

CAROLINA POWER & LIGHT COMPANY  
BRUNSWICK STEAM ELECTRIC PLANT

UNIT 0

PLANT EMERGENCY PROCEDURES INTRODUCTION

PLANT EMERGENCY PROCEDURE PEP-01.0

VOLUME XIII

Rev. 009

Recommended By:

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Date:

4/16/84

Approved By:

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Date:

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CAROLINA POWER & LIGHT COMPANY  
BRUNSWICK STEAM ELECTRIC PLANT

UNIT 0

PLANT EMERGENCY PROCEDURES INTRODUCTION

PLANT EMERGENCY PROCEDURE PEP-01.0

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Recommended By: \_\_\_\_\_ Date: \_\_\_\_\_  
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CAROLINA POWER & LIGHT COMPANY  
Emergency Response Organization

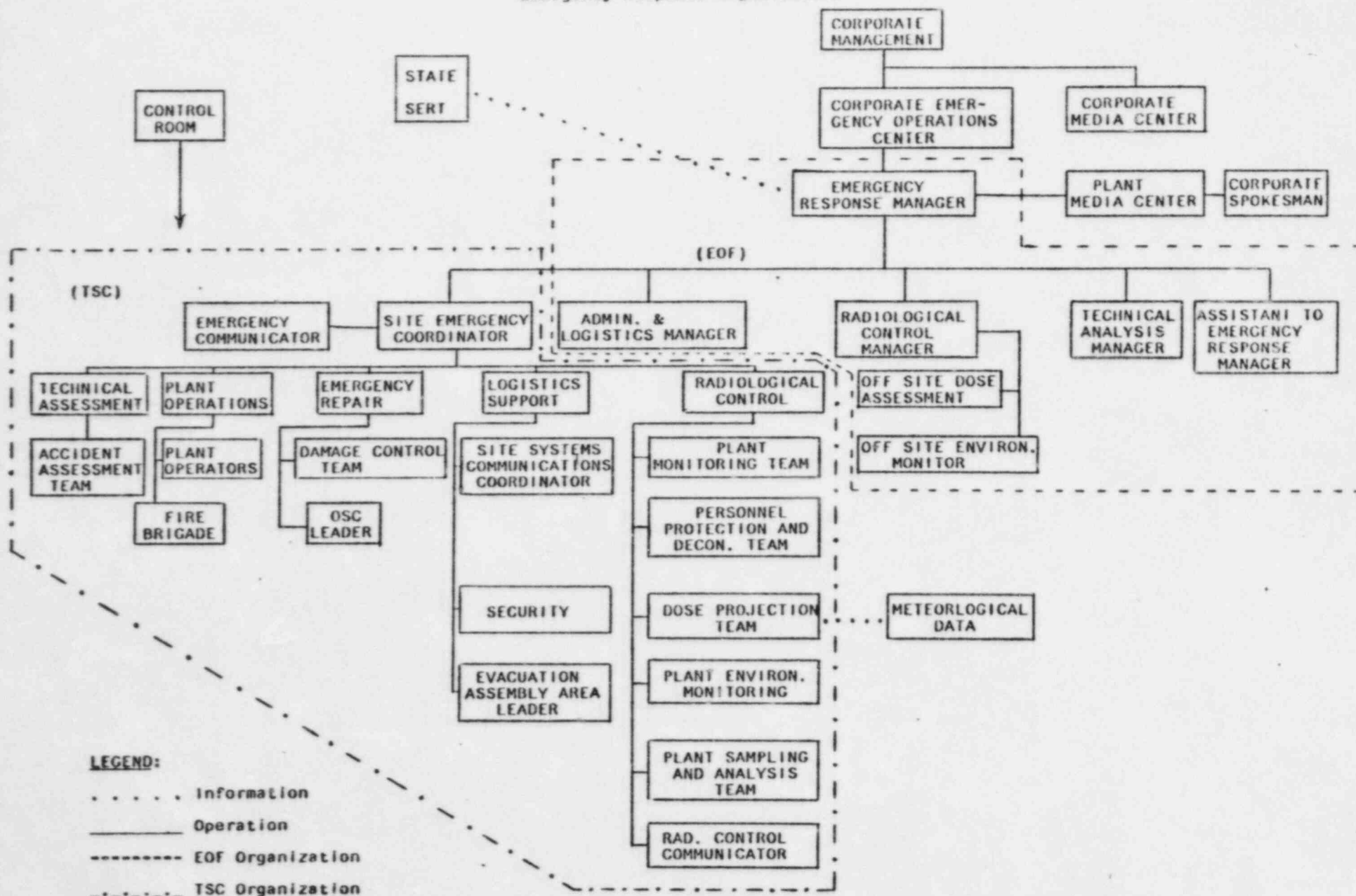




EXHIBIT 1.2-2  
EMERGENCY RESPONSE ORGANIZATION

1. Site Emergency Coordinator: General Manager  
  
Alternates: Manager - Technical & Administrative Support  
Assistant to General Manager  
Manager - Operations  
Manager - Environmental & Radiation Control  
Manager - Maintenance  
Manager - Technical Support  
  
Interim: Shift Operating Supervisor  
  
Alternate Interim: Shift Foreman
2. Plant Operations Director: Manager - Operations  
  
Alternates: Superintendent - 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 unaffected Unit
- 2.b Fire Brigade  
  
Leader: Shift Foreman  
  
Alternate: Plant Fire Chief  
  
Interim: Fire Brigade Member
3. Emergency Repair Director: Manager - Maintenance  
  
Alternates: Mechanical Maintenance Supervisor  
Electrical Maintenance Supervisor  
  
Interim: Site Emergency Coordinator

EXHIBIT 1.2-2  
EMERGENCY RESPONSE ORGANIZATION  
(continued)

3.a Damage Control Team:

Leader: Mechanical Maintenance Supervisor  
Electrical Maintenance Supervisor

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: Senior Specialist - Electrical  
Senior Specialist - Mechanical

4. Logistics Support Director: Director - Administrative Support  
Alternates: Materials Control Supervisor  
Interim: Site Emergency Coordinator

4.a Site Communications Systems Coordinator: BCU Office Engineering  
Coordinator

This individual will be designated by the Logistic Support Director when the emergency communications system is activated.

