



UNITED STATES  
 NUCLEAR REGULATORY COMMISSION  
 REGION II  
 101 MARIETTA STREET, N.W., SUITE 2900  
 ATLANTA, GEORGIA 30323-0199

MAR 31 1994

Report Nos.: 50-424/94-06 and 50-425/94-06

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

Docket Nos.: 50-424 and 50-425 License Nos.: NPF-68 and NPF-81

Facility Name: Vogtle Electric Generating Plant (VEGP)

Inspection Conducted: March 7-11, 1994

Inspector: [Signature] 3/25/94  
 A. Gooden Date Signed

Approved by: [Signature] 3/25/94  
 K. Barr, Chief Date Signed  
 Emergency Preparedness Section  
 Radiological Protection and Emergency Preparedness Branch  
 Division of Radiation Safety and Safeguards

SUMMARY

Scope:

This announced inspection was a Regional initiative to evaluate the licensee's emergency preparedness program in the following areas: audits and self-assessment; training and implementation of the Nuclear Management and Resources Council (NUMARC) emergency action level (EAL) scheme and the revised Environmental Protection Agency (EPA) Manual of Protective Action Recommendations (EPA-400); 50.72 event reporting; shift staffing and augmentation; and the effectiveness of corrective action tracking.

Results:

Within the areas reviewed, a non-cited violation (NCV) was identified for failure to train two individuals assigned responsibilities in the EOF as Dose Assessment Manager (Paragraph 5). No deviations were identified.

The performance of a designated Emergency Director and Dose Assessment Manager during a table-top drill demonstrated the capability to properly classify events, project the offsite dose consequences, and provide the appropriate protective action recommendations (PARs) for onsite and offsite populations. Walkthrough observations involving one Control Room crew and dose assessment personnel disclosed that interviewees were trained, and fully aware of the Plan and procedure changes resulting from EPA-400 guidance (PARs and emergency worker dose limits) and the NUMARC EAL scheme. Positive aspects of the

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licensee's program included an effective critique process with timely resolution of open items, and the number of drills and exercises that were conducted in excess of those required.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*J. Beasley, General Manager
- R. Dorman, Manager, Training and Emergency Preparedness
- K. Duquette, Health Physicist
- \*B. Gabbard, Nuclear Specialist I
- \*K. Holmes, Manager, Operations
- \*M. Kurtzman, Supervisor, Health Physics and Chemistry Training
- \*R. LeGrand, Manager, Health Physics and Chemistry
- \*L. Mayo, Nuclear Specialist I
- \*J. Roberts, Emergency Preparedness Coordinator
- L. Rouse, Plant Instructor, Nuclear
- P. Tucker, Instructor, Training

Other licensee employees contacted during this inspection included operators, engineers, technicians, security force members, and administrative personnel.

#### Nuclear Regulatory Commission

- \*C. Casto, Chief, Test Program Section
- \*R. Starkey, Resident Inspector

\*Attended exit interview

An index of abbreviations used throughout this report will be found in the last paragraph.

### 2. Emergency Detection and Classification (82201)

The program area of Emergency Detection and Classification was inspected to determine whether the licensee used and understood a standard EAL classification scheme. Requirements applicable to this area are found in 10 CFR 50.47(b)(4), Sections IV.B and IV.C of Appendix E to 10 CFR Part 50, and the licensee's Emergency Plan.

On March 1, 1994, the licensee implemented the NUMARC emergency classification methodology. The previous emergency classification methodology was based on the fission product barrier approach. The event classification was determined by the status of three barriers (reactor coolant system, fuel cladding, and containment) considered as normal, breached, or challenged. During a previous inspection, the inspector noted two examples where the Vogtle EALs would result in event classifications that were one level higher than the examples of initiating conditions in NUREG-0654. The two events involved a LGCA and a SGTR. The Vogtle barrier-based approach assumed that any LOCA that exceeded the capacity of two charging pumps would cause the fuel cladding barrier to be breached or challenged, even if the ECCS operated

as designed. If a LOCA occurs into containment, two of three fission product barriers were considered breached or challenged. The aforementioned assumption was also applied in the event of a SGTR. Consequently, any further degradation in containment is the breach of the third barrier and a General Emergency was declared. In response to NRC comments regarding overly conservative EALs (IR Nos. 50-424/92-301, and 50-424/92-29 and 50-425/92-29), the licensee submitted by letter dated February 10, 1993 for NRC review changes incorporating the NUMARC EAL methodology. By letter dated November 3, 1993, the NRC granted approval for the Vogtle NUMARC EAL methodology. Implementation of NUMARC EALs resolved all previous inspector concerns regarding overly conservative EALs.

