TREAT AS

SENSITIVE

INFORMATION

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SOUTHERN COMPANY
Energy to Serve Your World℠

January 3, 2005

Docket Nos.: 50-424
50-425

EP-04-2154

US Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Vogtle Electric Generating Plant
Emergency Plan Revision 39

Ladies and Gentlemen:

In accordance with 10CFR50.54(q) and 10CFR50.4(b)(5), Southern Nuclear Operating Company hereby submits Revision 39 to the Vogtle Electric Generating Plant (VEGP) Units 1 and 2 Emergency Plan (the Plan).

Revision 39 incorporates a transfer of responsibility to monitor and decontaminate non-involved VEGP personnel from VEGP to Burke County EMA, a change to the present designated location (TSC) for the Backup OSC and an update to Appendix 2, letters of agreement. Additionally, minor editorial comments and title changes were incorporated.

Justifications for the changes are located within Enclosure 1. Enclosure 2 provides the insertion instructions, and Enclosure 3 identifies the revised pages. These plan changes do not decrease the effectiveness of the Plan.

If you have any questions regarding this submittal, please contact this office or Mr. C. E. Boone, Emergency Planning Coordinator, at (205) 992-6635.

Sincerely,

Don E. Grissette

DEG/CEB/daj

Enclosures:
1. Justification For Revision 39 to the VEGP Emergency Plan
2. Insertion Instructions
3. Revised Plan Pages

AX45

cc: Southern Nuclear Operating Company
Mr. J. T. Gasser, Executive Vice President
Mr. W. F. Kitchens, General Manager – Plant Vogtle
Mr. L. E. Mayo, Emergency Planning Coordinator – Plant Vogtle
Mr. K. Holmes, Performance Analysis
Mr. C. E. Boone, Emergency Planning Coordinator
R Type: CVC7000

U. S. Nuclear Regulatory Commission
Dr. W. D. Travers, Regional Administrator
Mr. C. Gratton, NRR Project Manager – Vogtle
Mr. G. J. McCoy, Senior Resident Inspector – Vogtle

ENCLOSURE 1

Justification For Revision 39
To The VEGP Emergency Plan

JUSTIFICATION FOR REVISION 39 TO THE VEGP EMERGENCY PLAN

1. Preface
   Page xix

   Paragraph 1 – Delete "and relocation centers are also." Add word "are."

   Justification: The responsibility to monitor and decontaminate VEGP personnel, once dismissed from the site, has been accepted by Burke County EMA. Burke County has trained personnel to staff reception centers and operate the portal monitors which are designed for persons and vehicles. Therefore the reference to onsite relocation centers has been removed.

2. Table of Content
   Page ix

   List Of Figures – Delete figures J-1 and J-2 from list.

   Justification: Same as change 1 above.

3. Page B-4

   Section B.2.1.1, 6th bullet – change reference from "early dismissal of nonessential" to "site dismissal of non-involved."

   Justification: Editorial change to maintain consistency throughout emergency plan. Function has not changed.

4. Page B-4

   Section B.2.1.1, 7th bullet – change reference from "relocation" to "reception." Delete "prior to dismissal."

   Justification: Same as change 1 above.

5. Page H-5

   Section H.1.2, 3rd paragraph – Change "TSC" reference to "Outage Control Center (OCC) and Clearance and Tagging (C&T)" as the location of the back-up OSC.

   Justification: The TSC is limited in the floor space, communications, printed resources, electronic resources, and seating if the OSC relocates to the TSC. The OCC and C&T are located in the control building one level above the control room. The floor space, communications, printed resources, electronic resources, and seating are available.

6. Page H-18

   Section H.6, 1st paragraph – Delete wording ", and relocation centers."

   Justification: Same as change 1 above.

JUSTIFICATION FOR REVISION 39 TO THE VEGP EMERGENCY PLAN

7. Pages J-2, J-3 and J-4	Section J.1.4 – Entire section rewritten to accommodate the change of responsibility of the offsite reception center. Burke County EMA will receive VEGP non-involved personnel, monitor for contamination, and decontaminate as necessary. This will be accomplished in accordance with their approved plan and procedures. Justification: Same as change 1 above.
8. Table J-5, item 1	Deleted references to "Burke County Middle School and Blakeney Elementary School" as additional reception centers for Burke County Georgia. **Justification:** State of Georgia and Burke County eliminated these centers from their respective emergency plans.
9. Figures J-1 and J-2	Deleted Figures J-1 and J-2. **Justification:** Same as change 1 above.
10. Page K-3	Section K.3, 1st paragraph – Delete word "offsite" as it pertains to decontamination emergency kit. **Justification:** Editorial change. Decontamination kits are still available at the EOF and Health Physics Control Point. The offsite reference is no longer applicable.
11. Page K-3	Section K.3, 3rd paragraph – Deleted all references to the relocation centers. **Justification:** Same as change 1 above.
12. Page K-3	Section K.3, 3rd paragraph – Change "Burke County Hospital" to "Burke Medical Center." **Justification:** Editorial change to correct hospital name.
13. Table O-1	Delete reference to "site relocation centers" in Sheet 3 of 3, Radiological Emergency Team In-Plant course. **Justification:** Editorial change to correct reference to "relocation centers."

JUSTIFICATION FOR REVISION 39 TO THE VEGP EMERGENCY PLAN

14. Appendix 1

GLOSSARY - Correct the following:

- EBS changed to EAS - Emergency Alerting System
- EPD changed to EMD – Emergency Management Division of South Carolina

Justification: Editorial changes.

15. Appendix 2

Change "Table Of Contents" to "List of Letters Of Agreement On File"

Justification: The information contained in the letters of agreement is not needed to implement any action. Other sections of the emergency plan (i.e., sections A and L) contain the specific actions that these authorities have agreed to perform if called upon by VEGP. These letters will remain on file and will continue to be confirmed viable on an annual basis.

16. Appendix 2

Delete letters of agreement with Frank L. Carter, M.D. and Framatome Technologies.

Justification: Dr. Carter has joined practice with Medical Specialist which is listed as current. Framatome Technologies no longer provides post accident sampling services.

17. Appendix 4

Table 4-4, OSC Emergency Equipment (Typical), Item 30 – Delete references to tools.

Justification: OSC tools are stored in the tool room located on the first floor of the maintenance building. There are also tools stored in the hot machine shop within the Auxiliary Building.

18. Appendix 4

Table 4-6, Offsite Decontamination Emergency Equipment Kit (Typical) – Delete "Offsite" in title of table and delete item 18, bags.

Justification: Title change for consistency with item 9 above and deleted redundant "bag" reference which is listed in item 4 of table 4-6.

ENCLOSURE 2

Insertion Instructions

VEGP UNIT 1 AND UNIT 2
EMERGENCY PLAN
REVISION 39 11/04
INSERTION INSTRUCTIONS

VOLUME 1:	
Section	**Instructions**
Remove Justification for Revision 37 to the VEGP Emergency Plan, Enclosure #1 (Sheets 1 and 2).	Replace with Justification for Revision 39 (Sheets 1 through 3).
Remove Table of Contents.	Replace entire Table of Contents.
Remove Preface.	Replace entire section.
Remove Section B.	Replace entire section.
Remove Section H.	Replace entire section.
Remove Section J.	Replace entire section.
Remove Section K.	Replace entire section.
Remove Section O.	Replace entire section.
VOLUME 2:	
Remove Appendix 1.	Replace entire appendix.
Remove Appendix 2.	Replace entire appendix.
Remove Appendix 4.	Replace entire appendix.
Acknowledgment Receipt	Sign and return.

ENCLOSURE 3

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PREFACE

The Vogtle Electric Generating Plant (VEGP) is a two-unit pressurized water reactor operated by Southern Nuclear Operating Company (SNC). The plant is on a 3169-acre site located in the eastern portion of Burke County, Georgia, approximately 23 river mi upstream from the intersection of the Savannah River with U.S. Highway 301, as shown on figure i. Figure ii shows the site and the locations of the buildings on the site. The locations of the VEGP emergency facilities are shown on figure ii.

This Emergency Plan is applicable to VEGP, Units 1 and 2, and to its environs as specified by the emergency planning zones (EPZs): a plume exposure pathway EPZ, which nominally consists of the area within approximately 10 mi of the plant, and an ingestion exposure pathway EPZ, which extends to 50 mi. These distances are reckoned from a point midway between the centers of the Unit 1 and Unit 2 containment buildings for the 10 mile EPZ map. The two EPZs are shown in figures iii and iv.

Because of the location of VEGP, the emergency planning and/or protective action responsibilities at the state level involves two states, Georgia and South Carolina. Both Georgia and South Carolina, as well as the counties (Burke County in Georgia and Aiken, Barnwell, and Allendale Counties in South Carolina) within the plume exposure pathway EPZ, have prepared plans for a response to an emergency at VEGP. These plans describe their respective responsibilities, authorities, capabilities, and emergency functions. The major portion of the plume exposure pathway EPZ in South Carolina is within the Department of Energy's Savannah River Site (SRS). The Department of Energy, Savannah River Operations Office (DOE-SR), pursuant to a memorandum of agreement between Georgia Power Company (GPC),as assigned to SNC, and DOE-SR provided in appendix 5, will be responsible for all emergency response actions on the SRS whenever an emergency occurs at VEGP.

Small areas of Georgia within a 10-mi radius of the plant have been excluded from the detailed state and local planning. The area in Richmond County has been excluded because it is a low-lying swampland with no residences, no access routes, and limited recreational use. A letter documenting this provision is included in appendix 11.

Within the plume exposure pathway EPZ, Burke County in the State of Georgia has the largest resident population. However, even here the population is small and dispersed. The areas in South Carolina that are not federally owned or controlled are along the Savannah River lowlands in Aiken, Allendale, and Barnwell Counties. The segment in Aiken County, approximately 8 to 10 mi NNW from VEGP, is part of the Cowden Plantation

and has no resident population. The segments to the ESE, Barnwell and Allendale Counties (approximately 9 to 10 mi from VEGP), are largely comprised of portions of the Creek Plantation, a horse farm. Within the South Carolina portion of the plume exposure pathway EPZ, the only housing occurs within the Creek Plantation in Barnwell County, where there are only a limited number of permanent residences. Figure v presents the permanent population within the plume exposure pathway EPZ.

The transient population within the plume exposure pathway EPZ includes persons in the work force at the VEGP and at recreational areas, mainly hunters and fishermen (see figure vi). This transient population is generally along the Savannah River; around the Cowden Plantation and Gray's Landing in Aiken County; around Creek Plantation in Barnwell and Allendale Counties; and at St. Mary's Baptist Church in Barnwell County.

The EPZ for ingestion exposure includes an area within 50 mi of VEGP. Planning for the ingestion exposure pathway is a responsibility of the States of Georgia and South Carolina. More information about the ingestion exposure pathway EPZ can be obtained from the States' Radiological Emergency Plans.

The order of the presentation provided herein follows that of the 16 standards delineated in 10 CFR 50, Section 50.47 (b). Appropriate criteria from NUREG-0654, Revision 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, are addressed approximately in the sequence presented in that document.

Although this Plan is designed to stand on its own, two additional plans expand on matters mentioned here: the Corporate Emergency Plan (appendix 7) and the Emergency Communication Plan (appendix 8). It is to be recognized that this is only a plan and not a prescriptive document. Each incident is a unique event; therefore this Plan is designed to incorporate the flexibility to tailor the response and meet the emergency.

This Plan is supported by a set of implementing procedures. A listing of these procedures is included as appendix 9.

B. ONSITE EMERGENCY ORGANIZATION

Initial staffing of the onsite emergency organization will be provided from personnel normally employed at the site. For reference throughout this section, the organizational chart for the Vogtle Electric Generating Plant (VEGP) staff is presented in figure B-1. If the need arises, this staff will be augmented substantially by the addition of Southern Nuclear Operating Company (SNC) personnel and by personnel from other organizations. This section includes a description of the emergency duties of the normal shift complement, a discussion of the manner in which emergency assignments are to be made, a listing of additional support personnel on whom VEGP can rely, and a description of the relationships between onsite and offsite response activities.

B.1 NORMAL PLANT ORGANIZATION

The organizational structure shown on figure B-1 represents the pool of personnel available on site during normal working hours. Approximately 700 people are stationed at the site during the standard workday.

The normal operating crew for two units includes a shift supervisor, licensed plant operators, and non-licensed plant operators. A shift superintendent is also on shift during operation (as defined in the Technical Specifications). Personnel from the Chemistry and Health Physics, Maintenance, and Security Departments are also on site continuously. Refer to table B-1 of this section for minimum staffing requirements.

B.2 EMERGENCY ORGANIZATION

The emergency director has the responsibility to classify an event in accordance with the emergency classification system (described in section D). Classification of an event into one of the four emergency categories (Notification of Unusual Event (NUE), Alert, Site Area Emergency, or General Emergency) activates the VEGP emergency organization. The extent to which the emergency organization is activated depends on the severity of the situation. Table B-1 provides a summary of personnel available on shift and those who would be available within 60 min of notification.

For an NUE, the emergency director assigns responsibility for making the appropriate notifications and directing the proper response; but no further activation of the emergency organization is required.

If the event is classified as an Alert, the technical support center (TSC), operations support center (OSC), and Corporate Emergency Operations Center (CEOC) will be activated.

For this classification, the emergency organization is structured as shown on figure B-2. The corporate emergency organization will also be activated. The organization for corporate response is shown on figure B-4, and further information about the corporate resources and operations is presented in the SNC Corporate Emergency Plan (appendix 7). Corporate personnel who report to the plant site will be integrated into the VEGP emergency organization. In addition, the emergency operations facility (EOF) will be brought to a standby status.

For a Site Area Emergency or General Emergency, the emergency organization and EOF will be fully activated. The organization will be as shown in figure B-3.

A security related emergency may delay the ordering of facility activation in order to protect plant personnel from the security threat. The decision to delay activation of the facilities will be made by the Emergency Director.

Relationships among the VEGP emergency organization and other elements of emergency response are shown on figure A-1.

B.2.1 Emergency Organization Responsibilities

Following an Alert or higher emergency declaration, the positions shown on figures B-2 and B-3 will be filled by VEGP or SNC personnel as discussed below.

1. EMERGENCY DIRECTOR

Plant and corporate personnel that may be designated as emergency directors are listed in table B-2 of this plan. They will receive training as specified in table 0-2 of this plan prior to becoming qualified to fill this position. Their nonemergency positions as vice president, general manager, assistant general managers, managers, superintendents, and supervisors provide them plant knowledge and supervisory skills necessary to fill the emergency director position.

The emergency director has the authority, management ability, and knowledge to assume the overall responsibility for directing VEGP staff in an emergency situation. Initially this position will be filled by the shift superintendent or the shift supervisor if the shift superintendent can not be located expeditiously. The responsibility for emergency direction will be transferred to the nuclear plant general manager, or an alternate after receiving an appropriate briefing and becoming familiar with the current status of events.

Turnover with the accompanying briefing will include, but is not limited to, the following:

1. Review of logs and status boards.
2. Discussion with the incumbent including emergency classification, summary of events, offsite notifications, plant status, equipment status, outstanding orders, any noted deficiencies and completed checklist items.
3. Discussion with staff, as needed.

Following relief, announcement will be made to staff of the transfer of responsibility. (See Procedure 91102-C for specifics.) The primary and alternates for the position of emergency director are shown on table B-2.

The emergency director manages the following activities for the duration of the emergency:

- Notification and communication: directs the notification of VEGP, SNC and GPC personnel and notifies and maintains open communications with offsite authorities regarding all aspects of emergency response.
- Emergency response facilities: oversees the activation and staffing and requests additional assistance, as needed.
- Emergency operations: has authority over those actions taken to mitigate the emergency condition or reduce the threat to the safety of plant personnel or the public, including the recommendation of protective actions to offsite authorities.
- Emergency services: provides overall direction for management of procurement of site needed materials, equipment, and supplies; documentation; accountability; and security functions.
- Emergency operations planning: provides overall direction for the management of planning for procedure, equipment, and system development to support emergency operations.
- Discretionary authority: can modify emergency implementing procedures; may tailor the emergency organization to fit the specific staffing needs on a case by case basis.

