UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

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Report Nos.: 50-348/87-37 and 50-364/87-37

Licensee: Alabama Power Company
600 North 18th Street
Birmingham, AL 35291-0400

Docket Nos.: 50-348 and 50-364 License Nos.: NPF-2 and NPF-8

Facility Name: Farley

Inspection Conducted: December 16-18, 1987

Inspector: T. R. Collins 3/1/88
Date Signed

Approved by: C. M. Hosey, Section Chief 3/1/88
Division of Radiation Safety and Safeguards
Date Signed

SUMMARY

Scope: This special, announced inspection was conducted to followup on allegations regarding the radiation protection program.

Results: One licensee identified violation for failure of a licensee employee to sign in on a Radiation Work Permit (RWP).

REPORT DETAILS

1. Persons Contacted

   Licensee Employees

   R. Bayne, Chemistry Supervisor
   D. Grissett, Emergency Planning Supervisor
   M. Mitchell, Health Physics and Radwaste Supervisor
   *D. Morey, Assistant General Manager
   *C. Nesbitt, Technical Superintendent
   B. Patton, Plant Health Physicist
   J. Woodard, General Manager

   Other licensee employees contacted included construction craftsmen, engineers, technicians, operators, mechanics, security office members, and office personnel.

   Nuclear Regulatory Commission

   *W. H. Bradford, Senior Resident Inspector

   *Attended exit interview

2. Exit Interview

   The inspection scope and findings were summarized on December 18, 1987, with those persons indicated in Paragraph 1 above. The inspector described the areas inspected and discussed in detail the licensee identified violation (Paragraph 4.g). No dissenting comments were received from the licensee. Proprietary information is not contained in this report.

3. Licensee Action on Previous Enforcement Matters

   This subject was not addressed in the inspection.

4. Followup on Allegations (99014)

   a. Allegation (2850058271)

      A lower level manager was not qualified for his assigned position.

      Discussion and Finding

      The inspector discussed with licensee management representatives the knowledge and qualifications of the individual in question. The inspector reviewed the individual's training records and resume and determined that the lower level manager had a Bachelor of Science degree and five years experience in his specialty, which met the

requirements of ANSI N18.1, 1971, Section 4.3.2 as required by Technical Specification 6.3, Facility Staff Qualifications.

Conclusion

This allegation was not substantiated.

b. Allegation (2850058254)

A hydrogen explosion occurred in the Unit 1 Turbine/Generator which contaminated the hydrogen system. Smears of a vendor's truck and couplings snowed contamination above acceptable levels. Alleger wanted to notify the vendor but was overruled. Report of this incident which occurred in February 1982, omitted smear results showing contamination levels.

Discussion and Finding

The inspector discussed this event with licensee management representatives and determined that an event similar to the allegation had occurred in September 1981. Rather than a hydrogen explosion an electrical fault (arc) had occurred on the Unit 1 Main Generator which resulted in shutting down Unit 1. Unit 1 remained shut down and was in a refueling outage between September 1981 and March 1982. The inspector reviewed the incident report issued by the licensee which included radiological survey results of the Unit 1 Main Generator/Turbine arc incident. The inspector selectively reviewed the radiological survey results of the Unit 1 Main Generator/Turbine, Hydrogen System and the vendor truck and concluded that radioactive contamination levels were well below action guidelines as established by radiation control procedures, $< 1{,}000$ dpm/100 cm^2 beta/gamma and < 100 dpm/100 cm^2 alpha. Unit 2 began a routine outage early as the result of the electrical fault. Survey records that were reviewed did not appear to be changed or altered in any way.

Conclusion

This allegation was partially substantiated in that an electrical fault had occurred on the Unit 1 Main Generator which resulted in shutting down Unit 1. Although surveys of the Main Generator were performed by the licensee, the likelihood of the generator being contaminated is remote. No contaminated system makes direct contact with the Main Generator. However, no violations or deviations of regulatory requirements were identified.

c. Allegation (2850058263)

Smears of the reactor cavity indicated that thousands of counts per minute (cpm) alpha was detected using a scintillation alpha probe. Smears of reactor cavity walls taken by the alleger indicated alpha

contamination levels up to 400 dpm/100 cm^2. Alleger reported this result in the survey but the survey was changed.

