



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

AUG 26 1988

Report No.: 50-424/88-28

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

Docket Nos.: 50-424

License Nos.: NPF-68

Facility Name: Vogtle

Inspection Conducted: July 12-14, 1988

Inspectors: <u>for CBassett</u>	<u>8/23/88</u>
R. E. Weddington	Date Signed
<u>for CBassett</u>	<u>8/23/88</u>
W. B. Gloersen	Date Signed
Approved by: <u>for CBassett</u>	<u>8/23/88</u>
C. M. Hosey, Section Chief	Date Signed
Division of Radiation Safety and Safeguards	

SUMMARY

Scope: This routine, unannounced inspection was conducted in the area of radiation protection including: radiological safety training, external exposure control, internal exposure control, control of radioactive materials, the program for maintaining radiation exposure as low as reasonably achievable (ALARA), licensee action on previous enforcement matters, onsite followup of events, followup on licensee events reports, followup on Information Notices, and followup on inspector identified items.

Results: Although the inspection results in this program area appeared to indicate improving performance since the previous evaluation, the following violations were identified:

- Failure to properly label a container of licensed radioactive material, Paragraph 7.
- Failure to follow radiation protection procedures, Paragraph 8.

The following licensee identified violation was documented:

- Failure to follow inventory control procedures, Paragraph 7.

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *R. Bellamy, Plant Manager
- *E. Dannemiller, Technical Assistant to General Manager
- K. Duquette, Senior Health Physicist
- *C. Eckert, Manager, Health Physics and Chemistry
- *G. Frederick, Quality Assurance Site Manager
- *C. Garrett, Operations, Engineer
- *T. Greene, Plant Support Manager
- *I. Kochery, Health Physics Superintendent
- J. Lucot, Health Physics Lab Supervisor
- *W. Nicklin, Regulatory Compliance Supervisor
- *K. Pointer, Senior Plant Engineer

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

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- *R. Aiello, Resident Inspector
- *R. Musser, Resident Inspection (Hatch)
- *J. Rogge, Senior Resident Inspector

*Attended exit interview

2. Training and Qualifications (83723)

Technical Specification (TS) 6.3.1 requires that a retraining and replacement training program for the plant staff shall be maintained. Additionally, personnel shall meet the minimum education and experience recommendations of ANSI N18.1-1971.

The inspector discussed the health physics technician training program with licensee representatives. Health physics technicians received approximately five weeks of basic qualification training, which included general employee training (GET), Pressurized Water Reactor (PWR) systems, balance of plant systems, nuclear physics fundamentals, radiation protection, mitigating core damage, and operational quality assurance program. Additionally, several weeks of on-the-job training were provided. The licensee had a check-off procedure for task completion. Also, the licensee provided two weeks of instruction per year in continuing training in subjects, such as detection and control of hot particles, NRC information notices, significant plant events, and operations and maintenance experience at other facilities. The licensee

had a total of 36 ANSI-qualified health physics technicians and five permanent contractor health physicists.

The inspector also discussed with licensee representatives the contractor health physics training and qualification program. Basically, contractors were provided with an entrance test to examine their knowledge as a health physicist and their knowledge of site specific requirements. Contractors were required to attain a grade of at least 70 percent. Additionally, contractors were provided with job coverage training and were required to review applicable procedures.

Finally the inspector ascertained that the licensee had, within the last month, received accreditation for the health physics training program from the Institute of Nuclear Power Operations (INPO).

No violations or deviations were identified.

3. External Exposure Control (83724)

10 CFR 20.101 specifies applicable dose standards for individuals in restricted areas. The inspector reviewed selected records of licensee employees and verified that exposures were below the applicable regulatory limits and the records were maintained as required. The inspector observed that procedures were in place for allowing exposures higher than the initial administrative limit.

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 TS 6.11. During tours of the plant, the inspector performed independent radiation surveys and found no inconsistencies with area postings and licensee survey results.

Additionally, the inspector reviewed active general and special radiation work permits (RWPs) posted in the vicinity of the health physics field office for repetitive and non-routine work. The inspector also reviewed selected RWP packages containing the RWP request, ALARA review worksheets and prejob briefing statements for the active RWPs.

The inspector observed that the licensee had installed PM-6 portal monitors at the exit area in the main gate area and outside the area known as the mini-PESB (Plant Entrance and Security Building) located between Units 1 and 2. The inspector discussed the operation of the portal monitors with licensee representatives. Individuals were required to stand in the portal monitors for several seconds in order to be counted. The alarm levels were set to detect contamination on an individual approximately equivalent to 700 disintegrations per minute per one hundred square centimeters (dpm/100 cm²).