The emergency director may not delegate the following responsibilities:

- The decision to notify offsite emergency response agencies.

- The decision to recommend protective actions to offsite authorities.
- Declaration of emergency classifications.
- Authorization for plant personnel to exceed 10 CFR 20 radiation exposure limits.
- The decision to downgrade the emergency classification or terminate the emergency.
- Request for Federal assistance.
- The decision to order site dismissal of non-involved personnel from the site at an Alert classification level.
- The decision to order non-involved personnel to proceed to a reception center and receive radiological monitoring.

The emergency director may operate from the control room, TSC, or EOF at his discretion. He may act as the TSC manager during the early phases of emergency response until the EOF is activated.

2. TSC STAFF

a. TSC Manager

The TSC manager performs the following activities:

- Coordination of inputs and recommendations from technical and corrective action advisors.
- Direction of onsite emergency personnel involved in restoration of the plant to a safe condition.
- Technical assistance and operations guidance to control room personnel.
- Direction of TSC staff in analysis of problems, design and planning for temporary modifications, and development of temporary emergency operating procedures.
- Recommendation of protective actions to the emergency director based on plant conditions.
- Providing recommendations on emergency classifications to the emergency director.

b. TSC Support Coordinator

The TSC support coordinator directs the clerical and logistic activities in the TSC. He ensures that support staff, including clerks, status board keepers, and communicators, are available in sufficient numbers and that office supplies, drawings, and other documents are available to TSC and OSC personnel. He is responsible for timely completion of offsite notification. He ensures that transportation and communication needs are satisfied. He arranges for additional offsite support personnel and equipment working in conjunction with the EOF support coordinator. (Designees are identified on table B-2).

c. Engineering Supervisor

The engineering supervisor directs a staff of engineers with expertise in reactor engineering, thermal and hydraulic analysis, instrumentation and control, and mechanical and electrical systems. He directs the analysis of plant problems, core damage, and provides recommendations for plant modifications to mitigate the effects of the accident.

d. Maintenance Supervisor

The maintenance supervisor manages the planning and coordination of repair, damage control, and plant modification activities. He works closely with the engineering supervisor in planning for plant modifications and repairs.

e. Operations Supervisor

The operations supervisor analyzes problems associated with systems operations and provides recommendations for procedures for mitigating the emergency situation.

f. Health Physics Supervisor

The health physics supervisor is responsible for onsite and in-plant radiological controls. He provides guidance to the maintenance supervisor related to radiological considerations associated with plant modification and repair and provides direction to the OSC manager related to the health physics controls for emergency teams. He performs offsite dose assessment prior to EOF activation and keeps the dose assessment supervisor in the EOF informed of the radiological status of the plant.

g. Chemistry Supervisor

The chemistry supervisor is responsible for directing and evaluating in-plant chemistry and analyses, directing and evaluating post accident sampling, and assisting in core damage assessment.

h. TSC Security Supervisor

The TSC security supervisor coordinates the security functions including accountability and site access control. He coordinates the processing of offsite personnel who require authorization to enter the site. When directed by the emergency director, will request assistance from civil law enforcement authorities, as required.

3. OSC STAFF

a. OSC Manager

The OSC manager receives direction from the TSC personnel to dispatch emergency teams (e.g., firefighting, search and rescue, first aid, repair, etc.) to prescribed areas of the plant or site. The OSC manager directs composition of the teams to ensure that appropriately qualified personnel are assigned. In particular, he will ensure that proper health physics coverage is provided. The OSC manager will provide specific instructions to the team leaders. He will also maintain communications with the teams that remain assigned to the OSC and monitor the status of their activities.

b. OSC Personnel

Selected emergency response personnel will report to the OSC as directed. Depending on the nature of the emergency, personnel from the Maintenance, Operations, Chemistry and Health Physics Departments will be directed to report to the OSC. The following emergency teams will be formed as necessary:

- Backup fire brigade.
- Search and rescue.
- First aid.
- Damage assessment.
- Damage control.

- Repair and modification.
- Field monitoring.

Each team will be headed by a designated team leader, who will maintain communications with the OSC, TSC, or EOF.

4. EOF STAFF

The emergency director will normally manage the VEGP emergency organization from the EOF when activated. In addition to serving as the overall command center, the EOF is the location where offsite response activities are coordinated and initial reentry and recovery actions are planned.

a. EOF Manager

The EOF manager manages the following activities:

- Overall direction and control of offsite VEGP response.
- Communication of radiological information to State and local emergency response agencies.
- After consultation with the emergency director, provides support for initial activities associated with planning for recovery operations.

b. EOF Support Coordinator

The EOF support coordinator performs the following functions:

- Ensures timely completion of offsite notifications in coordination with the TSC support coordinator.
- Ensures the availability of an adequate number of administrative personnel for EOF and TSC operations.
- Develops a duty roster for extended emergency operations, if necessary.
- Obtains and distributes office supplies, office equipment, drawings, and documents, as necessary.
- Provides temporary quarters, food, and water as necessary for emergency workers.
- At the request of the EOF manager or emergency director, makes contact with private organizations to provide support services.
- Expedites procurement of necessary materials or equipment.
- Arranges for offsite support personnel and equipment.
- Access control for the EOF

c. Dose Assessment Supervisor

The dose assessment supervisor is responsible for the evaluation of offsite radiological conditions; specific responsibilities include:

- Performance of offsite dose calculations in accordance with plant procedures.
- Direction of VEGP field monitoring teams.
- Comparison of calculations and measurements with State and Federal groups performing radiological assessment.

- Projection of radiological consequences offsite, based on anticipated or predicted plant conditions.
- Recommending protective actions to the EOF manager, based on actual or projected offsite radiological consequences.

5. OTHER CORPORATE PERSONNEL

The Corporate Emergency Plan (appendix 7) describes the actions to be taken by Southern Nuclear Operating Company (SNC) in the event of an emergency. The vice president, project, may supplement the VEGP emergency organization with additional resources and personnel from Hatch or Farley Nuclear Plant.

B.2.2 Emergency Organization Assignments

Table B-2 identifies by title the individuals who will fill the key emergency positions.

A sufficient number of people are identified to ensure that all emergency positions on table B-2 will be filled.

B.2.3 Other Support Services

1. CONTRACTOR SUPPORT

Arrangements have been made to obtain support services from Bechtel Power Corporation and Westinghouse, if required. These organizations will initially be contacted by the EOF support coordinator or Corporate Emergency Operations Center to arrange for the required assistance.

2. MEDICAL ASSISTANCE

Agreements are in place with Radiation Management Consultants, Burke County Hospital, Doctors Hospital, and Burke County Emergency Management Agency (see appendix 2) to provide assistance for injured personnel, including cases involving radioactive contamination. This assistance will be requested whenever necessary in accordance with plant procedures.

3. AGENCY SUPPORT

Assistance may be requested from Burke County, the State of Georgia, or Federal agencies. Section A of this Plan describes the assistance that may be requested. Any requests for aid will be made by the emergency director.

B.2.4 Interfaces Among Response Groups

Section A, figure A-1, illustrates the integrated organization for response to an emergency at VEGP.

TABLE B-1 (SHEET 1 OF 2)
MINIMUM STAFFING FOR POWER OPERATION

Major Functional Area	Major Tasks	Position Title or Expertise	On Shift	Augmentation in 60 min
Plant operations and assessment of operational aspects		Shift superintendent (SRO) Shift supervisor (SRO) Plant operator (RO) Plant equipment operator	1(a) 1(a) 3(a) 3(a)(e)	- - - -
Emergency direction and control (emergency director)	Overall management of emergency organization	Shift supervisor; shift superintendent	1(b)	-
Notification/communication	Notification of VEGP, State, local, and Federal personnel	Shift administrative assistant or other trained personnel	2	2
Radiological accident assessment and support of operational accident assessment	EOF direction Offsite dose assessment	Manager or superintendent; HP/Chemistry Shared foreman	- 1	1 -
	Offsite surveys onsite (out of plant)	Chemistry technicians and other trained personnel	3	3
	Chemistry/radiochemistry	Chemistry technicians or equivalent	1	1
Plant system engineering, repair and corrective actions	Technical support (including core/thermal hydraulics)	Shift technical advisor or engineer	1(c)	-
		Electrical Mechanical	- -	1 1
	Repair and corrective actions	Mechanical maintenance System operator Electrical maintenance Instrumentation and control technician	1 - 1 1	1 1 1 -
Protective actions (in plant)	Radiation protection: • Access control • HP coverage for repair, corrective actions, search and rescue, first aid and fire fighting • Personnel monitoring • Dosimetry • Decontamination • In-plant Survey	Health Physics technicians or other trained personnel	2	2

TABLE B-1 (SHEET 2 OF 2)

MINIMUM STAFFING FOR POWER OPERATION

Major Functional Area	Major Tasks	Position Title or Expertise	On Shift	Augmentation in 60 min
Firefighting			Fire brigade per FSAR	Local support
Rescue operations and first aid			2(b)	Local support
Site access control and personnel accountability	Security, firefighting communications, personnel accountability	Security personnel	Per Security Plan	
			Totals 20(d)	14

a. Refer to technical specifications for nonpower operation.

b. May be provided by shift personnel assigned other functions.

c. Required unless shift superintendent or the individual with a senior operator license meets the qualification for the STA as required by the NRC.

d. Does not include positions footnoted with a (b) or (c).

e. One of the three plant equipment operators may be assigned to the Fire Brigade.

TABLE B-2 (SHEET 1 OF 2)

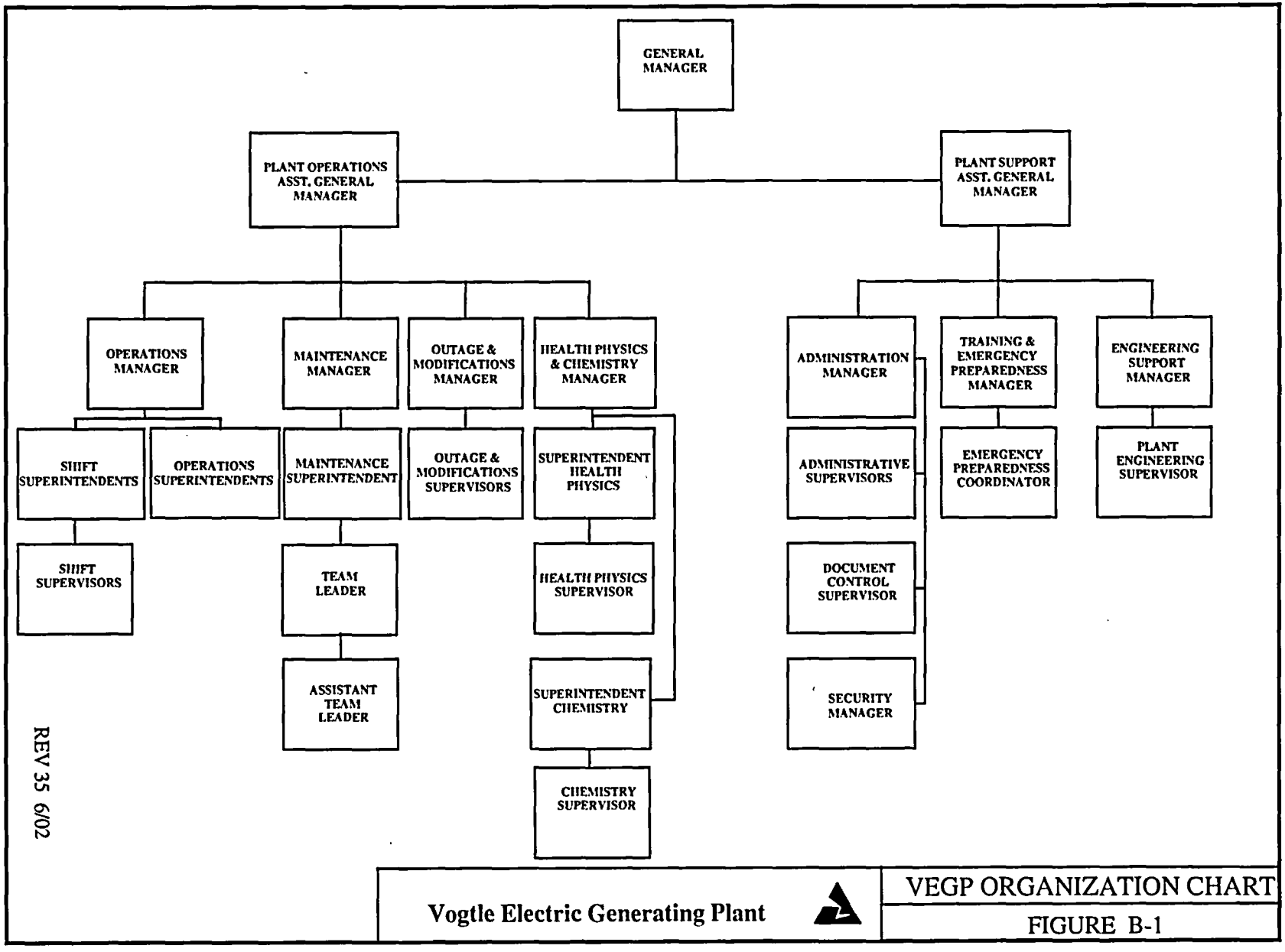
EMERGENCY ORGANIZATION ASSIGNMENTS

Emergency Position	Primary	Alternate(s)
Emergency director	Nuclear plant general manager	Plant operations AGM*; manager operations; operations superintendent; plant support AGM; shift superintendent; shift supervisor
	Designees	
EOF manager	Supervision from onsite staff as designated in procedure 91101-C	
EOF support coordinator	Supervision from onsite staff as designated in procedure 91101-C	
Dose assessment supervisor	Health Physics/Chemistry supervision from on-site staff as designated in procedure 91101-C	
Dose analyst	Onsite staff as designated in procedure 91101-C	
TSC manager	Supervision from onsite staff as designated in procedure 91101-C	
TSC support coordinator	Onsite staff as designated in procedure 91101-C	
Engineering supervisor	Supervision from onsite staff as designated in procedure 91101-C	
Maintenance supervisor	Supervision from onsite staff as designated in procedure 91101-C	
Operations supervisor	Supervision from onsite staff as designated in procedure 91101-C	
Health physics supervisor	Supervision from onsite staff as designated in procedure 91101-C	
Chemistry supervisor	Supervision from onsite staff as designated in procedure 91101-C	
Engineers	Plant engineers	
TSC security supervisor	Supervision from onsite staff as designated in procedure 91101-C	

*AGM - Assistant General Manager

TABLE B-2 (SHEET 2 OF 2)

Emergency Position	Designees
OSC manager	Supervision from on-site staff as designated in procedure 91101-C
Dosimetry team	Qualified health physics personnel
Communicators (Offsite for Control Room, TSC and EOF)	Plant engineers; nuclear specialist; administrative assistants; operations personnel
Clerks	Administrative assistants
In-plant radiation monitoring team	Selected emergency response personnel
Post accident sampling team	Selected emergency response personnel
Damage control/assessment/ repair team	Selected emergency response personnel
Search and rescue team	Selected emergency response personnel
Backup fire brigade	Selected emergency response personnel
First aid team	Selected emergency response personnel
Field monitoring team	Selected emergency response personnel
Shift supervisor Plant operators Plant equipment operators	Normal operating shift personnel