Discussion and Finding

The inspector discussed this issue with licensee management representatives and HP technicians and determined through review of contamination survey records performed during 1982 and 1983 that only trace amounts of alpha contamination were detected. The area where alpha activity was most significant was the reactor cavity and spent fuel pool area. Survey results revealed that alpha contamination was 2,000 to 8,000 dpm/100 cm^2. However, the beta/gamma activity from these same smears indicated 2.0×10^6 to 3.0×10^6 dpm/100 cm^2. With extreme high beta/gamma activity, up to 5% of the beta/gamma value could be recorded as alpha radioactivity when counting alpha and beta particles simultaneously using an alpha/beta counting system. This results when a percentage of the beta particles are counted in the alpha energy window. The licensee cut up these smears to reduce the interference from beta/gamma activity with the alpha activity and after counting the individual sections of the smears in aggregate using a beta/gamma and alpha proportional counters, alpha contamination levels were found to be non-detectable. The inspector also concluded after review of survey records that no changes appeared to have been made to the alpha survey results. Therefore, the inspector could not prove or disprove that changes were made on the survey records.

Conclusion

This allegation was partially substantiated in that alpha contamination appeared to be present on extremely high beta/gamma radioactivity smears. However, analysis performed by the licensee demonstrated that the alpha contamination levels were below licensee action levels. No violations or deviations of regulatory requirements were identified.

d. Allegation (2850058162)

During plant operations with failed fuel, the alleger felt he received a high extremity dose. Alleger also stated that the licensee operated for a long time without extremity TLDs.

Discussion and Findings

The inspector discussed this issue with licensee management representatives and Chemistry technicians and concluded after interviews with selected individuals (Health Physics and Chemistry personnel) and review of radiological survey's and radiation work permits (RWPs) for the period of 1982 and 1983, that personnel required to take reactor coolant samples (RCS) were issued extremity dosimetry. The inspector reviewed the alleger's dosimetry records

and determined that extremity TLD's had been issued when required and the results were well within 10 CFR 20.101 limits. The inspector reviewed the licensee's program for issuance of extremity TLDs and determined that since 1982 and 1983 and presently the limit for issuing extremity dosimetry has been that the extremity dose rate is $\geq$ 6 times the anticipated whole body dose rate.

Conclusion

This allegation was not substantiated.

e. Allegation (2850058033, 2850058051, 2850058179, 2850058305)

A vendor company identified a problem with the accuracy of the whole body counter.

A contract technician indicated that whole body counter coefficients were badly off.

A vendor identified problems with the whole body counter.

A vendor found a large discrepancy between the vendor's whole body counter and the licensee's.

Discussion and Finding

The inspector discussed these issues with licensee management representatives and dosimetry personnel. After interview of selected individuals (Chemistry Supervisors and Dosimetry personnel), review of selected calibration records, whole body count (WBC) results, and comparison of the licensee's WBC results and the vendor's WBC results the inspector identified no discrepancies. The inspector also reviewed the licensee's approved procedures both for the licensee's and the vendor's whole body counters and concluded that these procedures were adequate both for operation and calibration of the whole body counters.

Conclusion

These allegations were not substantiated.

f. Allegation (2850058355)

A licensee employee had an internal deposition of xenon rather than iodine.

Discussion and Finding

The inspector discussed this issue with HP Supervisory personnel and was informed that no known incidents had occurred resulting in an internal deposition for the individual in question. The individual

was not available for interview, since he was no longer employed by the licensee. The inspector reviewed the individuals dosimetry file for internal exposure results, and concluded that for the individual in question no positive internal exposures of iodine were received by the individual in question.

Conclusion

This allegation was not substantiated.

g. Allegation (2850058260, 2850058295)

Two licensee employees entered Unit 1 containment violated RWP requirements and the Radiological Incident Reports (RIRs) were destroyed.

Discussion and Findings

The inspector discussed these issues with licensee management representatives and HP personnel and, for one of the above mentioned licensee personnel, the inspector reviewed an RIR that was written on February 8, 1982, for failure to sign in on an RWP for routine inspection as required by Radiation Control Procedure FNP-RCP-002, Section 6.1.7, prior to entering Unit 1 containment. The other issue regarding failure to follow RWP requirements, the inspector concluded after interviews with the individual in question and HP personnel (HP supervisor and HP technicians), that apparently no RWP requirements were violated, therefore, no RIR was required to be written.