4.b Emergency Security Team:

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

4.c Evacuation Assembly Area Leader

Leader: Cost Control Specialist  
Alternate: Security Guard

EXHIBIT 1.2-2  
EMERGENCY RESPONSE ORGANIZATION  
(continued)

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

Alternates: Supervisor - Radiation Control I  
Supervisor - Radiation Control II  
Principal Specialist - Radiation Control  
Supervisor - Environmental and Chemistry  
Project Specialist - Environmental and Chemistry

Interim: Site Emergency Coordinator

5.a Environmental Monitoring Team:

Leader: Project Specialist - Environmental and Chemistry

Alternates: Foreman - Environmental and Chemistry

Interim: Radiological Control Director

5.b Plant Monitoring Team:

Leader: Supervisor - Radiation Control I

Alternates: Foreman - Radiation Control

Interim: Radiological Control Director

5.c. Personnel Protection and Decontamination Team:

Leader: Supervisor - Radiation Control II

Alternates: Foreman - Radiation Control

Interim: Radiological Control Director

5.d Dose Projection Coordinator: Principal Specialist - Radiation Control

Alternates: Specialist - Radiation Control

Interim: Radiological Control Director

EXHIBIT 1.2-2  
EMERGENCY RESPONSE ORGANIZATION  
(continued)

5.e Plant Sampling and Analysis Team:

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

5.f Radiological Control:

Communicator:	Foreman - E&RC
Alternates:	Technician I - E&RC
Interim:	Radiological Control Director

6. Technical Assessment Director:

Leader:	Manager - Technical Support
Alternate:	Engineering Supervisor
Interim:	Site Emergency Coordinator

7. Emergency Communicator:

Director - Regulatory Compliance	
Alternate:	Regulatory Compliance Specialist
Interim:	Available Plant Operator

8. Representative to State  
Emergency Response Team  
Headquarters:

Senior Specialist - ALARA	
Alternate:	Technician II - Radiation Control

9. Site Public Information

Coordinator:	Manager - News Services
Alternates:	Vice President - Corporate Communications Director - Media Relations
Interim:	General Manager or his designee

EXHIBIT 1.2-2  
EMERGENCY RESPONSE ORGANIZATION  
(continued)

- |                                                    |                                                                                |  |
|----------------------------------------------------|--------------------------------------------------------------------------------|--|
| 10. Emergency Response Manager:                    | Vice President - Brunswick Nuclear Project                                     |  |
| Alternate:                                         | Manager - Outages BNP                                                          |  |
| 11. Administrative & Logistics Manager:            | Administrative Supervisor - BCU                                                |  |
| Alternate:                                         | Supervisor - BCU Planning and Budget                                           |  |
| 12. Technical Analysis Manager:                    | Manager - Site Planning & Control                                              |  |
| Alternate:                                         | Director - Unit Outages                                                        |  |
| 13. Radiological Control Manager:                  | Manager - Radiological & Chemical Support, HE&EC                               |  |
| Alternate:                                         | Director - Health Physics HE&EC                                                |  |
| 14. Assistant to the Emergency Response Manager:   |                                                                                |  |
| 15. Corporate Emergency Operations Center Manager: | Senior Vice President - Fossil Generation and Power Transmission               |  |
| Alternates:                                        | Executive Vice President - Power Power Supply and Engineering and Construction |  |
| 16. Corporate Spokesman:                           | Vice President - Nuclear Safety and Research or his designee                   |  |
| Alternate:                                         | Vice President - Nuclear Plant Engineering                                     |  |

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1.0 PLANT EMERGENCY PROCEDURES INTRODUCTION

1.1 Manual Purpose and Use

1.2 Emergency Response Organization

2.0 EMERGENCY CLASSIFICATIONS AND CONTROL PROCEDURES

2.1 Initial Emergency Actions

2.2 Emergency Control - Unusual Event

2.3 Emergency Control - Alert

2.4 Emergency Control - Site Emergency

2.5 Emergency Control - General Emergency

2.6 Emergency Management Guides

- 2.6.1 Plant Operations Director
- 2.6.2 Emergency Repair Director
- 2.6.3 Logistics Support Director
- 2.6.4 Radiological Control Director
- 2.6.5 Representative to the State Emergency Response Team
- 2.6.6 Environmental Monitoring Team Leader
- 2.6.7 Plant Monitoring Team Leader
- 2.6.8 Personnel Protection and Decontamination Team Leader
- 2.6.9 Fire Brigade Leader
- 2.6.10 Emergency Security Team Leader
- 2.6.11 Damage Control Team Leader
- 2.6.12 Operational Support Center/Evacuation Assembly Area Leader
- 2.6.13 Site Public Information Coordinator
- 2.6.14 Site Systems Communications Coordinator
- 2.6.15 Emergency Response Manager
- 2.6.16 Administrative and Logistics Manager
- 2.6.17 Technical Analysis Manager
- 2.6.18 Radiological Control Manager
- 2.6.19 Dose Projection Coordinator
- 2.6.20 Emergency Communicator
- 2.6.21 Technical Assessment Director
- 2.6.22 Assistant to the Emergency Response Manager
- 2.6.23 Plant Sampling and Analysis Team Leader
- 2.6.24 Radiological Control Communicator

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3.3 Plant Monitoring Procedures

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3.3.5 Emergency Radiation Work Permits

3.4 Radiological Consequences

3.4.1 Initial Dose Projections

3.4.2 Whole Body Dose Projections

3.4.3 Thyroid Dose Projections

3.4.4 (Reserved)

3.4.5 Automation of Dose Projection Procedures using the  
HP-9830A Table-top Computer

3.4.6 (Reserved)

3.4.7 Automation of Dose Projection Procedures using the IBM  
Personal Computer

3.5 Environmental Monitoring Procedures

3.5.1 Confirmation of Initial Off-Site Dose Projections

3.5.2 Expanded Environmental Monitoring

3.5.3 Plume Tracking by Actual Measurement

3.6 Source Term Assessments and Estimates of Core Damage

3.6.1 Release Estimates Based Upon Stack/Vent Readings

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3.6.3 Estimate of the Extent of Core Damage Under Accident  
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3.6.5 Collection and Analysis of Very High Level Radioactive  
Samples

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3.8 Protective Action Procedures

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3.9 Aid to Affected Personnel

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- 3.9.2 First Aid and Medical Care
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- 3.9.4 (Reserved)
- 3.9.6 Search and Rescue

4.0 SUPPLEMENTAL PROCEDURES

- 4.1 Record Keeping and Documentation
- 4.2 Emergency Facilities and Equipment
- 4.3 Performance of Training, Exercises and Drills
- 4.4 (Reserved)
- 4.5 Public Education and Information

APPENDIX A EMERGENCY RESPONSE RESOURCES

- A.1 BSEP Personnel
- A.2 Federal, State, and County Agencies
- A.3 Fire and Medical Assistance
- A.4 Other Emergency Response Contacts



CAROLINA POWER & LIGHT COMPANY  
BRUNSWICK STEAM ELECTRIC PLANT

UNIT 0

RADIOLOGICAL CONTROL DIRECTOR

PLANT EMERGENCY PROCEDURE: PEP-02.6.4

VOLUME XIII

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FOR INFORMATION ONLY

Recommended By:

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4/18/84

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1.0 Responsibilities and Objectives

The Radiological Control Director is responsible to the Site Emergency Coordinator for:

- 1.1 Managing the radiological monitoring and assessment aspects of the plant during an emergency;
- 1.2 Managing activities to control radiation exposure;
- 1.3 Providing technical and administrative direction to the Radiological Emergency Teams.
- 1.4 Providing liaison with Corporate personnel in the Harris Energy & Environmental Facility before activation of the Emergency Operations Facility and with the Radiological Control Manager after Emergency Operations Facility activation.

2.0 Scope and Applicability

This procedure shall be implemented when the Technical Support Group becomes activated, or when any of the Radiological Emergency Teams become activated. The actions and responsibilities are limited to the Radiological Control Director and those emergency team members assigned to him.