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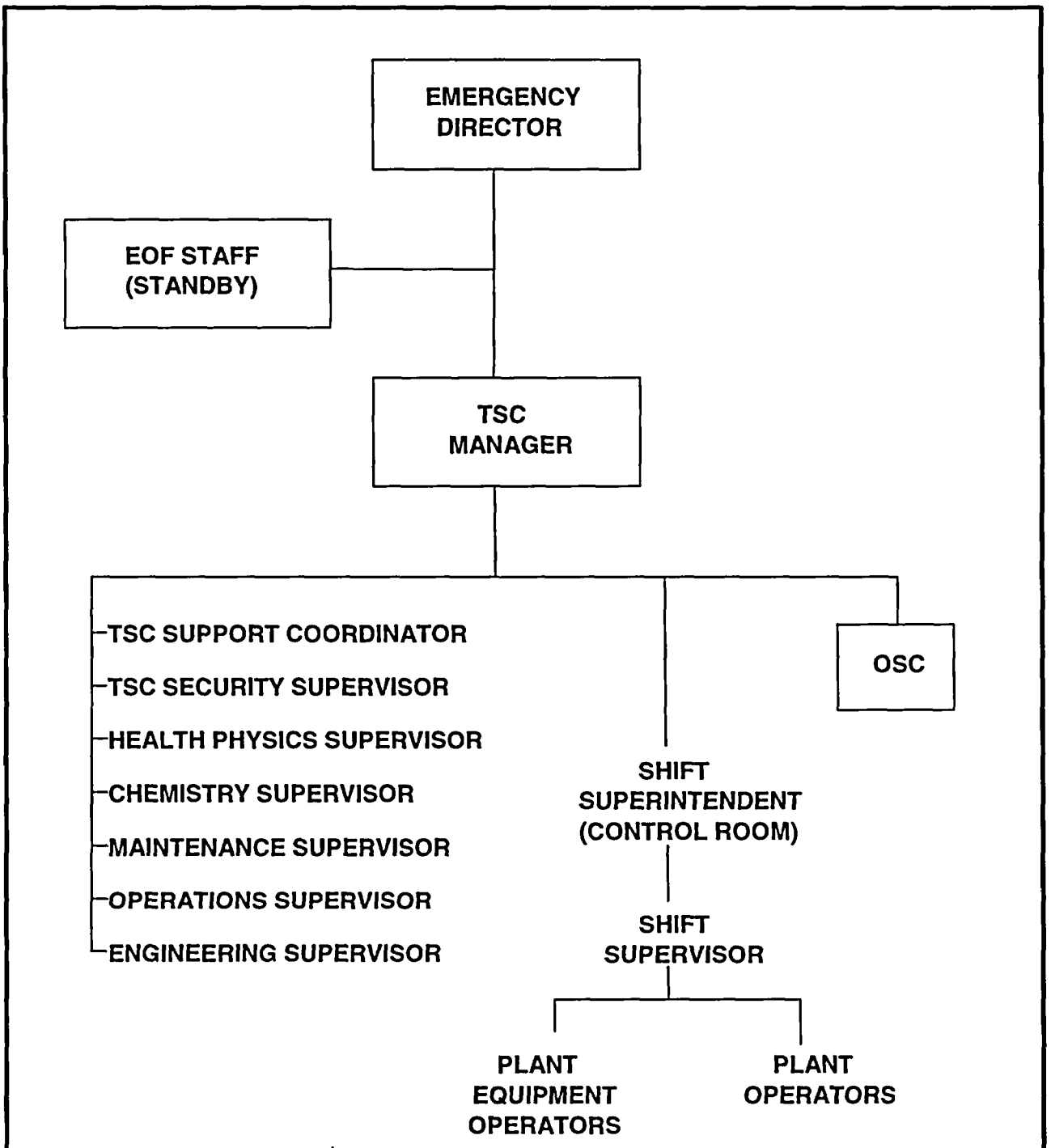
Vogtle Electric Generating Plant

VEGP ORGANIZATION CHART

FIGURE B-1



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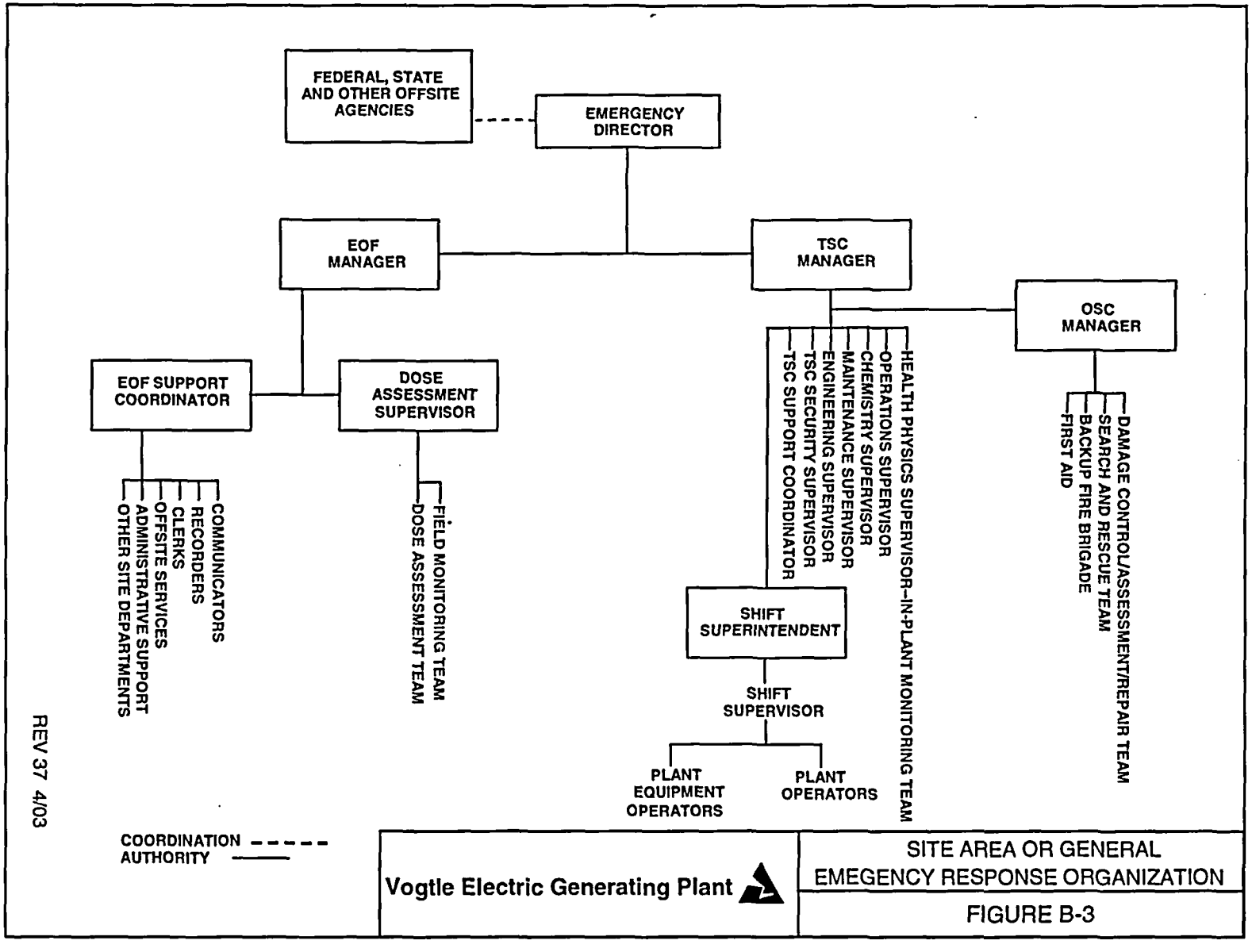
Vogtle Electric Generating Plant	RESPONSE ORGANIZATION FOR ALERT
	FIGURE B-2


FEDERAL, STATE AND OTHER OFFSITE AGENCIES
EMERGENCY DIRECTOR
EOF MANAGER
TSC MANAGER
OSC MANAGER
EOF SUPPORT COORDINATOR
DOSE ASSESSMENT SUPERVISOR
COMMUNICATORS
RECORDERS
CLERKS
OFFSITE SERVICES
ADMINISTRATIVE SUPPORT
OTHER SITE DEPARTMENTS
FIELD MONITORING TEAM
DOSE ASSESSMENT TEAM
TSC SUPPORT COORDINATOR
TSC SECURITY SUPERVISOR
ENGINEERING SUPERVISOR
MAINTENANCE SUPERVISOR
CHEMISTRY SUPERVISOR
OPERATIONS SUPERVISOR
HEALTH PHYSICS SUPERVISOR-IN-PLANT MONITORING TEAM
SHIFT SUPERINTENDENT
SHIFT SUPERVISOR
PLANT EQUIPMENT OPERATORS
PLANT OPERATORS
DAMAGE CONTROL/ASSESSMENT/REPAIR TEAM
SEARCH AND RESCUE TEAM
BACKUP FIRE BRIGADE
FIRST AID
COORDINATION
AUTHORITY
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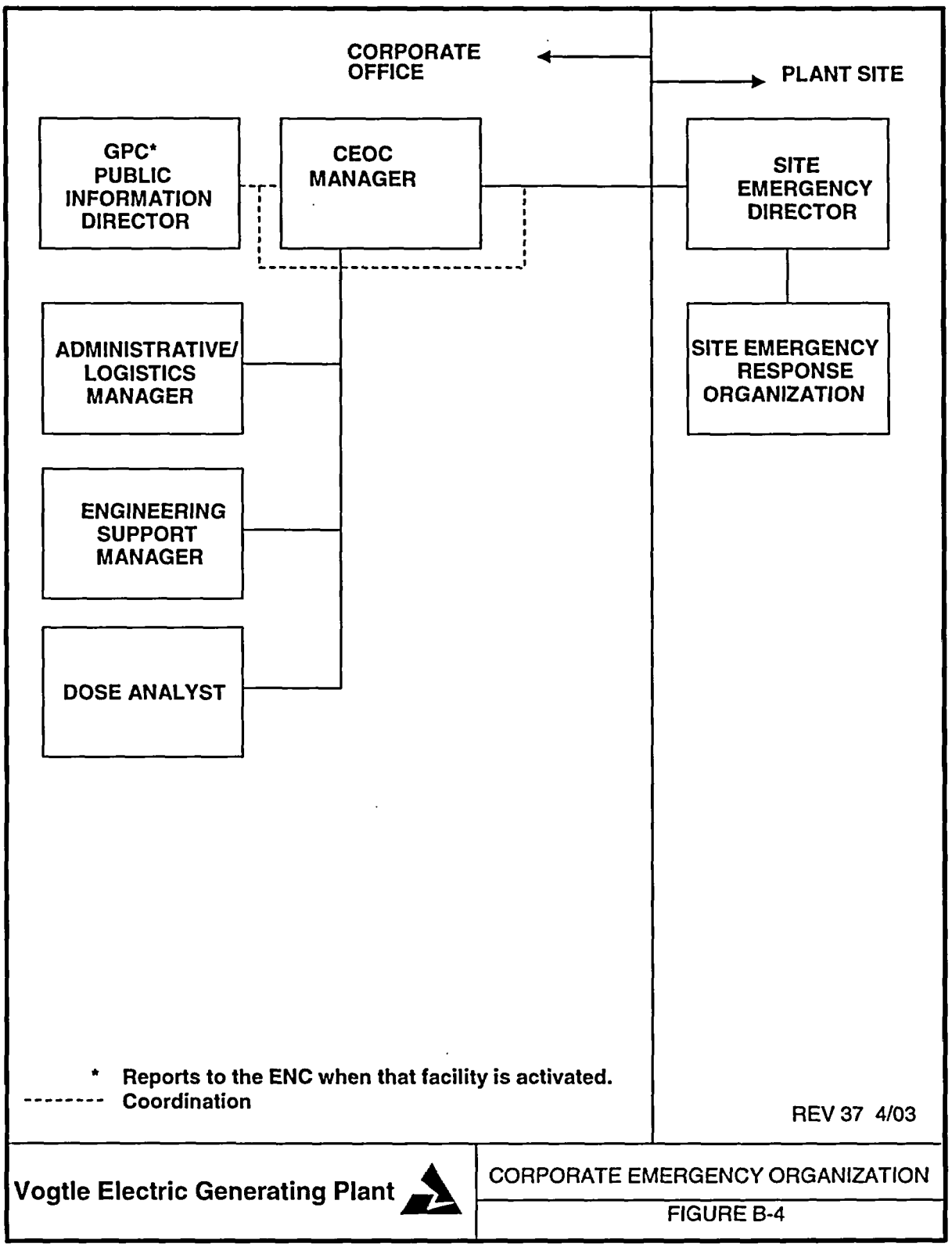
Vogtle Electric Generating Plant
SITE AREA OR GENERAL EMEGENCY RESPONSE ORGANIZATION
FIGURE B-3


CORPORATE OFFICE
PLANT SITE
GPC* PUBLIC INFORMATION DIRECTOR
CEOC MANAGER
SITE EMERGENCY DIRECTOR
ADMINISTRATIVE/ LOGISTICS MANAGER
SITE EMERGENCY RESPONSE ORGANIZATION
ENGINEERING SUPPORT MANAGER
DOSE ANALYST
* Reports to the ENC when that facility is activated.
-------- Coordination
REV 37 4/03
Vogtle Electric Generating Plant
CORPORATE EMERGENCY ORGANIZATION
FIGURE B-4

H. EMERGENCY FACILITIES AND EQUIPMENT

Following the declaration of an emergency, response activities will be coordinated at a number of facilities. These Emergency Response Facilities (ERF) and the equipment which will be used for accident assessment and monitoring functions are described in this section.

H.1 EMERGENCY FACILITIES

1. TECHNICAL SUPPORT CENTER (TSC)

The TSC has been established consistent with NUREG 0696, as described below. The TSC is shared by both units and is located adjacent to the Unit 1 control room at el 220 ft. The layout of the TSC and location of key personnel are shown in figure H-1. Walking time from the TSC to the control room is less than 2 min. The TSC covers about 5900 ft^2 and can accommodate 25 people. It is an integral part of the Seismic Category I control building structure.

The TSC provides plant management and technical support personnel (including five Nuclear Regulatory Commission (NRC) personnel) with a facility from which they can assist plant operating personnel located in the control room during an emergency. The emergency director and NRC director will be located next to each other to ensure proper communications. The TSC is equipped with a computer system, which provides source term and meteorological data and technical data displays to allow TSC personnel to perform detailed analysis and diagnosis of abnormal plant conditions, including assessment of any significant release of radioactivity to the environment. In addition, the TSC has ready access to plant records, some of which are stored in the TSC and some in the control room.

The TSC structure and ventilation system are designed to ensure that the TSC personnel are protected from radiological hazards. The TSC ventilation is a separate system and not a part of the control room ventilation system.

The air supply is filtered by high efficiency particulate air (HEPA) and charcoal filters. During accident conditions the filtration system provides filtered cooling air meeting the following exposure design criteria: 5 rem - whole body; 30 rem - thyroid; and 75 rem - skin dose for a 30 day occupancy.

The air filtration system will be placed in service when required by Procedure 91110-C, Duties of the Health Physics Supervisor (TSC). The ventilation system can be manually controlled from the TSC. The air filtration system will also be placed in the filtration mode automatically whenever the control room HVAC is isolated. The air filtration system, when activated, automatically processes all of the outdoor air together with approximately 25 percent of the recirculated air through the filtration unit. In the initial actuation of the air filtration system, a parallel signal is initiated to deenergize the onsite technical support center battery room and toilet exhaust fans and dampers. The continuous influx of outdoor air with no positive exhaust is designed to pressurize the area to 0.125 in. WG. After the filtration process, the filtered air is mixed with the balance of recirculated air for further conditioning by the normal supply system.

When the TSC is activated, there will be a portable radiation monitor placed in the TSC to alert personnel of the presence of high radiation levels. In addition, portable radiation monitors are available for personnel in transit from the TSC to other areas. Portable air breathing apparatus and anti-contamination clothing are provided in the TSC.

