

Brunswick Steam Electric Plant Unit Nos. 1 and 2
Plant Emergency Procedures (PEP)

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BSEP PLANT OPERATING MANUAL
VOLUME XIII, BOOK 2
PLANT EMERGENCY PROCEDURES (PEP)

PLANT OPERATING MANUAL
VOLUME 13, BOOK 2
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CAROLINA POWER & LIGHT COMPANY
BRUNSWICK STEAM ELECTRIC PLANT

UNITS NOS. 1 & 2

PLANT EMERGENCY PROCEDURES INTRODUCTION

PLANT EMERGENCY PROCEDURE PEP-1.0

VOLUME XIII

Rev. 2

Recommended By: Robert A. Indelicato Date: 10/9/81

Approved By: Kellings for CR Dier Date: 10/12/81
Plant General Manager

PEP-1.0 PLANT EMERGENCY PROCEDURES INTRODUCTION

1.1 Manual Purpose and Use

The purpose of this manual is to implement the emergency actions described in the Radiological Emergency Plan for the Brunswick Steam Electric Plant (BSEP) and provide the BSEP staff and supporting agencies with specific instructions, forms and data to ensure prompt actions, proper notifications, and effective communications during potential and actual emergency conditions. It also denotes the means by which emergency preparedness is maintained by periodic training, exercises, and equipment inventories and checks. During and subsequent to an emergency, this manual will provide a record of the actions completed in fulfillment of established emergency response requirements.

The Plant Emergency Procedures Manual is organized to facilitate immediate use by both on-site and off-site emergency response personnel. The basic contents of sections are shown on EXHIBIT 1.1-1, USE OF THE PEP MANUAL.

Section 1 is the Introduction and Emergency Organization. This section describes the proper use of the manual and the organization of the key emergency response personnel.

Sections 2 and 3 are the action sections to be implemented during the emergency or potential emergency. Section 2 consists of step-by-step immediate action procedures, and the classification scheme used by plant personnel in reporting potential emergency events, evaluating their extent, classifying them as an Unusual Event, Alert, Site Emergency, General Emergency or as an event of lesser safety significance, and controlling the situation. Also included are management guides for key personnel.

Section 3 contains the specific procedures required to monitor, control and mitigate the consequences of classified emergencies. This section provides step-by-step instructions to direct specific personnel activities during an emergency.

Section 4 of this manual includes the supplemental procedures required to assure the appropriate emergency personnel and equipment are prepared for the onset of emergency conditions.

Appendix A lists emergency response resources and their suggested channels for access in emergency communications. Appendix B contains reference materials and forms anticipated to be required to fulfill requirements of the specific procedures.

The controlled copies of this manual are indexed with color-coded tabs to facilitate use in emergencies.

Red Tabs precede portions of the manual which may be required for immediate action, or approximately within the first hour after an event is reported to the Control Room.

- Yellow Tabs denote the Key Personnel Emergency Management Guides. These guides are used to assure that appropriate actions are addressed by responsible, qualified personnel and that the status of actions may be properly maintained.
- Blue Tabs precede those PEPs normally used by emergency response members subsequent to the initial classification of an emergency.
- White Tabs preface those sections which provide reference information or emergency preparedness data.

EXHIBITS are numbered according to the procedure in which they are located. The EXHIBIT number uses the PEP number followed by an assigned integer. EXHIBITS are located at the end of the respective PEPs in numerical order according to the assigned integer.

Example: The first three EXHIBITS of PEP 3.4.4 are located at the end of that PEP and are numbered as follows: 3.4.4-1, 3.4.4-2, 3.4.4-3.

For informational blanks and checkoffs, the use of "N.A." for items not available or not applicable is permitted.

EXHIBIT 1.1-1

USE OF THE PEP MANUAL

SECTION 1.0	MANUAL PURPOSE AND USE; EMERGENCY ORGANIZATION
SECTION 2.0	EMERGENCY CONTROL AND MANAGEMENT; IMMEDIATE ACTIONS TO EVALUATE EVENT AND CLASSIFY
SECTION 3.0	EMERGENCY ACTIONS TO CONTROL, MITIGATE AND TERMINATE AN EMERGENCY
SECTION 4.0	ACTIVITIES TO ASSURE EMERGENCY PREPAREDNESS
APPENDIX A	EMERGENCY RESPONSE RESOURCES
APPENDIX B	EXTRA MAPS, EXHIBITS AND FORMS

1.2 Emergency Response Organization

The Emergency Response Organization has been defined to quickly and effectively bring an emergency condition under control. The organization is compatible with and integrated into the normal mode of operation. The position of Site Emergency Coordinator will be activated upon declaration of any emergency level from an Unusual Event to General Emergency. Dependent upon the level of the emergency, other members of the emergency organization will be activated as needed.

EXHIBIT 1.2-1 shows the Emergency Response Organization for BSEP. Each position in the Emergency Response Organization has been assigned primary, alternate, and interim personnel to function in that position, as indicated in EXHIBIT 1.2-2. The organization consists of the Site Emergency Coordinator with the Technical Support Group reporting to him. This Group consists of a Plant Operations Director, an Emergency Repair Director, a Logistics Support Director and a Radiological Control Director. Each of these positions directs one or more teams. The Site Emergency Coordinator is the primary interface with the Emergency Response Manager, who interfaces with off-site organizations and individuals, including the Corporate Emergency Operations Center, the Site Public Information Coordinator, the Corporate Spokesman, the State Emergency Response Team (SERT) Headquarters, and other state and federal agencies. Upon activation of the Emergency Operations Facility (EOF), off-site dose assessment and off-site environmental monitoring responsibilities shift from the Site Emergency Coordinator to the Emergency Response Manager. The EOF organization under the direction of the Emergency Response Manager consists of the Technical Analysis Manager, the Radiological Control Manager, Administration & Logistics Manager, and their supporting staff.

Current phone numbers are maintained in controlled copies of this Manual in the Technical Support Center, Operational Support Center, and the Control Room.

Outside support agencies, and the means of contacting each, are also listed in PEP-Appendix A.

EMERGENCY RESPONSE ORGANIZATION

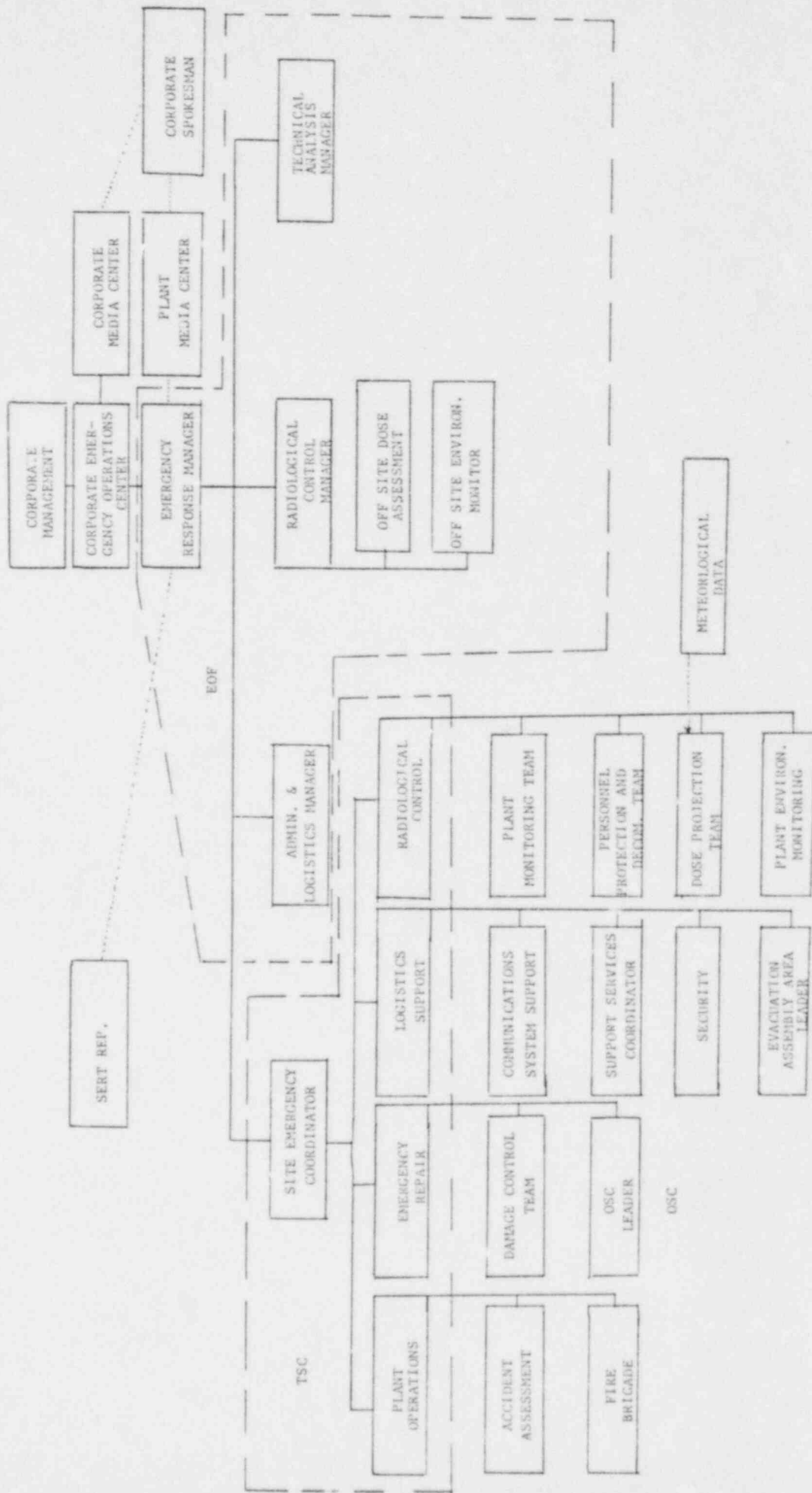


EXHIBIT 1.2-2

EMERGENCY RESPONSE ORGANIZATION

1. Site Emergency Coordinator: Plant General Manager
 - Alternates: Manager - Plant Operations
Manager - Operations
Manager - Environmental and Radiation Control
Manager - Maintenance
Manager - Technical Support
 - Interim: Shift Operating Supervisor
 - Alternate Interim: Shift Foreman

