



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Report . . 50-348/79-21

Licensee: Alabama Power Company
600 North 18th Street
Birmingham, Alabama 35202

Facility Name: Farley 1

Docket No. 50-348

License No. NPF-2

Inspection at Farley site near Ashford, Alabama

Inspectors:

G. L. Troup

6/15/79

Date Signed

for W. J. Millsap

6/15/79

Date Signed

Approved by:

G. R. Jenkins, Acting Section Chief
FF&MS Branch

6/15/79

Date Signed

SUMMARY

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Inspection on May 21-25, 1979.

Areas Inspected

This special, unannounced inspection involved 67 inspector-hours onsite in the areas of environmental sampling and surveys and design review following an uncontrolled release of radioactive material, posting and control, radiological work practices, radiation worker training and contamination control.

Results

Of the six areas inspected, no apparent items of noncompliance or deviations were identified in three areas; three apparent items of noncompliance were found in three areas (inadequate design control of drains (79-21-01); (inadequate posting of radiation area (79-21-02)); (failure to comply with health physics procedures (79-21-03)). No apparent deviations were found.

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DETAILS

1. Persons Contacted

Licensee Employees

- *W. G. Hairston, III, Plant Manager
- J. D. Woodard, Assistant Plant Manager
- *C. D. Nesbitt, Chemistry/Health Physics Supervisor
- D. N. Morey, Maintenance Supervisor
- *M. W. Mitchell, Jr., Assistant Chemistry/Health Physics Supervisor
- *B. P. Patton, Health Physicist
- J. M. Walden, Chemistry/Health Physics Foreman
- O. M. Graves, Chemistry/Health Physics Foreman
- B. H. Miller, Chemistry/Health Physics Foreman
- W. R. Bayne, Chemistry/Health Physics Foreman
- L. A. Ward, Startup Supervisor
- *W. Carr, Quality Assurance Engineer
- L. S. Williams, Training Supervisor

Other licensee employees contacted included six construction craftsmen, four technicians, two operators, and five mechanics.

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on May 25, 1979, with those persons indicated in Paragraph 1 above. Mr. Hairston acknowledged the items of noncompliance identified by the inspector. Regarding the release of water to Unit 2 and the environment, Mr. Hairston stated that a supplemental report would be submitted following receipt of additional environmental monitoring results. Mr. Nesbitt acknowledged the inspector's comments concerning procedural requirements for chemical spills. Mr. Hairston stated that the radiation worker training would be reviewed concerning practical exercises and that other changes in the amount of training were also being considered. During a telephone conversation with the inspector on June 1, Mr. Hairston agreed to include a discussion on high radiation area requirements in a safety meeting and stated that a station letter would be issued on the subject.

3. Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

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5. Uncontrolled Release to Unit 2 and the Environment

- a. On May 14, 1979, the licensee notified Region II that it had been determined that radioactive liquid had been released from Unit 1 into the Unit 2 Auxiliary Building via the floor drains system in the decontamination room. Subsequent surveys conducted by the licensee revealed that contamination above the limits for uncontrolled areas was present in Unit 2 and contamination was present on the shoes of 11 construction workers.
- b. An inspector discussed the event with licensee representatives and reviewed the survey records for the Unit 2 areas and construction workers who worked in Unit 2. When the surveys showed contamination present on the shoes of 11 workers, the licensee made additional surveys of automobiles and the individual's homes. When the surveys indicated contamination, action was taken in accordance with the licensee's procedures. The survey records indicated that the workers had been decontaminated and some articles of personal clothing had been confiscated and disposed of as radioactive waste. The survey records showed no contamination present in automobiles or homes. Additionally, the workers who had contamination on their shoes were whole-body counted for possible internal contamination; all whole-body counting results were negative.
- c. The inspector also inspected the discharge path in Unit 2 and the outside areas with licensee representatives and reviewed the results of environmental samples collected at various locations onsite and from the river. At the time of the inspection, all environmental sample results were not available but the sample results for onsite samples showed slight or no detectable activity. On May 30, the licensee informed an inspector that the results of environmental samples which were analyzed by outside agencies showed no detectable activity in the river water attributable to this release.
- d. An inspector requested that a licensee representative take smears for loose contamination at various locations in the Unit 2 Auxiliary Building during a tour of the areas. A total of 17 smears were taken; no areas greater than the licensee's limits for unrestricted areas were found.
- e. The licensee attributed the release to inadequate control of design changes. The piping and instrumentation diagram (P&ID) for the Unit 1 floor drains shows five drains in the decontamination room discharging into Unit 1. The P&ID for Unit 2 shows four drains discharging into Unit 2. A licensee representative stated that in actuality, three drains discharge into Unit 1 and two discharge into Unit 2 (these numbers include both drain lines and floor drains). When the decontamination sinks were installed, the drain piping was connected to a capped drain line which was assumed to go to Unit 1. A test was performed to verify that the drip pan drain discharged to Unit 1; when this was verified, it was assumed that all five drains were those on

the Unit 1 P&ID and that they went to Unit 1. However, the drain to which the sinks were connected was a Unit 2 drain.