3.0 Actions and Limitations

3.1 General Requirements

- 3.1.1 Announce your name and assumed position title to all team leaders that report to you.
- 3.1.2 Verify the necessary personnel to contend with the emergency have been notified.
- 3.1.3 Determine need for additional equipment, supplies, and manpower, and make request for same.
- 3.1.4 Ensure documentation of the following in the Radiological Control Director's log:
  - Communications
  - Key decisions
  - Data collected
  - Checklists(in accordance with PEP-4.1, "Record Keeping and Documentation").

- 3.1.5 When relinquishing the Radiological Control Director position, brief your successor on the emergency status. Note completion of this step in the Radiological Control Director's log.
- 3.1.6 Coordinate as necessary with the Radiological Control Manager after the Emergency Operations Facility is activated.
- 3.1.7 When requested by State officials, arrange for analysis of environmental samples by the HEEC and for whole body counting and bioassay of affected off-site individuals.
- 3.1.8 Provide technical and administrative direction to the Radiological Emergency Teams (Plant Monitoring Team, Plant Sampling and Analysis Team, Dose Projection Team, Environmental Monitoring Team, and Personnel Protection and Decontamination Team).

NOTE: The following steps represent the major activities to be performed by the Radiological Emergency Teams. Consult other procedures for more details on Radiological Emergency Team activities. Exhibit 2.6.4-1 provides a list of the plant emergency procedures used by these teams.

### 3.2 Plant Monitoring Activities

- 3.2.1 Direct the Plant Monitoring Team to perform on-site radiological surveys.
- 3.2.2 Provide guidance on the issuing of emergency RWP's.
- 3.2.3 Direct that health physics coverage be provided for damage control and plant sampling and analysis reentry teams.

### 3.3 Plant Sampling and Analysis Activities

- 3.3.1 Direct that containment liquid and gas samples be obtained at the Postaccident Sample Station.
- 3.3.2 Have assessments of potential release source terms and effluent source terms made as necessary.
- 3.3.3 Have estimates of core damage performed based on sampling and analysis results.

### 3.4 Dose Projection Activities

NOTE: Off-site dose projections will be performed in the Emergency Operations Facility after it is fully activated and staffed. The TSC Dose Projection Team will remain active after EOF activation in gathering source term data and verifying off-site dose projections.

- 3.4.1 Transmit information necessary for assessing effluent source terms to the Dose Projection Coordinator.
- 3.4.2 Have off-site dose projections performed and discuss results with the Site Emergency Coordinator.
- 3.4.3 Until the EOF is activated, recommend to the Site Emergency Coordinator all protective actions for off-site individuals for subsequent recommendation to the counties or state.

### 3.5 Environmental Monitoring Activities

NOTE: The Environmental Monitoring Team leader will be responsible to the Radiological Control Director prior to EOF activation and to the Radiological Control Manager after EOF activation.

- 3.5.1 Ensure that environmental monitoring to confirm off-site dose projections is initiated.
- 3.5.2 Advise appropriate state and county officials (at the State Emergency Response Team headquarters if activated) of the environmental monitoring efforts under way prior to activation of the EOF.
- 3.5.3 Arrange for plume tracking activities to be performed when major releases are occurring or could occur.
- 3.5.4 Direct that environmental TLDs be analyzed and consider the placement of additional TLDs in downwind sectors off site.

### 3.6 Personnel Protection and Decontamination Activities

- 3.6.1 Aid in determination of the need for protective cover or evacuation for on-site personnel.
- 3.6.2 Direct personnel to join in search and rescue activities, providing first aid as necessary.

- 3.6.3 Direct that dosimetry and protective equipment be issued by the Personnel Protection and Decontamination Team as necessary.
- 3.6.4 Ensure that personnel decontamination services are being provided as necessary.
- 3.6.5 Have surveys performed to verify the radiological safety of plant evacuation assembly areas and work areas such as the TSC, EOF, and OSC.
- 3.6.6 Consider the use of potassium iodide for CP&L workers when work is being performed in areas where airborne iodine is suspected (see PEP-03.8.3).

EXHIBIT 2.6.4-1  
RADIOLOGICAL EMERGENCY TEAM PROCEDURES

Plant Monitoring Team Procedures

PEP-02.6.7      Plant Monitoring Team Leader  
PEP-03.3.1      In-Plant Monitoring and Surveys  
PEP-03.3.5      Emergency Radiation Work Permits  
PEP-03.8.4      Access Control

Plant Sampling and Analysis Team Procedures

PEP-02.6.24     Plant Sampling and Analysis Team Leader  
PEP-03.6.3      Estimate of the Extent of Core Damage Under Accident Conditions  
PEP-03.6.5      Collection and Analysis of Very High Level Radioactive Samples

Dose Projection Team Procedures

PEP-02.6.20     Dose Projection Coordinator  
PEP-03.4.1      Initial Dose Projections  
PEP-03.4.2      Whole Body Dose Projections  
PEP-03.4.3      Thyroid Dose Projections  
PEP-03.4.5      Automation of Dose Projection Procedures (HP-9830A)  
PEP-03.4.7      Automation of Dose Projection Procedures (IBM-PC)  
PEP-03.6.1      Release Estimates Based Upon Stack/Vent Readings

Environmental Monitoring Team Procedures

PEP-02.6.6      Environmental Monitoring Team Leader  
PEP-03.5.1      Confirmation of Off-Site Dose Projections  
PEP-03.5.2      Expanded Environmental Monitoring  
PEP-03.5.3      Plume Tracking by Actual Measurement

Personnel Protection and Decontamination Team Procedure

PEP-02.6.8      Personnel Protection and Decontamination Team Leader  
PEP-03.7.2      Emergency Personnel Monitoring and Dosimetry  
PEP-03.7.3      Issuance and Use of Protective Gear  
PEP-03.7.4      Monitoring and Surveys for Personnel Habitability  
PEP-03.8.1      Evacuation  
PEP-03.8.3      Administration of Radioprotective Drugs  
PEP-03.8.4      Access Control  
PEP-03.9.2      First Aid and Medical Care  
PEP-03.9.3      Transporting of Contaminated Injured Personnel  
PEP-03.9.6      Search and Rescue

Radiological Control Communicator Procedure

PEP-02.6.25     Radiological Control Communicator



CAROLINA POWER & LIGHT COMPANY  
BRUNSWICK STEAM ELECTRIC PLANT

UNIT 0

REPRESENTATIVE AT THE STATE EMERGENCY RESPONSE TEAM HEADQUARTERS

PLANT EMERGENCY PROCEDURE: PEP-02.6.5

VOLUME XIII

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FOR INFORMATION ONLY

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## 1.0 Responsibilities and Objectives

The member of the plant staff identified in PEP-01 as SERT representative is responsible to the Emergency Response Manager for:

- 1.1 Reporting to the SERT Headquarters as directed by the Site Emergency Coordinator/Emergency Response Manager.
- 1.2 Providing liaison with agency representatives at the SERT Headquarters.
- 1.3 Serving as director of CP&L's involvement with off-site protective actions during a declared emergency.

## 2.0 Scope and Applicability

This procedure shall be implemented during a declared site or general emergency. The actions and responsibilities are limited to the individuals listed in PEP-01 as SERT Representative and those emergency team members assigned to them.