2. Plant Operations Director: Manager - Operations
 - Alternates: Manager - Plant Operations
Shift Operating Supervisor
 - Interim: Site Emergency Coordinator
- 2.a. Plant Operators
 - Leader: Shift Operating Supervisor
 - Alternate: Shift Foreman or Senior Control Operator
 - Interim: Shift Foreman of Affected Unit
- 2.b. Accident Assessment Team
 - Leader: Engineering Supervisor
 - Alternate: Director - Planning & Scheduling
 - Interim: Site Emergency Coordinator
- 2.c. Fire Brigade
 - Leader: Shift Foreman
 - Alternate: Plant Fire Chief
 - Interim: Fire Brigade Member

EXHIBIT 1.2-2

EMERGENCY RESPONSE ORGANIZATION (cont.)

- 3. Emergency Repair Director: Manager - Maintenance
 - Alternates: Mechanical Maintenance Supervisor
 - Electrical Maintenance Supervisor
 - Interim: Site Emergency Coordinator

3.a. Damage Control Team:

- Leader Mechanical Maintenance Supervisor
- Electrical Maintenance Supervisor
- Alternates Mechanical Maintenance Foreman
- Electrical Maintenance Foreman

The leaders and members of this team will be selected by the Site Emergency Coordinator and/or Emergency Repair Director according to the nature of the task.

- 3.b. Operational Support Center Leader: Mechanical Maintenance Foreman
- Alternate Senior Maintenance Engineer

- 4. Logistics Support Director: Manager - Technical Support
 - Alternates: Administrative Supervisor
 - Interim: Site Emergency Coordinator

- 4.a. Site Communications Systems Coordinator: Engineering Technician I
(Planning & Scheduling)

This individual will be designated by the Site Emergency Coordinator when the emergency communications system is activated.

- 4.b. Support Services Coordinator: Stores Foreman

This individual will be designated by the Site Emergency Coordinator to interface with the Administration & Logistics Manager in the Emergency Operations Facility (EOF) when activated. Prior to EOF activation, this individual will interface with the Corporate Operations Coordinator in the Corporate Emergency Operations Facility if corporate support services are required.

EXHIBIT 1.2-2

EMERGENCY RESPONSE ORGANIZATION (cont.)

4.c. Emergency Security Team:

Leader: Security Specialist
Alternates: Chief of Security
Interim: Senior Security Person on duty

4.d. Evacuation Assembly Area Leader:

Leader: Cost Control Specialist
Alternate: Environmental & Chemistry Technician

5. Radiological Control Director: Manager - Environmental and Radiation Control (E&RC)

Alternates: Supervisor - Radiation Control
Supervisor - Environmental and Chemistry
Project Specialist - Radiation Control

Interim: Site Emergency Coordinator

5.a. Environmental Monitoring Team:

Leader: Supervisor - Environmental and Chemistry
Alternate: Foreman - Environmental and Chemistry
Interim: Radiological Control Director

5.b. Plant Monitoring Team:

Leader: Project Specialist - Environmental and Chemistry
Alternates: Specialist - Chemistry
Specialist - ALARA
Interim: Radiological Control Director

EXHIBIT 1.2-2

EMERGENCY RESPONSE ORGANIZATION (cont.)

- 5.c. Personnel Protection and Decontamination Team:
- | | |
|-------------|---|
| Leader: | Supervisor - Radiation Control |
| Alternates: | Foreman - Radiation Control
Specialist - Radiation Control |
| Interim: | Radiological Control Director |
- 5.d. Dose Projection Coordinator:
- | | |
|--------------|--|
| Coordinator: | Project Specialist - Radiation Control |
| Alternate: | Specialist - Radiation Control |
| Interim: | Radiological Control Director |
6. Emergency Communicator:
- | | |
|-------------------------|--|
| Emergency Communicator: | Regulatory Compliance - Project Specialist |
| Alternate: | Regulatory Compliance Specialist |
| Interim: | Available Plant Operator |
7. Representative to State Emergency Response Team Headquarters:
- | | |
|---------------|--|
| Headquarters: | Assistant to the Plant General Manager |
| Alternate: | Emergency Preparedness Specialist |
8. Site Public Information Coordinator:
- | | |
|--------------|---|
| Coordinator: | Manager - News Services |
| Alternates: | Vice President - Corporate Communications
Director - Media Relations |
| Interim: | Plant General Manager or his designee |
9. Emergency Response Manager:
- | | |
|-----------------------------|---------------------------------------|
| Emergency Response Manager: | Vice President - Nuclear Operations |
| Alternate: | Manager - Corporate Quality Assurance |
10. Administrative & Logistics Manager:
- | | |
|------------|---|
| Manager: | Manager - Construction Procurement Services |
| Alternate: | Manager - Nuclear Operations Administration |

EXHIBIT 1.2-2

EMERGENCY RESPONSE ORGANIZATION (cont.)

11. Technical Analysis Manager: Director - Nuclear Engineering Safety Review
Alternate: Principal Specialist - Special Projects
Nuclear Operations Administration
12. Radiological Control Manager: Manager - Environmental and Radiation Control, HE&EC
Alternate: Principal Specialist - Environmental, HE&EC
13. Corporate Emergency Operations Center Manager: Senior Vice President - Power Supply
Alternates: Executive Vice President - Power Supply and Engineering and Construction
14. Corporate Spokesman: Vice President - Nuclear Safety and Research or his designee
Alternate: Vice President - Technical Services

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CAROLINA POWER & LIGHT COMPANY
BRUNSWICK STEAM ELECTRIC PLANT

UNITS NOS. 1 & 2

INITIAL EMERGENCY ACTIONS

PLANT EMERGENCY PROCEDURE PEP-2.1

VOLUME XIII

Rev. 2

Recommended By: Robert A. Lidelcato

Date: 10/9/81

Approved By: RE Morgan for C.R. Dietz
Plant General Manager

Date: 10/12/81

PEP-2.1 INITIAL EMERGENCY ACTIONS

1.0 Responsible Individual and Objectives

The Shift Operating Supervisor is responsible for:

- 1.1 Directing the emergency response activities in the Control Room and elsewhere on the site and ensuring that the proper Emergency Instructions and Procedures are being followed.
- 1.2 Classifying the emergency in accordance with the Emergency Action Levels (EALs) as either: (a) Unusual Event (PEP-2.2); (b) Alert (PEP-2.3); (c) Site Emergency (PEP-2.4); or (d) General Emergency (PEP-2.5).

Note: Figure 2.1-1 (found at the end of this procedure) provides a Logic Flow Diagram of this procedure.

The alternate persons for implementing this procedure are the Shift Foreman or, in his absence, the Senior Control Operator.

All plant personnel are responsible for reporting to the Control Room any conditions or symptoms, indicated by instrument readings or direct observations, that could lead to an emergency.

2.0 Scope and Applicability

This procedure may be implemented (at the discretion of the Shift Operating Supervisor or his alternate) upon recognition of an off-normal condition as determined by instrument readings or direct observation. This procedure shall be implemented following: 1) implementation of any Emergency Instruction; 2) any report of an unplanned fire or explosion on site; 3) any tech spec violation; 4) receipt of a hurricane or tornado warning; or 5) any report of a security threat. Implementation of this procedure does not constitute an emergency but rather serves as a guideline for evaluation of the plant conditions and comparisons with Emergency Action Levels (EALs). Once implemented, this procedure shall remain in effect until either 1) the emergency is classified and the proper Emergency Control procedure is implemented, or 2) the off-normal condition is resolved. The Shift Operating Supervisor on duty (or his designated alternate) has immediate and unilateral authority to carry out this procedure. He may be relieved by a properly trained individual, as identified in PEP-1.2, "Emergency Organization."

- ### 3.0 Actions ("*" denotes decisions or actions which should be entered in the Shift Foreman's Log).

Note: The following actions are to be carried out by the Shift Operating Supervisor (or his designated alternate) in an expeditious manner for personnel and plant protection and emergency classification.

3.1 Ensure appropriate Emergency Instructions and plant procedures are being implemented.

3.2 Determine need to evacuate localized plant areas.

Note: If a Building Evacuation is not required, go to Step 3.3.

*3.2.1 Sound Building Evacuation alarm for 15 seconds and announce over the Plant PA System "(state emergency condition) in the (location). Evacuate the (location)."

Example: "Radiation Alarm in Radwaste Building, Evacuate the Radwaste Building."

3.2.2 Implement Section 3.1 of PEP-3.8.1, "Evacuation" and direct evacuees to report to the designated assembly area for the building being evacuated.