- f. The inspector informed licensee management that this was an item of noncompliance against 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings" and Chapter 5 of the Operations Quality Assurance Manual in that the drains were not installed in accordance with the drawings and appropriate qualitative acceptance criteria to determine that the installation had been satisfactorily accomplished (79-21-01). This resulted in piping the drains so that the discharge was into Unit 2 rather than Unit 1 as intended. This was acknowledged by a licensee management representative.

6. Plant Tours

- a. During the course of the inspection, the inspectors toured various areas of the plant to observe posting of areas, contamination control and general work practices. The inspectors talked with six construction workers regarding the radiation work permit (RWP) under which they were working and general radiation and contamination levels. The workers were also asked to read their pocket dosimeters. All of the workers knew the RWP which applied to their job and could correctly read their dosimeter; all but one of the workers also knew the general radiation and contamination levels in their work areas. The inspectors had no further questions.
- b. During a tour of the Unit 1 Auxiliary Building on May 23, an inspector noted that the door to the piping penetration room at elevation 121 feet was open and a rope across the entrance had a sign hanging from it stating that the room was a contamination control area. "General area 65 mr/hr" was written on the sign. The door (which was facing the wall) had "Caution-radiation area" and "Caution-high radiation area" signs affixed. A licensee representative stated that the high radiation area was in the back of the room but that a radiation area existed in the remainder of the room and that the entrance should have been posted with a radiation area sign. The inspector stated that this was an item of noncompliance against 10 CFR 20.203(b) in that the dose rate was greater than 5 mrem/hr and the area was not conspicuously posted as a radiation area (79-21-02). Subsequent to the inspection, a licensee representative informed the inspector that there was a radiation area sign on the entrance to the radiation control area, which includes six levels of a building. The inspector stated that this does not provide adequate information to the workers, since a radiation area can have radiation levels of 5-100 mrem/hr by definition and 10 CFR 20.203(b) requires that each area be posted. Also, Section IV.C of the Farley Health Physics Manual states, "Each area within the Radiation Controlled Area shall be surveyed and conspicuously posted with the appropriate caution signs."
- c. On May 25 the inspector observed an area on elevation 155 feet in the Unit 1 Auxiliary Building posted "High Radiation Area - No Entry-Contact HP". The inspector observed an individual entering and leaving this

area. A licensee representative accompanying the inspector talked with the individual, in the presence of the inspector, and determined that the individual did not have a radiation monitoring device with him, as required by Technical Specifications 6.12.1 for entry into a high radiation area. The individual also stated that he had not contacted health physics regarding his entry into this area. Subsequent discussions with health physics personnel indicated that they had been informed of entries to areas on other levels for this job but had not been contacted regarding entries on elevation 155 feet. A licensee representative had the area surveyed and told the inspector that the area was not a high radiation area at that time but acknowledged that the individual violated the posting requirements when he entered the area. The inspector stated this was considered to be an item of noncompliance against Technical Specifications 6.11, which required that procedures for personnel radiation protection shall be approved, maintained and adhered to; the plant health physics manual, section I.C requires, in part, that each individual must obey plant health physics procedures and practices (79-21-03).

- d. In reviewing the Radiation Incident Report file, the inspector noted several reports of violations of the requirements of radiation work permits and health physics procedure requirements, such as failure to notify health physics of a spill of radioactive material. Although these instances were identified by the licensee and corrective action initiated, they are examples of failure to follow approved health physics procedures, as noted above.
- e. On May 23, a licensee representative accompanying an inspector in the Auxiliary Building identified an open door as an unbarricaded entrance to a high radiation area. A review of the posted radiation levels indicated that a filter cubicle inside the door had radiation levels as high as 2 R/hr, which requires barricading per Technical Specifications 6.12.1. With the door open, the high radiation area sign was not visible. The technician attending the door had been called to another location and had left it unlocked and unguarded. The licensee representative reinstructed the technician about the requirements for high radiation areas and initiated action to have the barricade put in place. The inspector discussed this case and the one on May 25 with a licensee management representative and stated that the two cases indicate a need for additional training or instruction concerning high radiation areas; the management representative stated that a station letter would be issued and the subject would be discussed at regular safety meetings.

7. Radiation Worker Training

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- a. 10 CFR 19.12 specifies the information which must be included in the radiation worker training program. In RII Report No. 50-348/79-11, paragraph 10, it was noted that the training provided to visitors and temporary employees apparently met the requirements of 10 CFR 19.12. In reviewing the Radiation Incident Reports file an inspector noted

instances where personnel contamination had occurred to several contractor employees in the same area on the same day. A licensee representative discussed these cases with the inspector; the cases where several individuals were involved were attributable to problems in dressing/undressing in anti-contamination clothing. The licensee representative stated that in several cases, additional training was given to groups of workers on proper dressing/undressing techniques. The inspector discussed the problems of personnel contamination with several licensee representatives; their consensus opinion was that the contamination problems in part, were related to inexperience in using anticontamination clothing.