## 3.0 Actions and Limitations

### 3.1 General Requirements

- 3.1.1 Report your position and readiness to the Site Emergency Coordinator or the Emergency Response Manager.
- 3.1.2 Announce your name and assumed position title to all appropriate agency representatives at the State Emergency Response Team Headquarters.
- 3.1.3 When relinquishing this position, brief your successor on the emergency and emergency actions status.
- 3.1.4 Determine need for additional equipment, supplies, and manpower and make request for the same.

NOTE: If necessary, request that plant personnel who can offer technical advice in areas of radiation control or plant Operations report to you at the SERT.

- 3.1.5 Initiate a log and ensure documentation of the following in accordance with PEP-04.1, Record Keeping and Documentation:

3.1.5.1 Communications

3.1.5.2 Key decisions

3.1.5.3 Data collected

3.1.5.4 Checklists

3.1.6 Ensure proper use of communications equipment per  
PEP-03.1.3, Use of Communications Equipment.

- 3.2 Relay Site Emergency Coordinator's/Emergency Response Manager's recommendations for protective actions off site to agency representatives at the SERT Headquarters.
- 3.3 Provide descriptions of the procedures used to analyze samples so that differences in analysis methods are not, of themselves, the cause of differing assessments of levels of radioactivity in the environment (i.e., may result from use of different types of TLDs and different methods of reading TLDs).
- 3.4 Where requested, coordinate arrangements for analysis of replicate samples.

CAROLINA POWER & LIGHT COMPANY  
BRUNSWICK STEAM ELECTRIC PLANT

UNIT 0

ENVIRONMENTAL MONITORING TEAM LEADER

PLANT EMERGENCY PROCEDURE: PEP-02.6.6

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PEP-02.6.6

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## 1.0 Responsibilities and Objectives

The Environmental Monitoring Team Leader is responsible to the Radiological Control Director for providing technical and administrative direction to the Environmental Monitoring Team during a declared emergency. Once the Emergency Operations Facility is activated, the Environmental Monitoring Team Leader will be responsible to the Radiological Control Manager in the Emergency Operations Facility.

## 2.0 Scope and Applicability

This procedure shall be implemented upon activation of the Environmental Monitoring Team. The actions and responsibilities are limited to the Environmental Monitoring Team Leader and those emergency team members assigned to him.

## 3.0 Actions and Limitations

### 3.1 General Requirements

- 3.1.1 Report your position and readiness to the Radiological Control Director (the Radiological Control Manager after the Emergency Operations Facility is activated).
- 3.1.2 Announce your name and assumed position title to team members.
- 3.1.3 Determine need for additional equipment, supplies, and manpower and make request for same.
- 3.1.4 When relinquishing the Environmental Monitoring Team Leader position, brief your successor on the emergency status. Note completion of this step in your log.
- 3.1.5 Ensure documentation of the following:
  - Communications
  - Key decisions
  - Data collected
  - Checklists

(In accordance with PEP-04.1, Record Keeping and Documentation.)
- 3.1.6 Ensure proper use of communications equipment (per PEP-03.1.3, Use of Communications Equipment).
- 3.1.7 Ensure exposure control is in accordance with PEP-03.3.5, Emergency Radiation Work Permits (i.e., Radiation Work Permits shall be completed).

- 3.1.8 Ensure that good communications are maintained with the Dose Projection Coordinator in order to anticipate expected conditions and verify field conditions (meteorology and dose rates).
  - 3.1.9 When the HEEC Environmental Monitoring Teams arrive and become functional, plant personnel involved in off-site monitoring can be released for support of on-site efforts as necessary.
  - 3.1.10 Each siren in the ten-mile EPZ is equipped with electrical outlets which can be used for running environmental air samplers. (These sirens are also individually numbered which allows them to be used as reference points.)
  - 3.1.11 If requested, state monitoring teams should be briefed regarding environmental conditions found prior to their activation.
- 3.2 Assign personnel to perform environmental monitoring procedures as directed by the Radiological Control Director (the Radiological Control Manager after the Emergency Operations Facility is activated).

Priorities for assignments will depend on plant conditions; the following order for priority of assignments is provided as a guide:

- 3.2.1 Dose confirmation (PEP-03.5.1, Confirmation of Off-Site Dose Projections). (Interface with the Dose Projection Coordinator.)
  - 3.2.2 Off-site monitoring (PEP-03.5.2, Expanded Environmental Monitoring; PEP-03.5.3, Plume Tracking by Actual Measurement).
  - 3.2.3 Other missions as required (interface with Personnel Protection and Decontamination Team Leader and Plant Monitoring Team Leader).
- 3.3 Guidelines for the Environmental Monitoring Team Leader
- 3.3.1 Provide technical and administrative direction to the Environmental Monitoring Team.
  - 3.3.2 Ensure that two Environmental Monitoring Teams are available for deployment after the TSC is activated.



- 3.3.3 Consult with the Dose Projection Coordinator to obtain current meteorological conditions and projected dose conditions for field team placement. An objective of field team placement is to take measurements at locations close to the distances assumed in the calculated dose projections.
- 3.3.4 Advise field teams of expected conditions--both initially and as conditions change.
- 3.3.5 Record location of environmental teams and results of surveys at specific locations and times on area maps for ease of tracking.
- 3.3.6 Discuss with the Dose Projection Coordinator the results of environmental surveys in order to confirm off-site dose projections as per PEP-03.5.1.
- 3.3.7 Report results of environmental surveys and confirmation of off-site dose projections to the Radiological Control Director.
- 3.3.8 Perform plume tracking operations as per PEP-03.5.3.
- 3.3.9 Collect and replace TLDs at existing direct radiation sample locations as per PEP-03.5.2.
- 3.3.10 If directed by the Radiological Control Director, direct the placement of additional TLDs in downwind sectors off site as per PEP-03.5.2.
- 3.3.11 Direct the initiation of expanded environmental monitoring (i.e., soil, water, vegetation, etc.) as per PEP-03.5.2 and E&RC-3110.



CAROLINA POWER & LIGHT COMPANY  
BRUNSWICK STEAM ELECTRIC PLANT

UNIT 0

PLANT MONITORING TEAM LEADER

PLANT EMERGENCY PROCEDURE: PEP-02.6.7

VOLUME XIII

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Recommended By:

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## 1.0 Responsibilities and Objectives

The Plant Monitoring Team Leader is responsible to the Radiological Control Director for providing technical and administrative direction to the Plant Monitoring Team during a declared emergency.

## 2.0 Scope and Applicability

This procedure shall be implemented upon activation of the Plant Monitoring Team. The actions and responsibilities are limited to the Plant Monitoring Team Leader and those emergency team members assigned to him.