The TSC normal lighting is supplied from normal offsite power through a motor control center backed up by the security diesel generator. The TSC essential lighting is supplied from the essential lighting system. Self-contained, battery-operated emergency lighting is provided as a backup to the normal lighting for ingress and egress only and is located in the TSC hallway.

Power for TSC vital equipment is provided from either the motor control center backed up by the security diesel generator or from a battery-backed uninterruptible power supply system. Power to the dc system is provided via battery chargers, one of which is powered from this same motor control center.

The records storage is shared by the control room and the TSC. Separate copies of the following documents will be stored in the control room complex and in the TSC:

- Technical Specifications.
- Plant Operating Procedures.
- Final Safety Analysis Report.

- Emergency Plan.
- Emergency Plan Implementing Procedures.
- Records needed to perform the functions of the emergency operating facility (EOF) when it is not operational.

In addition, copies of the above-listed documents and the following documents are available in Vogtle Electric Generating Plant (VEGP) Document Control:

- Plant operating records.
- Plant Review Board records and reports.
- System piping and instrumentation diagrams and heating, ventilation, and air-conditioning (HVAC) flow diagrams.
- Piping area drawings.
- Electrical one-line, elementary, and wiring diagrams.
- Control logic and loop diagrams.

The above records are available in current form and are updated as necessary to ensure currency and completeness.

Operations at this facility are directed by the TSC manager.

2. OPERATIONS SUPPORT CENTER (OSC)

The OSC has been established to be consistent with NUREG 0696 as described below. The OSC is located on the second floor of the maintenance building in the lunch room. The lunch room is located in the southeast corner of the second floor and is accessed via the south stairwell or the east stairwell. Figure H-2 defines the OSC layout and shows access stairwells. The OSC is where operational support personnel (such as instrument technicians, engineers, mechanics, electricians, chemical/radiation technicians, equipment operators, incoming shift personnel, etc.) assemble to aid in the response to an emergency.

Preparations for dispatching maintenance teams to the plant will include the following steps as described in Procedure 91104, Duties of the OSC Manager, and Procedure 91202, Activation and Operation of the OSC.

A. Members of the team will be selected by the OSC manager based on the type of work to be conducted.

B. The work will be preplanned by the maintenance personnel.

C. Drawings, manuals, and other procedures will be obtained from the document control room or maintenance building. If the equipment manuals are not available in either facility, a complete set of manuals is available in the service building.

D. Dosimetry will be obtained from the OSC emergency kit or at the HP control point.

E. Protective clothing and equipment, radios, and other supplies will be obtained from the emergency kit stored in the OSC or the health physics control point. All equipment will be checked before leaving the OSC or health physics control point.

F. A radiation work permit (RWP) will be completed in accordance with standard practices at the health physics control point, TSC, or OSC. Standard procedures include emergency RWPs. Procedure 91301-C, Emergency Exposure Guidelines, provides instruction for emergency exposures.

G. The tools and equipment needed to conduct repairs and take corrective actions will be determined. This equipment may be available in the auxiliary building tool crib or in the maintenance building. Arrangements for tools and equipment not located onsite will be made in coordination with the support coordinator.

H. ALARA and job briefings will be held with each team in the OSC, the TSC, or at the health physics control point, as appropriate. Work to be performed, special precautions, plant conditions, and radiological information will be included in the briefings.

I. Upon completion of the job, the team members will be debriefed and their exposures recorded.

Status boards containing plant conditions and emergency classification will be available in the OSC.

Emergency kits containing radiation monitoring equipment, first aid supplies, decontamination supplies, breathing apparatus, portable lighting, and hand-held radios are stored in the OSC. Emergency kit contents are listed in appendix 4.

In the event that this facility becomes uninhabitable, the functions of the OSC will be conducted from the Outage Control Center (OCC) and Clearance and Tagging (C&T) located in the control building. Evacuation of the OSC will be conducted according to Procedure 91202-C, Activation and Operation of the OSC. This Procedure describes the method by which the OSC is evacuated and the movement of personnel to other facilities in an orderly manner. The OSC manager will keep the TSC manager informed of the initiation, progress, and completion of the evacuation and relocation of the OSC personnel.

Operations at this facility are directed by the OSC manager.

3. EMERGENCY OPERATIONS FACILITY

The EOF has been established consistent with NUREG 0696, as described below. It is located in the lower south wing of the training center, approximately 1.5 mi. southeast of the plant.

The EOF is a command post for the overall management of the emergency response, the coordination of radiological assessment, and the management of initial recovery operations. The EOF will be activated as prescribed in the Vogtle Electric Generating Plant Emergency Plan implementing procedures. From the EOF, VEGP management personnel assist the states and other governmental bodies by recommending protective actions to ensure public health and safety. Plant systems information, radiological data, and meteorological data are provided via the Integrated Plant Computer (IPC) system to EOF personnel. IPC terminals may be located in the dose assessment area and others may be located in the command center area. The EOF is the control point for the assessment of all field data and sample analyses. This information will be available to county, State, and Federal representatives. The EOF is sized to accommodate 35 persons, including 25 predesignated persons, 9 persons from the NRC, and 1 person from the Federal Emergency Management Agency

(FEMA). The emergency director and NRC director of site operations will have designated seating adjacent to each other to facilitate proper communications. It is anticipated that representatives from the states of Georgia and South Carolina will be sent to the EOF.

The EOF consists of several rooms, as shown, together with the location of key personnel, in figure H-3. Three of these rooms are equipped with IPC terminals. These rooms are normally used as classrooms. The walls of these classrooms consist of panels that fold back to form one large room that can accommodate at least 35 people. The stored IPC terminals will be placed in this area for EOF personnel use. The remaining EOF rooms are designated for equipment and records storage, and NRC and VEGP conference rooms.

The EOF ventilation system is functionally similar to the system used in the TSC. The EOF is sealed and maintained at a positive pressure with respect to atmospheric pressure. The ventilation system has recirculation capability through high-efficiency particulate air filters. The EOF protection factor has been calculated to be at least 5.7 for photons of 0.7 MeV. Dedicated portable radiation monitors are available at the EOF for surveillance.

Normal power to the training center, including the EOF, is from a reliable offsite source. Emergency lighting is provided by battery operated lights.

The following records or information are available at the EOF:

- Technical Specifications.
- Selected plant operating procedures.
- Emergency Plan.
- Emergency Plan Implementing Procedures.
- FSAR.
- State and local emergency response plans.
- Offsite population distribution data.

- Evacuation plans.
- Savannah River Site Emergency Plan.

The following records or information can be transmitted to the EOF by hand or facsimile:

- Environs radiological monitoring records.
- VEGP and SNC employee radiation exposure histories.
- System piping and instrumentation diagrams and HVAC flow diagrams.
- Piping area diagrams.
- Electrical one-line, elementary, and wiring diagrams.

The above records or information are available in current form and updated as necessary to ensure currency and completeness.

Operations at this facility are directed by the EOF manager.

4. BACKUP EOF

In the unlikely event that the EOF becomes uninhabitable, resources and personnel will be transferred to the backup EOF, located in the Georgia Power Company (GPC) operating headquarters on Woodlands Road in Waynesboro, Georgia. The location of Woodlands Road is shown on preface Figure iv, 50-Mile Emergency Planning Zone (Waynesboro insert). The backup EOF is approximately 16 miles west-southwest of VEGP.

The dose assessment supervisor will assign a person to periodically complete a habitability survey of the EOF. If the dose rate exceeds 100 mrem/h or the airborne iodine activity exceeds 2.7 E-7 µCi/cc, the dose assessment supervisor may recommend to the EOF manager that the EOF be evacuated. Following the decision to evacuate, the EOF manager will manage the transfer to and setup of the backup EOF.

The transfer of EOF activities will be conducted in such a manner that the continuity of the dose assessment and decision-making functions are maintained. The transfer will be conducted as described below in accordance with Procedure 91203-C, Activation and Operation of the EOF.

A. The EOF manager will direct the relocation activities.

B. The control room, TSC, OSC, corporate office, Federal, State, and local officials will be notified of the decision to relocate the EOF.

C. The EOF support coordinator will direct the collection of all equipment identified in Procedure 91203-C and will arrange for the transportation of personnel and equipment. The equipment transferred will include a dose projection computer, a facsimile machine, overhead projectors, and reference materials.

D. The dose assessment and field monitoring team direction functions will be transferred to the TSC initially. The dose assessment function may be transferred to the backup EOF when the relocation is complete.

E. The emergency director function will be transferred to the TSC during the relocation. The emergency director may choose to go to the TSC or direct the TSC manager to assume the emergency director function.

F. The EOF manager will inform the TSC when the backup EOF is capable of performing the EOF function.

The total time to complete the relocation to the backup EOF is approximately 75 minutes.

H.2 CORPORATE AND NEWS CENTER FACILITIES

Descriptions of the corporate facilities used during emergencies and the Emergency News Center are described in appendix 7 and appendix 8, respectively.

H.3 ACTIVATION AND STAFFING OF EMERGENCY FACILITIES

During the initial stages of an emergency situation, emergency activities at VEGP are directed from the control room. For a Notification of Unusual Event, no other facilities need be activated.

For security related events, the activation of emergency facilities may be delayed as described in section B.

Upon declaration of an Alert or higher level classification, the TSC will be activated and will be operational within about an hour of the initial notification. Overall direction and control will be exercised from the TSC for an Alert situation. For Site Area and General Emergency categories, the TSC will be the command center if the emergency director chooses, at least until the EOF is activated.

Activation of the OSC will be initiated at an Alert or higher level classification. Support personnel will be directed to report to that facility as appropriate for the specific situation. The OSC will be operational within about an hour of initial notification.

The EOF will be brought to a standby status for an Alert and will be activated for a Site Area or General Emergency classification. This facility will be operational within about an hour of the initial notification. VEGP security personnel will establish access control to the EOF, since it is outside the plant security area. The emergency director may establish himself either at the TSC or EOF at his option.

H.4 PLANT MONITORING AND DATA HANDLING SYSTEMS

1. GEOPHYSICAL PHENOMENA MONITORS

a. Meteorological

A meteorological monitoring program is in place at VEGP. Instruments are mounted on a 60-m tower located to the south-southwest of the power block. Parameters measured and transmitted to the control room include:

- Windspeed (10 m and 60 m).
- Wind direction (10 m and 60 m).
- Standard deviation of horizontal wind direction (10 m).
- Vertical temperature difference (10 m and 60 m).
- Ambient temperature (10 m).
- Dewpoint temperature (10 m).
- Precipitation (base).

An equipment building which houses the recording, calibration, and amplification equipment is located near the base of the tower. The system is powered by an uninterruptible power supply consisting of wet cell batteries, charger, and inverter for high availability.

The important parameters for characterizing the transport of airborne radioactivity are windspeed, wind direction, and atmospheric stability (derived from the standard deviation of the horizontal wind direction or vertical temperature difference). These meteorological parameters are used in a calculational methodology to assess the offsite radiological consequences of accidental releases of airborne radioactivity. The methodology is described in section I, Accident Assessment.

b. Hydrologic

The normal source of plant cooling water is the Savannah River, which provides makeup to the cooling towers. The probable maximum flood level has been determined to be about 140 ft mean sea level (MSL). However, since the access elevations to safety-related structures are at 220 ft MSL, high river level is not relevant to plant safety. The ultimate heat sink for VEGP is the nuclear service cooling water towers. Two 100-percent towers are provided for each unit, and the system will provide sufficient shutdown cooling for approximately 30 days with no makeup. Because of these design features, hydrologic monitors will not be required for initiation of emergency actions; therefore, there will be no emergency levels based on hydrologic monitors.

c. Seismic

Seismic monitoring instrumentation for VEGP consists of time-history accelerographs, central control unit, and free-field ETNA.

A strong-motion accelerometer (SMA) is installed in the containment tendon gallery on the basemat. The second SMA is located on the containment operating floor at elevation 220 feet.

Activation of the time history accelerographs causes visual and audible annunciation in the control room to alert the plant operator that an earthquake has occurred.

d. Fire Detection

The fire-detection system at VEGP includes smoke, flame, and temperature detectors and manual fire alarms. Fire-detection systems are provided in all areas with safe shutdown equipment, as well as other locations throughout the plant. In addition to initiating fire-suppression systems, indications from the fire-detection system are transmitted to the control room.

2. PROCESS AND EFFLUENT RADIATION MONITORING SYSTEM (PERMS)

PERMS receives and processes radiological input readings during normal and abnormal operating and accident conditions; measures, evaluates, and reports radioactivity in designated areas; and monitors releases of radioactive materials in liquid and gaseous effluents. Data from PERMS are obtained for the IPC. A more detailed description of PERMS is provided in FSAR section 11.5.

PERMS consists of the following components:

- PERMS Display Computer: capable of nonvolatile mass data storage and provided with all necessary programming, communication, display, and hardware to serve as information manager for the PERMS.
- Communications Display Computer: in the control room, polls individual data modules and updates alarm status and system radiation levels throughout the plant. Communicates with the IPC to provide data to general plant areas.
- Safety-related display console: in the control room, provides remote control and status display of the safety-related channels from the safety data modules.

- Data processing modules (DPMs): microprocessor-based data acquisition processors for local control and data processing; have two-way digital communication with the communication display computer except safety related DPMs which have one way communications.
- Radiation monitors: along with their associated DPMs, detect, compute, and indicate the radiation levels at selected plant locations and actuate alarms if these levels exceed predetermined values; include area, airborne, and liquid monitors.
- Displays:
  - PERMS Display Computer.
  - Communications Display Computer.
- Printers:
  - Radiochemistry Lab.

There are four types of radiation monitors in PERMS: area radiation monitors, airborne and air particulate radiation monitors, liquid radiation monitors, and post-accident radiation monitors.

The post-accident radiation monitors provide radiation monitoring after an accident. The monitors are comprised of area, airborne, and air particulate monitors. Area monitors respond to gamma radiation photons within any energy range from 60 keV to 3 MeV. Airborne monitors are capable of detecting and measuring radioactive gaseous effluent concentrations with compositions ranging from fresh equilibrium noble gas fission product mixtures to 10-day old mixtures. Power to post-accident monitors is diesel generator backed to ensure against interruption of monitor operation and loss of data.

3. Integrated Plant Computer (IPC)

The Integrated Plant Computer gathers, stores, and displays data used by TSC and EOF personnel to analyze plant conditions. The IPC performs this function independently of actions in the control room and without degrading or interfering with control room and plant functions. The IPC consists of workstations, printers, video copiers, and associated computer hardware and software.

The IPC serves as the primary data acquisition system for emergency response, acquiring, processing, and feeding data to the TSC, EOF, and SPDS. In addition, data links are provided to other locations. Overall system unavailability is 0.01 or less. All inputs originating from safety systems are individually isolated at specific locations before entering the IPC system.

The IPC has the required data storage capability to meet the guidelines of NUREG-0696, which specifies 2 hours of pre-events data, 12 hours of post event data, and 2 weeks of additional post-event data within reduced-time resolution.

The emergency response parameters provided to the IPC are listed in table H-1. All the parameters in the IPC are available to all IPC workstations.

The IPC hardware and software are protected against unauthorized manipulation of, or interference with, input signals, data processing, data storage, and data output. This security is provided by way of key lock devices, integral program write protection, restricted authorized personnel access, and other administrative controls.

The required IPC equipment (processor, workstations, printer, video copiers, and network devices) are powered by a battery system (uninterruptible power).

Meteorological information is collected by a data recorder at the meteorological tower. The information is transmitted via microwave to the plant. In the plant, the data is provided to the IPC computer. The meteorological system power is provided with a wet cell battery backup.

In the event the data transmission system fails, data will be obtained by sending a person to the meteorological shack to collect the information and phone it back to the plant.

Fire detection information is provided via visual observation of the fire alarm panel by the control room personnel and an audible alarm. The fire alarm panels are discussed in the Vogtle Electric Generating Plant (VEGP) Final Safety Analysis Report (FSAR) subsection 9.5.1. Information of fire detection will be verbally transmitted to the other ERFs by control room personnel. Fire main header pressure is provided by direct input to the IPC. Seismic panels are discussed in the VEGP FSAR subsection 3.7.4. Information on seismic motion will be verbally transmitted to other ERFs by control room personnel.