- b. The inspector discussed these findings with the cognizant supervisors, especially the inclusion of a practical exercise in dressing/undressing in the training. Following this discussion, licensee representatives acknowledged the need for a practical exercise in dressing/undressing as well as self-frisking and stated the inclusion in the training would be considered (79-21-04). A licensee management representative also acknowledged this and stated that it would be considered during a complete review of the radiation worker training program.

8. Contamination Control

- a. An inspector reviewed the implementation of the contamination control program during the maintenance period with particular emphasis on the control of tools and equipment as they exit the radiation control area (RCA) and contamination control areas. During tours of the plant, the inspector observed workers exiting areas and bagging tools as required by procedure and personnel delivering tools, drawings, etc., to the survey point when exiting the RCA. The inspector also observed equipment and tools at the tool drop point and the clean tool rack apparently being handled in accordance with Section IV.F of the Farley Health Physics Manual. The inspector had no further questions.
- b. The inspector reviewed the Radiation Incident Report file for cases of personnel contamination. In several cases, the cause was attributed to poor practices in removing protective clothing (see paragraph 7). Two individuals (one licensee employee and one contractor employee) each had several reports of personal contamination. A licensee representative stated that both individuals did not exercise good work practices and had been counseled on their responsibilities. The contractor employee has since left the site; the licensee employee has been reinstructed in his responsibilities as a radiation worker. No other examples of multiple personnel contamination which were attributed to poor work practices were noted.
- c. In reviewing the Radiation Incident Report file and the health physics log for the period January 1 - May 20 the inspector noted five instances where tanks had overflowed creating contamination problems and four instances where the rupture disk on the waste evaporator had blown out

or some other problem with the evaporator had caused a spill of radioactive material. The inspector asked if these were examples of operator error, poor procedures or equipment problems. The inspector noted that eight of these occurrences happened in approximately a one-month period. A licensee management representative stated that there was an equipment problem with the evaporator and that when the evaporator was out of service, water backed up in the system and tank overflows occurred. He further stated a request has been submitted for design changes to waste evaporator and to drain lines which should reduce the equipment problems and the tank overflows.

9. Handling of Chemical Spills

- a. In reviewing the health physics log, an inspector noted two entries which involved chemical spills, one of which involved boric acid and the other involved chromated water. The inspector discussed the chromated water spill with licensee representatives, paying particular attention to safety precautions and clothing requirements as potassium dichromate and sodium dichromate are classed allergic sensitizers which can cause occupational dermatitis as classified by the National Institute for Occupational Safety and Health and may also contribute to other occupational diseases. A licensee representative reviewed the cleanup procedure and protective clothing requirements with the inspector. The inspector had no further questions on the actual cleanup operation.
- b. The radiation work permit for decontamination operations states that protective clothing requirements shall be as specified by health physics. The inspector noted that to assure that adequate protective clothing is specified, the foreman or technician must be cognizant of the hazards involved. Plant chemistry procedure, FNP-O-CCP-26, Chemical Addition/ Control of the Component Cooling Water System specifies protective clothing requirements and safety precautions for handling chemicals, including chromate compounds. Procedure FNP-O-RCP-7, Area and Material Decontamination references methods to be used for decontamination but does not specify special requirements/precautions to be observed when dealing with chemicals. Licensee management representatives acknowledged that special instructions/safety precautions are appropriate for the cleanup of chemical spills and stated that the procedures would be reviewed and appropriate requirements added (79-21-05).

10. Worker Concerns

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- a. During the inspection several workers approached an inspector with questions concerning radiological work practices and work assignments at the plant. The concerns were in three basic areas (1) inequitable distribution of radiation exposure among members of a functional group, (2) the use of a worker's exposure as a factor in making job assignments, and (3) failure to provide adequate drawings to locate certain mechanical components and the resultant increase in exposure

from searching for the components. The inspector discussed the NRC requirements in these areas with the workers and informed the workers that he would discuss their concerns with licensee management.

- b. The inspector discussed the workers concerns with several members of licensee management. Licensee representatives stated that the objective was to equalize the exposure among the functional groups while maintaining job continuity and minimizing the total exposure for a given job and the total exposure for the group. As part of this effort, an exposure summary is provided on a weekly basis to supervisors so that they are aware of the workers exposures in their functional group. A licensee management representative stated that the distribution and equalization of exposure within functional groups is an on-going program and that this has been and will be discussed with the workers. Regarding the availability of drawings, the licensee management representative stated the location drawings had been sought for some time as part of the job planning but that it was not until the work was in progress that they were located; once located, they were made available to the workers. A program is now in progress to obtain all of the location drawings so that they will be available for future jobs. The inspector had no further questions.

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