1975, dated July 20, 1990. The audit was quite limited in scope, in that it only addressed whether all operators had an "up to date" medical record which documented that all components of the medical exam had been completed. The regulatory or procedural standards for the audit were not part of the audit. The auditor was not familiar with the detailed requirements of 10 CFR 55 relating to medical examinations. For example, the auditor was unfamiliar with the requirement of 10 CFR 55.23 for a facility representative to certify that a complete medical exam had been performed for each licensed operator applicant. Finally, at the Exit Interview on August 7, 1990, the Quality Assurance Manager stated that he had not considered it necessary to direct a comprehensive audit of the medical records, since he considered that the original medical department review had been comprehensive. He further stated that his department was not planning to do a complete audit of the medical department's records for licensed operators.

The inspector concluded that the restriction by management of the scope of the audit, and the unfamiliarity of the auditor with the requirements of 10 CFR 55 had severely limited the effectiveness of the audit. This resulted in an audit which failed to accurately diagnose the status of medical examinations and records.

b. The inspector then reviewed in detail the medical record abstracts provided by the licensee for each operator's medical records in the Regional Office. The inspector noted that the current medical requirements of 10 CFR 55 became effective May 26, 1987. Therefore, this date was used as the starting date for the inspector's review.

The inspector determined from the abstracts that all of the deficiencies identified by the facility had been correctly characterized. However, the inspector identified several additional instances of incomplete medical examinations which were not identified by the facility. These instances were:

1. The inspector identified seven additional operators who had been certified by the facility to have completed a medical examination to the standards of ANSI/ANS-3.4-1983, "Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants," when, in fact, they had not

completed that exam on the indicated date. NRC Form 396 specifies that medical exams for licensed operators are to be completed to the standard of ANSI/ANS-3.4-1983. Facilities are required by 10 CFR 55.23 to certify that operator license applicants have completed medical examinations to the standard of Form 396.

During the inspection, the facility provided additional information detailing the specific reasons for the incompleteness of the pre-license medical exams of the eight operators identified by the facility. The inspector observed, from the facility's IIR, that the required blood and electrocardiogram tests were missing from seven of the eight medical exams which were used by the facility as the basis for the initial license application. In addition, medical history, peripheral vision, pulmonary function, urinalysis, or examination by a licensed physician were missing from several of the eight exams. The nine additional operators identified by the inspector had a similar distribution of missing exam components.

The inspector concluded that authorized representatives of the facility had incorrectly certified that the 15 licensee applicants had completed a medical exam which met the requirements of NRC Form 396, Certification of Medical Examination. (See Enclosure 3 for dates.) The certifications apparently violated the requirement of 10 CFR 55.23 for a facility representative to certify that a pre-license physical had been completed as specified in ANSI/ANS 3.4-1983 in that the 15 medical exams which were certified to have been done were incomplete.

2. The inspector identified four additional operators who had exceeded two years between complete medical examinations during the terms of their licenses. Of these, two operators had exceeded the biennial anniversary year of their medical exams, while the other two exceeded the biennial anniversary dates of their medical exams. For example, a medical exam given on June 1, 1988 would have a biennial anniversary date of June 1, 1990, and would exceed its biennial anniversary year on December 31, 1990. For purposes of this review, any substantive medical examination completed prior to May 26, 1987, was considered complete. Both of the operators who had exceeded the biennial anniversary year of their medical examination had an intermediate, partial medical examination in the period between complete examinations.

   The inspector also reviewed a list of operators provided by the facility that the facility had determined did not have complete NRC medical exams within 24 months of their previous exams.

   The facility's review, documented in the IIR, identified 48 operators who had delinquent medical exams at one time or another since 1987.

3. Eleven of the operators identified by the facility (in Para. 3.b.1 and 3.b.2 above) also had incomplete medical exams of record at the time of the review. The facility removed these individuals from licensed duties until they successfully completed medical exams, and promptly notified the NRC of this discovery.

   The inspector noted that, of the eleven operators, four had delinquent medical exams for relatively short periods, up to nearly 11 weeks. Representatives of the medical department, and the Incident Investigation Report, stated that these short term delinquencies were due to operator cancellations of scheduled medical exams. One licensed operator volunteered that his understanding of the requirement for medical exams was that they needed to be completed by the end of the biennial anniversary year, rather than the biennial anniversary date of the previous medical exam.

   The names of the operators identified are provided in Enclosure 2. The inspector concluded from the large number of incomplete and delinquent medical exams that more than half of the licensed operators had not completed a biennial (two year) medical exam to the standards of ANSI/ANS-3.4-1983. These instances apparently violated the medical exam requirements of 10 CFR 55.21, 55.53(i) and 55.23.

c. The inspector reviewed a chronology provided by the facility during the inspection concerning the operator whose medical exam had expired, and who could not pass the medical exam when it was given in June 1990. The inspector reviewed the operator's medical record, interviewed the operator and his supervisor, and developed a modified chronology:

November 30, 1988	Partial NRC medical exam conducted with no discrepancies identified by operator on exam history.
April 21, 1989	Operator restricted by the medical department from working alone in the Control Room, or operating power equipment due to medication prescribed for viral infection (resulting in disturbance of equilibrium). (Operator stopped standing watches due to side effects of medication.)*
April 28, 1989*	Operator stopped taking medication, advised supervisor, and resumed watchstanding. Medical department did not indicate this in the operator's medical record.
May, 1989-Present	Medical symptoms recur at intervals of one to three weeks for a period of several hours. Onset of symptoms was gradual enough that operator could summon assistance.

