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

MAR 24 1992

Report Nos.: 50-321/92-07 and 50-366/92-07

Licensee: Georgia Power Company
P.O. Box 1295
Birmingham, AL 35201

Docket Nos.: 50-321 and 50-366 License Nos.: DPR-57 and NPF-5

Facility Name: Plant E. I. Hatch

Inspection Conducted: March 2-6, 1992

Inspectors: R. B. Shortridge 3/24/92
R. B. Shortridge Date Signed

Accompanying Personnel: B. A. Parker

Approved by: 3/24/92
J. P. Potter, Chief Date Signed
Facilities Radiation Protection
Section
Emergency Preparedness and Radiological
Protection Branch
Division of Radiation Safety and Safeguards

SUMMARY

Scope: This routine unannounced inspection was conducted in the area of occupational radiation safety and included an examination of: organization and management controls, audits and appraisals, external exposure control, internal exposure control, control of radioactive materials and contamination, surveys and monitoring, and maintaining occupational exposures as low as reasonably achievable (ALARA).

Results: No violations or deviations were identified. Based on interviews with licensee management, supervision, station personnel and records review, the radiation protection program continues to satisfactorily protect the health and safety of the public.

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

*O. Fraser, Site Supervisor, SAER
*G. Goode, Assistant General Manager
*J. Hammonds, Supervisor, Regulatory Compliance
*W. Kirkley, Manager, Health Physics and Chemistry
*M. Link, Supervisor, Health Physics
*J. Payne, Senior Engineer, Nuclear Safety and Compliance
*J. Reddick, Supervisor, Health Physics
*L. Sumner, General Manager
*S. Tipps, Manager, Nuclear Safety and Compliance

Other licensee employees contacted during the inspection included technicians, maintenance personnel and administrative personnel.

Nuclear Regulatory Commission

L. Wert, Senior Resident Inspector
*R. Musser, Resident Inspector

*denotes attendance at the exit meeting held on March 6, 1992.

2. Organization and Management Controls (83750)

The inspector reviewed changes made to the licensee's organization, staffing levels and lines of authority as they relate to radiation protection. Since the last inspection, Wayne Kirkley's status as Manager of Health Physics and Chemistry has changed from interim to permanent. Also, a new health physicist was recently hired and some minor reorganization within the Health Physics and Chemistry Department has taken place. The licensee continues to encourage rotational assignments between departments. These changes do not appear to adversely affect the licensee's ability to control radiation exposure or radioactive material.

No violations or deviations were identified.

3. Audits and Appraisals (83750)

In 1991, two audits of Health Physics were conducted by the plant's Safety Audit and Engineering Review section (SAER). Audit 91-HP-1 was reviewed during a previous NRC inspection, but the remainder of followup actions taken for deficiencies found during the audit were reviewed by the inspector during this inspection. In addition, Audit 91-HP-2, which was

conducted in October/November 1991, was reviewed by the inspector as were followup actions. In general, the audit was found to be well planned and documented and contained items of substance relating to the radiological protection program. Corrective actions in response to audit findings were taken in a timely manner and appeared to be adequate.

The inspector also reviewed the licensee's deficiency card (DC) and significant occurrence reporting (SOR) programs. The DC program is implemented under Hatch Procedure No. 10AC-MGR-004-0S and is a plant-wide program for identifying a wide variety of deficiencies, including those related to radiation/health physics. In 1991, a total of approximately 11,500 DCs were generated but only 72 were radiologically-related. Approximately four percent of all DCs are upgraded to SORs based on their significance per Hatch Procedure No. 10AC-MGR-012-0S. Various radiologically-related SORs and DCs from the fourth quarter of 1991 and the first quarter of 1992 were reviewed during the inspection. No adverse trends were noted since the last inspection in October 1991. The inspector questioned the licensee about their capability to trend DCs and SORs and learned that, while tracking and trending is performed, the licensee's DC/SOR tracking system, although adequate, appears to be limited in its capabilities. From discussions with licensee representatives, it appears that the possibility exists, albeit remote, that some DCs could be omitted from trending analyses depending upon how they were initially input into the system.

No violations or deviations were identified.

4. External Exposure Control (83750)

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 1.25 rems to the whole body, head and trunk, active blood forming organs, lens of eyes, or gonads; 18.75 rems to the hands, forearms, feet and ankles; and 7.5 rems to the skin of the whole body.