*3.2.3 Implement Section 3.1 of PEP-3.8.2, "Personnel Accountability," and direct work group supervisors to inform the Shift Operating Supervisor of any personnel not accounted for within 30 minutes.

3.2.4 Repeat Step 3.2.1 above.

3.3 Determine whether personnel injuries have occurred.

Note: If no personnel injuries are reported, go to Step 3.4.

*3.3.1 Determine number of persons injured and their location(s).

3.3.2 Implement PEP-3.9.2 "First Aid and Medical Care," and PEP-3.9.6 "Search and Rescue," as appropriate.

3.3.3 Determine whether injuries involve radioactive contamination.

Note: If contamination is involved, ensure appropriate precautions are taken in accordance with PEP Section 3.9, "Aid to Affected Personnel."

-CAUTION-

PRIORITY SHOULD BE PLACED ON LIFESAVING INJURY TREATMENT OVER THE NEED TO DECONTAMINATE. SEE PEP-3.9.2 FOR GUIDANCE.

3.4 Determine whether off-normal conditions include fire.

Note: If no fire is detected or reported, go to Step 3.5.

3.4.1 Determine location of fire, sound fire alarm, and announce location using plant PA if not announced as part of Step 3.2.

*3.4.2 Implement Fire-Fighting Procedures FP-7, "General Fire Plan" (Vol. XIX; Plant Operating Manual).

- 3.5 Using EXHIBIT 2.1-1 "Emergency Action Levels" compare plant conditions (observed or indicated parameters and conditions) with the EALs and classify the emergency.

Note: If no emergency exists (i.e., no Emergency Action Level is met), go to Step 3.6.

-CAUTION-

DECLARATION OF THE HIGHEST EMERGENCY CLASS FOR WHICH AN EMERGENCY ACTION LEVEL IS MET SHOULD BE MADE.

- 3.5.1 If an EAL for an Unusual Event is met, implement PEP-2.2, "Emergency Control - Unusual Event."
- 3.5.2 If an EAL for an Alert is met, implement PEP-2.3, "Emergency Control - Alert."
- 3.5.3 If an EAL for a Site Emergency is met, implement PEP-2.4, "Emergency Control - Site Emergency."
- 3.5.4 If an EAL for a General Emergency is met, implement PEP-2.5 "Emergency Control - General Emergency."
- 3.6 Continue to monitor and evaluate plant conditions in accordance with previous steps until off-normal conditions are returned to normal.
- * Note: When operations are within normal operating parameters, and safe in the judgment of the Shift Operating Supervisor, terminate use of this procedure.

EXHIBIT 2.1-1

EMERGENCY ACTION LEVELS

UNUSUAL EVENT

1.0 Effluent Releases

1.1 Liquid Releases

1.1.1 Any unplanned release from the liquid waste system resulting in activity levels greater than those in 10CFR20, Appendix B, Table II to the discharge canal.

1.1.2 A planned release giving activity levels greater than those given in 10CFR20, Appendix B, Table II to the discharge canal as indicated by a failure to isolate or terminate the release upon:

- a) exceeding the RMS setpoint, or
- b) exceeding 2 times the permitted release flow rate, and loss of circulating water pump.

1.1.3 Any other accidental, unplanned, or uncontrolled off-site liquid release which exceeds or which could have exceeded 10 curies.

1.2 Gaseous Release giving concentration $>3 \times 10^{-7}$ uCi/cc at the release point as indicated by the Instantaneous Limit calculated in accordance with OG-6 exceeding 1.0.

2.0 Plant Occurrences Having Direct Consequences

2.1 In-Plant Releases

2.1.1 Failed fuel, as indicated by Reactor Coolant System (RCS) activity:

- a) RCS activity >4.0 $\mu\text{Ci/ml}$ (Dose Equivalent I-131),
- b) RCS activity >0.2 $\mu\text{Ci/ml}$ (Dose Equivalent I-131), but less than limit in (a) above, for more than 48 hours,
- c) RCS activity $>100/E$ $\mu\text{Ci/ml}$ for all isotopes.

EXHIBIT 2.1-1

EMERGENCY ACTION LEVELS (cont.)

UNUSUAL EVENT (continued)

- 2.1.2 In-plant leak or spill as indicated by:
- a) Any Building Evacuation based on confirmed radiological conditions (except precautionary).
 - b) Reactor Coolant System leakage in excess of 25 gpm for >8 hours.
 - c) Unidentified Reactor Coolant System leakage in excess of 5 gpm for >8 hours.
 - d) Any non-isolable RCS pressure boundary leakage.
- 2.2 Failure of a primary system safety/relief valve (including ADS) to open if challenged OR to close once opened.
- 2.3 Emergency Core Cooling System automatically initiated and discharging to vessel for a period greater than five (5) minutes other than by operator action.
- 2.4 Loss of containment integrity requiring shutdown by technical specifications and shutdown is not achieved within required time period.
- 2.5 Loss of engineered safety feature or fire protection system function requiring shutdown by technical specifications and shutdown is not achieved within required time period.
- 2.6 Indications or alarms on process or effluent parameters not functional in control room to an extent requiring plant shutdown or other significant loss of assessment or communication capability for greater than sixty (60) minutes.
- 2.7 Loss of all off-site power or loss of all on-site AC Power capability.
- 2.8 Transportation of contaminated injured individual from site to off-site hospital.
- 2.9 Unplanned fire within the Protected Area not brought under control more than 10 minutes after activation of a Fire Suppression System or 10 minutes after manual fire-fighting efforts have begun.
- 3.0 Occurrences Having Indirect Consequences
- 3.1 Natural Phenomenon or Man-Made Event Having Potential for Degrading Plant Safety.
- a) Any alarm on seismic monitor and confirmation of an earthquake in the region.

EXHIBIT 2.1-1

EMERGENCY ACTION LEVELS (cont.)

UNUSUAL EVENT (Continued)

- b) Any tornado crossing the site boundary (by observation or evidence).
 - c) Any hurricane requiring implementation of EI-37.1, "Operation During Hurricane Warnings and Hurricane Conditions."
 - d) Any aircraft crash within the site boundaries.
 - e) Any unplanned explosion within the site boundaries.
 - f) Any release of toxic or flammable gas that could endanger personnel.
- 3.2 Exceeding any Technical Specification Safety Limit.
- 3.3 Plant Situations:
- a) Security violations pursuant to Security Procedure SI-19, "Notification of Significant Events."
 - b) Any incident involving licensed nuclear material (i.e., nuclear fuel or licensed sources), which may have caused or threatens to cause:
 - i. A loss of one day or more of the operation of the facility,
 - ii. Property damage in excess of \$2,000.
 - c) Strikes of operating employees or security guards, or honoring of picket lines by such employees.
- 3.4 Any other instance that, in the judgment of the Shift Operating Supervisor/Site Emergency Coordinator warrants declaration of an Unusual Event:

An Unusual Event represents conditions that involve (1) releases to the environment in excess of Technical Specification limits; or (2) failures of fuel cladding that result in concentrations of radioactivity in the primary coolant requiring hot shutdown; or (3) degradation of the plant safety systems.

EXHIBIT 2.1-1

EMERGENCY ACTION LEVELS (cont.)

ALERT

1.0 Effluent Release

- 1.1 Any liquid release giving $>1.0 \times 10^{-4}$ $\mu\text{Ci/ml}$ in the discharge canal as indicated by:
- a) Whenever the Service Water discharge monitor reads >1000 cps.
 - b) Field measurement indicating $>1.0 \times 10^{-4}$ $\mu\text{Ci/ml}$ in the discharge canal.
- 1.2 Any gaseous release giving $>3 \times 10^{-4}$ uCi/cc at the site boundary:
- a) Main Stack high range discharge monitor reading >0.1 R/hr.
 - b) Whenever Steam Jet Air Ejector discharge monitor is off-scale-high.
 - c) Whenever the Reactor Building Ventilation monitor is off-scale-high.
 - d) Whenever the Reactor Building Roof Vent monitor is off-scale-high.
 - e) Whenever the Turbine Building Vent monitor is off-scale-high.

2.0 Plant Occurrences Having Direct Consequences

2.1 In-Plant Releases

2.1.1 Failed fuel, as indicated by:

- a) RCS activity >40 $\mu\text{Ci/ml}$ (Dose equivalent I-131)

Note: Whenever main steam isolation is indicated due to high radiation in the line, an RCS grab sample should be taken immediately and analyzed for gross activity.

2.1.2 In-Plant Leak or Spill, which may be indicated by:

- a) The high range drywell area monitor reading >10 R/hr.*
- b) Any Area Radiation Monitor or Continuous Air Monitor off-scale-high.
- c) Any Site Evacuation based on confirmed radiological conditions.
- d) Fuel handling accident involving damage to spent fuel, as indicated by:

*When instrumentation is installed and operable.

EXHIBIT 2.1-1

EMERGENCY ACTION LEVELS (cont.)