June, 1989*	Operator diagnosed to have Meniere's disease by personal specialist physician. Placed on medication (meclazine) which he stated "knocks him out." Medication is changed (Diamox, scopolamine), and he stated side effects were not apparent. Supervisor verbally advises medical department, and is verbally advised that no restrictions on his duties are required. Operator's medical record does not reflect that discussion. Medication reduces severity of symptoms to some degree.
December 29, 1989	Partial NRC medical exam conducted. Operator disclosed on exam history that he was being treated for Meniere's disease, and was taking two different medications than the one disclosed in April 1989.
January 4, 1990*	Medical department physician examines operator. No medical impediment noted.
June 22, 1990	Operator is reexamined by different physician after medical department review identifies Meniere's disease on patient's December 1989 visit. Physician recommends operator be considered temporarily medically unqualified due to Meniere's disease pending further review.
July 23, 1990*	Facility notifies Regional Office of operator's medical impediment.

* Modifications to facility chronology based on interview of operator on August 7, 1990.

The inspector observed that the requirements of 10 CFR 55.25 for the facility to notify the NRC within thirty days of learning of a diagnosis of an adverse physical condition had apparently been violated, in that the operator in question had been medically unqualified from June 1989 through June 1990, without notification to the NRC of this medical impediment.

(The inspector also noted that this operator did not have a complete NRC medical exam from the time one was given on December 6, 1986, until the one given June 22, 1990. This deficiency was also identified by the facility in its medical department review, and is one of the deficiencies noted in Para. 3.b.2 above.)

Other personnel were interviewed and selected medical records reviewed to determine whether additional operators had a medical condition which made them ineligible for duty with no restrictions. Three additional operators with unreported medical conditions were identified by the inspector in a sample of twenty medical records reviewed.

One of these operators required corrective lenses to meet the vision requirements. One operator had diabetes mellitus, for which he required periodic insulin injections. One operator had been restricted by the medical department from operation of power equipment or driving while he was taking medication for a back injury. That operator took the medication from March until June, 1990. The NRC was not notified of these medical conditions. All three operators continued to stand watches as licensed operators. The failures to notify the NRC of these conditions within thirty days of their occurrence are additional examples of apparent violations of 10 CFR 55.25 in that the operators no longer met the medical requirements of ANSI/ANS-3.4-1983.

Finally, the inspector reviewed Inspection Report 89-43 dated November 21, 1989, and a Notice of Violation in that report, which concerned a failure to make a timely notification of the medical impediment of another operator. The operator was evaluated as medically unqualified on July 6, 1989, but this was not reported to the NRC until September 15, 1989. As corrective action for this violation the facility stated on December 21, 1989, that:

> "Implementation of Nuclear Administrative and Technical Manual procedure 93GB-OLC09 should ensure no further violation of the cited regulation. As an additional activity however, a systematic review of 10 CFR 55 and 10 CFR 50.74 has been performed to identify all additional requirements for licensee notifications and submittals related to Operators Licenses. Procedures to ensure controls exist for all notifications required by 10 CFR Part 55 and 10 CFR 50.74 will be developed."

The inspector noted that the revised procedure 93GB-OLC09 became effective May 12, 1990. The inspector concluded that the licensee's corrective actions for this violation had not been in effect for sufficient time to affect the timeliness of notifications. However, the inspector noted that sufficient time had passed since the original violation for the licensee to perform a comprehensive review and the failure to perform this review had been a missed opportunity to identify and correct the deficiencies which were subsequently identified by the NRC and the licensee.

4. Review of Operator Watchstanding Proficiency Records

The inspector requested objective documentation that each operator considered to be actively performing licensed duties as defined by 10 CFR 55.53(e) had actively performed licensed duties in the previous calendar quarter. The facility was unable to provide the requested objective documentation.

The inspector determined that site procedure 40DP-90P07, "Operations Department Operating Guideline Instructions," assigned the Operations Manager the responsibility to ensure that this requirement was met, but did not indicate how that should be accomplished. The procedure did adequately recapitulate the requirements of 10 CFR 55.53 (e) and (f).

The inspector determined, by interviewing the three Unit Training Coordinators, that the method in use to ensure the requirement was met was to review the recent watchstanding history of persons returning to shift after an extended absence. Such persons were said to be scheduled to complete a reactivation plan to ensure they were reactivated as required by 40DP-90P07 and 10 CFR 55.53(f). Following the completion of this plan, the Operations Manager or his designee would certify that the operator had completed the requirements for reactivation of his or her license. The inspector reviewed several of these certifications. The inspector concluded that no formal tracking system for operator activity existed, and considerable potential existed for inadvertent violations of the active status requirements.

At the Exit Interview on July 10, 1990, a facility representative committed to develop a system to provide objective documentation that all licensed operators actively performing licensed duties were maintaining active status. At the Exit Interview on August 7, 1990, licensee representatives outlined a system to track individual watchstanding hours which had not been completely implemented.

No violations or deviations were identified.

5. Requalification Training Requirements

This subject area was previously reviewed in Inspection Report 90-16. No violations were identified in that inspection. In this inspection, the inspector reviewed the summary records of the annual operating and biennial written requalification examinations for the last examinations given. The inspector determined from the summary record that each licensed operator had apparently been given an exam as required. Newly licensed operators, and operators who directly participated in the formulation of the exams, were exempted from the exam, as permitted by the licensee's requalification program at the time. The licensee's program was subsequently modified to prohibit anyone other than newly licensed operators from not taking an exam during the annual or biennial cycle.

No violations or deviations were identified.

6. Exit Interview

The inspector met with licensee representatives (see Paragraph 1) and summarized the scope and results of the inspection, and the potential violations which had been identified. Licensee representatives acknowledged the findings of the inspection, and made the commitments indicated in Paragraphs 3 and 4 of this report.

ENCLOSURE 3

Listing of inaccurate facility certifications, Palo Verde Units 1, 2, and 3.

(Reserved)