The authority and responsibility for the classification of emergency events and the initiation of emergency actions were described in EPIP 91001-C. The inspector conducted a walkthrough (table-top interview) involving an Emergency Director and Dose Assessment Manager to determine the adequacy of personnel training in the area of event classification and accident assessment (see Paragraph 5 for details regarding the interviews). Interviewees demonstrated the capability to classify events, familiarity with time requirements for offsite notifications, recommend protective actions, perform dose projections, and an effective interface was demonstrated in assessing the potential offsite consequences based on both plant and HP conditions.

The inspector reviewed the licensee's coordination efforts with State and local officials regarding the NUMARC classification scheme. The licensee conducted briefings/meetings during September and October 1993 to discuss the proposed changes to the Vogtle emergency classification system incorporating the NUMARC EALS. By written correspondence, each of the offsite authorities concurred with the proposed NUMARC EAL scheme.

The inspector reviewed licensee 50.72 event reports covering the period January 1993 to March 1, 1994. From the referenced reports and time period, four reports were reviewed of which three resulted in a NOUE classification as follows: 1) April 18, 1993, due to ECCS injection involving Unit 1; 2) October 7, 1993, due to a toxic gas release involving hydrazine and ammonia; 3) February 2, 1994, due to ECCS injection involving Unit 1; and 4) January 11, 1994, non-emergency declaration involving the loss of Unit 1 annunciators' indications. The inspector's review of the licensee's EALs and other supporting documentation disclosed that the events were correctly classified, and notifications were made in accordance with requirements in the Emergency Plan, EPIPs, and 10 CFR 50.72. Event critiques were held following each event to identify what, if any, areas of response requiring improvements. Those areas identified by the licensee as requiring followup were being monitored by the NRC Residents Office for resolution.

No violations or deviations were identified.

### 3. Protective Action Decision-Making (82202)

The program area of Protective Action Decision-Making was inspected to determine whether the licensee was maintaining a continuous capability to make appropriate recommendations to governmental officials to protect the public and to take appropriate measures to protect onsite workers in the event of an emergency. Requirements applicable to this area are contained in 10 CFR 50.47(b)(9) and (10), Section IV.D.3 of Appendix E to 10 CFR Part 50, and the Emergency Plan.

The inspector reviewed pertinent portions of the Emergency Plan and EIPs to determine if authority and responsibility for accident assessment and protective action decision-making was clearly assigned and were available on a 24-hour basis. The Emergency Plan and EIP clearly delineated the responsibility for PARs before and after activation. The specific actions and instructions were contained in EIP 91305-C, "Protective Action Guidelines."

Walk-through evaluations involving protective action decision-making were conducted with an Emergency Director and Dose Assessment Manager (see Paragraph 5 for details). Interviews confirmed that personnel were cognizant of the appropriate onsite protective actions and aware of the range of PARs appropriate to the general public. Personnel demonstrated an excellent familiarity with various procedural changes resulting from EPA-400 implementation. During the postulated accident involving a SGTR, the Dose Assessment Manager demonstrated an indepth knowledge of the automated dose projection program known as "MIDAS." The interviewee demonstrated familiarity with the accident default values in MIDAS, and the appropriate exposure limits for emergency workers.

Additional details regarding the walk-throughs are provided in Paragraph 5.

No violations or deviations were identified.

### 4. Shift Staffing and Augmentation (82205)

The program area of Shift Staffing and Augmentation was inspected to determine whether shift staffing for emergencies was adequate both in numbers and in functional capability, and whether administrative and physical means were available and maintained to augment the emergency organization in a timely manner. Requirements applicable to this area are contained in 10 CFR 50.47(b)(2), Sections IV.A and IV.C of Appendix E to 10 CFR Part 50, and the Emergency Plan.