The following discussion summarizes the IPC system hardware for emergency response at various locations.

a. Computer Room Hardware

The computer is located next to the lower cable spreading room. This room house the main computer for processing information. Also located in this room is the Input/Output equipment, printing, off-line storage, and computer network equipment.

b. EOF Hardware

The EOF is located in the training center approximately 8000 feet from the power block. It contains workstation and computer network equipment required for communicating with the main IPC processors.

c. TSC Hardware

The TSC is located in the power block in the vicinity of the control room. This room houses workstations, computer network equipment and data link equipment.

d. Control Room Hardware

The control room contains SPDS workstations and other general operator use workstations.

e. System Input Room Hardware

This room is used for signal tie point to the IPC equipment when required.

f. Remote Processing Units

In addition to the input configuration described above, many input signals come from remote processing units (RPUs).

Field data will be scanned, converted to engineering units, and transmitted to the IPC system via seven data links from three remote processing units. Data from train A will be transmitted via three data links by RPUA. Data from train B will be transmitted via three data links by RPUB. Nonnuclear safety data will be transmitted via a single data link by RPUN.

g. Process Effluent Radiation Monitoring System

Radiation inputs are scanned and transmitted to the IPC system via data links by PERMS.

4. Emergency Response Data System (ERDS)

In accordance with the requirements of 10 CFR 50, Appendix E, Section VI and NUREG 1394, Revision 1, means are provided to transmit critical plant variables from the onsite computer system to the Nuclear Regulatory Commission Operations Center via a dedicated communications link. The installed system consists of a computer which polls the Integrated Plant Computer (IPC) for the required data, assigns the appropriate data quality value, formats the data stream, and periodically transmits the data stream over the dedicated telecommunications circuit to the NRC.

NUREG 1394, Revision 1, required submittal of a Plant Attribute Library (PAL) and Data Point Library (DPL) to the NRC. Vogtle Electric Generating Plant submitted the original PAL and DPL information to the NRC under a letter from C. K. McCoy to the USNRC (letter number ELV-03500). Changes to the computer configuration or data protocols (contained in the PAL) must be reported to the USNRC at least 30 days prior to installing the change. Changes to the information describing the specific computer data points transmitted must be reported to the USNRC within 30 days following the change. The specific plant parameters which are designated as ERDS points are shown in the FSAR in table 7.5.2-1. Typical plant modifications which might affect the DPL include:

1. Software changes which affect calculated points on the IPC.
2. Rescaling or replacement of transmitters that are scanned by the IPC, PSMS, or PERMS and are associated with ERDS.

5. SAFETY PARAMETER DISPLAY SYSTEM

The SPDS provides a display of plant parameters from which the status of operation can be assessed, in the control room, TSC, and EOF. The SPDS has the following functions:

- Aids the control room operators in the rapid detection and identification of abnormal operating conditions.

- Provides additional specific information to analyze and diagnose the cause of abnormal operating conditions.
- Monitors plant response to corrective actions.
- Provides grouping of parameters to enhance the operators' capability to assess plant status quickly without surveying all control room displays concurrently.
- Directs the operators' attention to other specific confirmatory non-SPDS control room displays.
- Provides human factors engineered display formats in simple and consistent display patterns and codings.
- Provides display information on a real-time basis, along with validation of data.
- Provides generated selectable trend displays on a real-time basis for monitoring reactivity control, reactor core cooling and heat removal from the primary system, reactor coolant system integrity, radioactivity control, containment integrity, and other selected parameters.

The SPDS in the control room consists of displays of sets of concentrated parameters from which plant safety status can be rapidly assessed. Duplicate SPDS displays are located in the TSC and EOF to maximize the exchange of information between these facilities and the control room. The SPDS in each facility is a peripheral of the IPC system. The SPDS is in operation during normal and abnormal operating conditions.

The selection of parameters to be displayed on the SPDS is based on the parameters required to monitor the critical safety functions identified by the Westinghouse Owners Group (WOG). These parameters will aid control room operators in determining the safety status of the plant. The justification for selecting these parameters is contained in the analyses and background information generated by the WOG to support the critical safety function restoration guidelines. The emergency response guidelines, which contain the critical safety function restoration guidelines and identify the parameters used to monitor the critical safety functions, have been submitted to the NRC by the WOG.

6. POST ACCIDENT SAMPLING

Liquid samples from the reactor coolant system and the containment sumps, and air samples from the containment atmosphere may be taken during accident conditions. Section I of this plan contains a more detailed description of these capabilities.

7. OTHER PROCESS PARAMETERS

Several other process parameters, including reactor coolant system pressure and temperature, containment pressure and temperature, liquid levels and other system indications, are useful both for the initiation phase and continued assessment. The specific parameters monitored by the IPC are listed in table H-1. Several of these are used in the classification process as discussed in section D, Emergency Classification System.

H.5 OUT OF PLANT MONITORING

1. GEOPHYSICAL MONITORING

A source of meteorological data is Bush Field in Augusta. The National Weather Service (NWS) maintains an automated observation station at the airport; and windspeed, wind direction, cloud cover, and ceiling height can be obtained. Information from this automated observation station as well as forecast information can be obtained from the NWS in Columbia, S. C.

2. RADIOLOGICAL MONITORING

VEGP will have sufficient portable equipment and trained personnel to field three field monitoring teams. Each team will include two people who will obtain an emergency monitoring kit. The kits will include dosimeters, a two-way radio, meters for measuring gamma and beta/gamma dose rates, and air samplers for collecting particulates and iodines. The particulate filter is used in the field primarily to clean the sample so that any activity on the cartridge (silver zeolite or equivalent) will be iodine. The cartridge is then counted in the field to provide an estimate of airborne iodine concentration. VEGP monitoring teams will remain on the Georgia side of the Savannah River.

Radiological monitoring on the South Carolina side of the Savannah River will be conducted by personnel from the SRS, or the State of South Carolina. These field monitoring teams will be equipped with equipment similar to that used by the VEGP teams. Results of the SRS monitoring activities will be provided to the EOF.

3. LABORATORY FACILITIES

VEGP has laboratory facilities for analysis of radioactive samples. The major pieces of equipment include a solid-state gamma spectrometer and a beta/gamma gas proportional counter.

The GPC environmental laboratory located in Smyrna, GA has the capability to perform isotopic analyses of drinking water, river water, milk, vegetation, sediment, and biological samples, as well as tritium and gross-beta analysis. In addition, processing of environmental TLDs will be handled by this laboratory.

Backup laboratory facilities are available at Plant Hatch. This backup capability could be used if facilities in VEGP were not available.

H.6 EMERGENCY KITS

Emergency kits are located in the TSC (for control room also), the OSC, the health physics control point and the EOF. An ambulance kit will be carried by the VEGP health physics technician who accompanies the ambulance. Procedures require an inspection and operational check of equipment in these kits on a quarterly basis and after each use. Equipment in these kits is calibrated in accordance with the suppliers' recommendations. A set of spares of certain equipment is also maintained to replace inoperative or out-of-calibration equipment.

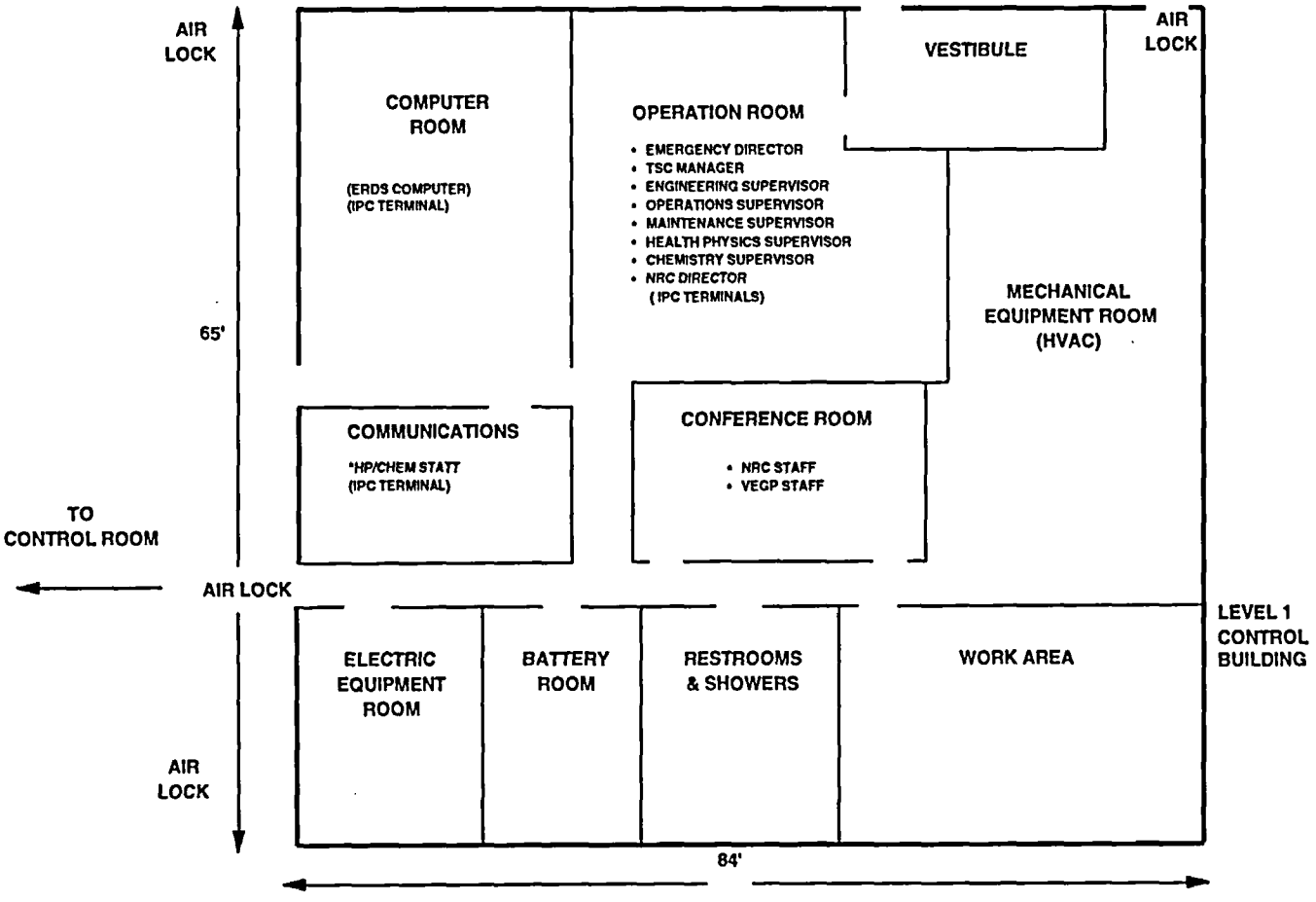
A listing of the typical contents of each kit and the spares is included in appendix 4.

TABLE H-1

INTEGRATED PLANT COMPUTER INPUTS

- Neutron flux
- Pressurizer (pressure, level, temperature, valve position).
- Reactor coolant system (pressure, temperature, flow)
- Reactor coolant pump status
- Containment (pressure, temperature, H2 concentration, water level)
- Containment spray system status
- Safety injection system status
- Residual heat removal (RHR) system status
- Chemical and volume control system (CVCS) status
- Nuclear service cooling water (NSCW) system status
- Component cooling water (CCW) system status
- Auxiliary component cooling water (ACCW) system status
- Steam generator (pressure, level, flow)
- Auxiliary feedwater system status
- Turbine status
- Generator status
- Condensate system status
- Feedwater system status
- Circulating water system status
- HVAC systems status
- Radiation monitoring systems (effluent, area, and process monitors)
- Meteorological system (primary and backup tower, wind speed, wind direction, indication of stability class, temperature) {Unit One IPC only}

TECHNICAL SUPPORT CENTER



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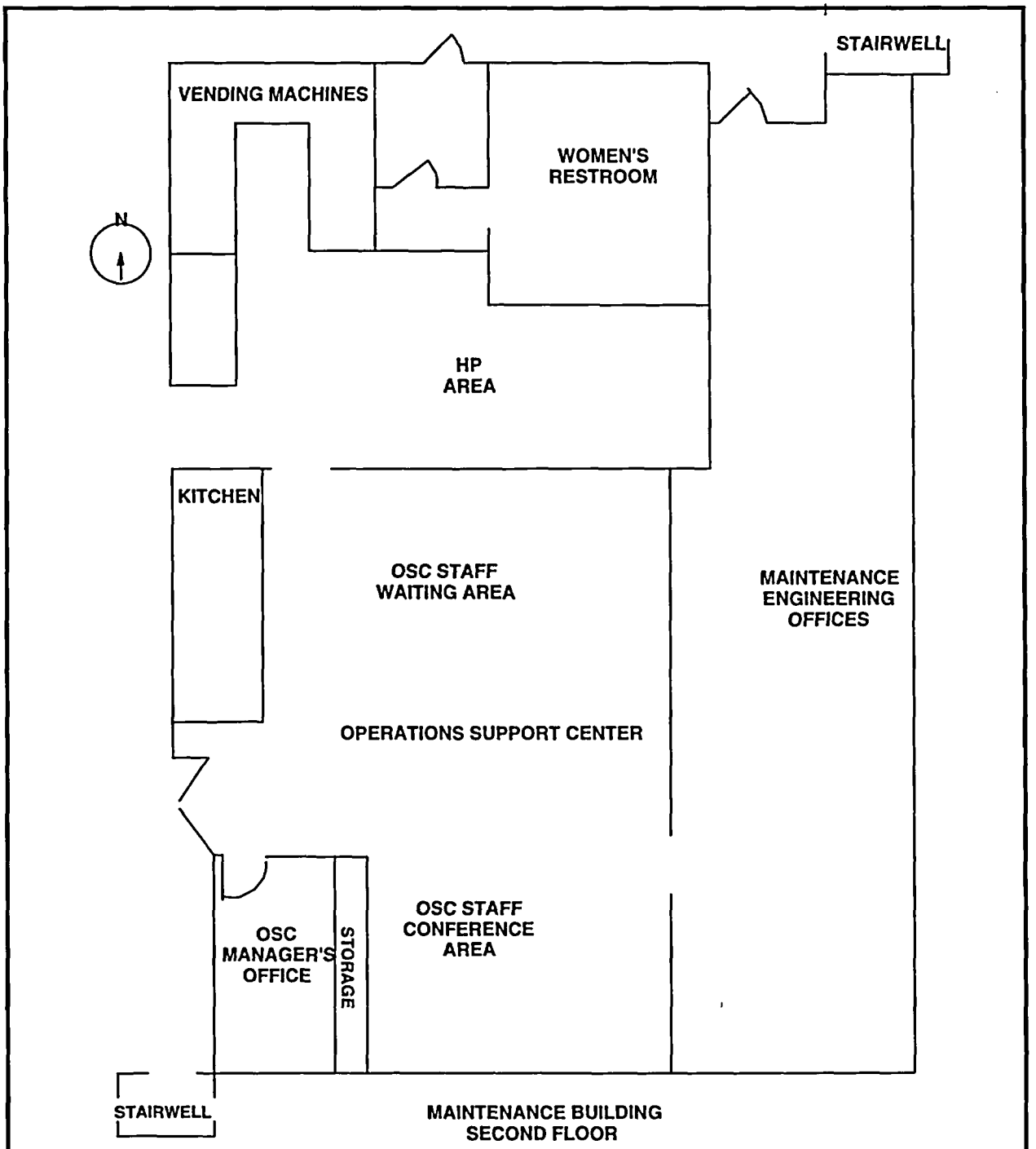
Vogtle Electric Generating Plant