ALERT (continued)

- i. observation/report, AND an alarm on Reactor Building Ventilation monitor, Reactor Building roof vent monitor, or the refueling floor area monitor.
 - ii. Any time EI-22, "Spent Fuel Damage" is implemented.
 - e) Whenever the Reactor Building Closed Cooling Water monitor is off-scale-high.
- 2.2 Loss of Coolant Accident (primary system leakage >50 gpm) as indicated by:
- a) Reactor Vessel water level falling and normal feedwater system unable to restore.
 - b) Low or falling RCS pressure, with rising drywell pressure and temperature.
 - c) Any time EI-1.2 is implemented.
- 2.3 Steam Line Break (i.e., downstream of MSIVs and upstream of feedwater isolation valves), as indicated by:
- a) Reactor trip, with:
 - i. low RCS pressure, or
 - ii. low steam pressure, or
 - iii. low reactor vessel water level, or
 - iv. high steam flow.
 - b) Any time EI-1.3 is implemented.
- AND either:
- c) RCS activity >0.2 uCi/cc Iodine equivalent, or
 - d) MSIV fails to close
- 2.4 Loss of all AC Power
- a) Loss of off-site power (startup transformer and auxiliary transformer de-energized),
- AND
- b) Failure of on-site emergency AC power source, as indicated by loss of diesel generators.
- 2.5 Failure of the Reactor Protection System to initiate and complete a trip which brings the reactor to a subcritical condition.
- 2.6 Loss of all D.C. power (more than momentary).
- 2.7 Complete loss of ability to maintain plant in cold shutdown.

EXHIBIT 2.1-1

EMERGENCY ACTION LEVELS (cont.)

ALERT (continued)

- 2.8 Any unplanned fire not brought under control within 10 minutes after fire suppression efforts have begun AND which could potentially affect vital, safety-related or ESF equipment.

3.0 Occurrences Having Indirect Consequences

- 3.1 All alarms (annunciators) lost for more than 5 minutes.

- 3.2 Evacuation of Control Room anticipated or required (i.e., implementation of EI-29), with control of shutdown established from local stations.

- 3.3 Natural Phenomenon or Man-Made Event Having Potential for Degrading Plant Safety.

- a) Earthquake registering >0.08 g on seismic instrumentation.
- b) An adverse weather condition that causes a loss of function of 2 or more safety-related trains.
- c) Any explosion, aircraft crash, or missiles resulting in major damage to structures housing safety-related systems.
- d) Any unplanned and uncontrolled entry of flammable or toxic gases into vital areas in sufficient quantities to endanger personnel or the operability of safety-related equipment.

3.4 Plant Situations

- a) Attempted sabotage, with successful entry into a Protected Area.
- b) A turbine disk failure resulting in penetration of its outer casing.

- 3.5 Any other instance that, in the judgment of the Site Emergency Coordinator/Shift Operating Supervisor, warrants declaration of an Alert:

An Alert represents conditions which involve; (1) releases to the environment exceeding 10 times a Technical Specification limit or (2) damage to the core resulting in radioactive levels in the reactor coolant exceeding $40 \mu\text{Ci/ml}$ dose equivalent I-131, $10,000/\bar{E} \mu\text{Ci/gram}$, or radiation levels exceeding 10 R/hr as measured by the monitor in the drywell; or (3) occurrence of an event (or events) resulting in a substantial reduction in safety. Corrective action is predicted to be successful in preventing a significant release.

Events in this class reflect a significant degradation in the safety of the reactor. However, releases from such events will be small.

EXHIBIT 2.1-1

EMERGENCY ACTION LEVELS (cont.)

SITE EMERGENCY

1.0 Effluent Releases

Any release to the environment resulting in an off-site dose in excess of 0.1 rem (whole body) or 0.5 rem (thyroid), as indicated by:

- a) Dose projections using actual effluent data and actual meteorological conditions as calculated in accordance with PEP-3.4.1.
- b) Dose projections using estimated or assumed data (if actual data is unavailable), as calculated in accordance with PEP-3.4.1.
- c) Field measurements at or beyond the site boundary.

2.0 Plant Occurrences Having Direct Consequences

2.1 In-plant Releases

2.1.1 Failed Fuel, as indicated by RCS activity $>400 \mu\text{Ci/ml}$ (Dose equivalent I-131).

2.1.2 Major In-Plant Leak or Spill, as indicated by:

- a) Drywell high range area monitor $>100 \text{ R/hr.}^{**}$
- b) Major damage to spent fuel, as indicated by:
 - i. observation of substantial damage to multiple fuel assemblies,
 - ii. observation that the water level has dropped below the top of the fuel.

2.2 Loss of Coolant Accident (primary system leakage $>50 \text{ gpm}$) as indicated by:

- a) Reactor Vessel water level falling and normal feedwater system unable to restore.
- b) Low or falling RCS pressure, with rising drywell pressure and temperature.
- c) Any time EI-1.2 is implemented.

AND

Failure of any 2 (or more) ECCS trains to function on demand.

** When instrumentation is installed and operable.

EXHIBIT 2.1-1

EMERGENCY ACTION LEVELS (cont.)

SITE EMERGENCY (continued)

2.3 Steam Line Break (i.e., downstream of MSIVs and upstream of feedwater isolation valves), as indicated by:

- a) Reactor trip, with:
 - i) Low RCS pressure, or
 - ii) Low steam pressure, or
 - iii) low reactor vessel water level, or
 - iv) high steam flow.
- b) Any time EI-1.3 is implemented.

AND

Inability to close MSIVs within 15 minutes.

2.4 Loss of all AC power

- a) Loss of off-site power (startup transformer and auxiliary transformer de-energized), AND
- b) Failure of on-site emergency AC power source for greater than 15 minutes, as indicated by loss of diesel generators.

2.5 Loss of all DC power for greater than 15 minutes.

2.6 Any fire that:

- a) impairs the operability of any safety-related train or vital equipment;
- b) causes the inability to shutdown the plant.

2.7 Inability to achieve plant Hot Shutdown.

3.0 Occurrences Having Indirect Consequences

3.1 Loss of all alarms (annunciators) AND occurrence of a plant transient.

3.2 Evacuation of Control Room AND local control of shutdown is not established or is lost.

3.3 Any Natural Phenomenon or Man-Made Event which Degrades Plant Safety concurrent with or causing the loss of more than 2 safety-related trains, i.e.:

- a) Earthquake that registers >0.16 g ground acceleration.

EXHIBIT 2.1-1

EMERGENCY ACTION LEVELS (cont.)

SITE EMERGENCY (continued)

- b) Hurricane winds - 0-50 ft. above ground level - 130 mph
50-150 ft. above ground level - 150 mph
150-450 ft. above ground level - 180 mph
- c) Tornado winds - Maximum tangential of 300 mph with forward velocity of 60 mph.
- d) Any explosion, aircraft crash, or missiles resulting in major damage to structures housing safety-related systems.
- e) Any unplanned, uncontrolled entry of flammable or toxic gases into vital areas in sufficient quantities to endanger personnel or the operability of safety-related equipment.

3.4 Plant Situations

- a) Attempted sabotage with successful attempt(s) at disabling plant equipment or controlling plant operations.

3.5 Any other instance that, in the judgment of the Site Emergency Coordinator/Shift Operating Supervisor, warrants declaration of a Site Emergency:

A Site Emergency represents conditions that involve; (1) releases to the environment resulting in projected doses to members of the public in excess of 0.1 rem whole body or 0.5 rem thyroid; or (2) damage to the core resulting in radiation levels in the reactor coolant exceeding 400 $\mu\text{Ci/ml}$ dose equivalent I-131, or radiation levels exceeding 100 R/hr in the primary containment as measured by the monitor in the drywell; or (3) occurrence of an event (or events) that involve major failures of plant equipment and that will lead to core damage unless corrective action is taken. Time is available to implement contingency measures.

The Site Emergency class includes Alert conditions where the plant personnel have been initially unsuccessful in restoring the facility to a safe shutdown condition (e.g., the fire has now continued for more than 10 minutes and has now caused loss of function of safety-related equipment). It also includes Alert conditions where subsequent additional malfunctions have occurred (e.g., a transient occurs during the time when plant alarms are inoperable). The Site Emergency class is more severe than the Alert class because significant radiation releases may occur.

EXHIBIT 2.1-1

EMERGENCY ACTION LEVELS (cont.)

GENERAL EMERGENCY

1.0 Effluent Releases

Any release to the environment resulting in an off-site dose in excess of 1.0 rem (whole body) or 5.0 rem (thyroid), as indicated by:

- a) Dose projections using actual effluent data and actual meteorological conditions as calculated in accordance with PEP-3.4.1.
- b) Dose projections using estimated or assumed data (if actual data is unavailable) as calculated in accordance with PEP-3.4.1.
- c) Field measurements at or beyond the site boundary.

2.0 Plant Occurrences Having Direct Consequences

2.1 In-Plant Releases

- 2.1.1 Failed Fuel as indicated by RCS activity $>4,000 \mu\text{Ci/cc}$ (dose equivalent I-131).
- 2.1.2 Severe in-containment leak or spill, as indicated by the drywell high range area monitor reading $>1000 \text{ R/hr.}^{**}$

2.2 Loss of any two of the three fission product barriers listed below:

- a) Failed fuel causing RCS $>40 \mu\text{Ci/ml}$.
- b) Loss of primary coolant boundary including:
 - i. Loss of Coolant Accident (as defined in "Alert", 2.2);
 - ii. Major Steam Line Break (as defined in "Alert", 2.3);
- c) Loss of containment integrity including:
 - i. Failure to isolate containment.
 - ii. Rupture of containment vessel.

3.0 Event Combinations Likely to Lead to Core Melting

3.1 Loss of main condenser decay heat removal capability, (with poor prognosis for recovery), AND either:

- a) Failure of all Low Pressure Coolant Injection trains (with poor prognosis for recovery), or
- b) Failure of all Service Water trains necessary for removing decay heat (with poor prognosis for recovery).

3.2 Inability to achieve Hot Shutdown for >30 minutes.

**when instrumentation is installed and operable.

EXHIBIT 2.1-1

EMERGENCY ACTION LEVELS (cont.)

