

APPENDIX B

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-313/85-09
50-368/85-09

Licenses: DPR-51
NPF-6

Dockets: 50-313
50-368

Licensee: Arkansas Power and Light Company (AP&L)
P.O. Box 551
Little Rock, Arkansas 72203

Facility Name: Arkansas Nuclear One (ANO), Units 1 and 2

Inspection At: ANO Site, Russellville, Arkansas

Inspection Conducted: April 15-19, 1985

Inspector:

Blaine Murray
for Wesley L. Holley, Radiation Specialist
Facilities Radiological Protection Section

5/13/85
Date

Accompanying
Personnel:

Blaine Murray
Blaine Murray, Chief, Facilities Radiological
Protection Section

5/13/85
Date

Approved:

Blaine Murray
Blaine Murray, Chief, Facilities Radiological
Protection Section

5/13/85
Date

L. E. Martin
Lawrence Martin, Project Section A,
Reactor Project Branch 2

5/21/85
Date

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Inspection Summary

Inspection Conducted April 15-19, 1985 (Report 50-313/85-09; 50-368/85-09)

Areas Inspected: Routine, unannounced inspection of the licensee's radiation protection activities during the Unit 2 refueling outage including: advanced planning and preparation; staffing, training, and qualifications; ALARA; external exposure control; internal exposure control; posting, labeling, and worker controls; radioactive and contaminated material controls; surveys; health physics logs and records; and independent confirmatory surveys. An allegation regarding improperly performed personnel monitoring was also investigated. The inspection involved 44 inspector-hours onsite by one NRC inspector.

Results: Within the areas inspected, one deviation was identified (portable continuous air monitors, paragraph 9). The allegation could not be substantiated.

DETAILS

1. Persons Contacted

AP&L

- *J. M. Levine, ANO General Manager
- I. D. Akins, Health Physics (HP) Supervisor
- B. Baker, Operations Manager
- *M. J. Bolanis, HP Superintendent
- C. Burchard, HP Supervisor
- *P. Campbell, Plant Licensing Engineer
- *T. H. Cogburn, Special Projects Manager
- W. Hada, HP Supervisor
- I. D. Helm, HP Specialist (ALARA Coordinator)
- R. Green, HP Dosimetry Supervisor
- *D. B. Lomax, Plant Licensing Supervisor
- *M. L. Pendergass, Engineering and Technical Support Manager
- T. M. Rolniak, HP Trainer 2
- *J. D. Vandergrift, Training Superintendent
- D. Wagner, Assistant HP Superintendent

Others

- *P. H. Harrell, NRC Resident Inspector

The NRC inspector also contacted other licensee employees, including HP and administrative personnel.

*Denotes those present at the exit interview.

2. Open Item Identified During This Inspection

Open items are matters that require further review and evaluation by the inspectors or the licensee. Open items are used to document, track, and ensure adequate followup on matters of concern to the inspector.

<u>Open Item</u>	<u>Description</u>	<u>Reference Paragraph</u>
313/8509-02; 368/8509-02	Portable HP Instrumentation Radiation Response Check	12

3. Allegation Followup

An allegation was made to the NRC on April 2, 1985, by a contractor employee concerning improper frisking upon exiting a radiological controlled area (RCA). The specific concern identified was that the HP

monitor at the RCA control point allowed the licensee's HP personnel to frisk improperly.

- a. Observation: The NRC inspector observed, at various times on day and night shifts, the practices of the HP monitors at the RCA control point as well as the frisking procedures of licensee and contract personnel. The NRC inspector observations determined that the practices and procedures were adequate and that there was no indication that selected personnel were allowed to violate frisking procedures.
- b. Personnel Interviews: The NRC inspector interviewed the licensee employees with respect to frisking procedures for personnel exiting the RCA control point. Included in the interviews were eight HP monitors who manned the RCA control point on various work shifts. It was ascertained from the interviews that the licensee's HP personnel, other licensee personnel and contractors were not deficient in their frisking procedures.
- c. Conclusion

The NRC inspector did not substantiate the allegation that the licensee's HP personnel were frisking improperly.

4. Advanced Planning and Preparation

The NRC inspector determined that the licensee had made adequate plans in advance of the refueling outage. The results of this planning and preparation were evident by the availability of adequate supplies, manpower, instrumentation, dosimetry, and ALARA activities.