In addition, the inspector discussed the use of the new solid state integrating dosimeters. Licensee representatives indicated that in

addition to higher accuracy and reliability compared to the more commonly used pocket ion chambers, the computerized system would automatically disallow entry for workers trying to work under unauthorized RWPs. The dosimeters also alarmed at a predetermined dose and dose rate.

The inspector reviewed the licensee's thermoluminescent dosimetry (TLD) program. All TLD analyses were performed monthly at the licensee's corporate laboratory in Symrna, Georgia. The licensee had no capability to perform the analyses on site. The electronic integrating dosimeters readings were replaced by the TLD readings as the official dose record only after the TLD data had been reviewed. Correlation studies were performed when either of the following two situations occurred: (1) the TLD reading was greater than 300 millirem (mrem) and there was at least a $\pm 25\%$ difference between the electronic dosimeter reading (EDR) and TLD reading; or (2) TLD reading was greater than 100 mrem and there was at least $\pm 50\%$ difference between the EDR and TLD. Special reports from the corporate laboratory were issued whenever a TLD was lost or when TLD results were greater than 100 mrem. Although the licensee did use a computerized, automated dose tracking system, "manual dose cards" were used when the computer was not operating. On such occasions, doses greater than or equal to 2 mrem were entered into the computer and conversely doses less than 2 mrem were not entered into the system. During this inspection, the inspector observed that the EDR computer was inoperable for one day. The inspector also discussed with the licensee the use of separate dose cards for multiple badging.

No violations or deviations were identified.

4. Internal Exposure Control and Assessment (83725)

10 CFR 20.103(a) requires that suitable measurements of concentrations of radioactive materials in air be performed to detect and evaluate the airborne radioactivity in restricted areas and that appropriate bioassays be performed to detect and assess individual intakes of radioactive material. 10 CFR 20.103(b) requires the licensee to use process or other engineering controls, to the extent practicable, to limit concentrations of radioactive materials in air to levels below those specified in 10 CFR Part 20, Appendix B, Table 1, Column 1, or limit concentrations which when averaged over the number of hours in any week during which individuals are in the area, to less than 25% of the specified concentrations.

The inspector discussed with licensee representatives the internal exposure controls, operation of the whole-body counter and any measurable radioactivity intakes since February 1988. There were no measurable radioactivity intakes during the time frame noted above. The inspector observed that the licensee used a Canberra Stand-up configuration whole-body counting system.

No violations or deviations were identified.

5. Control of Radioactive Materials and Contamination (83726)

10 CFR 20.201(b) states that each licensee shall make or cause to be made such surveys as (1) may be necessary for a licensee to comply with the regulations in this part, and (2) are reasonable under the circumstances to evaluate the extent of radiation hazards that may be present.

During tours of the facility, the inspector observed that survey data and general information on plant conditions were posted in the areas adjacent to the health physics field office.

No violations or deviations were identified.

6. Maintaining Exposures ALARA (83728)

10 CFR 20.1(c) specifies that licensees should implement a program to maintain occupational doses "As Low as Reasonably Achievable" (ALARA). Other recommended elements of an ALARA program are contained in Regulatory Guides 8.8 and 8.10.

The inspector discussed portions of the licensee's ALARA program with licensee representatives. The Vogtle ALARA Program was described in procedure 00910-C. The licensee assigned an individual to be an ALARA specialist who wrote RWPs, collected survey data, and performed preplans and post-job reviews. However, the ALARA specialist did not have a position on the ALARA committee since the ALARA committee was originally organized for managers. In addition to the duties of the ALARA specialist listed above, this individual also maintained an ALARA history file of past jobs. As an aid in preplanning certain jobs, the ALARA specialist utilized a system developed by Combustion Engineering referred to as "C-Scan." The system served as a visual aid to the ALARA specialist by visually displaying various pumps, valves, and components throughout Unit 1. These visual displays were still photos which have been stored on laser disk.

The inspector noted that the licensee had an ALARA suggestion program, however it had only been used once since January 1988. At the time of this inspection the licensee did not have an ALARA incentive program.

No violations or deviations were identified.

7. License Event Reports (92700)

The inspector reviewed Licensee Event Report (LER) 88-09 involving inadequate health physics controls which allowed shipment of a radioactive check source to the Westinghouse facility in Hunt Valley, Maryland. The licensee provided an adequate description of the event. On April 6, 1988, licensee personnel were verbally notified that the Westinghouse facility had received a control room ventilation radiation monitor assembly, 1-RE-12117, with a Strontium-90 (Sr-90) check source installed. The check source had a source strength of approximately 1.1 microcuries as of

June 6, 1986. The shipping documents and packaging had not indicated that a radiation source was included. After the licensee was notified, a deficiency card was generated, an inventory of radioactive sources was initiated, and an Event Review Team was formulated to investigate the event. The licensee determined that the event occurred because of the uncontrolled removal of the radiation label (cover plate to which labels were affixed) which allowed a shipment of a radioactive source without proper identification and labeling. As a matter of historical interest, the control room ventilation radiation monitor assembly was removed from its installed location in the plant on May 27, 1987.