GENERAL EMERGENCY (continued)

- 3.3 Inability to provide makeup water to the RCS (i.e., simultaneous failure of HPCI, LPCI, RCIC, Condensate and Feedwater), as indicated by falling or low Reactor Vessel level with attempts to inject water not successful within 15 minutes.
- 3.4 Loss of Coolant Accident coincident with failure of both Core Spray System trains AND both Low Pressure Injection System trains.

Shift Operating Supervisor learns of an off normal condition, determined by instrument readings or observation. Shift Operating Supervisor implements PEP-2.1, which flows as shown on this sheet.

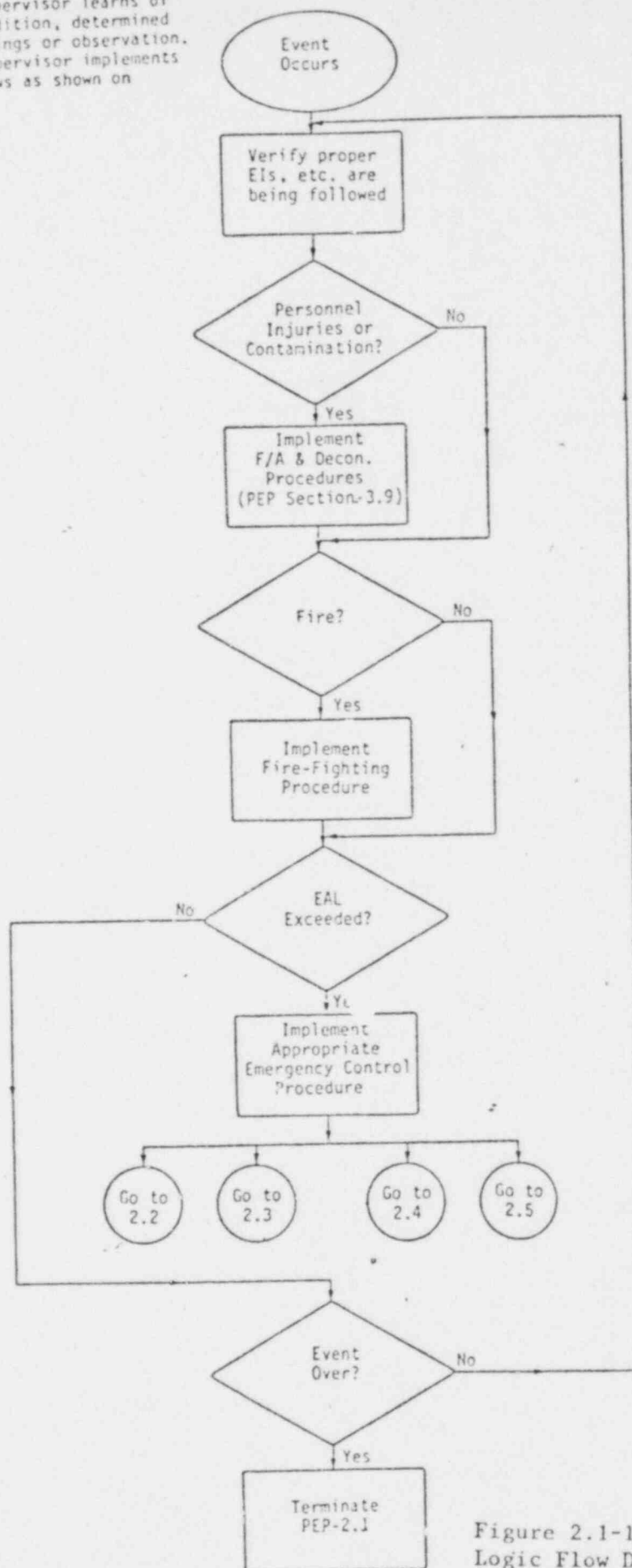


Figure 2.1-1
Logic Flow Diagram for PEP-2.1

File No. _____
Unit No. _____
Q+RETcd _____
App'l _____

CAROLINA POWER & LIGHT COMPANY
BRUNSWICK STEAM ELECTRIC PLANT

UNITS NOS. 1 & 2

LOGISTICS SUPPORT DIRECTOR

PLANT EMERGENCY PROCEDURE PEP-2.6.3

VOLUME XIII

Rev. 2

Recommended By: Robert A. Indelheath

Date: 10/9/81

Approved By: RE Murray for CR Dietz
Plant General Manager

Date: 10-12-81

PEP-2.6.3 LOGISTICS SUPPORT DIRECTOR

1.0 Responsibilities and Objectives

The Logistics Support Director is responsible for:

- 1.1 Assuring the continuity of emergency response resources including manpower, facilities, equipment, and supplies.
- 1.2 Providing liaison with the CP&L Corporate authorities in the General Office until the Emergency Operations Facility is activated, and with the Administrative and Logistics Manager after Emergency Operations Facility activation.
- 1.3 Providing technical and administrative direction to the Emergency Security Team, the Site Systems Communications Coordinator, the Support Services Coordinator, and the Evacuation Assembly Area Leader.

2.0 Scope and Applicability

This procedure shall be implemented when any of the above (Section 1.3) teams become activated or upon activation of the Technical Support Group. The actions and responsibilities are limited to the Logistics Support Director and those emergency team members assigned to him.

3.0 Actions and Limitations (Priority actions to be addressed by the Site Emergency Coordinator as the interim Logistics Support Director are indicated by "**").

3.1 General Activities

- 3.1.1 Report your position and readiness to the Site Emergency Coordinator.
- 3.1.2 Announce your name and assumed position title to all team leaders that report to you, to the Site Emergency Coordinator and to other personnel in the Technical Support Center.
- 3.1.3 Ensure that all personnel actively assigned to you (i.e., not off site or in the Operational Support Center) are accounted for at all times (see PEP-3.8.2, "Personnel Accountability" for initial accountability requirements).
- 3.1.4 Determine need for additional equipment, supplies, and manpower, and make request for same.
- 3.1.5 Ensure documentation of the following in the Logistics Support Director's Log:
 - Communications
 - Key decisions

- Data collected
- Checklists

(in accordance with PEP-4.1, "Record Keeping and Documentation")

- 3.1.6 A. When assuming the Logistics Support Director position, request a briefing on the emergency and emergency actions status from the previous position holder. Note completion of this step in the Logistics Support Director's log.
- B. When relinquishing your position, brief your successor on the emergency and emergency actions status. Note completion of this step in the Logistics Support Director's log.
- C. Notify all appropriate personnel of your name, the position you are assuming, and the name of the person you replace. Note completion of this step in the Logistics Support Director's log.
- 3.1.7 Ensure Communications Equipment is used to support the emergency and that all non-emergency communications are terminated.
- 3.1.8 Ensure exposure control is in accordance with PEP-3.7.1, "Emergency Work Permits and Exposure Control" (i.e., Emergency Work Permits shall be completed when required).
- 3.2 Upon its activation, render the Technical Support Center Operational by:
- 3.2.1 If activation is necessary during hours when the Document Control Building is locked, have Security unlock building and the two closets in room 125. During normal work hours, the Document Control office staff have access to these closets.
- 3.2.2 The right hand closet in room 125 has a floor plan and a key to the emergency switchboard in an envelope hanging on the inside of the door.
- 3.2.3 In the center of room 125 a ceiling panel is marked in each corner with thumbtacks. Remove this panel and drop the phone cords.
- 3.2.4 Open the emergency switchboard cabinet in the library and remove the blue phones. The beige phones are stored in room 125.
- 3.2.5 Connect each numbered phone with the corresponding jack in room 125 and the one adjoining it.

- 3.2.6 Arrange the tables and chairs according to the floor plan. Place phones in the proper position around the room.
 - 3.2.7 Place identification signs and log books for each indicated individual.
 - 3.2.8 Remove wall displays from closet and arrange according to floor plan.
 - 3.2.9 Check operability of monitoring equipment in storage room 124. If any instrument is not operable call RC Foreman.
 - 3.2.10 Contact Security to set up Guard Post in TSC as specified in floor plan.
 - 3.2.11 Checking that Technical Support Center computer is operational. (1)
 - 3.2.12 Checking that Technical Support Center radiation monitors are operational (check source).
- 3.3 Upon the decision to activate the Plant Media Center, prepare the Plant Media Center by directing appropriate personnel to set up the trailers behind the Visitor Center with necessary tables, phones, etc.
- 3.4 Upon the decision to activate the Emergency Operations Facility, prepare the Emergency Operations Facility by:
- 3.4.1 Obtain from security key to locked EOF file cabinet located in the EOF area of the Training Building.
 - 3.4.2 Obtain folding tables and chairs from training classrooms and set up in the EOF area in the locations shown in diagram in top drawer of file cabinet.
 - 3.4.3 In EOF ceiling panels, find colored thumbtacks marking location of emergency phone cords.
 - 3.4.4 Lift panels and drop phone cords to tables.
 - 3.4.5 Remove telephone instruments from TSC supply closet and connect to phone cords. Position phones on tables as shown in floor plan.
 - 3.4.6 Check operability of phones.
 - 3.4.7 Place identifications signs on tables.

(1) Once installed.