## 3.0 Actions and Limitations

### 3.1 General Requirements

- 3.1.1 Report your position and readiness to the Radiological Control Director.
- 3.1.2 Announce your name and assumed position title to team members.
- 3.1.3 Determine need for additional equipment, supplies, and manpower and make request for same.
- 3.1.4 When relinquishing the Plant Monitoring Team Leader position, brief your successor on the emergency status. Note completion of this step in your log.
- 3.1.5 Ensure documentation of the following:
  - Communications
  - Key decisions
  - Data collected
  - Checklists

(in accordance with PEP-04.1, "Record Keeping and Documentation")
- 3.1.6 Ensure proper use of communications equipment (per PEP-03.1.3, "Use of Communications Equipment")
- 3.1.7 Ensure exposure control is in accordance with PEP-03.3.5, "Emergency Radiation Work Permits" (i.e., Radiation Work Permits shall be completed).
- 3.1.8 Ensure that good communications are maintained with the Personnel Protection and Decontamination Team Leader and the Plant Sampling and Analysis Team Leader in order to minimize the communications impact on the Radiological Control Director.

3.1.9 Ensure that personnel reporting to you who are working in the Operational Support Center (OSC) always log in, log out, and debrief with the OSC leader when they are working outside the OSC.

3.1.10 Work closely with the Personnel Protection and Decontamination Team Leader to coordinate the overall radiological control of on-site activities.

### 3.2 Guidelines for the Plant Monitoring Team Leader

3.2.1 Provide technical and administrative direction to the Plant Monitoring Team.

3.2.2 Assign team members to perform in-plant radiological surveys in accordance with PEP-03.3.1.

NOTE: If survey results indicate that plant conditions have changed such that current radiological postings are inadequate, make reasonable efforts to post areas correctly. This is especially true for areas of greater than 1000 mR/hr where access should be limited as "locked high radiation areas."

3.2.3 Maintain area maps of current radiological conditions in the plant as appropriate.

3.2.4 Ensure that RWPs are issued in accordance with PEP-03.3.5 and E&RC procedures.

3.2.5 Review guidelines for entry missions with each reentry team per Step 3.3 below.

3.2.6 Assign personnel to accompany each reentry team in order to provide health physics coverage.

3.2.7 Establish areas to which access should be controlled for the purpose of minimizing personnel exposures. (This includes establishing health physics checkpoints and/or personnel frisking stations--see PEP-03.8.4.

### 3.3 Guidelines for Reentry Missions for Data Collection and/or Accompanying Other Personnel

3.3.1 For each reentry mission, brief the team members on the following:

3.3.1.1 Anticipated radiological conditions

3.3.1.2 Required protective gear and dosimetry

- 3.3.1.3 Primary and alternate ingress/egress routes
- 3.3.1.4 Maximum stay times and radiation field limitations requiring special authorization
- 3.3.2 Ensure that each group of team members on a reentry mission has the following:
  - 3.3.2.1 Proper monitoring and communications equipment
  - 3.3.2.2 A Radiation Work Permit
  - 3.3.2.3 Proper dosimetry and protective gear
  - 3.3.2.4 Copies of pertinent procedures
  - 3.3.2.5 Maps/drawings marked up to show destination and ingress/egress routes (if necessary)
  - 3.3.2.6 An outline of the mission
  - 3.3.2.7 Any special tools or equipment necessary for the mission

CAROLINA POWER & LIGHT COMPANY  
BRUNSWICK STEAM ELECTRIC PLANT

UNIT 0

PERSONNEL PROTECTION AND DECONTAMINATION TEAM LEADER

PLANT EMERGENCY PROCEDURE: PEP-02.6.8

VOLUME XIII

Rev. 002

FOR INFORMATION ONLY

Recommended By:

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Director - Administrative Support

Date:

4/16/84

Approved By:

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Date:

4/18/84

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## 1.0 Responsibilities and Objectives

The Personnel Protection and Decontamination Team Leader is responsible to the Radiological Control Director for providing technical and administrative direction to the Personnel Protection and Decontamination Team during a declared emergency.

## 2.0 Scope and Applicability

This procedure shall be implemented upon activation of the Personnel Protection and Decontamination Team. The actions and responsibilities are limited to the Personnel Protection and Decontamination Team Leader and those emergency team members assigned to him.

## 3.0 Actions and Limitations

### 3.1 General Requirements

- 3.1.1 Report your position and readiness to the Radiological Control Director.
- 3.1.2 Announce your name and assumed position title to all team members.
- 3.1.3 Determine need for additional equipment, supplies, and manpower and make request for same.
- 3.1.4 When relinquishing the Personnel Protection and Decontamination Team Leader position, brief your successor on the emergency status. Note completion of this step in your log.
- 3.1.5 Ensure documentation of the following:
  - Communications
  - Key decisions
  - Data collected
  - Checklists

(in accordance with PEP-04.1, "Record Keeping and Documentation")
- 3.1.6 Ensure proper use of communications equipment (per PEP-03.1.3, "Use of Communications Equipment").
- 3.1.7 Ensure exposure control is in accordance with PEP-03.3.5 "Emergency Radiation Work Permits" (i.e., Radiation Work Permits shall be completed).



- 3.1.8 Ensure that good communications are maintained with the Plant Monitoring Team Leader in order to minimize the communications impact on the Radiological Control Director.
  - 3.1.9 Work closely with the Plant Monitoring Team Leader to coordinate the overall radiological control of on-site activities.
  - 3.1.10 Ensure that personnel reporting to you who are working in the Operational Support Center (OSC) always log in, log out, and debrief with the OSC Leader when they are working outside the OSC.
- 3.2 Guidelines for the Personnel Protection and Decontamination Team Leader:
- 3.2.1 Provide technical and administrative direction to the Personnel Protection and Decontamination Team.
  - 3.2.2 Assign personnel to perform personnel protection and decontamination functions.
  - 3.2.3 Have team members assist in search and rescue missions and provide first-aid and medical care services as necessary (see PEP Section 3.9).
    - 3.2.3.1 Notify the Radiological Control Director whenever transportation of a contaminated, injured patient is required.
    - 3.2.3.2 If transportation of a contaminated patient is required, notify the hospital of the patient's condition and arrange for Health Physics technicians to precede the contaminated patient to the hospital to prepare for the receipt of this patient. (A Health Physics technician should also accompany the patient to the hospital.)
  - 3.2.4 Verify the radiological safety of plant evacuation assembly areas. (See PEP-03.7.4 and PEP-03.8.1.)
  - 3.2.5 Establish a location for personnel decontamination and provide personnel decontamination services as necessary in accordance with E&RC-0210.
  - 3.2.6 Ensure that dosimetry is issued in accordance with PEP-03.7.2 and E&RC procedures.

- 3.2.6.1 Issue special dosimetry as necessary; i.e., dosimetry for TSC and EOF personnel, finger badges for sampling missions, etc.
- 3.2.6.2 If RIMS is not available, dosimetry issue information should be recorded for later entry into RIMS.
- 3.2.7 Issue protective equipment and gear to support reentry teams; i.e., respirators, anticontamination clothing, and survey instruments (see PEP-03.7.3).
- 3.2.8 Coordinate vehicle release activities both at the plant and in the parking lot under plant evacuation circumstances as per PEP-03.8.4.
- 3.2.9 Perform radiological surveys to ensure the habitability of work areas such as the counting room, TSC, OSC, and EOF as per PEP-03.7.4.
- 3.2.10 Place and maintain area TLDs at various areas within the exclusion area as per PEP-03.7.2 to assess the radiological impact on personnel.
- 3.2.11 If directed by the Radiological Control Director, administer radioprotective drugs in accordance with PEP-03.8.3.

