



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

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Report Nos.: 50-321/88-16 and 50-366/88-16

Licensee: Georgia Power Company
P. O. Box 4545
Atlanta, GA 30302

Docket Nos.: 50-321 and 50-366

License Nos.: DPR-57 and NPF-5

Facility Name: Hatch 1 and 2

Inspection Conducted: May 9-10, 1988

Inspector:

G. B. Kuzo

19 May 1988

Date Signed

Approved by:

C. M. Hosey
C. M. Hosey, Section Chief

5/23/88

Date Signed

Division of Radiation Safety and Safeguards

SUMMARY

Scope: This special, unannounced inspection of radiation protection activities involved review of recent changes to general employee training, radiation instrument performance checks, personnel contamination monitoring, and extremity exposure evaluations.

Results: The licensee's actions in the program area reviewed provided improved radiation protection training and initiated proper evaluations of recent changes regarding radiation protection activities.

No violations or deviations were identified in the areas inspected.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *S. Bethay, Supervisor, Nuclear Safety and Compliance
- M. L. Link, Supervisor, Health Physics
- B. A. Morris, Dosimetry Foreman
- R. W. Ott, Supervisor, Health Physics/Chemistry Training
- *D. Smith, Superintendent, Health Physics
- *R. W. Zavadoski, Manager, Health Physics and Chemistry

Other licensee employees contacted included engineers, technicians, and office personnel.

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- *J. Menning, Resident Inspector

*Attended exit interview

2. Training and Qualifications (83723)

10 CFR 19.12 requires the licensee to instruct all individuals working in or frequenting any portion of the restricted area in health protection aspects associated with exposure to radioactive material or radiation, in precautions or procedures to minimize exposures, and in the purpose and functions of protective devices employed, applicable provisions of Commission regulations, individual responsibilities and the availability of radiation exposure data.

Licensee changes to general employee training (GET) regarding practical aspects of radiation protection instructional presentations and subsequent training evaluations were discussed and reviewed. The licensee has initiated changes to improve practical aspects regarding health physics training for workers at the facility. A recently developed training videotape outlining proper radiation protection practices was reviewed and discussed with licensee personnel. The videotape was developed to stress personnel dressout requirements and the techniques utilized for transfer of materials when moving between contaminated and non-contaminated areas at the facility. Licensee representatives stated that the film would be included in all GET training by June 1988. In addition, the licensee was evaluating the use of detailed mockups depicting specific facility conditions to train personnel regarding radiological hazards and good practices associated with selected jobs.

In addition to the increased attention to the proper use of protective clothing "dressout" and practical factors training, the licensee has specified evaluation criteria for each step of the GET dressout exercise requirement. From review of the Georgia Employee Training Instructor Handbook, Media No. GE-IH-101165-00, Radiation Protection Training - Protective Clothing Exercise for Initial Training, the inspector noted that each step of the removal of protective clothing was further subdivided into specified point standard criteria based on detailed actions by the trainee, for example, sequence of activities, poor practices, improper disposal of materials, etc. From discussion with licensee personnel and review of licensee GET records the inspector verified that the reported changes in evaluation criteria were implemented for the training program. Review of initial test results indicated that employee scores have remained consistent using the new evaluation criteria.

No violations or deviations were identified.

3. External Exposure (83723)

10 CFR 20.101 requires that no licensee shall possess, use or transfer licensed material in such a manner as to cause any individual in a restricted area to receive in any period of one calendar quarter a total occupational dose in excess of 18.75 rems to the hands, forearms, feet and ankles.

In October 1987, the licensee initiated the use of wrist mounted thermoluminescent dosimeters (TLDs) to monitor extremity exposures when required for personnel conducting specific activities at the facility. Prior to October 1987, all extremity exposures were conducted using finger ring TLDs. Licensee representatives stated that the rationale for the change was to decrease the frequency of losing the finger ring dosimetry when removing protective clothing while still using dosimetry acceptable to provide accurate extremity dose measurements. When the change was initiated the licensee had not conducted any studies to verify the adequacy of the wrist mounted dosimeters to monitor extremity exposure.

Beginning April 1988, the licensee reinitiated the use of finger ring TLDs and also began a subsequent study of extremity exposures measured by finger ring compared to wrist mounted TLDs. Initial comparative results were reviewed and discussed with licensee representatives for personnel conducting work on piping associated with a reactor water cooling unit (RWCU) pump, Radiation Work Permit (RWP) No. 188-0341, and control rod drive (CRD) maintenance and support work, RWP No. 288-1059. The inspector noted that extremity exposure as measured by the finger ring TLD ranged from similar results to exposure values 2.3 times greater than values reported for the wrist mounted dosimetry. Discussions with licensee representatives knowledgeable of the personnel and their assigned work indicated that the variability in measurements between the wrist mounted and finger ring TLDs was associated with the type of job conducted. For example, the largest differences were reported for welders working on the

RWCU piping. Licensee representatives indicated that the comparative study was continuing and would be utilized to address the feasibility for the use of wrist mounted dosimetry in lieu of finger rings for specific job categories. The inspector noted that a review of the results and the licensee's evaluation was considered an inspector followup item (IFI) and would be reviewed during a subsequent inspection (50-321,366/88-16-01).