TSC LAYOUT PLAN

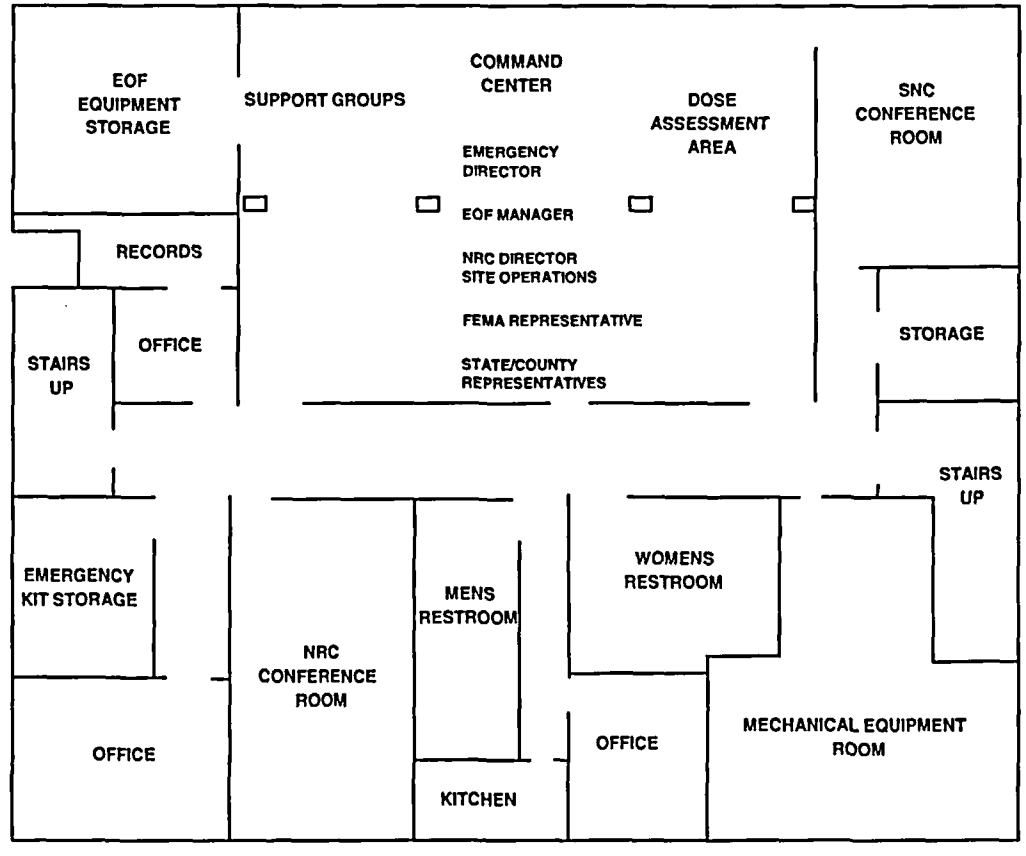
FIGURE H-1



REV 19 1/94

Vogtle Electric Generating Plant	OSC LAYOUT PLAN
	FIGURE H-2

EMERGENCY OPERATIONS FACILITY

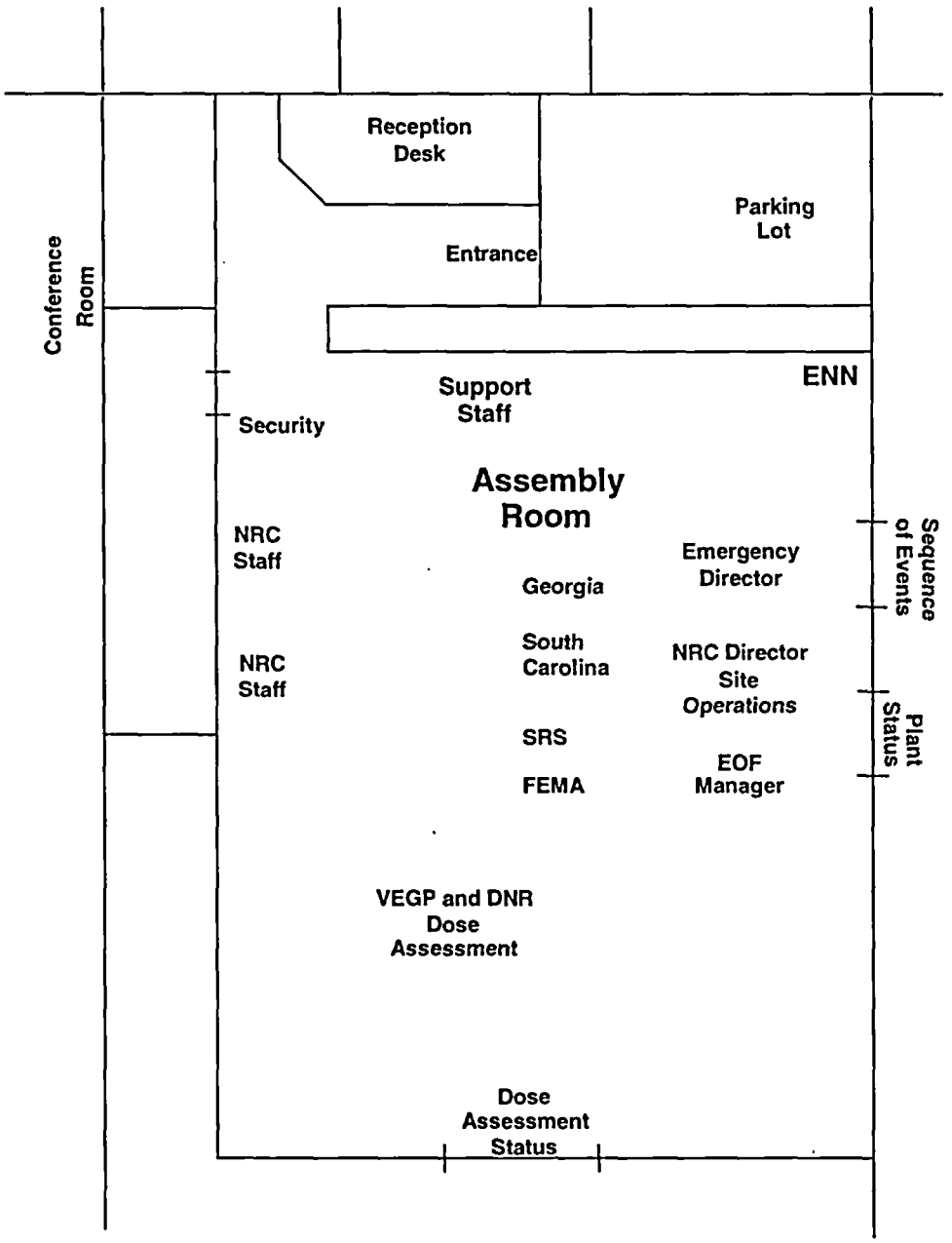


REV 37 4/03

Vogtle Electric Generating Plant

EOF LAYOUT PLAN

FIGURE H-3



REV 37 4/03

Vogtle Electric Generating Plant	BACKUP EOF FLOOR PLAN
	FIGURE H-4

J. PROTECTIVE RESPONSE

This section describes the protective actions that have been developed to limit radiation exposure of plant personnel and the public following an accident at the plant. This section addresses conditions at the Alert, Site Area, or General Emergency classification. Protective response at the Notification of Unusual Event (NUE) level would be taken at the discretion of the emergency director.

J.1 PROTECTIVE RESPONSE FOR ONSITE PERSONNEL

Protective response for onsite personnel (including visitors and contractor personnel) depends upon alerting, assembly and accountability, site dismissal, monitoring, and decontamination.

1. ALERTING

   Section E of this Plan, Notification Methods and Procedures, describes the methods to be used to alert onsite personnel of emergency conditions.

2. ASSEMBLY AND ACCOUNTABILITY

   A security related emergency may preclude the ordering of assembly and accountability in order to protect plant personnel from the security threat. The decision not to order assembly and accountability will be made by the Emergency Director.

   Upon activation of the plant emergency alarm, plant personnel assigned specific emergency responsibilities proceed to their designated emergency response location. Emergency response personnel in the protected area badge into their emergency response facility (TSC, OSC, or control room) using their ACAD badge and also sign in on a personnel roster (TSC and OSC only). The security computer system performs an initial accountability of all persons in the protected area. Thereafter, the emergency response facility managers of the control room, TSC, and operations support center shall be responsible for periodically assuring that accountabilities in their facilities are being maintained. Assignment logs and required periodic communications between emergency response teams maintain accountability.

   Non-involved plant personnel, visitors, and contractors located within the protected area leave the protected area upon hearing the emergency alarm and report to their designated assembly areas. As these individuals exit the protected area, they badge out. The Security Department accounts for each person inside the protected area at the start of an emergency by using the security computer system.

This method provides for accountability of all individuals inside the protected area within about 30 min. of the emergency declaration page announcement. Accountability reports are made periodically to the emergency director by the Security Department.

3. SEARCH AND RESCUE

If protected area accountability reveals a missing person, the emergency director assembles a search and rescue team per emergency response procedures (Procedure 91401-C, Assembly and Accountability). The search and rescue team obtains information on last known location from the computer system or reports from other personnel. A search of likely areas is conducted until the missing individual is located.

4. SITE DISMISSAL

Site dismissal, with or without monitoring, of non-involved personnel on-site (if feasible) is ordered by the emergency director whenever a Site Area or General Emergency is declared.

If there has been no radioactive release and a release is not projected, the emergency director may elect to order a "site dismissal with no monitoring" rather than with monitoring. For a site dismissal with no monitoring, non-involved personnel are sent home without going to reception centers.

If site dismissal with monitoring is necessary, the emergency director will notify Burke County EMA and request setup of a reception center to receive VEGP non-involved personnel. The route selected to the reception center is based on meteorological and/or radiological conditions. The location of the reception center is shown in figure iv in the Preface. Personnel on site will be notified by public address, site siren, or other communication that dismissal of non-involved personnel to the applicable reception center will take place and specify the route. The site dismissal will be conducted and controlled per Procedure 91403-C, Site Dismissal. Security will dispatch security officers to work areas outside the protected area to ensure all non-involved personnel have left the owner-controlled area.

Upon site dismissal to a reception center, non-involved personnel will be monitored for contamination to determine gross contamination as per the Burke County Emergency Operations Plan. Those personnel who are contaminated will undergo a decontamination process in accordance with standard health physics procedures. Those personnel who are not contaminated will be released upon clearance of the vehicle.

Vehicles will be monitored by gamma instruments for contamination in the designated parking areas. Those vehicles which indicate contamination will be marked or identified for decontamination. Uncontaminated vehicles will be allowed to exit the area upon authorization of the reception center emergency workers. Contaminated vehicles will be decontaminated as per the Burke County Emergency Operations Plan.

Contaminated articles and clothing and waste material will be collected and placed in containers or bags for disposal and/or processing at the site.

5. MONITORING AND DECONTAMINATION

When an Alert is declared and site dismissal with no monitoring is anticipated, personnel who have left the protected area are monitored by portal monitors. If necessary, decontamination is completed using the plant decontamination facilities located in the control building or other appropriate location.

When site dismissal with monitoring is expected and release of radioactivity has occurred, monitoring is performed by Burke County EMA emergency workers at an established reception center.

Should decontamination be necessary, the reception center establishes a field decontamination area, using materials from emergency kits located in the vicinity of the reception center. Decontamination and waste disposal are completed in accordance with the Burke County Emergency Operations Plan.

6. USE OF ONSITE PROTECTIVE EQUIPMENT AND SUPPLIES

A supply of potassium iodide is stored in the TSC for TSC and control room use, OSC, EOF, main control point, or health physics room. The health physics supervisor will direct the issuance of potassium iodide when the projected thyroid exposure is greater than 25 rem. The health physics supervisor will direct radiological survey personnel to distribute potassium iodide and record the name and social security number of those individuals who are issued potassium iodide. Potassium iodide will be issued in 130-mg doses daily for at least 3 days, but not more than 10 days. Issuance will be performed immediately prior to exposure or not longer than 4 hours after exposure.

At the time potassium iodide is distributed, an iodine sensitivity check will be made by querying each individual concerning known reactions to iodine. Individuals who have experienced reactions to iodine will be excused from duties requiring issuance of KI.

J.2 PROTECTIVE RESPONSE FOR THE PUBLIC

VEGP is responsible for ensuring that timely recommendations for protective actions reach appropriate State and local officials. These officials (as described in section A) are then responsible for alerting the public and ordering shelter and/or evacuation, if necessary.

1. ALERTING

The means used by VEGP to alert local and State agencies and the means used by local and State agencies to alert the public are described in section E and appendix 3 of this Plan.

2. PROTECTIVE ACTION RECOMMENDATIONS

The emergency director is responsible for providing protective action recommendations to State and local officials as part of initial notifications and follow-up communications. These recommendations are based upon assessment actions as described in section I of this Plan. Using available information on plant conditions, projected dose estimates, and any available monitoring data, the emergency director recommends whether the public should be advised to seek shelter or evacuate. Other factors which influence protective actions will be evaluated by State and local officials. The mechanism for communicating these recommendations is described in section E of this Plan. These recommendations are based on the Environmental Protection Agency (EPA) Protective Action Guidelines, as shown in Table J-2. Table J-3 provides guidance to the emergency director on the expected protection afforded by residential units.

In addition, Procedure 91305, Protective Action Guidelines, provides guidance on protective action recommendations in the absence of any release of radioactivity. Site dismissal of non-involved station personnel and evacuation and/or sheltering the general public is recommended for a General Emergency even though there has not been a release of radioactivity from the plant.

3. EVACUATION AND SHELTERING

The Georgia Emergency Management Agency (in coordination with Georgia Department of Natural Resources) and South Carolina Emergency Management Division (in coordination with South Carolina Department of Health and Environmental Control) are responsible for deciding protective measures for affected offsite areas within their jurisdictions. State officials will consider the potential risks of implementing protective actions against the reduction of radiological risk achieved by the protective action.

Determination of the benefit of evacuation must take into account the time needed to complete the evacuation. Table J-4 presents a summary of evacuation time estimates. Appendix 6 includes more detail on how these estimates were developed and presents information on evacuation routes, evacuation areas, relocation centers, shelter areas, and the population distribution by evacuation areas and sectors.

If a decision is made to evacuate any part or all of the plume exposure pathway EPZ, the evacuation will be carried out in accordance with the emergency response plan of each affected county.

In the event of an evacuation, the populace will be instructed to proceed by the appropriate evacuation route to predesignated reception centers/shelters.

Reception centers/shelters for Georgia and South Carolina counties within the plume exposure pathway EPZ are listed in Table J-5. The services to be provided in the reception centers include:

- Registration
- Screening for contamination
- Decontamination as needed
- Information and assistance for family unification
- Food and lodging
- First aid

Privately owned vehicles will be the primary mode of transportation if evacuation is directed. Individuals who do not have their own means of transportation have been advised in the public information calendar, to arrange their own transportation, if possible. If this is not possible, individuals are instructed to stay tuned to the radio or television and listen for the phone number to call to be picked up. Specially equipped vehicles will be dispatched directly to the homes of handicapped and/or nonambulatory individuals requiring special transportation means.

Under certain conditions, sheltering inside the home may be the preferred recommended action. Area radio and television stations or tone alert radios will advise the public on taking this action, will provide instructions to the public, and will give the "all clear signal" when appropriate.