No violations or deviations were identified.

5. Staffing

The NRC inspector reviewed the licensee's functional organization regarding the radiation protection program to determine compliance with the Final Safety Analysis Reports (FSARs), Sections 12 and 13 and Technical Specifications (TS), Section 6.2.

The HP staffing appeared sufficient to support the refueling outage. The licensee had hired 54 contract HP technicians to supplement the permanent plant staff. The licensee was utilizing one HP supervisor per shift as a roving HP observing the tasks being performed for the outage. Radiation work permits (RWPs) were reviewed and approved by ANO ANSI-N18.1-1971 qualified personnel.

The licensee's HP organization changes included the designation of a permanent HP dosimetry supervisor and the addition of a HP specialist.

No violations or deviations were identified.

6. Training and Qualifications

The NRC inspector reviewed the training and qualifications of HP contract personnel related to the refueling outage activities to determine conformance to the FSAR, Sections 13.1 and 13.2 commitments and requirements of TS, Section 6.4 and 10 CFR 19.12.

The NRC inspector performed a review of the qualifications of the contract HP technicians. This review included evaluation criteria used by the licensee to establish ANSI-N18.1-1971 qualification for contractor HP technicians. The NRC inspector also reviewed the licensee's screening, training, and examination program for contractor personnel.

No violations or deviations were identified.

7. ALARA

The licensee's refueling outage ALARA program was reviewed to determine compliance with the requirements of 10 CFR Part 20.1 and the recommendations of Regulatory Guides (RGs) 8.8 and 8.10.

The NRC inspector determined that the licensee had set a goal not to exceed 233 man-rem for this refueling outage (2R4). At the time of this inspection, 99 man-rem had been expended. The outage skin contamination goal was set not to exceed 120 incidents and 74 incidents had occurred as of this inspection. The licensee is investigating skin contamination incidents and taking positive corrective actions (counseling and retraining) to reduce skin contamination incidents. ALARA personnel are actively involved in planning and scheduling of maintenance activities during the outage. Outage tasks received an initial evaluation and jobs which are estimated to require the expenditure of greater than 1 man-rem require a separate ALARA review. The licensee tracks both man-rem and man-hours expended on each task on a daily basis by implementing the "ALARA Data Bank" computer program. This computer code is updated with RWP data. Each outage task is assigned a man-rem goal. The major tasks are reviewed for dose reduction by the ALARA committee. The NRC inspector was concerned that some outage ALARA preplanning and post job critiques were not performed because the ALARA coordinator did not have the available time to complete these functions.

No violations or deviations were identified.

8. External Exposure Control

The NRC inspector reviewed the licensee's external exposure program to determine compliance with 10 CFR 20.101, 20.102, 20.202, 20.401 and 20.403 and commitments of the FSAR, Section 12.3.2.

The NRC inspector determined that each person entering the RCA was routinely issued a thermoluminescent dosimeter (TLD) and self-reading dosimeter (SRD). Additional dosimetric devices, such as high range SRDs or extremity TLDs, were issued when required in certain areas such as high radiation areas, steam generator work, or as specified on an RWP. The NRC inspector reviewed a selected sampling of the RWPs issued during the refueling outage. The RWPs incorporated sufficient radiological controls.

The NRC inspector reviewed NRC Form-4 and NRC Form-5 information for the permanent plant staff, contractors, and visitors. The information required by the forms was current and complete. The licensee had established a program to provide a daily listing of current worker exposures based on SRD results. The listings were posted for review by the workers. The licensee maintains an in-house TLD system which allows for immediate processing of TLDs to verify SRD results. An administrative limit procedure had been established to track workers with high exposures or the potential for high exposures.

No violations or deviations were identified.

9. Internal Exposure Control

The NRC inspector reviewed the licensee's internal exposure program to determine compliance with the requirements of 10 CFR 10.103 and commitments in Sections 12.3 and 12.4 of the FSAR.

The NRC inspector did not identify any problems regarding the respiratory protection program. The NRC inspector noted that the licensee routinely performs whole body counting on individuals prior to entry into an RCA and upon completion of the work assignment at the site. The NRC inspector reviewed the maximum permissible concentration (MPC) hours record in the MPC-hour log.