10 CFR 20.101(b)(3) requires the licensee to determine an individual's accumulated occupational dose to the whole body on an NRC Form 4 or equivalent record prior to permitting the individual to exceed the limits of 20.101(a).

10 CFR 20.202 requires each licensee to supply appropriate personnel monitoring equipment to specific individuals and require the use of such equipment.

10 CFR 20.408(b) requires that when an individual terminates employment with the licensee, or an individual assigned to work in a licensee's facility but not employed by the licensee completes the work assignment, the licensee furnish the NRC a report of the individual's exposure to radiation and radioactive material incurred during the period of employment or work assignment, containing information recorded by the licensee pursuant to 20.401(a). 20.401(a) requires each licensee to maintain records showing the radiation exposure of all individuals for whom personnel monitoring is required under 20.202 of the regulations. Such records shall be kept on Form NRC-5 or equivalent.

The licensee's radiation exposure limits and personnel dosimetry program are implemented under Hatch Procedure Nos. 60AC-HPX-001-OS and -002-OS, respectively. During tours of the plant, the inspector observed workers wearing appropriate personnel monitoring devices. In addition, discussions with licensee representatives and a review of selected personnel dosimetry records indicated that the licensee was in compliance with the requirements referenced above.

No violations or deviations were identified.

5. Internal Exposure Control (83750)

10 CFR 20.103(a)(3) requires, in part, that the licensee, as appropriate, use measurements of radioactivity in the body, measurements of radioactivity excreted from the body, or any combination of such measurements as may be necessary for timely detection and assessment of individual intakes of radioactivity by exposed individuals.

The inspector reviewed the licensee's bioassay program, which is implemented under Hatch Procedure No. 60AC-HPX-003-OS. No problems were found during a review of selected records for routine bioassays, which are performed at initial employment, annually and at termination.

In 1991, the licensee's goal for personnel contaminations was 222 and only 205 occurred. These included both skin and clothing contaminations, though it should be noted that clothing contaminations involving modesty clothing only are not included in the licensee's count. A review of selected records indicated that skin dose assessments are performed as required. In addition, since the last inspection, the licensee has had four personnel contaminations which resulted in the individuals ingesting a small amount of radioactive material, primarily cobalt-60. The incidents occurred in October and November 1991. The inspector

discussed the incidents with licensee representatives and reviewed the analyses. The licensee recently upgraded their analysis methods from ICRP-2 methodology to ICRP-30 methodology and the licensee's followup actions in all four cases appeared adequate. The maximum calculated dose was 2.5 MPC-hours. The inspector also learned that the licensee has plans to procure a new computer system that will be directly linked with their whole body counting system and will incorporate the changes effected by the new 10 CFR Part 20.

No violations or deviations were identified.

6. Surveys, Monitoring, and Control of Radioactive Material and Contamination (83750)

10 CFR 20.201(b) requires each licensee to make or cause to be made such surveys as (1) may be necessary for the licensee to comply with the regulations and (2) are reasonable under the circumstances to evaluate the extent of radioactive hazards that may be present.

10 CFR 20.203 specifies the posting, labeling and control requirements for radiation areas, high radiation areas, airborne radioactivity areas and radioactive material. Additional requirements for control of high radiation areas are contained in Technical Specification 6.12. During tours of the plant, the inspector noted that the licensee's posting and control of radiation areas, high radiation areas, airborne radioactivity areas, contamination areas, radioactive material areas, and the labeling of radioactive material was adequate. All doors posted as locked high radiation areas were found locked. The licensee has also upgraded many signs and postings with newer, more visible versions.

The inspector reviewed the Hatch Procedure Nos. 60AC-HPX-004-OS and -007-OS, which established the licensee's radiological survey and monitoring programs for the control of radiation and contamination and verified that the procedures were consistent with regulations, Technical Specifications, and good health physics practices.

The inspector reviewed selected records of radiation and contamination surveys performed during the period of February/March 1992, and discussed the survey results with licensee representatives. During tours of the plant the inspector observed health physics technicians performing radiation and contamination surveys.

The inspector performed independent radiation/contamination surveys in various areas including the Auxiliary Building, the Control Room, the clean tool rooms and the yard. No radiation or contamination beyond allowable limits was found. In addition, the inspector made direct observations of individuals exiting the radiologically-controlled area (RCA) with regard to the frisking of the whole body and hand-carried items (lunch boxes, tools, etc.) and only minor discrepancies were noted and discussed with the licensee.