CAROLINA POWER & LIGHT COMPANY  
BRUNSWICK STEAM ELECTRIC PLANT

UNIT 0

DOSE PROJECTION COORDINATOR

PLANT EMERGENCY PROCEDURE: PEP-02.6.20

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## 1.0 Responsibilities and Objectives

The Dose Projection Coordinator is responsible to the Radiological Control Director for projecting doses off site during a declared emergency. After activation of the Emergency Operations Facility, the Dose Projection Coordinator will provide meteorological data and source term information to EOF personnel and provide verification of off-site dose assessments made by EOF personnel.

## 2.0 Scope and Applicability

This procedure shall be implemented upon activation of the Dose Projection Team. The actions and responsibilities are limited to the Dose Projection Coordinator and those team members assigned to him.

## 3.0 Actions and Limitations

### 3.1 General Requirements:

- 3.1.1 Report your position and readiness to the Radiological Control Director.
- 3.1.2 Announce your name and assumed position title to all team members.
- 3.1.3 Determine and procure equipment, supplies and manpower necessary for use by the Dose Projection Team.
- 3.1.4 When relinquishing the Dose Projection Coordinator position, brief your successor on the emergency status. Note completion of this step in your log.
- 3.1.5 Ensure documentation of the following:
  - Communications
  - Key decisions
  - Data collected
  - Data transmitted
  - (In accordance with PEP-04.1, Record Keeping and Documentation)
- 3.1.6 Ensure proper use of communications equipment (in accordance with PEP-03.1.3, Use of Communications Equipment).

- 3.1.7 Ensure that good communications are maintained with the Plant Sampling and Analysis Team Leader for source term assessments and the Environmental Monitoring Team Leader for verification of dose projections.

### 3.2 Guidelines for the Dose Projection Coordinator.

- 3.2.1 Provide technical and administrative direction to the Dose Projection Team.
- 3.2.2 Determine effluent source terms either from monitor readings or information supplied by the Plant Sampling and Analysis Team. (Exhibit 2.6.20-7 can be used to record source term data.)
- 3.2.3 Periodically obtain on-site meteorological data.
- 3.2.4 If the plant computers are not accessible, determine meteorological data in accordance with Exhibit 2.6.20-1, Manual Met Tower Data Acquisition.
- 3.2.5 If the computer program 'DOSE' is to be used on the IBM Personal Computer for dose projections, have the test cases given in Exhibit 3.4.7-1 run to verify that the program is working properly.\*
- 3.2.6 Use computer or manual methods to perform source term and dose projection procedures (see PEP section 3.4).
- 3.2.7 Provide projected meteorological and radiological conditions to the Environmental Monitoring Team Leader for the proper placement of environmental teams.
- 3.2.8 Periodically call the CP&L corporate meteorologists in Raleigh and request meteorological forecast data. (PEP Appendix A.4 for phone numbers.) Make use of Exhibits 2.6.20-4 and 2.6.20-5 for recording forecast and other meteorological data.
- 3.2.9 Consult with the Environmental Monitoring Team Leader to obtain actual field readings in order to confirm off-site dose projections.
- 3.2.10 Recommend off-site protective actions to the Radiological Control Director based on dose projections.

\*For your information, Exhibit 2.6.20-3 provides some considerations to be noted to ensure that future changes to the dose projection procedures cause similar changes to the dose projection computer programs and vice versa.



- 3.2.11 Obtain and distribute meteorological and source term data to the dose assessment group in the EOF as required.
- 3.2.12 Use Exhibit 2.6.20-6 to detail wind direction in terms of degrees from north versus sector wind is blowing from and sector wind is blowing to.
- 3.2.13 Ingestion dose projection procedures are contained in the Harris Environmental and Energy Center's Emergency Procedures should they be needed before activation of the EOF. Copies of HEEC Emergency Procedures are available in the TSC.



Exhibit 2.6.20-1

Manual Met Tower Data Acquisition

- 1.0 If the CRT, modem circuit, or telephone system for contacting the met tower is out of service, the data is obtained as follows (if unavailable from process computer):
  - a. Obtain key from E&RC (No. 20) or Security to allow access to the Meteorological Building, located at the base of the tower, northwest of the site.
  - b. On the shelf in the building, locate the manual pulse counter. This unit should be plugged into a 110 Vac outlet for recharging the internal batteries.
  - c. The unit has a stop/start switch and a position 1/position 2 switch. It has a black lead and white lead.
  - d. Unplug manual pulse counter.
  - e. Open the left-hand cabinet on the right wall of the building.
  - f. Inside this cabinet you will observe several black jacks and one white jack.
  - g. Each black jack is labeled as to what parameter is involved.
  - h. Plug the white lead into the white jack and the black lead into the parameter whose pulses are needed.
  - j. Reset counter to zero.
  - k. Place switch into position 2.
  - m. Observe time; place stop/start to start.
  - n. At the end of 90 seconds, turn stop/start to stop.
  - o. Record number of pulses and multiply number by 10. This will scale up the pulses to equal 15-minute values.
  - p. Proceed to obtain the other parameters.
  - q. Record readings on Exhibit 2.6.20-2.
  - r. Record the wind direction and wind speed from the recorders on the data form.
  - s. Turn switch to stop and plug counter into 110 Vac.

Exhibit 2.6.20-1 (Cont'd)

- t. Secure all cabinets, lock building, and return keys to E&RC/Security.
  - u. Perform the E&RC tabletop computer program to convert the pulses to usable parameters as normal.
  - v. Compare the wind parameters to the values from q above to see if they are reasonable.
- 2.0 If the calculator is out of service but the pulses can be obtained either automatically or by hand, proceed as follows:

CONVERSION OF PULSES TO ENGINEERING UNITS

WIND SPEED (MPH) = WIND SPEED PULSES ' 15

WIND DIRECTION: A = (SIN PULSES - 750)

B = (COS PULSES - 750)

APPARENT ANGLE = ARCTAN OF ABSOLUTE VALUE OF A/B

A B WIND DIRECTION (DEGREES FROM NORTH)

+ + APPARENT ANGLE

+ - 180 - APPARENT ANGLE

- - 180 + APPARENT ANGLE

- + 360 - APPARENT ANGLE

AMBIENT TEMPERATURE (°F) = (TEMP PULSES X 0.12) + ZA

ZA = SITE SPECIFIC ZERO ADJUST FACTOR\*

DIFFERENTIAL TEMPERATURE (°F) = (DT PULSES ' 60) + ZA

ZA = SYSTEM SPECIFIC ZERO ADJUST FACTOR\*

ANSWER IN DEGREES F MULTIPLIED BY SITE

SPECIFIC NORMALIZING FACTOR (0.5976)

CONVERTS UNITS TO °C/100 METERS.

\*NOTE: THE MOST RECENT ZERO ADJUST FACTORS ARE USUALLY POSTED IN THE MET TOWER BUILDING. IF CURRENT FACTORS ARE UNAVAILABLE, ASSUME ZA FOR AMBIENT TEMP = -50 AND ZA FOR DELTA T = -10.