- 3.4.8 Place telecopier on table with HP phone and NRC phone and check operability of HP and NRC phones and of telecopier.
- 3.4.9 Contact Security and establish Guard/Watchperson to set up post at door to EOF.
- 3.4.10 Contact BSEP site EOF support personnel and ask them to report to EOF.
- 3.5 Arrange for an alternate training facility should the permanent training center become inaccessible.
- 3.6 When the provision of PEP-Section 3.2 ("Augmentation and Mobilization Procedures") are not adequate for meeting personnel needs:
 - 3.6.1 Arrange for additional personnel, upon a Technical Support Group member's request. (See EXHIBIT 2.6.3-1, "Personnel Resources").
 - 3.6.2 Notify the Emergency Security Team Leader of the names and affiliations of all individuals requested to come to the site, and where they should report.
- 3.7 Arrange for additional equipment, upon a Technical Support Group member's request. (See EXHIBIT 2.6.3-2, "Equipment Resources Requests").
- 3.8 Arrange for additional services, as required. (See EXHIBIT 2.6.3-3, "Additional Services").
- 3.9 Provide new and/or modified contracts for services to be procured.
- 3.10 Ensure Communications Equipment is used to support the emergency and that all non-emergency communications are terminated.
- 3.11 Coordinate with the Administrative and Logistics Manager as required after the Emergency Operations Facility is activated.

EXHIBIT 2.6.3-1

PERSONNEL RESOURCES

CP&L (Other than Brunswick personnel)

Rad-chem technicians, Contact:

Name	Number
------	--------

Technical specialists, Contact:

Name	Number
------	--------

I & C technicians, Contact:

Name	Number
------	--------

Mechanical technicians, Contact:

Name	Number
------	--------

Communications, Contact:

Name	Number
------	--------

Security, Contact:

Name	Number
------	--------

Other: _____

Name	Number
------	--------

Name	Number
------	--------

Name	Number
------	--------

CONTRACT PERSONNEL

Rad-chem technicians, Contact:

Company	Name	Number
---------	------	--------

Technical specialists, Contact:

Company	Name	Number
---------	------	--------

I & C technicians, Contact:

Company	Name	Number
---------	------	--------

Mechanical technicians, Contact:

Company	Name	Number
---------	------	--------

Communications, Contact:

Company	Name	Number
---------	------	--------

Security, Contact:

Company	Name	Number
---------	------	--------

Other: _____

Company	Name	Number
---------	------	--------

Company	Name	Number
---------	------	--------

Company	Name	Number
---------	------	--------

EXHIBIT 2.6.3-1 (continued)

OTHER (UTILITIES, AE'S, ETC.)

Rad-chem technicians, Contact:

Company	Name	Number
---------	------	--------

Technical specialists, Contact:

Company	Name	Number
---------	------	--------

I & C technicians, Contact:

Company	Name	Number
---------	------	--------

Mechanical technicians, Contact:

Company	Name	Number
---------	------	--------

Communications, Contact:

Company	Name	Number
---------	------	--------

Security, Contact:

Company	Name	Number
---------	------	--------

Company	Name	Number
---------	------	--------

Other: _____

Company	Name	Number
---------	------	--------

Company	Name	Number
---------	------	--------

Company	Name	Number
---------	------	--------

EXHIBIT 2.6.3-2

EQUIPMENT RESOURCES REQUESTS

SPECIAL TOOLS

Name of Item	Requested By	Source of Item		
		Organization	Individual	Phone #

EXHIBIT 2.6.3-2 (continued)

REPLACEMENT COMPONENTS:

Name of Item	Requested By	Source of Item		
		Organization	Individual	Phone #

EXHIBIT 2.6.3-2 (continued)

ADDITIONAL SHIELDING :

Name of Item	Requested By	Source of Item		
		Organization	Individual	Phone #

PIGS:

Name of Item	Requested By	Source of Item		
		Organization	Individual	Phone #

HELICOPTER:

Name of Item	Requested By	Source of Item		
		Organization	Individual	Phone #

TRAILERS:

Name of Item	Requested By	Source of Item		
		Organization	Individual	Phone #

PORTABLE SANITATION FACILITIES:

Name of Item	Requested By	Source of Item		
		Organization	Individual	Phone #

EXHIBIT 2.6.3-2 (continued)

TLD'S:

Name of Item	Requested By	Source of Item		Phone #
		Organization	Individual	

RESPIRATORS:

Name of Item	Requested By	Source of Item		Phone #
		Organization	Individual	

CLOTHING:

Name of Item	Requested By	Source of Item		Phone #
		Organization	Individual	

DECONTAMINATION EQUIPMENT:

Name of Item	Requested By	Source of Item		Phone #
		Organization	Individual	

EXHIBIT 2.6.3-2 (continued)

OFFICE/INFORMATION EQUIPMENT:

Name of Item	Requested By	Source of Item		
		Organization	Individual	Phone #

COMMUNICATIONS EQUIPMENT:

Name of Item	Requested By	Source of Item		
		Organization	Individual	Phone #

EXHIBIT 2.6.3-2 (continued)

RADWASTE HANDLING EQUIPMENT:

Name of Item	Requested By	Source of Item		Phone #
		Organization	Individual	

LABORATORY EQUIPMENT:

Name of Item	Requested By	Source of Item		Phone #
		Organization	Individual	

OFF-SITE/MOBILE LAB. FACILITIES:

Name of Item	Requested By	Source of Item		Phone #
		Organization	Individual	

EXHIBIT 2.6.3-3

ADDITIONAL SERVICES

Name of Item	Requested By	Source of Service		
		Organization	Individual	Phone #

KITCHEN EQUIPMENT &
SUPPLIES

MEALS

TRAVEL

File No. _____
Unit No. _____
Q+RETcd _____
App'l _____

CAROLINA POWER & LIGHT COMPANY
BRUNSWICK STEAM ELECTRIC PLANT

UNITS NOS. 1 & 2

FIRE BRIGADE LEADER

PLANT EMERGENCY PROCEDURE PEP-2.6.9

VOLUME XIII

Rev. 2

Recommended By: Robert A. Indelicato

Date: 10/9/81

Approved By: REllinger for CR Dose
Plant General Manager

Date: 10-12-81

PEP-2.6.9 FIRE BRIGADE LEADER

1.0 Responsibilities and Objectives

The Fire Brigade Leader is responsible to the Plant Operations Director for providing liaison with the Site Emergency Coordinator/Plant Operations Director and the Fire Brigade during a declared emergency.

2.0 Scope and Applicability

This procedure shall be implemented when the Fire Brigade becomes activated during a declared emergency (non-fire) or a fire causes an EAL to be exceeded. The actions and responsibilities are limited to the Fire Brigade Leader and those emergency team members assigned to him.

3.0 Actions and Limitations

3.1 General Activities

- 3.1.1 Report your position activation and readiness to the Plant Operations Director.
- 3.1.2 Announce your name and assumed position title to all team members.
- 3.1.3 Report to Plant Operations Director for team member accountability (per PEP-3.8.2, "Personnel Accountability").
- 3.1.4 Determine need for additional equipment, supplies and manpower and make request for same from the Plant Operations Director.
- 3.1.5
 - A. When assuming the Fire Brigade Leader position, request a briefing on the emergency and emergency actions status from the previous position holder.
 - B. When relinquishing the Fire Brigade Leader position, brief your successor on the emergency and emergency actions status.
 - C. Notify all appropriate personnel of your name, the position you are assuming, and the name of the person you replace.
- 3.1.6 Ensure proper use of communications equipment (per PEP-3.1.3, "Use of Communications Equipment").
- 3.1.7 Upon completion of the fire-fighting activities, ensure documentation of the event in accordance with the Fire Plan (Volume XIX, Plant Operating Manual).

3.2 The Fire Brigade Leader shall perform duties described in the plant Fire Protection Procedure and Fire Protection Manual with the following exceptions and amplifications.

3.2.1 Report to the Plant Operations Director in the Technical Support Center instead of to the Shift Foreman/Site Emergency Coordinator when:

- 1) A fire occurs during a declared emergency.
- 2) A fire causes an emergency to be declared.

3.2.2 Communicate with the Plant Operations Director as frequently as necessary to ensure:

- 1) Awareness of the approach to, or exceeding of, an Emergency Action Level caused by the fire or fire-fighting efforts.
- 2) Awareness of effects on Safe Shutdown equipment from the fire or fire-fighting efforts.
- 3) Awareness of changes in radiological conditions that could affect fire-fighting efforts.
- 4) Documentation of key decisions.

File No. _____
Unit No. _____
Q+RETcd _____
App'l _____

CAROLINA POWER & LIGHT COMPANY
BRUNSWICK STEAM ELECTRIC PLANT

UNITS NOS. 1 & 2

ADMINISTRATION OF RADIOPROTECTIVE DRUGS

PLANT EMERGENCY PROCEDURE PEP-3.8.3

VOLUME XIII

Rev. 2

Recommended By: Robert A. Indelbert

Date: 10/9/81

Approved By: William J. for CR D. O. F. E.
Plant General Manager

Date: 10-17-81

PEP-3.8.3 ADMINISTRATION OF RADIOPROTECTIVE DRUGS

1.0 Responsible Individuals and Objectives

The purpose of this procedure is to provide guidelines on the use of medical treatment to mitigate the consequences of inhalation of radioactive materials during an accident.

The Site Emergency Coordinator (the Emergency Response Manager after the Emergency Operations Facility is activated) is responsible for advising off-site authorities whenever it is estimated that plant releases of radioactivity such as I-131, may be of such levels that administration of radioprotective drugs may be appropriate. (Federal Radiation Council Report No. 7, May 1965, Background Material for the Development of Radiation Protection Standards). Any actual decision to administer such drugs to non-CP&L personnel will be the responsibility of the Department of Human Resources.

