

APPENDIX B

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-313/89-24
50-368/89-24

Operating Licenses: DPR-51
NPF-6

Dockets: 50-313
50-368

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

Facility Name: Arkansas Nuclear One (ANO)

Inspection At: ANO site, Russellville, Arkansas

Inspection Conducted: May 15-19, 1989

Inspector: Blaine Munay
foe L. T. Ricketson, P.E., Radiation Specialist
Facilities Radiological Protection Section

6/12/89
Date

Approved: Blaine Munay
foe R. E. Baer, Chief, Facilities Radiological
Protection Section

6/12/89
Date

Inspection Summary

Inspection Conducted May 15-19, 1989 (Report 50-313/89-24; 50-368/89-24)

Areas Inspected: Routine, unannounced inspection of selected areas in the radiation protection program as set forth in the core inspection program (83750).

Results: No significant problems were identified in the areas of staffing, facilities, equipment and supplies, procedures, and management support. One apparent violation was identified concerning contamination control procedures in areas outside of the radiological control area (see paragraph 6). It was also observed that there is a need for more health physics (HP) supervision oversight at some exit areas to ensure that workers follow proper contamination control practices.

DETAILS1. Persons ContactedAP&L

- *T. G. Campbell, Vice President, Nuclear
- *N. S. Carns, Director, Nuclear Operations
- *L. W. Humphrey, General Manager, Quality
- *S. M. Quennoz, General Manager, Plant Support (Acting)
- *T. C. Baker, Manager, Technical Support
- *J. D. Vandergrift, Manager, Operations
 - E. E. Bickel, Superintendent, HP
 - G. D. Provencher, Supervisor, Quality Engineering
 - T. R. Smith, Supervisor, HP
 - J. D. Deal, Supervisor, HP
- *D. B. Lomax, Supervisor, Plant Licensing
 - J. R. Waid, Supervisor, Technical Support Training
 - J. T. Pugh, Lead Trainer, (General Employee Training)
 - T. M. Rolniak, Lead Trainer, (HP/Radwaste)
- *P. L. Michalk, Licensing Specialist
- D. J. Wagner, Nuclear Quality Specialist

NRC

- *D. D. Chamberlain, Section Chief, Region IV
- *A. T. Howell, II, Project Engineer, Region IV
- *W. D. Johnson, Senior Resident Inspector
- *R. C. Haag, Resident Inspector

The NRC inspector also contacted other licensee and contractor personnel during the inspection.

*Denotes those present at the exit meeting on May 19, 1989.

2. Inspector Observations

The following is an observation that the NRC inspector discussed with the licensee during the exit meeting on May 19, 1989. Observations are not violations, deviations, unresolved items, or open items, but are identified for licensee consideration for program improvement. Observations have no specific regulatory requirement.

Increased Surveillance by HP Personnel

There appeared to be a need for increased HP presence and observation in radiologically controlled areas. The NRC inspector noted numerous minor items during inspection of controlled areas such as: individuals throwing potentially contaminated protective clothing at

waste receptacles, individuals not following the proper undressing sequence, individuals not placing contaminated clothing in proper waste receptacles, individuals not signing off radiation work permits in a timely manner. Collectively, these items could be an indication of larger problems. In some cases HP personnel were present, but not in sufficient numbers and often busy with other duties, or were not aggressive enough to correct the workers. A similar observation concerning work practices during outage activities was identified in NRC Inspection Report 50-313/88-02; 50-368/88-02 (see paragraph 5).

3. Licensee Action on Previous Findings

(Closed) Violation (313/8725-01; 368/8725-01): Failure to Perform Radiation Surveys - This item involved the failure to perform contamination surveys on hand tools used in controlled areas. The NRC inspector verified that an additional HP had been assigned to the controlled access exit point to aid in surveying items coming out of the area. Additionally, a new automated cabinet-style frisking unit had been installed and was in use for items such as tools and hardhats. These actions were consistent with the licensee's response to the violation.

(Open) Open Item (313/8725-02; 368/8725-02): Dosimetry Technician Training - This item involved the lack of formalized training course for dosimetry technicians. The NRC inspector verified that a formalized, in-house training course had been developed and needs only to be approved (through the licensee's normal review process) and implemented. The training course will be augmented by vendor training, which some individuals have already received. This item will remain open until the NRC confirms that the training course has been implemented.

(Closed) Open Item (313/8725-03; 368/8725-03): Long Term Radiation Work Permits (RWP) - This item involved evaluation intervals for long term or "general" RWPs and possible changing radiological conditions which could result in more radiation exposure than originally planned. All long term RWPs have been reviewed and are now required by procedure (1622.003 Revision 15) to be reviewed at least monthly to determine if radiological conditions have changed. The NRC inspector reviewed several current RWPs and verified that none were in effect for more than one month.

(Closed) Violation (313/8802-01; 368/8802-01): Failure to Perform Adequate Radiological Surveys - This item involved the use of survey instruments which did not have the required sensitivity to measure lower dose rates when identifying radiation areas outside of controlled access. The NRC inspector verified, through discussions with representatives from the licensee's training department, that increased emphasis on the correct instrument selection is now included in the licensee's training course "Exposure Control," given to AP&L technicians, and in "Procedure Requirements and Areas of Responsibility," given to contract personnel. This action was consistent with the licensee's response to the violation.