Exhibit 2.6.20-1 (Cont'd)

STABILITY CLASS

DIFFERENTIAL TEMPERATURE  $\Delta T$

A	< -1.9 ( $^{\circ}\text{C}/100\text{m}$ )
B	-1.9 to -1.7
C	-1.7 to -1.5
D	-1.5 to -0.5
E	-0.5 to +1.5
F	+1.5 to +4.0
G	> +4.0

## Exhibit 2.6.20-2

## MANUAL PULSE COUNTS

DATE \_\_\_\_\_

TIME \_\_\_\_\_

PARAMETER      PULSES/90 Sec

WSU	X 10 = _____	WSU
WDU SIN	X 10 = _____	WDU SIN
WDU COS	X 10 = _____	WDU COS
WSL	X 10 = _____	WSL
WDL SIN	X 10 = _____	WDL SIN
WDL COS	X 10 = _____	WDL COS
AMB Temp	X 10 = _____	AMB Temp
DT 1	X 10 = _____	DT 1
DT 2	X 10 = _____	DT 2

Wind speed upper from recorder (avg) \_\_\_\_\_ mph

Wind direction upper from record (avg) \_\_\_\_\_ degrees

Wind speed lower from recorder (avg) \_\_\_\_\_ mph

Wind direction lower from record (avg) \_\_\_\_\_ degrees

## Exhibit 2.6.20-3

### Considerations for Making Future Changes to the Dose Projection Procedures, the Dose Projection Computer Programs, and their Associated Documentation.

The computer programs used to automate emergency dose projections are inherently linked to the various emergency dose projection procedures. Therefore, making a change to a procedure may necessitate changes to the computer programs or vice versa. Furthermore, the dose projection procedures and computer programs used by BSEP are somewhat standardized within the CP&L system. When changes to the dose projection procedures or programs are to be made, users of these procedures and programs at other CP&L facilities should be informed and in some cases their concurrence with the changes sought. Documents, computer programs, and concerned groups which are interrelated for dose projections are as follows:

#### Emergency Dose Projection Documents

- PEP-02.6.20      Dose Projection Coordinator
- PEP-03.4.1      Initial Dose Projections
- PEP-03.4.2      Whole Body Dose Projections
- PEP-03.4.3      Thyroid Dose Projections
- PEP-03.4.5      Automation of Dose Projection Procedures Using the HP-9830A Tabletop Computer
- PEP-03.4.7      Automation of Dose Projection Procedures Using the IBM Personal Computer
- Volume 13, Book 1, Appendix F  
Technical Basis of Emergency Dose Projection Program  
Documentation of Emergency Dose Projection Computer Programs

#### Emergency Dose Projection Computer Programs

- 'DOSE'            Emergency Dose Projections
- 'IDP'            Initial Dose Projections
- 'MET'            Meteorological Data Acquisition
- 'TALK'           Receiving Met Forecasts from Forecast Center
- 'FORECAST'       Viewing Received Met Forecasts
- 'NWS'            Determining Stability Class from National Weather Services Data

#### CP&L Groups Concerned with Emergency Dose Projection Procedures and Computer Programs

- BSEP Dose Projection Team (TSC)
- HBR Dose Projection Team (TSC)
- HLEC Dose Assessment Team (EOF)
- Corporate Meteorologists (Forecast Center)



Carolina Power &amp; Light Company

## METEOROLOGICAL FORECAST FORM

Date: \_\_\_\_\_

Time Issued: \_\_\_\_\_

Issued By: \_\_\_\_\_

Received By: \_\_\_\_\_

Forecast Location: \_\_\_\_\_

## A) Next 1 Hour

1) Wind Direction: Sector \_\_\_\_\_ Deg. \_\_\_\_\_

2) Winds Should Remain (Steady; Shifting; Variable)

2a) Variation Should Be \_\_\_\_\_ Deg.

3) Wind Velocity: \_\_\_\_\_ to \_\_\_\_\_ (MPH)

4) Stability Class \_\_\_\_\_

5) Precipitation Activity Will Be (None, Scattered, Steady)

6) Precipitation Type (Rain, Rainshowers, Thunderstorms, Ice, Snow)

7) Precipitation Intensity (Light, Moderate, Severe)

## B) Next 3 Hours:

---



---



---

C) Remarks: \_\_\_\_\_

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---





Carolina Power &amp; Light Company

**ONSITE METEOROLOGICAL DATA**

Date: \_\_\_\_\_

Time ( )	_____	_____	_____	_____
Upper Speed (mph) (m/s)	_____/____	_____/____	_____/____	_____/____
Upper Direc. (DEG)	_____	_____	_____	_____
Lower Speed (mph) (m/s)	_____/____	_____/____	_____/____	_____/____
Lower Direc. (DEG)	_____	_____	_____	_____
AMB Temp. (°F)	_____	_____	_____	_____
$\Delta T$ (°C/100m)	_____	_____	_____	_____
Stability Class	_____	_____	_____	_____

Time ( )	_____	_____	_____	_____
Upper Speed (mph) (m/s)	_____/____	_____/____	_____/____	_____/____
Upper Direc. (DEG)	_____	_____	_____	_____
Lower Speed (mph) (m/s)	_____/____	_____/____	_____/____	_____/____
Lower Direc. (DEG)	_____	_____	_____	_____
AMB Temp. (°F)	_____	_____	_____	_____
$\Delta T$ (°C/100m)	_____	_____	_____	_____
Stability Class	_____	_____	_____	_____



## Exhibit 2.6.20-6

## WIND DIRECTIONS

<u>WIND FROM</u>	<u>DEGREES FROM NORTH</u>	<u>WIND TOWARD</u>
N	349-11	S
NNE	12-33	SSW
NE	34-56	SW
ENE	57-78	WSW
E	79-101	W
ESE	102-123	WNW
SE	124-146	NW
SSE	147-168	NNW
S	169-191	N
SSW	192-213	NNE
SW	214-236	NE
WSW	237-258	ENE
W	259-281	E
WNW	282-303	ESE
NW	304-326	SE
NNW	327-348	SSE

# SOURCE TERM DATA

DATE: \_\_\_\_\_

TIME: \_\_\_\_\_

\_\_\_\_ ELEVATED RELEASE OR \_\_\_\_ GROUND LEVEL REL.

ALARMING MONITOR: \_\_\_\_\_

MONITOR INDICATION: \_\_\_\_\_

FLOW RATE (SCFM): \_\_\_\_\_

OTHER:

SOURCE TERM =

Ci/SEC

CAROLINA POWER & LIGHT COMPANY  
BRUNSWICK STEAM ELECTRIC PLANT

UNIT 0

PLANT SAMPLING AND ANALYSIS TEAM LEADER

PLANT EMERGENCY PROCEDURE: PEP-02.6.24

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PEP-02.6.24

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## 1.0 Responsibilities and Objectives

The plant Sampling and Analysis Team Leader is responsible to the Radiological Control Director for providing technical and administrative direction to the plant Sampling and Analysis Team during a declared emergency. Responsibilities of the plant Sampling and Analysis Team Leader include source term assessments and core damage estimations based on sampling results.

## 2.0 Scope and Applicability

This procedure shall be implemented upon activation of the plant Sampling and Analysis Team. Actions and responsibilities are limited to the plant Sampling and Analysis Team Leader and those emergency team members assigned to him.