The Radiological Control Director is responsible for consulting with the Company designated physician (PEP-Appendix A.3) as to the need for medical treatment to CP&L personnel, either preventative or therapeutic. The Radiological Control Director shall advise the Site Emergency Coordinator of any recommendation based on the consultation regarding the administration of radioprotective drugs to radiation workers as a preventative measure. A recommendation by the physician shall be conclusive regarding any therapeutic needs.

2.0 Scope and Applicability

This procedure is applicable when a release of radioactivity to the atmosphere, in addition to noble gases, occurs, or is likely to occur, and projected doses are greater than 10 rem. The guidelines set forth in this procedure are applicable only to the administration of radioprotective drugs to CP&L employees and vendor employees where CP&L is responsible as set forth in the Brunswick operating license.

Note: There are two locations of potassium iodine (KI) at the Brunswick Plant. In the TSC the KI is stored in the closets where emergency supplies are kept. In the OSC KI is stored in the Calibration Room.

3.0 Actions

3.1 Actions of the Radiological Control Director:

- 3.1.1 Have direct removal of unnecessary personnel from areas of high radiation concentration (as advisable, considering personnel and plant safety).

-CAUTION-

PERSONNEL REQUIRED FOR EMERGENCY REPAIRS OR SEARCH AND RESCUE SHOULD BE DIRECTED TO WEAR APPROPRIATE PROTECTIVE BREATHING APPARATUS.

- 3.1.2 Consult with Company designated physician (see PEP-Appendix A.3). Advise him of projected doses without Potassium Iodine and elapsed time since exposure.

Note: This consultation shall include a request for the physician, to be followed by a written recommendation to the Plant General Manager for administration of radioprotective drugs.

Physician contacted/consulted: _____ / _____
initials

time

Recommendations Made: _____

Name of Physician Making
Recommendations: _____

- 3.1.3 Decide whether to administer radioprotective drugs.

— Radioprotective drugs not recommended nor administered, including select individuals who should not be given radioprotective drugs.

— Radioprotective drugs should be administered (go to Step 3.1.4).

- 3.1.4 If a thyroid blocking agent is to be administered, direct the Personnel Protection and Decontamination Team Leader to administer single doses to potentially affected individuals as soon as possible.

- 3.1.5 Consult the Company designated physician (phone no. in PEP-Appendix A.3) for determination of daily continuance for those persons identified on EXHIBIT 3.8.3-1.

Physician consulted: _____ / _____
initial time

-CAUTION-

A MAXIMUM OF 130 MILLIGRAMS PER DAY (A SINGLE DOSE) FOR NO MORE THAN 10 DAYS IS THE MAXIMUM ALLOWABLE DOSE CONTINUATION.

IF CONTINUED DOSES ARE DETERMINED TO BE NECESSARY, THEY ARE TO BE FROM SERIALIZED BOTTLES WITH APPROPRIATE PRECAUTIONARY LABELS.

- 3.2 Actions of the Personnel Protection and Decontamination Team Leader when administering doses of radioprotective drugs:

- 3.2.1 Instruct each recipient of the radioprotective drugs to read the statement of risks involved with taking radioprotective drugs, as indicated on EXHIBIT 3.8.3-1.

- 3.2.2 Obtain the signature of each recipient on EXHIBIT 3.8.3-1 acknowledging their understanding the risks, and that they do volunteer to receive the radioprotective drugs.
- 3.2.3 Administer ONE single dose of radioprotective drugs to only those persons whose signatures have been obtained.
- 3.2.4 Sign EXHIBIT 3.8.3-1 acknowledging the administration of ONE single dose to those persons agreeing to receive the dose.
- 3.2.5 Return the completed EXHIBIT 3.8.3-1 to the Radiological Control Director.
- 3.2.6 Perform follow-up whole body counts and bioassay analysis on those persons using radioprotective drugs.

EXHIBIT 3.8.3-1

SIGNATURE PAGE FOR ACCEPTANCE OF THE RISKS OF RADIOPROTECTIVE DRUGS

-CAUTION-

IT HAS BEEN DETERMINED THAT ADMINISTRATION OF 130 MG OF POTASSIUM IODINE CAN REDUCE THE RADIATION EXPOSURE OF THE THYROID THAT WOULD OTHERWISE RESULT FROM INHALATION OF IODINE-131. WHILE 130 MG OF POTASSIUM IODINE CAN BE HAZARDOUS, THERE CAN BE SOME CIRCUMSTANCES WHERE THE BENEFITS TO BE GAINED OUTWEIGH THE POTENTIAL ADVERSE REACTIONS TO THE POTASSIUM IODINE.

I, the undersigned volunteer emergency worker, understand and accept the risks involved with receiving a single dose of radioprotective drugs.

<u>Print Name</u>	<u>Social Security No.</u>	<u>Acknowledgement of Medical Conditions*</u>	<u>Signature</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

The above listed names received information concerning the risks involved with the intake of radioprotective drugs and under my supervision received ONE single dose of radioprotective drugs.

_____/_____/_____
signature time date

* Enter any of these conditions or NONE: Hypertension (High Blood Pressure), Renal Problems, Thyroid Problems, Heart Condition, Diabetes.

File No. _____
Unit No. _____
Q+RETcd _____
App'l _____

CAROLINA POWER & LIGHT COMPANY
BRUNSWICK STEAM ELECTRIC PLANT

UNIT NOS. 1 & 2

RECORD KEEPING AND DOCUMENTATION

PLANT EMERGENCY PROCEDURE PEP-4.1

VOLUME XIII

Rev. 2

Recommended By: Robert A. Indelicato Date: 10/9/81

Approved By: William J. for CR Dietz Date: 10-12-81
Plant General Manager

PEP-4.1 RECORD KEEPING AND DOCUMENTATION

1.0 Responsible Individuals and Objectives

- 1.1 The Emergency Planning Coordinator is responsible for collecting and maintaining all records following an emergency.
- 1.2 The Emergency Communicator is the record keeper for the Site Emergency Coordinator and Emergency Response Manager and shall maintain records throughout an emergency (per PEP-3.1.1 and PEP-3.1.2).
- 1.3 Functional team leaders, supervisors, managers, and/or directors are responsible for assuring that records of all completed actions during an emergency are maintained, e.g., completed checklists, etc., and that these records are supplied to the Emergency Planning Coordinator following an emergency.

2.0 Scope and Applicability

This procedure shall be used to maintain site records of emergency preparedness and to compile records following an emergency.

3.0 Actions and Limitations

- 3.1 The Emergency Planning Coordinator shall perform the following actions to support this procedure:

- 3.1.1 Ensure that all drills and tests specified by the Emergency Response Plan are carried out according to the Plan and records of necessary actions are maintained.

Note: This can be done through normal plant operating procedures, i.e., RC&T Procedures, or by logs maintained by individual tests and drills.

- 3.1.2 Make arrangements, interfacing with corporate authorities, for an annual independent audit of emergency preparedness, including but not limited to:

- The Emergency Response Plan
- The Plant Emergency Procedures
- Training
- Readiness testing
- Facilities and equipment
- Interfaces with state and local governments

Note: An independent audit shall be performed by any competent organization, either internal or external to CP&L, not directly responsible for plant emergency preparedness.

- 3.1.2.1 Results of the audit shall be reviewed, and incorporation of comments/corrections initiated as appropriate.

- 3.1.2.2 Results of the audit shall be documented and reported to appropriate CP&L corporate personnel, plant management personnel, and involved Federal organizations.
- 3.1.2.3 Results of the audit shall be retained for five years at a minimum (in accordance with plant or corporate record keeping procedures).
- 3.1.3 Following an emergency, collect and maintain the following records of emergency operations and completed actions:
 - 3.1.3.1 Emergency communications
 - 3.1.3.2 Sequence of events
 - 3.1.3.3 Radiation records
 - 3.1.3.4 Security accountability records
 - 3.1.3.5 Site Emergency Coordinator, Plant Media Center, Emergency Operations Facility Group, and Technical Support Group logs.
- 3.1.4 Ensure availability of logbooks for the Site Emergency Coordinator, each Technical Support Group member, the Emergency Response Manager, and the Plant Media Center.
- 3.1.5 Ensure the Technical Support Center, Emergency Operations Facility, Operational Support Center, and Control Room have an up-to-date listing of phone numbers.
- 3.2 Plant and Corporate personnel responsible for maintaining records during an emergency shall provide a copy of those records to the Emergency Planning Coordinator following an emergency.

File No. _____
Unit No. _____
Q+RETcd _____
App'l _____

CAROLINA POWER & LIGHT COMPANY
BRUNSWICK STEAM ELECTRIC PLANT

UNIT NOS. 1 & 2

EMERGENCY FACILITIES AND EQUIPMENT

PLANT EMERGENCY PROCEDURE PEP-4.2

VOLUME XIII

Rev. 2

Recommended By: Robert A Indelicato

Date: 10/9/81

Approved By: Reilly for CK Dietz
Plant General Manager

Date: 10-12-81

PEP-4.2 EMERGENCY FACILITIES AND EQUIPMENT

1.0 Responsible Individuals and Objectives

The Emergency Planning Coordinator is responsible to the Plant General Manager for assuring that site emergency facilities (including the Emergency Operations Facility) and equipment (other than fire fighting facilities and equipment) are adequate for providing organized coordination and control of on-site and off-site activities during an emergency. This shall include staffing and inventories, calibration and operation of equipment and instrumentation.