The inspector reviewed licensee extremity exposure data for the months, October 1987 through March 1988, when only wrist mounted TLDs were utilized for extremity exposure monitoring. Highest exposure values were recorded for CRD work conducted during January, highest values ranging from approximately 600 to 750 mrem. Adjusting these results based on the highest bias for the finger mounted relative to wrist mounted TLDs noted for RWCU pump maintenance and welding activities, that is, 2.3 times greater, the inspector determined that 10 CFR Part 20 limits were not exceeded. Licensee representatives agreed to review in detail all extremity exposures, verify the assignee's exposure, and, where applicable, make the appropriate adjustments to the assigned personnel exposure.

No violations or deviations were identified.

4. Control of Radioactive Materials and Contamination, Surveys and Monitoring (83726)
 - a. Survey Instrument Performance Checks

The licensee discussed changes implemented regarding performance checks of personnel radiation contamination detection instrumentation. Performance checks conducted have been increased from a weekly to daily frequency for the contamination survey instruments located within or at the boundaries of the radiation control areas (RCAs). This change affected the frequency of performance checks conducted for the following instrumentation; RM-14s, PCM-1s, PCM-6s, hand and foot monitors, and tool monitors. For those instruments having multiple detectors, for example, the PCM-1s, all detectors associated with each instrument, are checked daily.

The inspector verified that the daily performance checks for RM-14 instrumentation were performed as detailed in Health Physics Instrumentation Procedure, 62HI-NCB-016-05, Radiation Monitor RM-14 Operation and Calibration, Rev. 2, dated May 9, 1988. In addition, the licensee discussed Special Purpose Procedure 62-SP-040788-YL-101N, dated April 26, 1988, which was developed to provide a data base regarding the necessary frequency for radioactive source checks of the monitoring instrumentation, excluding the RM-14 instrumentation. Licensee representatives stated that the self-monitoring capabilities of these "smart" instruments, that is, the capabilities to detect high and/or low background, and any interruption of gas flow to the detectors could allow reduced frequency of performance checks and

this was being evaluated by the special procedure. During tours of the facility the inspector verified that daily performance checks were being conducted for all contamination survey instrumentations outlined in the special procedure.

- b. Prior to the most recent refueling, bad fuel in the Unit 2 reactor had resulted in high noble gas activity in selected locations of the radiation control area. The high levels of noble gas resulted in noble gas decay products, mainly Cesium 138 and Rubidium 89 to accumulate on the clothing of workers entering the RCA. During exiting from the control area many workers alarmed the exit monitors as a result of the buildup of noble gas daughter products on their clothing. These personnel then were surveyed by health physics technicians and required to wait until contamination levels decayed to background levels, that is, less than 100 counts per minute (cpm) per HP-210 probe area above background, prior to being allowed to exit. Detailed guidance for the health physics technicians to conduct the surveys required to properly assess the source of contamination was not provided. In addition, a personnel contamination report was not issued unless contamination levels exceeded 500 cpm per probe area above background.

The licensee outlined changes to assessments of potential personnel contaminations identified at the facility. The inspector reviewed a Department Directive regarding contamination identification, dated April 22, 1988. The directive includes a flow chart and noble gas decay curve for use to logically evaluate potential contamination. An assessment of a potentially contaminated individual included verification of monitor alarms, review of areas visited, location of the contamination on the person, and determination if changes in contamination levels follow the expected noble gas decay products half-life (approximately 30 minutes) through time. In addition, the directive now requires the completion of a personnel contamination report (PCR) for all contamination events exceeding 100 cpm/probe area. Currently a procedure is being reviewed for approval which when implemented would provide detailed guidance for the evaluation and reporting requirements associated with contamination events.

No violations or deviations were identified.

5. Exit Interview (30703)

The inspection scope and findings were summarized on May 11, 1988, with those persons indicated in Paragraph 1. The inspector discussed the areas inspected and noted that the licensee's evaluation of results for extremity exposure monitoring as measured using finger ring compared to wrist mounted thermal luminescent dosimeters (TLDs) would be considered an inspector followup item. The licensee did not identify as proprietary any of the material provided to or reviewed by the inspector during this inspection. Dissenting comments were not received from the licensee.