## 3.0 Actions and Limitations

### 3.1 General Requirements

- 3.1.1 Report your position and readiness to the Radiological Control Director.
- 3.1.2 Announce your name and assumed position title to all team members.
- 3.1.3 Determine the need for additional equipment, supplies, and manpower and make request for the same.
- 3.1.4 When relinquishing the plant Sampling and Analysis Team Leader position, brief your successor on the emergency status. Note completion of this step in your log.
- 3.1.5 Ensure documentation of the following in accordance with PEP-04.1, Recordkeeping and Documentation.
  - Communications
  - Key decisions
  - Data collected
  - Checklists
- 3.1.6 Ensure proper use of communications equipment (per PEP-03.1.3, Use of Communications Equipment).
- 3.1.7 Ensure exposure control is in accordance with PEP-03.3.5, Emergency Radiation Work Permits (i.e., Radiation Work Permits shall be completed).

- 3.1.8 Ensure that good communications are maintained with the Personnel Protection and Decontamination Team Leader.
- 3.1.9 Ensure that personnel reporting to you who are working in the Operational Support Center (OSC) always log in, log out, and debrief with the OSC Leader when they are working outside the OSC.
- 3.2 Guidelines for Plant Sampling and Analysis Team Leader
  - 3.2.1 Provide technical and administrative direction to the plant Sampling and Analysis Team.
  - 3.2.2 Support source term assessments for the Dose Projection Team (especially when effluent monitors are inoperable).
  - 3.2.3 As soon as possible, obtain all necessary liquid and gas samples through the postaccident sample station for source term assessments and estimations of core damage.
  - 3.2.4 Make recommendations for sampling and analyses for each sampling mission per PEP-03.6.5.
  - 3.2.5 Perform other necessary laboratory analyses per appropriate E&RC procedures.
  - 3.2.6 Perform estimations of core damage based on sampling results per PEP-03.6.3.
  - 3.2.7 If local counting facilities become unusable, coordinate analysis of plant samples at off-site facilities.

CAROLINA POWER & LIGHT COMPANY  
BRUNSWICK STEAM ELECTRIC PLANT

UNIT 0

RADIOLOGICAL CONTROL COMMUNICATOR

PLANT EMERGENCY PROCEDURE: PEP-02.6.25

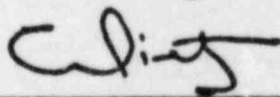
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## 1.0 Responsibilities and Objectives

The Radiological Control Communicator is responsible to the Radiological Control Director for expediting communications between the Director and the Radiological Emergency Teams.

## 2.0 Scope and Applicability

This procedure shall be implemented upon activation of the Technical Support Center. Actions and responsibilities are limited to the Radiological Control Communicator.

## 3.0 Actions and Limitations

### 3.1 General Requirements

- 3.1.1 Report your position and readiness to the Radiological Control Director.
- 3.1.2 Determine the need for additional equipment, supplies, and manpower and request the same.
- 3.1.3 When relinquishing the Radiological Control Communicator position, brief your successor on the emergency status. Note completion of this step in the Radiological Control Director's log.
- 3.1.4 Ensure proper use of communications and equipment (per PEP-03.1.3, Use of Communications Equipment).

### 3.2 Guidelines for the Radiological Control Communicator

- 3.2.1 Expedite communications between the Radiological Control Director and the Radiological Emergency Team Leaders (plant Monitoring, plant Sampling and Analysis, Dose Projection, Environmental Monitoring, and Personnel Protection and Decontamination Team Leaders).
- 3.2.2 Assist the Radiological Control Director in documentation of communications, key decisions, and data collected in his log.
- 3.2.3 Ensure that the updated Safety Parameter Display System (SPDS) information is routinely relayed to the radiological emergency teams.

CAROLINA POWER & LIGHT COMPANY  
BRUNSWICK STEAM ELECTRIC PLANT

UNIT 0

IN-PLANT MONITORING AND SURVEYS

PLANT EMERGENCY PROCEDURES: PEP-03.3.1

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## 1.0 Responsible Individual and Objectives

The Plant Monitoring Team is responsible for assuring that in-plant monitoring and surveys are conducted, documented, and reported as directed by the Radiological Control Director and the Plant Monitoring Team Leader.

## 2.0 Scope and Applicability

This procedure shall be implemented when an alert, site emergency, or general Emergency is declared.

This procedure includes direct radiation measurements and air sampling performed during the course of Damage Control Team and Plant Sampling and Analysis Team entries into radiation areas as well as entries for the sole purpose of measuring radiation levels and collecting air samples.

In order to minimize personnel radiation exposure, all entries must be approved by the Site Emergency Coordinator or his designee in accordance with PEP-03.3.5, Emergency Radiation Work Permits.

NOTE: Where this procedure does not address specific monitoring details, refer to plant procedures for routine operations.

## 3.0 Actions and Limitations

NOTE: For conditions where off-site releases are expected to have occurred and resources are limited, directing off-site monitoring near the site boundary (confirmation of initial dose projections) is generally of higher priority than building entries whose sole purpose is to determine the radiation environment.

The Plant Monitoring Team shall:

3.1 Obtain briefing from Site Emergency Coordinator/Radiological Control Director or Plant Monitoring Team Leader regarding:

- 3.1.1 Required monitoring data.
- 3.1.2 Anticipated levels of radiation and contamination en route.
- 3.1.3 Suggested routes.
- 3.1.4 Required protective gear.
- 3.1.5 Exposure limits allow for this entry.

- 3.2 Obtain calibrated monitoring equipment from emergency kits or from routine-use equipment.
- 3.3 Prior to leaving equipment storage location, perform and instrument check including:
  - 3.3.1 Battery check.
  - 3.3.2 Current calibration sticker.
  - 3.3.3 Source check.
- 3.4 Obtain necessary communications equipment and assure operability.
- 3.5 When accompanying Damage Control Teams or Plant Sampling and Analysis Teams, verify that team members are properly outfitted with protective gear and dosimetry.
- 3.6 When conducting surveys separate from Damage Control Team or Plant Sampling and Analysis Team entries, proceed to the locations requiring monitoring per step 3.1, and use appropriate plant survey maps and forms to record results.
- 3.7 Conduct in-plant monitoring and surveys (airborne contamination and dose rate) as directed in E&RC-0100, Routine/Special/Dose Rate/Survey; E&RC-0120, Routine/Special/Airborne Radioactivity Survey; and E&RC-0111 Routine/Special/Smear Surveys.
- 3.8 Operate direct radiation monitors continuously while proceeding to requested locations and note any unanticipated high radiation levels, their location, and time and date of reading.
- 3.9 Record (or communicate to one who is recording) pertinent data at each location requested to be monitored:
  - 3.9.1 For dose rate surveys use forms in E&RC-0100.
  - 3.9.2 For airborne surveys use forms in E&RC-0120.
  - 3.9.3 For contamination smear surveys use forms in E&RC-0111.
- 3.10 Communicate abnormally high readings to the Plant Monitoring Team Leader, per Step 3.1, or others, as directed.
- 3.11 Collect filters and charcoal cartridges from fixed samplers daily, or as directed.