Shift staffing levels and functional capabilities were reviewed and determined to be consistent with the guidance in Table B-1 of NUREG-0654. The inspector reviewed the licensee's notification system for activating the ERO during off-hours. The notification system involves activating a computer based automatic telephone dialing system for contacting a list of individuals assigned to the ERO. This automated system is referred to as the "Dialogic Recall System." The inspector



discussed with a member of the licensee's staff the periodic testing of the referenced system including backup provisions in the event the automated system was inoperable. According to the licensee contact, in the event the system became inoperable, the procedure for manual call-out would be implemented. According to documentation, system operability checks were performed on a quarterly basis. The licensee maintains an emergency response notification roster which was updated quarterly. The inspector discussed staff augmentation times with a licensee representative and reviewed documentation for the most recently conducted augmentation drill (December 1993). With the exception of the on-call EOF Manager, and members of the field monitoring team, the referenced drill resulted in a successful demonstration of staffing and facility activation times. The results disclosed that additional field monitoring personnel were not available for more than 60 minutes, and the EOF Duty Managers' pager failed to activate (location was outside the pager coverage area) resulting in the delayed arrival of an alternate EOF Manager to the EOF. During a similar drill conducted in November 1992, the OSC was delayed and the activation time was inconsistent with Section H of the Emergency Plan. In light of the aforementioned drill results, the inspector discussed with a licensee representative the augmentation program as an area for improvement. The inspector was informed that the licensee was evaluating the purchase and implementation of a new pager system to provide expanded coverage. Regarding staffing and activation of the additional field monitoring personnel, a change to the Emergency Plan (Revision 19) was submitted for NRC review that is intended to address this issue.

One other aspect of the licensee's staffing and augmentation program discussed and reviewed included the BEOF. A recent Plan submittal included a change to the BEOF location. Consequently, the inspector assessed the BEOF change via facility tour to determine if the effectiveness of the BEOF was diminished by the relocation. Based on distance from the plant, driving time from the primary EOF to the BEOF, and floor plan, the inspector determined that the change was an improvement over the previous BEOF in the areas of parking accommodations for responding personnel and the total physical size of the facility. No negative impact was noted in that the locations were essentially equidistance from the site. When questioned regarding a BEOF augmentation drill or a familiarization drill involving the required facility staffing, the licensee contact informed the inspector that such drill or tour had not been conducted. However, the licensee contact expressed intentions of conducting a facility walkthrough drill for familiarization purposes by December 1994 with the required BEOF staff. This item was documented in the licensee's commitment/open item tracking system for followup as Item C0027937.

No violations or deviations were identified.

## 5. Knowledge and Performance of Duties (Training) (82206)

The program area of Knowledge and Performance of Duties was inspected to determine whether the licensee's key emergency response personnel were properly trained and understood their emergency responsibilities. Requirements applicable to this area are contained in 10 CFR 50.47(b)(2) and (15), Section IV.E of Appendix E to 10 CFR Part 50, and the Emergency Plan.

The inspector reviewed the description (in the Emergency Plan) of the training program, training procedures, and selected lesson plans, and interviewed members of the instructional staff. The inspector reviewed selected lesson plans for ED training and dose projection training for personnel involved with accident assessment, classification, dose projection and PARs. The Introduction to NUMARC EAL Methodology lesson plan was effective in detailing the old and new EAL scheme. In addition, the inspector noted that the lesson plan and procedures were revised to reflect the emergency worker limits, EALs, and new exposure terminology resulting from EPA-400 and revised 10 CFR Part 20 (e.g. TEDE, CDE, DAC). Based on these reviews and interviews with training personnel, the inspector determined that the licensee maintained a formal training program.