TABLE J-1

USE OF PROTECTIVE EQUIPMENT AND SUPPLIES

Equipment	Criteria for Issuance	Location	Means of Distribution
Full face canister respirator	As needed by onsite emergency teams in areas of high airborne radioactivity	a. Emergency kits b. Health physics (HP) supply room	a. Issued at OSC or control point b. Issued as needed by HP personnel
Self contained breathing apparatus	a. Firefighting b. Toxic Gas c. Highly radioactive airborne activity d. Lack of oxygen	a. Control room b. Emergency kits	a. Used as needed by operators
Protective clothing (coveralls, hoods, boots, gloves)	As needed in areas of known contamination	a. Various areas of the station b. Emergency kits c. HP supply room	a. Issued as needed by HP personnel b. Issued at OSC or control point for emergency teams

TABLE J-2

RECOMMENDED PROTECTIVE ACTIONS TO REDUCE TOTAL EFFECTIVE DOSE EQUIVALENT AND THYROID COMMITTED DOSE EQUIVALENT FROM EXPOSURE TO AIRBORNE RADIOACTIVITY

Projected Dose (rem) to the Population	Recommended Actions	Comments
Total Effective Dose Equivalent (TEDE) less than 1 Thyroid Committed Dose Equivalent (CDE) less than 5	No planned protective actions. State may issue an advisory to seek shelter and await further instruction. Monitor environmental radiation levels.	Previously recommended protective actions may be reconsidered or terminated.
TEDE 1 to less than 5 Thyroid CDE 5 to less than 25	Evacuate unless constraints make it impractical. Monitor environmental radiation levels. Control access.	The State and/or County may shelter if evacuation poses a higher risk to some special groups of the population.
TEDE 5 and above Thyroid CDE 25 and above	Conduct evacuation. Monitor environmental radiation levels and adjust evacuation based on these levels. Control access.	

TABLE J-3

SHELTERING GUIDANCE
REDUCTION IN EXTERNAL GAMMA DOSE FROM PASSING CLOUD

Structure or Location	Shielding Factor(a)	
	Average	Range
Outside	1.0	-
Vehicles	1.0	-
Wood frame house (no basement)(b)	0.9	-
Basement of wood house	0.6	0.1 to 0.7(c)
Masonry house (no basement)	0.6	0.4 to 0.7(c)
Basement of masonry house	0.4	0.1 to 0.5(c)
Large office or industrial building	0.2	0.1 to 0.3(c)(d)

a. The ratio of the interior dose to the exterior dose.

b. A wood frame house with brick or stone veneer is approximately equivalent to a masonry house for shielding purposes.

c. This range is mainly due to different wall materials and different geometries.

d. The reduction factor depends on where personnel are located within the building (e.g., the basement or an inside room).

TABLE J-4
EVACUATION TIME ESTIMATE SUMMARY

Evacuation Area(a)		Total Evacuation Time(b) (Minutes)	
Analysis Area	Local Planning Zone	Fair Weather Winter Day	Adverse(c) Weather Winter Day
0-2 miles	A	150	155 (160)
0-5 miles 90° S	A, B-5, and C-5	150	155 (160)
0-5 miles 90° NW	A, D-5, E-5, and F-5	150	155 (160)
0-5 miles Except (SRS)	A, B-5, C-5, D-5, E-5, and F-5	150	155 (160)
0-10 miles 90° S	A, B-5, C-5, B-10, C-10, and D-10	155	160 (165)
0-10 miles 90° NW	A, D-5, E-5, F-5, E-10, and F-10	155	160 (165)
0-10 miles 90° N	G-10	115	120 (120)
0-10 miles 90° E	H-10	155	160 (160)
Full EPZ	13 Evacuation Planning Zones	155	160 (165)

a. Analysis area does not include the EPZ that lies within the Savannah River Site (SRS) operated by the U.S. Department of Energy (DOE). If required, evacuation of the portion of the SRS within the VEGP EPZ will be accomplished by relocating the potential population at risk to areas outside of the EPZ, but still within the SRS boundaries, with evacuation route not coinciding with routes designated for the population of the other evacuation planning zones.

b. All residents, transients, and special facilities within the analysis area would be evacuated. Evacuation time estimates include the times associated with notification, preparation, and mobilization events, as well as travel time out of the EPZ.

c. Moderate rainstorm represented by a reduction in roadway capacities and travel speeds of 20 percent. Number in parentheses indicate estimated evacuation times during a heavy rainstorm represented by a reduction in roadway capacities and travel speeds of 30 percent.

TABLE J-5 (SHEET 1 OF 2)

RECEPTION CENTERS/SHELTERS FOR COUNTIES WITHIN
PLUME EXPOSURE PATHWAY EPZ OF VEGP

COUNTY	RECEPTION CENTER/SHELTER	CAPACITY
1. Georgia Burke County	Burke County Comprehensive High School 1057 Perimeter Road Waynesboro	4,675, school in session 5,980, school not in session
2. South Carolina Aiken County	<u>PRIMARY</u> South Aiken High School 701 Pine Road Aiken, SC 29801 (803) 641-2600 <u>ADDITIONAL CENTER</u> Kennedy Middle School 659 Pine Log Road Aiken, SC 29801 (803) 641-2470 Middlebrook Elementary School 255 East Pine Log Road Aiken, SC 29801 (803) 641-2580	1200 1200

TABLE J-5 (SHEET 2 OF 2)

COUNTY	RECEPTION CENTER/SHELTER	CAPACITY
Allendale County(a)	PRIMARY Allendale Elementary School Route 278 East Allendale, SC 29810 (803) 584-3476	675
	ADDITIONAL CENTER Fairfax Elementary School 14th & Byrd Streets Fairfax, SC 29827 (803) 632-2536	265
Barnwell County	See Allendale County Shelters listed above	

a. To accommodate residents of Barnwell County within the Vogtle EPZ.

K. RADIOLOGICAL EXPOSURE CONTROL

K.1 EMERGENCY EXPOSURE GUIDELINES

During an emergency, it may be necessary to authorize radiation exposures above 10 CFR 20 limits. These higher exposures may be necessary to complete protective, corrective, or lifesaving actions. Table K-1 presents the emergency exposure limits for emergency workers involved in protecting valuable property, protection of large populations, or lifesaving actions. Under all such situations, every reasonable effort will be made to minimize exposures. Decisions as to appropriate exposures, considering the action required and relative risks, will be made by the emergency director in consultation with health physics personnel.

Equipment and facilities have been designed in accordance with Title 10, Code of Federal Regulations, Part 50 (10 CFR 50), Appendix A, General Design Criteria for Nuclear Power Plants. Criterion 61, "Fuel Storage and Handling and Radioactivity Control," requires systems which may contain radioactivity to be designed to assure adequate safety under normal and postulated accident conditions. Plant design has undergone an extensive As Low As Reasonably Achievable (ALARA) review. The ALARA reviews ensured that the design philosophies established in Regulatory Guide 8.8 were considered at the design stage. Design features are considered for potential exposure and changes are recommended to reduce potentially high doses.

The post-accident sampling procedures have been designed to provide adequate protection to personnel during the collection of grab samples. Designated sample points are specified in plant procedures.

A plant shielding design review was conducted in accordance with the criteria for infrequently occupied areas in NUREG 0737, Item II.B.2. The projected dose rates in the facility are presented in table 12.3.1-5 of the VEGP FSAR. The effluent sampling procedures have been written to assure that no individual receives a dose in excess of regulatory criteria (5 rem wholebody, 25 rem thyroid, 75 rem extremities). A time and dose rate study has been conducted to assure that the exposure criteria can be achieved under accident conditions.

K.2 ONSITE RADIATION PROTECTION PROGRAM

When necessary, the emergency director can authorize emergency exposures in excess of 10 CFR 20 limits but within the limits in table K-1. Where possible, the normal radiation work permit (RWP) procedure will be used to control exposures. This procedure requires signature approval, prior knowledge of worker past exposures, and guidance on protective actions to be used in the course of the emergency work. If time and urgency do not allow this procedure to be followed, the health physics supervisor may approve emergency RWP controls. In all cases, a briefing is given to the emergency team by health physics staff, and each team is accompanied by a qualified health physics technician who meets the qualifications of ANSI 18.1 criteria set out in the VEGP Technical Specifications. This briefing includes a discussion of the hazards involved in the planned action, as well as protective actions to be taken.

A record of individual and collective exposure received during the emergency will be maintained by the dosimetry team. Exposure records at the control point or the OSC will be updated after each entry into a radiologically controlled area. This may be accomplished through the dosimetry records computer system or manually. An individual's dose margin will be assessed by determining the difference between the updated exposure and current administrative limit; these margins are used to determine emergency assignments. Operation of the manual system and activation of the dosimetry team are described in Procedure 91110, Duties of the Health Physics Supervisor (TSC).

In situations where exposures in excess of 10 CFR 20 limits are authorized, the following considerations will be made prior to emergency team selection:

1. Declared pregnant female employees shall not be allowed to participate.
2. For doses greater than 25 rem, personnel shall be volunteers and be fully aware of the risks involved.

All emergency exposures will be included in personnel radiation exposure records.

Emergency dosimetry is provided to each member of the emergency response organization for both onsite and offsite organizations as required by the radiological conditions existing at the time. Appendix 4 presents information on the types of dosimetry available in each emergency response facility and other locations.

Emergency response personnel will be made aware that self reading dosimeters should be checked every 15 to 30 min. during the emergency. There is the capability to read TLDs within 24 h. They will also be read if the individual has received greater than a previously established value as determined by health physics procedures on their direct reading dosimeter.

Radiation dose will normally be controlled by the health physics supervisor within the limits authorized by routine station health physics procedures. The 10 CFR 20 limits will not be exceeded without the prior approval of the emergency director.

TLDs are processed on a routine basis as delineated in chapter 12 of the FSAR.

K.3 DECONTAMINATION

The action levels for determining the need for decontamination of personnel, equipment, and areas are delineated in plant admin. and health physics procedures. Personnel decontamination facilities are located on Level 1 of the control building in room R-110. The decontamination facility is located adjacent to the health physics station. Instrumentation to survey personnel during and after decontamination is located at the health physics station. The facility has vertical showering and normal wash sinks. Decontamination equipment for personnel is similar to that available in the Decontamination Emergency Equipment Kit (Appendix 4), except that the available supply is greater and stronger cleaning solutions are available. Waste generated through the use of the decontamination facilities is collected and processed by the plant liquid radwaste system.

Decontamination of personnel will be conducted in accordance with standard health physics practices.

If decontamination activities are required, a controlled access area will be established by roping off the area. Procedure 91306, Contamination Monitoring and Decontamination, addresses field decontamination and waste control. Supplies of clean clothing will be made available. Personnel decontamination will be accomplished using water washes or other methods for extreme cases as described in plant health physics procedures. These procedures will be applicable to removal of radioiodine from the skin. Decontamination of serious wounds will be accomplished at Doctors Hospital or the Burke Medical Center as described in section L of this Plan.

Equipment and area decontamination will be conducted as determined by the TSC manager, maintenance supervisor, operations supervisor, or health physics supervisor. It is accomplished as described in plant health physics procedures and ranges from vacuum cleaning to wash downs with water and acid or caustic solutions.

Personnel exiting the radiation-controlled area will be monitored for contamination by stand-up monitoring booths or by a whole-body scan with a hand-held probe. The standard health physics contamination limits will be used for release of personnel. The decontamination facilities described above can accommodate both men and women who indicate low and high levels of contamination. Plant areas that require access to facilitate recovery operations will be surveyed with portable instruments equipped with Beta/Gamma detectors. Appropriate protective clothing will be worn, as determined by this survey, to perform activities in these areas. Recovery operations will necessitate more detailed surveys on an as-needed basis.

K.4 ONSITE RADIOLOGICAL CONTAMINATION CONTROL

Access control is provided by the Security Department during emergency conditions. Only authorized emergency response personnel are allowed to enter the protected area. Such personnel report to the appropriate emergency response facility for accountability prior to completing any emergency assignments.

Access to in-plant areas that are contaminated is controlled by barriers, signs, locked doors, or personnel stationed for that purpose. Emergency monitoring teams are responsible for determining the need for onsite access control and establishing the proper method through discussions with technical support center (TSC) personnel. Plant procedures used for determining contaminated areas will be used for determining the need for access control.

Any food, tobacco, or potable liquids that are inside a radiation or contamination controlled area, regardless of the packaging, will be considered to be contaminated until surveyed or otherwise determined to be free of contamination. These areas will be controlled by plant health physics procedures and no eating, smoking, or drinking will be allowed. The emergency director or designee will make arrangements for supplies to be brought in.

The emergency health physics supervisor is responsible for permitting return of onsite areas and equipment to normal use once monitoring and decontamination are completed.

TABLE K-1

EMERGENCY EXPOSURE LIMITS FOR WORKERS
PERFORMING EMERGENCY SERVICES

Dose Limit (rem) (a) Total Effective Dose Equivalent (TEDE)	Activity	Condition
5	All	
10	Protecting valuable property.	Lower dose not practicable.
25	Life saving or protection of large populations.	Lower dose not practicable.
>25	Life saving or protection of large populations.	Only on a voluntary basis to persons fully aware of the risks involved.

a. Limit dose to the lens of the eye to three times the listed value and doses to any other organ (including skin and extremities) to ten times the listed value.

O. RADIOLOGICAL EMERGENCY RESPONSE TRAINING

Emergency response training is provided at four levels:

1. All VEGP badged personnel will receive General Employee Training at inception of onsite duties. GET will include emergency classification, individual response, signals, accountability, and site dismissal procedures.
2. All VEGP emergency response organization personnel will receive specialized training per Table O-2.
3. Offsite response groups who may support onsite situations, such as fire or personnel injury, will be offered annual training in notification, expected roles, site orientation, security procedures, and basic radiation protection.
4. Selected state and local emergency response management personnel with offsite emergency response roles will be offered a seminar/training course in specific areas; (1) the VEGP emergency classification system; (2) the VEGP protective action recommendation criteria and their relationship to plant conditions; and (3) the VEGP emergency response organization. These offsite management personnel will be offered initial training and annual retraining. Coordination with offsite authorities will include planning for and participation in VEGP exercises.

O.1 TRAINING

As a minimum, training will be provided in the subject areas shown in table O-1 to various personnel according to their emergency response position as shown on table O-2. It should be noted that these subject areas do not necessarily represent specific course titles, since several individual courses may be used to implement the training in each area. Also, both the content and depth of training may be varied slightly, depending upon the particular audience, in order to tailor the presentation to the specific needs of the group.

The training will be conducted in accordance with lesson plans. Classroom lectures, demonstration and use of equipment, and walk throughs of facilities will be incorporated into the lesson plans as appropriate. A written examination or practical exercise may be administered at the conclusion of a lesson. Records of the attendance and examination scores will be retained in the training files. Those designated to receive training in each subject area are indicated in table O-2.

Radiological emergency response training is offered throughout the year, with each training course being covered at least once per calendar year or as often as necessary to ensure that ERO personnel remain qualified per training requirements in section O.2. Annual retraining consists of initial training material reinforcement and appropriate lessons learned from the previous year's operating experience. Lessons learned that are distributed by other methods may not be included in annual retraining. The general manager-nuclear plant may receive credit for Management of Radiological Emergencies (MRE) requalification by participating in an integrated drill or annual exercise.

In addition, drills and exercises are an integral part of the training program and are conducted as specified in section N of this Plan. During practical drills, on the spot corrections will be made if the situation and time allow. If not, the corrections will be pointed out in the critique. Upon completion of each training session or drill, the participants will be asked to critique the training in order to ensure continued improvement.

O.2 QUALIFICATION

Emergency response personnel at VEGP are qualified by the following criteria:

Normal duties	Positions in the emergency organization are assigned commensurate with normal managerial, supervisory, and/or technical skills, as shown in table B-2.
Mandatory training for emergency positions held	All ERO personnel shall be trained per table O-2 within the last 15 months, except for post accident sampling and first aid training, which is to be within 36 months.
Drills/exercise performance	Individual performance is evaluated and corrective actions taken as necessary.

O.3 SUMMARY

All badged VEGP workers will receive general training in emergency preparedness. Selected individuals on site and off site will annually receive specialized training in order to implement the VEGP Emergency Plan.