Health Physics Procedure 46002-C, "Control and Accountability of Radioactive Sources," requires that source accountability checks be performed every six months. The check source had been at the warehouse for almost nine months, but the accountability log still indicated its previous location. Step 3.4.1.10 of Procedure 46002-C required that sources be dropped from the inventory when discarded. The inspector observed that a December 7, 1987 inventory did not indicate that a 1.1 microcurie Sr-90 check source was removed from the control room ventilation monitor. Failure to follow Procedure 46002-C indicated an apparent violation of TS 6.10.1. This TS requires that procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained, and adhered to for all operations involving personnel radiation exposure. This apparent violation was discussed with Regional personnel and since all the requirements specified in 10 CFR Part 2, Appendix C, Section V, were satisfied, this violation was not cited (50-424/88-28-01).

10 CFR 20.203(f)(1) requires that each container of licensed material shall bear a durable, clearly visible label identifying the radioactive contents except as provided in paragraph (f)(3) of this section. 10 CFR 20.203(f)(2) required the label to bear the radiation caution symbol and the words "CAUTION, RADIOACTIVE MATERIAL" or "DANGER, RADIOACTIVE MATERIAL." It shall also provide sufficient information to permit individuals handling or using the containers, or working in the vicinity thereof, to take precautions to avoid or minimize exposures.

On February 10, 1988, the licensee inadvertently shipped a 1.1 microcurie Sr-90 check source contained in control room ventilation radiation monitor assembly, 1-RE-12117, to the Westinghouse facility in Hunt Valley, Maryland without proper identification and labeling. This event occurred due to the uncontrolled removal of the cover plate of the control room radiation monitor to which the radiation labels were affixed. The failure to properly label the radioactive contents of the control room radiation monitor was identified as an apparent violation (50-424/88-28-02).

8. Onsite Followup of Events (92705)

During this inspection, the inspector followed up on an NRC Resident Inspector concern regarding the operability of the mini-Plant Entrance and Security Building (PESB) PM-6 portal monitor and the documentation of certain activities related to its daily source check. The inspector noted that the licensee's health physics staff conducted an investigation and, in addition, the Technical Assistant to the General Manager and a Security Investigator, from the licensee's corporate office, conducted a separate investigation to resolve the apparent signature control problems associated with the response check of the mini-PESB PM-6 portal monitor. The inspector reviewed the licensee's investigation summary.

The problem area was first identified by the NRC Resident Inspector who detected a failure of the PM-6 to activate upon entering the device on June 22, 1988. While assessing the problem, the Resident Inspector noted that the source check card on the PM-6 had no entries corresponding to the dates June 19 through 21, 1988. The licensee's investigation revealed that for the period June 19-21, 1988, source checks had not been performed, although signatures by calibration technicians in a separate calibration logbook indicated that a check had been made. Health Physics personnel had used this practice only since the installation of the mini-PESB, which had been approximately four months. Since that time, calibration personnel had no access to the PM-6 stationed outside the protected area exit (i.e., the mini-PSEB). Apparently, the calibration foreman had permitted the activity of having the health physics technicians perform the source check on the PM-6 including initialing the source check card while the calibration technicians would make the entries in the calibration lab logbook without indicating "for" or "by". After interviewing the personnel involved, reviewing the documents in use and on file, and evaluating the past performance of the equipment, the licensee's investigation concluded that the incident occurred due to inadequate supervision in the Health Physics Department and the location of the PM-6 outside the mini-PSEB and protected area. It was also concluded that the signature control problem appeared to be an isolated case.

The inspector examined the PM-6 portal monitor located outside the mini-PSEB and protected areas and verified that the daily source checks had been documented properly since the incident. The inspector also reviewed the portal monitor procedure, VGEP 43532-C, Operation and Use of Eberline PM-6 Portal Monitor, Revision 3, dated April 11, 1988, which required daily response checks of the PM-6 portal monitors. Contrary to the above, the PM-6 was not response checked for the period June 19-21, 1988. The failure to follow procedure 43532-C was identified as an apparent violation of TS 6.10.1 (50-424/88-28-03).

9. IE Information Notices (92717)

The inspector determined that the following information notices had been received by the licensee, reviewed for applicability, distributed to

appropriate personnel and that action, as appropriate, was taken or scheduled:

- IEN 88-08: Chemical Reactions with Radioactive Waste Solidification Agents.
- IEN 88-32: Prompt Reporting to NRC of Significant Incidents Involving Radioactive Material
- IEN 88-34: Nuclear Material Control and Accountability of Non-Fuel Special Nuclear Material at Power Reactors.