2.0 Scope and Applicability

Emergency facilities and equipment shall be maintained and kept operational, with inventories kept current and available upon need.

3.0 Actions and Limitations

The Emergency Planning Coordinator shall:

- 3.1 Maintain an on-going up-to-date copy of PEP-Appendix A for the following emergency facilities:
 - 3.1.1 Control Room
 - 3.1.2 Technical Support Center
 - 3.1.3 Operational Support Center
 - 3.1.4 Plant Media Center
 - 3.1.5 Corporate Media Center
 - 3.1.6 Corporate Emergency Operations Center
 - 3.1.7 Emergency Operations Facility
 - 3.1.8 The Harris Energy and Environmental Center
- 3.2 Establish Plant Media Center with Bell System telephones at the temporary trailers behind the Visitors Center. (See PEP-3.1.3 - "Use of Communications Equipment.")
- 3.3 Verify the availability and adequacy of the following systems for support of the emergency plan:
 - 3.3.1 Communications system;
 - 3.3.2 Geophysical phenomena monitors;
 - 3.3.3 Radiological monitors;

- 3.3.4 Process monitors;
- 3.4 Verify the inventory and calibration of protective facilities and equipment (i.e., decontamination facilities), first aid and medical facilities, supplies and equipment and damage control equipment and supplies, at specified periodic intervals and after each use, in accordance with RC&T Procedure 0600."
- 3.5 Maintain a copy of an inventory sheet in its respective emergency kit.

APPENDIX A.1 BSEP PERSONNEL

BSEP Personnel

	<u>Home Phone</u>	<u>Office</u>
<u>PLANT GENERAL MANAGER (SITE EMERGENCY COORDINATOR)</u>		
C. R. Dietz]	210
Alternate		
<u>MANAGER - PLANT OPERATIONS</u>		
R. E. Morgan]	342
<u>MANAGER - OPERATIONS (PLANT OPERATIONS DIRECTOR)</u>		
R. E. Knoble		214
Alternate		
R. E. Morgan		342
<u>MANAGER - ENVIRONMENTAL & RADIATION CONTROL (RADIOLOGICAL CONTROL DIRECTOR)</u>		
G. J. Oliver		447
Alternate		
L. F. Tripp		262
<u>MANAGER - MAINTENANCE (EMERGENCY REPAIR DIRECTOR)</u>		
M. D. Hill		212
Alternate		
J. P. Dimmette		367
<u>MANAGER - TECHNICAL SUPPORT (LOGISTIC SUPPORT DIRECTOR)</u>		
W. M. Tucker		213
Alternate		
W. L. Triplett		225

ASSISTANT TO PLANT GENERAL MANAGER (REPRESENTATIVE TO THE SERT)

J. A. Padgett 211

RADIATION CONTROL SUPERVISOR (PERSONNEL PROTECTION AND DECONTAMINATION LEADER)

L. F. Tripp 262

Alternate

Radiation Control Foreman (See Attached)

ENVIRONMENTAL AND CHEMISTRY SUPERVISOR (ENVIRONMENTAL MONITORING LEADER)

R. D. Pasteur 237

Alternate

A. H. Caylor 264

PROJECT SPECIALIST - RADIATION CONTROL (DOSE PROTECTION COORDINATOR)

R. F. Queener 477

Alternate

J. L. Kiser/P. B. Snead 476

PROJECT SPECIALIST - ENVIRONMENTAL AND CHEMISTRY (PLANT MONITORING LEADER)

C. E. Robertson 263

Alternate

N. D. Stalnaker 263

MECHANICAL MAINTENANCE SUPERVISOR (DAMAGE CONTROL LEADER)

J. P. Dimmette 367

I&C ELECTRICAL MAINTENANCE SUPERVISOR (DAMAGE CONTROL LEADER)

K. E. Enzor 368

Alternate

H. R. Harrelson 310

SENIOR SPECIALIST ELECTRICAL (OPERATIONAL SUPPORT CENTER LEADER)

R. D. Creech 366

Alternate

J. R. Jefferson 389

ENGINEERING SUPERVISOR (ACCIDENT ASSESSMENT LEADER)

E. A. Bishop	271
Alternate	
L. V. Wagoner	451

SECURITY SPECIALIST (EMERGENCY SECURITY LEADER)

W. Hatcher	252
Alternate	
G. Spies	253

COST CONTROL SPECIALIST (EVACUATION ASSEMBLY LEADER)

J. L. Boyte	230
Alternate	
R. G. Lee	231

Environmental and Radiation Control
Foreman

<u>Home</u>	<u>Office</u>
D. F. Boan (RC)	244
A. H. Caylor (E&C)	264
J. B. Cook (RC)	239
B. E. Failor (RC)	241
J. D. Henderson (RC)	453
J. A. Kaham (E&C)	238
W. A. Nurnburger (E&C)	263

Specialists

J. W. Davis (E&C)	261
J. L. Kiser (RC ALARA)	476
R. E. Queener (RC)	477
C. E. Robertson (RC)	263
P. B. Snead (RC)	477
N. D. Stalnaker (E&C)	263

Operations

Shift Operating Supervisors

C. F. Blackmon	375
A. S. Hegler	375
C. W. Martin	375
P. T. McNeill	375
M. C. Shealy	375
W. L. Johnson	384

Shift Foreman

J. A. Bowlby	200/423
M. R. Foss	200/423
J. D. Lichty	201/202
W. D. Link	201/202
J. L. Simon	200/201
R. D. Tart	200/423
S. B. York	200/201

Regulatory Compliance

C. S. Bohanan	316
R. M. Poulk	314
D. E. Novotny	316
M. J. Pastva	315

Electrical and I&C Maintenance Foremen

	<u>Home</u>	<u>Office</u>
J. R. Jefferson		389
G. N. Batton		365
W. M. Bracey		349
R. D. Creech		371
J. E. King		379
C. D. Parker		364
G. W. Stegall		366
J. W. Bruner		365
L. R. Stohler		363

Mechanical Maintenance

J. D. Thrift		266
W. M. Cain		348
E. G. Conner		354
H. R. Harrelson		310
T. P. Harrison		355
K. W. Huggins		356

Qualified Operators for Emergency Switchboard

Annette Clemmons		300
Charlotte Frye		219
Kay Hewett		215
Cindy Long		328
Brenda McKeithan		373
Sue Corbett		358
Rosetta Bailey		269
Amy Rhodes		269
Sally Stocum		236

Security

W. R. Hatcher		252
G. Spies		253

PEP-A.2 FEDERAL, STATE AND COUNTY AGENCIES

U.S. NUCLEAR REGULATORY COMMISSION, REGION II (404) 221-4503
 Atlanta, Georgia (Daytime, Nights and Holidays)

DEPARTMENT OF ENERGY
 Savannah River Operations Office (803) 725-3333
 Radiological Assistance Teams
 W. T. Thornton (803) 725-6211 or
 (803) 725-2688
 S. R. Wright (803) 725-3093

	<u>Primary</u> (During Normal Working Hours)	<u>Alternate</u>
<u>STATE OF NORTH CAROLINA</u>		
State Warning Point	733-3861	
Highway Patrol		(800) 662-7956
Radiological Health Branch		
Mr. Dayne Brown		733-4283

<u>BRUNSWICK COUNTY</u>		
Warning Point	*	457-5101
(County Sheriff - Mr. Herman Strong)		
Civil Preparedness	253-4376	754-6873
(Mr. Ellis Stanley)		

<u>NEW HANOVER COUNTY</u>		
Warning Point	*	762-5228
(County Sheriff - Mr. T. Radowitz)		
Civil Preparedness	763-7555	762-5228
(Mr. Ben Washburn)		

<u>U.S. COAST GUARD</u>		
Marine Safety Office	343-4895	256-3469 256-2615 (Duty Officer, Wrightsville Beach)

FEDERAL AVIATION ADMINISTRATION 763-2956

*Automatic Ring-Down dedicated telephone line

PEP-A.3 FIRE AND MEDICAL ASSISTANCE

FIRE AND MEDICAL PHONE NUMBERS

	<u>Primary</u>	<u>Alternate</u>
<u>MEDICAL CONSULTANTS TO CP&L</u>		
Dr. Forstner	457-9565	457-5271

<u>HOSPITALS</u>		
Dosher Hospital	457-5271	

<u>RESCUE SQUAD</u>		
Southport Volunteer Rescue Squad (Mr. Doug Ledgett)	457-5211	

<u>FIRE DEPARTMENTS</u>		
Yaupon Beach Fire Department	278-5472	
Southport Fire Department	457-5211	
Boiling Spring Lakes	845-2800	
Sunny Point	457-5221	

PEP-A.4 OTHER EMERGENCY RESPONSE CONTACTS

CP&L CORPORATE HEADQUARTERS

Vice President - Nuclear Operations:

B. J. Furr

(919) 836-6253

Alternate: Manager, E&RC

(919) 362-8633

Senior Vice President - Power Supply

(919) 836-6331

Lynn W. Eury

Office

Home

AMERICAN NUCLEAR INSURERS (ANI)

Farmington, Connecticut

(203) 677-7305

INSTITUTE OF NUCLEAR POWER OPERATIONS (INPO)

Atlanta, Georgia

Telecopier:

(404) 953-0904

(404) 953-7585

GENERAL ELECTRIC

San Jose, California

(408) 925-3207

UNITED ENGINEERS AND CONSTRUCTORS

Philadelphia, PA

(215) 422-4844