RCA total area equals approximately 774,000 square feet (ft^2) with approximately 160,000 ft^2 contaminated. Approximately 9500 ft^2 (1.22%) of the contaminated area is considered reclaimable while the other 150,500 ft^2 (19.45%) is considered non-reclaimable.

No violations or deviations were identified.

7. Program for Maintaining Exposures As Low As Reasonably Achievable (ALARA)

10 CFR 20.1(c) states that persons engaged in activities under licenses issued by the NRC should make every reasonable effort to maintain radiation exposures a low as reasonably achievable (ALARA). The recommended elements of an ALARA program are contained in Regulatory Guide 8.8, "Information Relevant to Ensuring that Occupational Radiation Exposure at Nuclear Power Stations will be ALARA," and Regulatory Guide 8.10, "Operating Philosophy for Maintaining Occupational Radiation Exposures ALARA."

The inspector reviewed the licensee's program to maintain occupational exposure ALARA, which is implemented under Hatch Procedure No. 60AC-HPX-009-OS. The 1991 collective site dose was 1161 person-rem. The licensee's collective site dose goal for 1992 was 1035 person-rem and, at the time of inspection, the site dose was at 52 person-rem for 1992. The 1035 person-rem goal is high compared to the median for boiling water reactors, although it is below the plant's three-year average of 1095 person-rem. In discussions, health physics (HP) personnel indicated that the dose goal was established by site management but were anticipating that corporate management would reduce the dose goal to approximately 800 person-rem. HP considers the potential reduction as very challenging since a chemical decontamination is not planned for the upcoming Unit 2 refueling outage. The inspector was told a cost/benefit analysis showed that, due to outage scope, an appreciable savings in dose from a chemical decontamination would not be made. In 1991, the utility performed its first refueling outage chemical decontamination of the recirculation and reactor water cleanup heat exchanger and piping. Postulated

savings from that action was approximately 430 person-rem. The inspector reviewed the past data and noted that a decontamination factor of the recirculation system averaged 9.8 and 7.5 for A and B loops, respectively. The inspector further questioned the reason for not planning to perform a similar decontamination and learned that the figure of 5,000 dollars per person-rem was used in the calculation for the cost/benefit analysis. This figure appeared low to the inspector and, in further discussion, the licensee representative indicated that a "break-even" figure for the analysis was approximately 8,000 dollars.

The inspector reviewed the meeting minutes for the Plant ALARA Review Committee (PARC) and noted that attendance had improved since the NRC had brought the problem of poor attendance to the licensee's attention. Also, the inspector noted that the number of ALARA suggestions had improved. This was another weakness in the licensee's program to reduce collective dose previously identified by the NRC. In 1991, the licensee received 66 ALARA suggestions and implemented 20. To date in 1992, the licensee has received 33 ALARA suggestions and implemented four. The inspector noted that the number of ALARA suggestion boxes and posters throughout the facility had been increased. However, the inspector learned that for 1992, all ALARA suggestions had been made by PARC members at the chairman's request and none had been received from plant personnel. The inspector informed the licensee that while the quality and quantity of ALARA suggestions appeared to be good, the fact that none of the suggestions had been received from the plant populous indicated that plant personnel were not actively participating in an important element of the program to reduce collective dose. Licensee representatives indicated that an incentive program to heighten ALARA awareness and solicit suggestions from plant personnel on how best to reduce dose was under consideration by plant management.

In past inspections, the NRC has identified that the office area utilized by the ALARA group was small and cramped and that the group appeared to need more resources. This was based on the perceived workload and the fact that the ALARA group was not routinely able to perform some trend analysis and, in many cases, able to perform analysis to the extent that the amount of dose saved by ALARA methods was quantified. The ALARA Coordinator indicated that a reorganization of the ALARA group was in progress, part of which would increase the group's size from six to eight people and provide more office space.

The inspector noted that the plant considers dose reduction as the number one priority and informed plant management that the ALARA program is improving but the challenge remains to gain the full participation of plant personnel.

No violations or deviations were identified.

8. Exit Meeting

At the conclusion of the inspection on March 6, 1992, an exit meeting was held with those licensee representatives denoted in Section 1 of this report. The inspector summarized the scope and findings of the inspection and indicated that no apparent violations or deviations were identified. The inspector did not receive any dissenting comments or proprietary information from the licensee.