10. Action on Previous Inspection Findings (92701, 92702)

- a. (Closed) Violation (50-424/87-61-01): Failure to perform adequate release surveys of bags of non-contaminated trash filled inside the Radiation Control Zone in that the survey method used did not ensure that the bags of trash were free of radioactivity prior to release. This enforcement issue was initially reviewed in Inspection Report No. 50-424/88-13. During that inspection, the inspector observed that part of the licensee's corrective action was to install a high-sensitivity monitor to perform release surveys of potentially contaminated materials. It was observed at that time that the high sensitivity monitor was not in operation. It had been taken out of service in January 1988, until a computer chip that would permit a longer count time could be obtained and placed in the unit's microprocessor. During this inspection, the inspector verified the operation of the monitor. This item is considered closed.
- b. (Closed) Violation (50-424/88-13-01): Failure to provide high radiation area controls. The inspector reviewed the corrective actions with licensee representatives which were documented in a letter to the NRC dated April 14, 1988. The inspector examined the locked doors which were provided to control access to the Alternate Radwaste Building (ARB). The licensee's response to this violation appeared adequate. This item is considered closed.
- c. (Closed) Violation (50-424/88-13): Failure to adhere to radiation protection procedures in that temporary shielding was installed on the top of a resin liner in the ARB without adhering to any of the provisions of the licensee's temporary shielding procedure. The inspector reviewed the corrective actions with licensee representatives which were documented in a letter to the NRC dated April 14, 1988. Personnel performing activities affected by the aforementioned procedure were made more aware of the procedural requirements and enhanced temporary shielding requirement implementation. This item is considered closed.

- d. (Closed) Violation (50-424/88-13-03): Failure to perform surveys as were reasonable and necessary on the spent resin storage tank discharge piping in that the entire line from the tank to the ARM was not surveyed and as a result two high radiation areas were not identified on the discharge line. The inspector reviewed the corrective actions with licensee representatives which were documented in a letter to the NRC dated April 14, 1988. The areas identified in the violation were resurveyed and the results were documented. The areas were posted shortly after the surveys were completed. Additionally, procedure 43007-C was revised on April 1, 1988, by requiring post-resin transfer surveys. This item is considered closed.
- e. (Closed) Violation (50-424/88-13-04): Failure to maintain records of radiation surveys. The inspector reviewed the corrective actions with licensee representatives which were documented in a letter to the NRC dated April 14, 1988. During that inspection, the inspector observed that the licensee failed to perform surveys on the resin liner in the ARB to determine the dose rate gradients on the top of the resin liner and to evaluate the need for relocation of whole body dosimetry and for extremity dosimetry. Additionally, it was observed that the licensee failed to perform surveys in the Auxiliary Building Levels A through D mezzanines on the resin discharge piping to evaluate the posting of access control requirements. The areas identified in the violation were resurveyed where practical and the survey results were documented. Additionally, the areas were posted appropriately. Procedure 43007-C, Revision 7 was revised to address post-job survey requirements for the areas affected by resin transfer and survey documentation. Additionally, Procedure 45004-C, "Extremity and Multiple Badging" was revised to document survey data when evaluations are conducted to relocate dosimetry. The licensee also stated that potential high radiation areas will be posted prior to resin transfer evolutions. This item is considered closed.
- f. (Closed) IFI (50-424/88-13-05): Provide more job specific information and controls on radiation work permits (RWPs). The inspector reviewed active general and special RWPs posted in the vicinity of the health physics field office for repetitive and non-routine work. The inspector also reviewed selected RWP packages containing the RWP request, ALARA review worksheets and prejob briefing statements for the active RWPs. The inspector noted that there was more specific information provided on the documents, including general statements of good practices. This item is considered closed.
- g. (Closed) Licensee Identified Violation (50-424/88-28-01): Failure to follow inventory control procedures. This violation was discussed in Paragraph 7 of this inspection report. Although this item will be considered closed, it will also be tracked in accordance with NRC administrative policy.

11. Exit interview

The inspection scope and findings were summarized on July 14, 1988, with those persons indicated in Paragraph 1. The inspector described the areas examined and discussed in detail the inspection findings listed below. Dissenting comments were not received from the licensee.

<u>Item Number</u>	<u>Description and Reference</u>
50-424/88-28-02	Violation - Failure to properly label the radioactive contents of the control room radiation monitor as required by 10 CFR 20.203(f)(1), Paragraph 7.
50-424/88-28-03	Violation - Failure to follow procedures as required by Technical Specifications 6.10.1, Paragraph 8.

The licensee did not identify as proprietary any of the material provided to or reviewed by the inspector during this inspection.