Emergency response training records were reviewed for selected individuals. Records for randomly selected individuals assigned to the ERO (Emergency Directors, Dose Assessment Managers, EOF Managers, and PASS team members) were reviewed to verify that individuals received training in accordance with the Plan and procedures during 1993. With one exception, no problems were noted. The one exception involved two individuals assigned to the ERO as DAM with assigned responsibilities in the areas of offsite dose calculations, PARs, and projection of offsite radiological consequences based on plant conditions. Training documentation for the aforementioned individuals disclosed that the required annual training for the referenced individuals were completed during the calendar year 1993. However, training was not attended involving the revised dose assessment methodology known as "MIDAS". The inspector reviewed class attendance rosters and interviewed personnel with responsibility for tracking ERO training. It was determined that the individuals had not completed the required training involving the revised dose assessment methodology. Section 0 of the Emergency Plan states that "All VEGP emergency response organization personnel will receive specialized training per Table 0-2." Section 5.2.3 of EPIP 91601-C states that "Additionally, the training shall be conducted whenever necessitated by significant revisions to the VEGP Emergency Plan, procedures or emergency equipment." According to licensee documentation, the referenced training was conducted on several dates during December 1993, in addition to January and February 1994. When questioned regarding the training status of the assignees, the inspector was informed that one individual was scheduled to attend training during the week of the inspection, and the remaining DAM designee was to attend training during the annual refresher training scheduled for a later date. The inspector informed the licensee that failure to provide Off-

site Dose assessment training to key members of the organization with responsibility for dose assessment was inconsistent with Section 0 of the Emergency Plan and Section 5.2.3 of EPIP 91601-C, and was considered a violation. In response, the licensee took immediate action to train personnel on the revised dose projection methodology and associated procedures (91304-C and 91305-C). In light of the aforementioned actions, this NRC identified violation is not being cited because criteria specified in Section VII.B of the NRC Enforcement Policy were satisfied. The licensee was informed that this finding was considered a NCV.

NCV 50-424, 425/94-06-01: Failure to train personnel in accordance with the Emergency Plan and EPIP 91601-C.

To assess the effectiveness of the emergency response training program, the inspector interviewed key individuals assigned to the ERO as the ED and DAM. Specific areas of evaluation included event classification, emergency worker exposure limits, dose projections, and onsite/offsite PARs based on plant and/or dose projection information. The Postulated accidents included a SGTR with a stuck-open ARV, and a loss of Control Room annunciators with a significant transient in progress. Both interviewees demonstrated an excellent understanding of their respective roles and responsibilities. Interviewees demonstrated an effective interface on matters pertaining to PARs by reviewing and comparing plant conditions with projected doses for decision-making regarding the appropriateness of protective actions. In response to the postulated accident conditions, the ED was both timely and correct in the event classification. Regarding the dose projections, the results were consistent with those obtained by the inspector and licensee observer. The DAM displayed an in-depth knowledge of MIDAS, the dose codes/defaults associated with MIDAS, and the revised EPA guidance. When questioned regarding the emergency workers exposure limits and action level for recommending KI administration to FMT personnel, no problems were noted. In addition to the interviews, the inspector observed a Control Room staff (table-top drill) demonstrate the capability to classify events in accordance with procedures, perform dose projections, develop PARs, complete the notification message forms, and notify the offsite authorities (communications cell) within the required time regime. During the drill, no significant issues were identified. A critique was held to discuss those areas requiring improvement.

During calendar year 1993, the licensee conducted three exercises (licensee only) in addition to a number of drills in advance of the NRC evaluated exercise. Additionally, the abovementioned table-top drill was a recent initiative by the licensee to enhance training for personnel in the areas of event classification, dose projection, offsite notification, PARs, etc. The inspector considers the referenced approach to training as indicative of plant management's commitment to emergency preparedness training.

One NCV was identified.



6. Independent Review/Audits (82701)

This area was inspected to determine whether the licensee had performed an independent review or audit of the emergency preparedness program, and review the effectiveness of the corrective action system for deficiencies and weaknesses identified during exercises and drills. Requirements applicable to this area are contained in 10 CFR 50.47(b)(14), 10 CFR 50.54(t), and the Emergency Plan.