The NRC inspector reviewed selected records of surveys conducted outside controlled access and verified that survey instruments used to perform the surveys were of sufficiently low sensitivity to measure 0.8 mR/h. The HP supervisor interviewed stated that a notice would be posted at the instrument storage location advising technicians which instruments shall not be used outside controlled access for establishing radiation areas.

(Open) Open Item (313/8827-02; 368/8827-02): Health Physics Supervisor Training - This item involved the lack of specialized training for some supervisors. The NRC inspector verified that there has been increased emphasis on offsite training for HP supervisors and that funds were budgeted for several training courses in the coming months. However, the NRC inspector noted that at least two supervisors have still not received any training in recent years. This item will remain open.

4. Audits and Appraisals

The NRC inspector reviewed audits and selected surveillances of the radiation protection program.

The NRC inspector reviewed Health Physics Audit QAP-3-88 performed between May 25 and September 30, 1988, and six surveillances which supported the audit, and concluded that the depth and scope of the audit were adequate. The checklists for surveillances were comprehensive and provided good guidance to the auditors. Qualifications of the auditors were adequate, with at least one former HP supervisor included as part of the audit team. Recommendations for improving the HP program were presented in the audit report and audit findings were resolved in a timely manner.

Findings of the 1989 audit were being prepared for formal presentation to the HP department.

No violations or deviations were identified.

5. Planning, Preparation, and Outage Activities

Due to an unscheduled outage to locate the source of reactor coolant leakage, the NRC inspector had the opportunity to observe outage operations, including planning and preparation, containment entry, personnel dressout, and contamination control. A list of the procedures reviewed is attached to this report.

The NRC inspector attended prejob briefings conducted by HP before entry into Unit 1 containment and noted that the topics discussed included expected radiation levels, protective clothing and respiratory requirements, survey instrumentation, administrative radiation dose limits, and dosimetry requirements. Also discussed were the symptoms

and effects of heat exhaustion, routes to be taken by the entry teams, and emergency rescue plan. There was a free discussion during the meeting concerning the possible problems involved. Representatives from departments such as operations, safety, and maintenance were in attendance.

The NRC inspector observed entry/exit operations at the containment hatch and noted that the controlled area for undressing was smaller than for planned outages which forced people to wait in line to undress. Occasionally, individuals, evidently impatient at having to wait for those in front of them to finish undressing, threw potentially contaminated protective clothing items into the receptacles. Such actions bring about the possibility of an airborne contamination hazard. The NRC inspector also noted occasional minor problems such as an individual removing his glove liners too soon in the undressing sequence. Only one HP was present and instructed individuals against such practices, when observed. However, all examples were not observed by the HP who was occupied part of the time with other tasks such as bagging respirators and logging people out of the area. This, along with the item discussed in the following section, led the NRC inspector to conclude that HP presence needs to be increased in such cases.

The licensee had identified four examples of unknown individuals either changing or not replacing radiological postings following entry to or exit from radiologically controlled areas. As a result, the licensee issued a memorandum on May 10, 1989, discussing these practices and warning of disciplinary action which would be taken if individuals were found changing or not replacing radiological posting. Labeling and posting were inspected in areas both inside and outside of Controlled Access and found to be adequate.

No violations or deviations were identified.

6. Control of Radioactive Material and Contamination

During the course of inspecting the licensee's program of controlling contamination, the NRC inspector observed an individual inside the high pressure turbine housing ("doghouse"), within a controlled area. The individual was properly suited in "Type B" clothing consisting of paper overalls, hood, gloves, glove liners, booties, and rubber shoe covers and was observed to be climbing and working in the contaminated area. The individual passed from the controlled area over a step-off pad and into a clean area without removing potentially contaminated protective clothing. When these work practices were questioned by the NRC inspector, the individual stated that he had not seen the step-off pad and was aware of only the step-off pad on the other side of the housing.

Technical Specifications 6.10 and 6.11 for ANO Units 1 and 2, respectively, require that procedures for personnel radiation safety shall be adhered to for all operations involving personnel radiation exposure. Radiation Procedure 1612.002, "Access and Control of Radiologically

Controlled Area," states that "Step-off pads are placed at exits from more highly contaminated areas. The step-off pads indicate the portion of protective clothing which should be removed when leaving the area." It requires that, "Individuals shall observe step-off pad instructions" The instructions on the step-off pads read, "Stop. Remove contaminated clothing." The failure to follow radiation protection procedures is an apparent violation of Technical Specification 6.10. (313/8924-01; 368/8924-01)

No deviations were identified.

7. Exit Meeting

The NRC inspector met with licensee representatives and NRC personnel denoted in paragraph 1 at the conclusion of the inspection and summarized the scope and findings of the inspection as presented in this report. The licensee representatives acknowledged their understanding of the inspection findings.

ATTACHMENT

PROCEDURES REVIEWED

<u>Title</u>	<u>Rev</u>	<u>Approval Date</u>
1012.005 Hot Particle Detection and Control	1	01-12-89
1612.002 Access Control of RCAs	8	10-22-87
1612.003 Radiation Work Permits	15	04-14-89
1612-004 Anti-Cs	7	10-16-87
1622.003 Rad Posting and Entry Requirements	10	11-16-88
1622.017 Operation of a Control Point	4	03-14-88
1622.009 Requirements for Reactor Building Power Entry	6	12-20-88