The NRC inspector reviewed the licensee's continuous air monitoring (CAM) program for gaseous, particulate, and iodine airborne concentrations. The NRC inspector noted that about 13 out of 15 CAMs were out-of-service. The two operable CAMs were dedicated to the Technical Support Center and a separate radwaste storage building. As such, a continuous air monitoring program was not in place for work activities in the power block areas. The licensee stated that the vendor that had supplied their original CAMs had gone out of business and they had been unable to obtain replacement parts.

The Unit 1 FSAR, Section 11.3.2.3 and the Unit 2 FSAR, Section 12.4.2.3 states that for each unit, "portable air monitors consist of four air samplers that are capable of continuously monitoring and recording particulate and gaseous activity. In addition, these monitors can be equipped with an iodine collection cartridge that can be counted in the laboratory." The failure to maintain instrumentation capable of implementing a continuous air monitoring program is considered a deviation of FSAR commitments. (313/8509-01; 368/8509-01)

No violations were identified.

10. Posting, Labeling, and Worker Controls

The NRC inspector examined posting, labeling, and control for radiation areas, high radiation areas, and contaminated areas against requirements of 10 CFR Parts 20.203, 20.204, and 20.207 and station procedures developed in accordance with TS 6.11 and 6.13.

The NRC inspector performed several inspections of the facility, including the RCA, and observed the RCA and Unit 2 access control, contamination control, and exit radiation monitoring controls. All areas observed appeared adequately posted, labeled, and properly controlled.

No violations or deviations were identified.

11. Radioactive and Contaminated Material Controls

The NRC inspector examined the radioactive material labeling and identification against the requirements of 10 CFR Part 20.203. The NRC inspector observed the licensee's control of contaminated tools and equipment during the refueling outage. Within the RCA, several areas were dedicated to storage of radioactive tools, equipment, and components. Containers were marked with labels that identified the radioactive contents.

No violations or deviations were identified.

12. Survey Program

The NRC inspector reviewed portions of the licensee's survey program to determine compliance with 10 CFR Parts 20.201 and 20.401.

The NRC inspector observed the use of portal monitors and personnel friskers by various personnel. The NRC inspector reviewed a sampling of the survey records compiled for the refueling outage. These records included radioactive airborne surveys, radiation surveys, and contamination surveys. These survey data appeared to be adequate, disseminated in a timely manner, and were used in work planning and dose control.

The NRC inspector noted that the licensee's prior-to-use response test procedure for portable survey meters did not include full-range radiation test levels. The licensee's response test procedure involved the use of small sealed sources which only provided radiation levels at about 10 mR/hr. However, a survey instrument might be used to measure actual radiation levels of several hundred mR/hr. This concern was discussed with the licensee during the exit interview on April 19, 1985. The licensee stated that their present response test program would be reviewed to ensure that survey meters are response tested, prior to use, for the radiation level expected to be measured. The licensee stated that the review and any necessary procedure changes would be completed by October 1, 1985. This is considered an open item pending review of the NRC inspector's concerns by the licensee. (313/8509-02; 368/8509-02)

No violations or deviations were identified.

13. Health Physics Logs and Records

The NRC inspector examined various records to determine compliance with 10 CFR Part 20.401 and the requirements of TS, Section 6.10 and FSAR, Section 13.6.

The NRC inspector reviewed selected entries of the HP log for the refueling outage, TLD/SRD discrepancy reports, and radiological incidents.

No violations or deviations were identified.

14. Independent Confirmatory Surveys

The NRC inspectors made confirmatory radiation surveys to verify the licensee's survey results.

During inspections of the ANO, Unit 2 containment and auxiliary buildings, the NRC inspector made independent measurements and determined that the designated areas in the radiation control area were properly posted and controlled.

No violations or deviations were identified.

15. Exit Interview

The NRC inspectors met with licensee representatives and the NRC resident inspector identified in paragraph 1 at the conclusion of the inspection on April 19, 1985. The NRC inspectors summarized the scope and findings of the inspection presented in this report. The licensee stated that the NRC inspector's concern regarding the survey meter response tests and the FSAR commitments for CAMs would be reviewed.