The inspector reviewed documentation resulting from two independent audits performed by personnel from the licensee's SAER Department. The referenced audits were conducted during the period March 12 - May 12, 1993 (documented in Audit Report No. 93-3), and August 10-27, 1993 (documented in Audit Report No. OP12-93/28). Each of the aforementioned audits were very compliance oriented to verify that Plan commitments were satisfied. According to audit results, no non-compliances or deficiencies were identified. According to the audit report details, the offsite interface review disclosed that the "licensee was maintaining an effective interface with the offsite authorities." The referenced audits satisfied the annual frequency requirement for such audits.

The inspector reviewed the effectiveness of the licensee's program for identification and corrective action of drill and exercise findings. The licensee utilizes a method of tracking items known as the OITS. Exercise and drill reports covering the period February 8, 1993 to October 28, 1993, disclosed that the licensee conducted facility critiques following all drills, exercises, and dress rehearsals. Based on the report details, the Controller/Evaluator organization appeared to be effective in the identification of items. Those items identified during drills and/or exercises, were documented in a report to plant management which identified the responsible department, item, corrective action, required completion date, etc., and entered into the above tracking system for followup. To assess the timeliness aspects of the licensee's corrective action, the inspector reviewed the exercise report for the August 4, 1993, NRC evaluated exercise. From a total of 40 items that were identified, only three items remained open at the time of the inspection. No adverse trend was noted involving ineffective corrective actions. One area of corrective action which was discussed with the licensee as an area for improvement involved the plant audibility in the Service Building and Maintenance Building due to repeat problems during drills.

This program area was considered effective in identification, resolution, and tracking of corrective actions.

No violations or deviations were identified.

7. Action on Previous Inspection Findings (92701)

(Open) IFI 50-424, 425/93-19-01: Review licensee's assessments and corrective actions for problems identified during the August 4, 1993 EP exercise.

The inspector reviewed the licensee's assessment and proposed corrective actions as presented to plant management in the August 1993 exercise report. With one exception, the licensee's actions to resolve those items requiring corrective actions were complete. The exception involved the completion and approval of revisions to procedures 91502-C and 91504-C (Core Damage Assessment and Core Inventory Determinations Using Reactor Power History). The inspector informed the licensee that the item would remain open pending completion of the referenced procedures.

#### 8. Exit Interview

The inspection scope and results were summarized on March 11, 1994 with those persons indicated in Paragraph 1. The inspector described the areas inspected and discussed in detail the inspection results listed below. There were no dissenting comments. Proprietary information is not contained in this report.

<u>Item Number</u>	<u>Status</u>	<u>Description/Reference</u>
50-424, 425/94-06-01	Closed	NCV - Failure to provide training in accordance with Section 0 of the Emergency Plan and Section 5.2.3 of EPIP 91601-C (Paragraph 5).
50-424, 425/93-19-01	Open	IFI - Review licensee's assessments and corrective actions for problems identified during the August 4, 1993 EP exercise (Paragraph 7).

#### 9. Index of Abbreviations Used In This Report

ARV	Atmospheric Relief Valve
BEOF	Backup Emergency Operation Facility
CDE	Committed Dose Equivalent
DAC	Derived Air Concentration
DAM	Dose Assessment Manager
EAL	Emergency Action Level
ECCS	Emergency Core Cooling System
ED	Emergency Director
EOF	Emergency Operation Facility
EPA	Environmental Protection Agency
EPIP	Emergency Plan Implementing Procedure
EPZ	Emergency Planning Zone
ERF	Emergency Response Facility
ERO	Emergency Response Organization
FMT	Field Monitoring Team
HP	Health Physics
IR	Inspection Report
KI	Potassium Iodide
LOCA	Loss Of Coolant Accident
MIDAS	Meteorological Information and Dose Assessment System
NCV	Non-Cited Violation

NOUE	Notification of Unusual Event
NUMARC	Nuclear Management and Resources Council
OITS	Open Item Tracking System
OSC	Operations Support Center
PAG	Protective Action Guide
PARs	Protective Action Recommendations
PASS	Post Accident Sampling System
SAER	Safety Audit Engineering Review
SGTR	Steam Generator Tube Rupture
TEDE	Total Effective Dose Equivalent
TSC	Technical Support Center