Conclusion

These allegations were partially substantiated in that a licensee employee entered Unit 1 containment for a routine inspection and failed to sign in on the RWP prior to entry. The licensee properly documented this event on a RIR as required by procedure. However, since the NRC Enforcement Policy, 10 CFR 2, Appendix C, 1986, states that a violation identified by the licensee will not be cited by the NRC if (1) it was identified by the licensee; (2) it fits in Severity Level IV or V; (3) it was reported if required; (4) it was or will be corrected, including measures to prevent recurrence, within a reasonable time; and (5) it was not a violation that could reasonably be expected to have been prevented by the licensee's corrective actions for a previous violation. The inspector concluded that this apparent violation met the criteria specified in 10 CFR 2, Appendix C and would be considered licensee identified (50-348, 364/88-02-01).

h. Allegation (2850058178, 2850058014)

A licensee employee had an excessive uptake of iodine in the lungs and after a couple of showers the activity disappeared.

Discussion and Finding

The inspector discussed this issue with licensee management representatives and HP personnel (supervisors and technicians). The inspector concluded after review of the individuals dosimetry file and RIRs, that an event similar to the allegation had occurred and the individual in question had received a potential intake of radioactivity on March 10, 1983, while performing work on 1B Reactor Coolant Drain Tank (RCDT). Review of the incident and the individuals WBC results indicated that the individual did not have any skin contamination and his Maximum Permissible Body Burden (MPBB) was < 10%. The isotopes included Cr-51, Fe-59,and Co-60. Followup WBCs revealed no detectable activity. The licensee documented this event on an RIR as required by procedure and performed WBCs of the individual to assess the intake of radioactivity.

Conclusion

This allegation was partially substantiated in that an event similar to the allegation had occurred and after the individual had showered prior to the WBC, the intake was assessed to be < 10% MPBB internal exposure, and was also below 10 CFR 20.103 limits. No violations or deviations of regulatory requirements were identified.

i. Allegation (2850058193)

Alleger saw a licensee employee pull a rope from the reactor cavity without a respirator as required by the RWP and therefore, became contaminated.

Discussion and Finding

The inspector discussed this event with licensee HP personnel (supervisors and technicians) and with the individual involved and concluded that the alleged event probably had occurred on January 13, 1982. The inspector determined that the individual had become contaminated, while working inside Unit 1 containment, performing decontamination inside the reactor cavity, but not from pulling a rope out of the reactor cavity. Upon exiting containment, the individual performed a whole body frisk and found increased activity on his right shoulder. Survey results revealed 6,000 dpm/probe area. After discussion with HP personnel involved in the incident (HP supervisor and HP technicians) and review of selected respiratory issuance logs and interview of the individual involved, it was determined that the individual was issued and wore the required respiratory equipment while performing decontamination in the reactor cavity. The licensee determined that during decontamination the individual's plastic suit had separated exposing this area to high levels of contamination. The inspector reviewed the RIR written on this event and concluded the licensee documented this incident as required.

Conclusion

This allegation was partially substantiated in that the individual in question did become contaminated while performing work inside Unit 1 reactor cavity, but not from pulling a rope out of the reactor cavity without a respirator. No violations or deviations of regulatory requirements were identified.

j. Allegation (2850058282)

First aid kits and equipment in the first aid station in the Auxiliary Building, Nurse's Station in the Training Facility, and the Plant Emergency Vehicle (PEV) were either missing or in need of repair. Also, the PEV did not contain a trauma kit and the patients compartment was not kept orderly as required.

Discussion and Finding

The inspector discussed these issues with licensee representatives (Emergency Planning (EP) Supervisor and EP Technicians). The inspector determined through review of quarterly inventory records as required by administrative control procedure, FNP-O-SHP-52, for 1982, 1983, and 1987 and through tours and observation of these facilities, that the first aid stations had the required first aid kits and trauma kit in the PEV. The inspector also determined by observation that the first aid kits and PEV were well maintained as required by administrative control procedures.

Conclusion

This allegation was not substantiated.

5. Radiological Surveys

The inspector requested the licensee to perform smear surveys of selected areas within the radiological controlled area (RCA) and analyze them for alpha, beta, and gamma radioactivity. The inspector observed the performance of the surveys. Surveys were taken in the Unit 1 Spent Fuel Pool Area, Waste Sorting Area, Unit 1 Primary Sample Room, and the Radwaste Solidification Area.

The inspector informed licensee management representatives that these smear samples (approximately 213) would be analyzed by the NRC Region II office and the results reported to the licensee.