TABLE O-1 (SHEET 1 OF 3)

TRAINING COURSE DESCRIPTIONS

Training Course	Description
Core Damage Assessment	This course covers the calculational methodology for assessing core damage and estimating potential source terms. It includes retrieval of pertinent plant parameter data from the control room; making core inventory determinations based on reactor power history; estimating cladding and/or fuel damage; and estimating resultant activity released to containment atmosphere.
Offsite Communications	This course covers operation of communications equipment in the ERFs; communications methods, and procedures for notification of off-site emergency response agencies.
Emergency Plan Overview(a) (EPO)	This course covers an overview of the Emergency Plan with special attention to emergency planning zones (EPZs); emergency classification system; onsite emergency response organizations; responsibilities of emergency response personnel; and site accountability and site dismissal.
First Aid	This course covers standard Red Cross Multimedia First Aid or equivalent.
Management of Radiological Emergencies (MRE)	This course covers classification of emergencies; emergency notification of on and offsite emergency response personnel and agencies; activation and staffing of emergency response facilities; protective action recommendation decision-making based on EPA PAG; retrieval of available plant computer data; reentry and repair operations; and communications and information management; and recovery.

a. EPO is included in G.E.T. badge training for all unescorted personnel.

TABLE O-1 (SHEET 2 OF 3)

Training Course	Description
Offsite Dose Assessment	This course covers dose projection methodology including computerized methods; retrieval of plant computer data; methods for obtaining meteorological data; operation of the dose assessment computer; and interpretation of offsite dose calculation results.
Post-Accident Sampling (TSC Chemistry Supervisors Only)	This course covers collection of samples from plant process and effluent streams under emergency conditions; measuring radionuclide and selected chemical concentrations in those samples; interpretation of sample results. Training requirement for the TSC chemistry supervisor is triennial.
Repair and Corrective Actions	This course covers As Low As Reasonably Achievable (ALARA) principles as they apply to planning and implementing repair and corrective action; emergency exposure guidelines; and communications during repair and corrective actions.
Field Monitoring Team	This course covers field measurement of airborne radioactivity, radiation levels and contamination in the EPZ; collecting environmental samples; map reading; record keeping; and radio communications.

TABLE O-1 (SHEET 3 OF 3)

Training Course	Description
Radiological Emergency Team In Plant	This course covers methods for performing in-plant radiation, contamination, and airborne radioactivity surveys under emergency conditions; search and rescue of missing personnel; managing health physics activities and communications for the above activities.
Security	This course covers emergency response activities of the security department including personnel accountability; traffic control; communications; and access control to emergency response facilities.
Medical Support of Radiation Emergencies	This course covers the responsibilities and methods for handling exposed and/or contaminated injuries. It includes interfacing with ambulance crews; health physics activities for transporting a contaminated injured patient to the hospital; monitoring and decontamination while at the hospital; and final disposition of the ambulance, ambulance crew, hospital staff, and radiation emergency area (REA) at the hospital.
SCBA	This course covers the use of self-contained breathing apparatus including equipment description; proper donning and use; and inspection and actions in case of equipment failure.

TABLE O-2 (Sheet 1 of 2)

Training Requirements For VEGP ERO Personnel	CORE DAMAGE ASSESSMENT	OFFSITE COMMUNICATIONS	EMERGENCY PLAN OVERVIEW (c)	FIRST AID	MANAGEMENT OF RADIOLOGICAL EMERGENCIES	OFFSITE DOSE ASSESSMENT	POST-ACCIDENT SAMPLING	REPAIR AND CORRECTIVE ACTIONS	FIELD MONITORING TEAM	RAD EMERGENCY TEAM IN-PLANT	SECURITY	MEDICAL SUPPORT OF RADIOLOGICAL EMERGENCY	SCBA
Emergency Director			x		x								X(b)
EOF Manager			x		x								
EOF Support Coordinator		x	x										
Dose Assessment Supervisor			x			x							
Dose Analyst			x			x							
TSC Security Supervisor			x								x		
TSC Manager			x		x								
TSC Support Coordinator		x	x										
Engineering Supervisor	x		x										
Maintenance Supervisor			x					x					
Operations Supervisor			x		x								
Health Physics Supervisor			x			x				x		x	
Chemistry Supervisor			x				x						
TSC Engineering Staff			x										
OSC Manager			x		x			x					
Communicators		x	x										
Clerks	X(a)		x										
Teams													
In-Plant Monitoring			x							x			x
Damage Control/Assessment			x						x				x
Repair And Modification			x						x				x
Search And Rescue			x	x									x
Fire Brigade			x										x
First Aid			x	x									x

TABLE O-2 (Sheet 2 of 2)

Training Requirements For VEGP ERO Personnel	CORE DAMAGE ASSESSMENT	OFFSITE COMMUNICATIONS	EMERGENCY PLAN OVERVIEW (c)	FIRST AID	MANAGEMENT OF RADIOLOGICAL EMERGENCIES	OFFSITE DOSE ASSESSMENT	POST-ACCIDENT SAMPLING	REPAIR AND CORRECTIVE ACTIONS	FIELD MONITORING TEAM	RAD EMERGENCY TEAM IN-PLANT	SECURITY	MEDICAL SUPPORT OF RADIOLOGICAL EMERGENCY	SCBA
Field Monitoring Team			x						x				
Dosimetry			x										
Health Physics Technicians			x	x						x			x
Monitoring Team Communicator			x						x				

(a) For Control Room Clerks Only
(b) Except General Office Staff
(c) Included in General Employee Training (GET)

APPENDIX 1

GLOSSARY

GLOSSARY

Term	Definition
AIM	analog input module
ALARA	As Low as Reasonably Achievable
CRT	cathode ray tube
CSC	Customer Service Center
CSF	critical safety function
CSFST	critical safety function status tree
CVCS	chemical and volume control system
DEFACS	Department of Family and Children Services
DHEC	Department of Health and Environmental Control of South Carolina
DMA	direct memory access
DNR	Department of Natural Resources
DOD	Department of Defense
DOE	Department of Energy
DOE SR	Department of Energy - Savannah River Operations Office
DOE SRS	Department of Energy - Savannah River Site
DPM	data processing module
EAS	Emergency Alerting System
ED	emergency director
EMA	Emergency Management Agency
ENC	Emergency News Center
ENN	Emergency Notification Network
ENS	Emergency Notification System
EOC	emergency operations center
EOF	emergency operations facility

Term	Definition
EOP	emergency operating procedure
EPA	Environmental Protection Agency
EPC	emergency preparedness coordinator
EPD	Environmental Protection Division of Georgia
EMD	Emergency Management Division of South Carolina
EPO	Emergency Plan Overview
EPZ	emergency planning zone
ERF	emergency response facilities
FEMA	Federal Emergency Management Agency
FEOC	forward emergency operations center
FRERP	Federal Radiological Emergency Response Plan
FSAR	Final Safety Analysis Report
FT	fire training
GEMA	Georgia Emergency Management Agency
GET	general employee training
GPC	Georgia Power Company
HP	health physics
HPN	Health Physics Network
HVAC	heating, ventilation, and air conditioning
I&C	instrumentation and control
INPO	Institute of Nuclear Power Operations
IPC	Integrated Plant Computer
MSIV	main steam isolation valve
MSL	mean sea level

Term	Definition
MSRE	medical support of radiological emergencies
NACOM	National Communication
NAWAS	National Warning System
NCHPD	Nuclear Chemistry and Health Physics Department
NEI	Nuclear Energy Institute
NDOP	Natural Disaster Operations Plan
NOAA	National Oceanic and Atmospheric Administration
NRC	Nuclear Regulatory Commission
NSCW	nuclear service cooling water
NSSS	nuclear steam supply system
NWS	National Weather Service
NUE	Notification of Unusual Event
ODA	offsite dose assessment
OPS	operational protection system
OS	operations supervisor
OSC	operations support center
PA	public address
PAG	Protective Action Guideline
PBX	private branch exchange
PEO	plant equipment operator
PERMS	process and effluent radiation monitoring system
PO	plant operator
PRA	peak recording accelerograph
R&CA	repair and corrective action

Term	Definition
RCP	reactor coolant pump
RCS	reactor coolant system
REC	radiation emergency coordinator
RERP	Radiological Emergency Response Plan
RET	radiological emergency team
RET/E	radiological emergency team/environmental
RET/I	radiological emergency team/in plant
RMC	Radiation Management Consultants
RO	reactor operator
RPU	remote processing unit
RTD	resistance temperature detector
RVLIS	reactor vessel level instrumentation system
RWP	radiation work permit
SAT	satisfied
SC	South Carolina
SCORERP	South Carolina Operational Radiological Emergency Response Plan
SEC	security
SG	steam generator
SLED	State Law Enforcement Division of South Carolina
SMA	strong motion accelerometer
SNC	Southern Nuclear Operating Company
SOE	sequence of events
SPDS	safety parameter display system
SRO	senior reactor operator
SRS	Savannah River Site

Term	Definition
STA	shift technical advisor
SUR	startup rate
TC	thermocouple
TLD	thermoluminescent dosimeter
TMI	Three Mile Island
TSC	technical support center
UFM	universal field multiplexer
USDA	United States Department of Agriculture
VEGP	Vogtle Electric Generating Plant
WOG	Westinghouse Owners Group

APPENDIX 2

LETTERS OF AGREEMENT

Letters of Agreement on File

The following letters of agreement are maintained on file with the Site Emergency Preparedness Coordinator.

- Burke County Emergency Management Agency
- WJBF-TV Channel 6
- WRDW-TV Channel 12
- WAGT-TV Channel 26
- RMC - Radiation Management Consultants
- Doctors Hospital
- Physicians' Multispecialty Group, P.C. and Augusta Cosmetic Survey
- Burke Medical Center
- Medical Specialists, Inc.
- Westinghouse
- Bechtel Power Corporation
- Clear Channel (WGUS-AM, WINZ-AM, WEKL-FM, WBBQ- FM, WPRW-FM, WKSP-FM, and WZNY-FM)
- WBAW Radio Station
- National Weather Service (NWS)
- WDOG Radio Station
- WKXC/KICKS 99 Radio Station
- Burke County Sheriff's Department
- INPO
- B. Lamar Murray, M.D.
- WFXG - TV Channel 54

- Aiken County South Carolina
- Allendale County South Carolina
- Barnwell County South Carolina
- Georgia Emergency Management Agency
- South Carolina Emergency Management Division

APPENDIX 4

EMERGENCY EQUIPMENT LISTS

TABLE 4-1

CONTROL ROOM/TSC EMERGENCY EQUIPMENT (TYPICAL)

1. Survey meters: Ion chamber, minimum range 0-50 R/h; Frisker, minimum range 0-50 k cpm
2. Dosimeters (0-99.99 Rem)
3. TLDs
4. Air sampler
5. Silver zeolite cartridges for air sampler
6. Particulate filter papers for air sampler
7. Survey logs
8. Smears
9. Plastic bags
10. Radiological signs
11. Barrier ropes or ribbon
12. Tape
13. Plastic sheeting
14. Absorbent material
15. Coveralls
16. Shoe covers
17. Rubber gloves
18. Cotton gloves
19. Hoods
20. Respirators
21. Respirator filters
22. SCBAs
23. First aid kit
24. Portable lanterns
25. Flashlights
26. Potassium iodide
27. Clipboards, writing materials, and secretarial supplies
28. Area maps
29. Check sources

TABLE 4-2

EOF EMERGENCY EQUIPMENT (TYPICAL)

EOF Supplies

1. Survey meters: Ion chamber, minimum range 0-50 R/h; Frisker, minimum range 0-50 k cpm
2. Dosimeters (0-99.99 Rem)
3. TLDs
4. Air sampler
5. Silver zeolite cartridges for air sampler
6. Particulate filter papers for air sampler
7. Survey logs
8. Smears
9. Plastic bags
10. Radiological signs
11. Barrier ropes or ribbons
12. Tape
13. Plastic sheeting
14. Absorbent material
15. Coveralls
16. Shoe covers
17. Rubber gloves
18. Cotton gloves
19. Hoods
20. Respirators
21. Respirator filters
22. First aid kit
23. Portable lanterns
24. Flashlights
25. Check sources
26. Potassium iodide
27. Disposable plastic gloves
28. Clipboards, writing materials, and secretarial supplies
29. Area maps

TABLE 4-3

EMERGENCY FIELD MONITORING KITS (3) (TYPICAL)

1. Ion chamber survey meter minimum range 0-5 R/h
2. Frisker minimum range 0-5 k cpm
3. Dosimeters (0-99.99 Rem)
4. Air sampler
5. Silver zeolite cartridges for air sampler
6. Particulate filter papers for air sampler
7. Sample counting equipment
8. Field monitoring log forms
9. Area and road maps
10. Clipboard and writing materials
11. Radios
12. Smears
13. Plastic bags
14. Soil scoop
15. Knife
16. 1-liter bottles
17. Tape
18. Cotton gloves and rubber gloves
19. Protective clothing
20. First aid kit
21. Flashlight
22. Calculator
23. Tape measure
24. Stop watch
25. Respirators

TABLE 4-4

OSC EMERGENCY EQUIPMENT (TYPICAL)

1. Survey meters: Ion chamber, minimum range 0-50 R/h; Frisker, minimum range 0-50 k cpm
2. Dosimeters (0-99.99 Rem)
3. TLDs
4. Air sampler
5. Silver zeolite cartridges for air sampler
6. Particulate filter papers for air sampler
7. Survey logs
8. Smears
9. Plastic bags
10. Radiological signs
11. Barrier ropes or ribbons
12. Tape
13. Plastic sheeting
14. Absorbent material
15. Coveralls
16. Shoe covers
17. Rubber gloves
18. Cotton gloves
19. Hoods
20. Respirators
21. Respirator filters
22. SCBAs
23. First Aid kit
24. Flashlights
25. Batteries
26. Check source
27. Potassium iodide
28. Data forms
29. Clipboards, writing materials, and secretarial supplies

TABLE 4-5

MAIN CONTROL POINT OR HP ROOM EMERGENCY EQUIPMENT (TYPICAL)

1. Survey meters: Ionization chamber, minimum range 0-50 R/h; Frisker, minimum range 0-50 k cpm
2. Dosimeters (0-99.99 Rem)
3. TLDs
4. Air sampler
5. Silver zeolite cartridges for air sampler
6. Particulate filter papers for air sampler
7. Survey logs
8. Smears
9. Plastic bags
10. Radiological signs
11. Barrier ropes or ribbons
12. Tape
13. Plastic sheeting
14. Absorbent material
15. Coveralls
16. Shoe covers
17. Rubber gloves
18. Cotton gloves
19. Hoods
20. Respirators
21. Respirator filters
22. SCBAs
23. First Aid kit
24. Flashlights
25. Batteries
26. Radiation protection and monitoring procedures
27. Potassium iodide
28. Clipboards, writing materials, and secretarial supplies

TABLE 4-6

DECONTAMINATION EMERGENCY EQUIPMENT KIT (TYPICAL)

1. Ion chamber, minimum range 0-5 R/h
2. Frisker with probe, minimum range 0-50 k cpm
3. Smears
4. Plastic bags
5. Radiological signs
6. Barrier ropes or ribbons
7. Tape
8. Plastic sheeting
9. Absorbent material
10. Coveralls
11. Shoe covers
12. Rubber gloves
13. Cotton gloves
14. Hoods
15. Soap
16. Shampoo
17. Towels

18. Razors
19. Shaving cream
20. Dosimeters (0-99 rem)
21. Hand brushes
22. Body maps
23. Potassium iodide
24. TLDs
25. Respirators with/filter cartridges
26. Cotton swabs

TABLE 4-7

OFFSITE AMBULANCE EMERGENCY EQUIPMENT

1. Coveralls
2. Shoe covers
3. Cotton gloves
4. Plastic bags
5. Tape
6. Plastic sheeting
7. Absorbent material
8. Rubber gloves
9. Frisker with/probe, minimum range 0-50 k cpm
10. TLDs(a)
11. Dosimeters (0-99.99 Rem)(a)
12. Radiation tape and tags

a. Equipment supplied by personnel at Plant Entry and Security Building (PESB).